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	
Exhibit No · (SDG&E-06-WP)	

WORKPAPERS TO PREPARED DIRECT TESTIMONY OF RICK H. CHIAPA / AARON M. BELL / STEVE A. HRUBY ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

May 2022



2024 General Rate Case - APP INDEX OF WORKPAPERS

Exhibit SDG&E-06-WP - GAS TRANSMISSION

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Overall Summary For Exhibit No. SDG&E-06-WP

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Description
Non-Shared Services
Shared Services
Total

In 2021 \$ (000) Incurred Costs							
Adjusted-Recorded	Adjusted-Recorded Adjusted-Forecast						
2021	2022	2023	2024				
5,163	5,103	5,103	5,103				
0	0	0	0				
5.163	5.103	5.103	5.103				

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Summary of Non-Shared Services Workpapers:

Description

A. PIPELINE & INSTRUMENTATION OPERATIONS

B. COMPRESSOR STATION OPERATIONS -

MORENO

C. TECHNICAL SERVICES

Total

	In 2021 \$ (000) Incurred Costs									
Adjusted- Recorded	Adjusted-Forecast							' Adjusted-Forec		st
2021	2022 2023 2024									
1,922	1,862	1,862	1,862							
3,196	3,196	3,196	3,196							
45	45	45	45							
5,163	5,103	5,103	5,103							

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: A. PIPELINE & INSTRUMENTATION OPERATIONS

Workpaper: 1GT000.000

Summary for Category: A. PIPELINE & INSTRUMENTATION OPERATIONS

	In 2021\$ (000) Incurred Costs						
	Adjusted-Recorded	Adjusted-Forecast					
	2021	2022	2023	2024			
Labor	1,284	1,323	1,323	1,323			
Non-Labor	638	539	539	539			
NSE	0	0	0	0			
Total	1,922	1,862	1,862	1,862			
FTE	12.2	12.6	12.6	12.6			

Workpapers belonging to this Category:

1GT000.000 Pipeline & Instrumentation Operations

1,323
539
0
1,862
12.6
_

Beginning of Workpaper

1GT000.000 - Pipeline & Instrumentation Operations

Non-Shared Service Workpapers

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: A. PIPELINE & INSTRUMENTATION OPERATIONS
Category-Sub 1. PIPELINE & INSTRUMENTATION OPERATIONS
Workpaper: 1GT000.000 - Pipeline & Instrumentation Operations

Activity Description:

The Gas Transmission Pipeline & Instrumentation Operations includes operation and maintenance equipment at pipeline receipt points, valve control stations, major customer delivery custody-transfer points, and all associated monitoring, metering, and control facilities, odorization equipment, and real-time operating data telemetry communications between gas facilities and SoCalGas's Gas Control department.

Forecast Explanations:

Labor - 5-YR Average

The TY 2024 forecast was established using the five-year average forecast methodology. In developing the TY 2024 forecast, SDG&E evaluated the historical expenditures from 2017 through 2021 for the Pipeline and Instrumentation Operations category. Through this analysis it was determined that the most accurate estimate of anticipated future needs is provided by the five-year average.

Non-Labor - 5-YR Average

The TY 2024 forecast was established using the five-year average forecast methodology. In developing the TY 2024 forecast, SDG&E evaluated the historical expenditures from 2017 through 2021 for the Pipeline and Instrumentation Operations category. Through this analysis it was determined that the most accurate estimate of anticipated future needs is provided by the five-year average.

NSE - 5-YR Average

Not applicable.

Summary of Results:

	In 2021\$ (000) Incurred Costs									
		Adjι	ısted-Recor	ded		Ad	justed-Fore	cast		
Years	2017	2018	2019	2020	2021	2022	2023	2024		
Labor	1,263	1,416	1,382	1,270	1,284	1,323	1,323	1,323		
Non-Labor	560	426	507	566	638	539	539	539		
NSE	0	0	0	0	0	0	0	0		
Total	1,823	1,843	1,889	1,836	1,922	1,862	1,862	1,862		
FTE	12.1	13.5	13.2	12.2	12.2	12.6	12.6	12.6		

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: A. PIPELINE & INSTRUMENTATION OPERATIONS
Category-Sub: 1. PIPELINE & INSTRUMENTATION OPERATIONS
Workpaper: 1GT000.000 - Pipeline & Instrumentation Operations

Summary of Adjustments to Forecast:

	In 2021 \$(000) Incurred Costs									
Forecast Method E		Bas	Base Forecast		Forecast Adjustments			Adjusted-Forecast		
Years	5	2022 2023 2024		2022	2022 2023 2024		2022	2023	2024	
Labor	5-YR Average	1,323	1,323	1,323	0	0	0	1,323	1,323	1,323
Non-Labor	5-YR Average	539	539	539	0	0	0	539	539	539
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Tota	ı	1,862	1,862	1,862			0	1,862	1,862	1,862
FTE	5-YR Average	12.6	12.6	12.6	0.0	0.0	0.0	12.6	12.6	12.6

Forecast Adjustment Details:

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	Adj Type
2022	440	171	0	611	0.1	1-Sided Adj
Explanation:	Pipeline Maintenance RAI	ИР base. С	6			
2022	254	99	0	353	0.1	1-Sided Adj
Explanation:	Measurement and Regula	tion Station	Maintenance F	RAMP base.	C11	
2022	6	3	0	9	0.1	1-Sided Adj
Explanation:	Odorization RAMP base.	C12				
2022	56	21	0	77	0.1	1-Sided Adj
Explanation:	Cathodic Protection RAMI	base. C2				
2022	60	23	0	83	0.1	1-Sided Adj
Explanation:	C14					
2022	-440	-171	0	-611	-0.1	1-Sided Adj
Explanation:	RAMP adjustment for C06					
2022	-56	-21	0	-77	-0.1	1-Sided Adj
Explanation:	Ramp adjustment for C02					
2022	-60	-23	0	-83	-0.1	1-Sided Adj
Explanation:	RAMP adjustment for C14					
2022	-6	-3	0	-9	-0.1	1-Sided Adj
Explanation:	RAMP adjustment for C12					
2022	-254	-99	0	-353	-0.1	1-Sided Adj
Explanation:	RAMP adjustment for C11					
2022 Total	0	0	0	0	0.0	
2023	56	21	0	77	0.1	1-Sided Adj
Explanation:	RAMP C2					
2023	6	3	0	9	0.1	1-Sided Adj
Explanation:	RAMP C12					

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: A. PIPELINE & INSTRUMENTATION OPERATIONS
Category-Sub: 1. PIPELINE & INSTRUMENTATION OPERATIONS
Workpaper: 1GT000.000 - Pipeline & Instrumentation Operations

	· · · · · · · · · · · · · · · · · · ·		- 1			
<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	Adj_Type
2023	440	171	0	611	0.1	1-Sided Adj
Explanation:	RAMP C6					
2023	254	99	0	353	0.1	1-Sided Adj
Explanation:	RAMP C11					
2023	60	23	0	83	0.1	1-Sided Adj
Explanation:	C14					
2023	-440	-171	0	-611	-0.1	1-Sided Adj
Explanation:	RAMP adjustment for C0	6				
2023	-56	-21	0	-77	-0.1	1-Sided Adj
Explanation:	RAMP adjustment for C0	2				
2023	-60	-23	0	-83	-0.1	1-Sided Adj
Explanation:	RAMP adjustment for C1	4				
2023	-6	-3	0	-9	-0.1	1-Sided Adj
Explanation:	Adjustment for C12					
2023	-254	-99	0	-353	-0.1	1-Sided Adj
Explanation:	RAMP adjustment for C1	1				
2023 Total	0	0	0	0	0.0	
2024	56	21	0	77	0.1	1-Sided Adj
Explanation:	C2					
2024	6	3	0	9	0.1	1-Sided Adj
Explanation:	RAMP C12					
2024	440	171	0	611	0.1	1-Sided Adj
Explanation:	RAMP C6					
2024	254	99	0	353	0.1	1-Sided Adj
Explanation:	RAMP C11					
2024	60	23	0	83	0.1	1-Sided Adj
Explanation:	C14					
2024	-440	-171	0	-611	-0.1	1-Sided Adj
Explanation:	RAMP adjustment for C0	6				
2024	-56	-21	0	-77	-0.1	1-Sided Adj
Explanation:	RAMP adjustment for C0	2				
2024	-254	-99	0	-353	-0.1	1-Sided Adj
Explanation:	RAMP adjustment for C1	1				
2024	-6	-3	0	-9	-0.1	1-Sided Adj
Explanation:	RAMP adjustment for C1	2				

Non-Shared Service Workpapers

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: A. PIPELINE & INSTRUMENTATION OPERATIONS
Category-Sub: 1. PIPELINE & INSTRUMENTATION OPERATIONS
Workpaper: 1GT000.000 - Pipeline & Instrumentation Operations

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	NSE	<u>Total</u>	<u>FTE</u>	Adj_Type
2024	-60	-23	0	-83	-0.1	1-Sided Adj
Explanation:	RAMP adjustment for C14					
2024 Total	0	0	0	0	0.0	

Non-Shared Service Workpapers

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: A. PIPELINE & INSTRUMENTATION OPERATIONS
Category-Sub: 1. PIPELINE & INSTRUMENTATION OPERATIONS
Workpaper: 1GT000.000 - Pipeline & Instrumentation Operations

Determination of Adjusted-Recorded (Incurred Costs):

Determination of Aujusteu-	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	1,013	1,119	1,142	1,078	1,116
Non-Labor	505	393	477	533	639
NSE	0	0	0	0	0
Total	1,518	1,512	1,619	1,610	1,756
FTE	10.7	11.6	11.3	10.5	10.5
Adjustments (Nominal \$) **					
Labor	-28	14	0	0	0
Non-Labor	-3	0	0	-2	-1
NSE	0	0	0	0	0
Total	-30	14	0	-2	-1
FTE	-0.2	0.1	0.0	0.0	0.0
Recorded-Adjusted (Nomina	al \$)				
Labor	985	1,133	1,142	1,078	1,116
Non-Labor	502	393	477	531	638
NSE	0	0	0	0	0
Total	1,487	1,526	1,619	1,608	1,754
FTE	10.4	11.6	11.3	10.5	10.5
acation & Sick (Nominal \$)					
Labor	146	172	164	153	168
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	146	172	164	153	168
FTE	1.7	1.9	1.9	1.7	1.7
Escalation to 2021\$					
Labor	131	112	76	39	0
Non-Labor	58	33	30	35	0
NSE	0	0	0	0	0
Total	189	145	106	74	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Consta	nt 2021\$)				
Labor	1,263	1,416	1,382	1,270	1,284
Non-Labor	560	426	507	566	638
NSE	0	0	0	0	0
Total	1,823	1,843	1,889	1,836	1,922
FTE	12.1	13.5	13.2	12.2	12.2

^{*} After company-wide exclusions of Non-GRC costs

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

Non-Shared Service Workpapers

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: A. PIPELINE & INSTRUMENTATION OPERATIONS
Category-Sub: 1. PIPELINE & INSTRUMENTATION OPERATIONS
Workpaper: 1GT000.000 - Pipeline & Instrumentation Operations

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs							
	Years	2017	2018	2019	2020	2021	
Labor		-28	14	0	0	0	
Non-Labor		-3	0	0	-2	-1	
NSE		0	0	0	0	0	
	Total	-30	14	0	-2	-1	
FTE		-0.2	0.1	0.0	0.0	0.0	

Detail of Adjustments to Recorded:

Year	Lat	or N	Lbr N	ISE	FTE	Adi Type
2017		28	-3	0	-0.2	1-Sided Adj
Explanation:	Incremental costs that ar Memorandum Account (be requested	for recover	y through a r	non-GRC Catastrophic Event
2017 Total	-:	28	-3	0	-0.2	
2018	•	4	0	0	0.1	1-Sided Adj
Explanation:	Incremental costs that ar Memorandum Account (be requested	for recover	y through a r	non-GRC Catastrophic Event
2018 Total	,	14	0	0	0.1	
2019 Total		0	0	0	0.0	
2020		0	-2	0	0.0	1-Sided Adj
Explanation:	Incremental COVID-relat Catastrophic Event Mem			o be reque	sted for reco	very through a non-GRC
2020 Total		0	-2	0	0.0	
2021		0	-1	0	0.0	1-Sided Adj
Explanation:	Incremental COVID-relat Catastrophic Event Mem			o be reque	sted for reco	very through a non-GRC
2021 Total		0	-1	0	0.0	

Non-Shared Service Workpapers

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: A. PIPELINE & INSTRUMENTATION OPERATIONS
Category-Sub: 1. PIPELINE & INSTRUMENTATION OPERATIONS
Workpaper: 1GT000.000 - Pipeline & Instrumentation Operations

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: C02 T1&T2

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

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

GRC Forecast Cost Estimates (\$000)

	2021 Historical Embedded Cost	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inci	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	Low	High
Tranche 1 Cost Estimate	73	63	63	63	23	29
Tranche 2 Cost Estimate	17	14	14	14	47	60

Cost Estimate Changes from RAMP:

GRC Work Unit/Activity Level Estimates

GRC forecast is outside the RAMP range due to an update in allocation between HCA and non-HCA tranches.

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP Range Activities	
Measure	Activities	Activities	Activities	Activities	Low	High
Tranche 1 # of CP and follow up reads	127.00	169.00	169.00	169.00	61.00	78.00

38.00

38.00

38.00

160.00

125.00

up reads

Work Unit Changes from RAMP:

Tranche 2 # of CP and follow

GRC forecast is outside the RAMP range due to an update in allocation between HCA and non-HCA tranches.

29.00

Risk S	pend	Efficiency	(RSE)
--------	------	------------	-------

	GRC RSE	RAMP RSE	
Tranche 1	3,849.000	1,074.600	
Tranche 2	1,639.000	65.500	

RSE Changes from RAMP:

Non-Shared Service Workpapers

Area: **GAS TRANSMISSION**

Witness: Rick H. Chiapa

Category: A. PIPELINE & INSTRUMENTATION OPERATIONS 1. PIPELINE & INSTRUMENTATION OPERATIONS Category-Sub: Workpaper: 1GT000.000 - Pipeline & Instrumentation Operations

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 (SDG&E-03, Chapter 2).

RAMP Item # 2

RAMP Activity

RAMP Chapter: SDG&E-Risk-3 Incident Related to the High Pressure System (Excluding Dig-in)

RAMP Line Item ID: C12

RAMP Line Item Name: Odorization

Tranche(/s): Tranche1: Transmission Facilities

GRC Forecast Cost Estimates (\$000)

	2021 Historical Embedded Cost	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP Range (2020 Incurred \$)	
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	Low	High
Tranche 1 Cost Estimate	9	9	9	9	8	10
Cost Estimate Changes fro	m RAMP:					

None.

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP Range Activities	
Measure	Activities	Activities	Activities	Activities	Low	High
Tranche 1 # of Gallons of Odorant used	185.00	185.00	185.00	186.00	167.00	213.00

Work Unit Changes from RAMP:

None.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE	
Tranche 1	2.000	22.400	

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 (SDG&E-03, Chapter 2).

Non-Shared Service Workpapers

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: A. PIPELINE & INSTRUMENTATION OPERATIONS
Category-Sub: 1. PIPELINE & INSTRUMENTATION OPERATIONS
Workpaper: 1GT000.000 - Pipeline & Instrumentation Operations

RAMP Item #3

RAMP Activity

RAMP Chapter: SDG&E-Risk-3 Incident Related to the High Pressure System (Excluding Dig-in)

RAMP Line Item ID: C06 T1&T2

RAMP Line Item Name: Pipeline Maintenance (HCA & Non-HCA)

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

GRC Forecast Cost Estimates (\$000)

	2021 Historical Embedded Cost	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inc	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	Low	High
Tranche 1 Cost Estimate	481	501	501	501	182	232
Tranche 2 Cost Estimate	106	110	110	110	369	472

Cost Estimate Changes from RAMP:

GRC forecast is outside the RAMP range due to an update in allocation between HCA and non-HCA tranches.

GRC Work Unit/Activity Level Estimates

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 R Range Ac	
Measure	Activities	Activities	Activities	Activities	Low	High
Tranche 1 # of Miles Patrolled and Maintained	362.00	362.00	362.00	362.00	131.00	168.00
Tranche 2 # of Miles Patrolled and Maintained	80.00	80.00	80.00	80.00	266.00	340.00

Work Unit Changes from RAMP:

GRC unit forecast is outside the RAMP range due to an update in allocation between HCA and non-HCA tranches.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE	
Tranche 1	363.000	1,038.000	
Tranche 2	156.000	62.000	

Non-Shared Service Workpapers

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: A. PIPELINE & INSTRUMENTATION OPERATIONS
Category-Sub: 1. PIPELINE & INSTRUMENTATION OPERATIONS
Workpaper: 1GT000.000 - Pipeline & Instrumentation Operations

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 (SDG&E-03, Chanter 2)

Non-Shared Service Workpapers

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: A. PIPELINE & INSTRUMENTATION OPERATIONS
Category-Sub: 1. PIPELINE & INSTRUMENTATION OPERATIONS
Workpaper: 1GT000.000 - Pipeline & Instrumentation Operations

RAMP Item # 4

RAMP Activity

RAMP Chapter: SDG&E-Risk-3 Incident Related to the High Pressure System (Excluding Dig-in)

RAMP Line Item ID: C11 T1 & T2

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

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

GRC Forecast Cost Estimates (\$000)

	2021 Historical Embedded Cost	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inci	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	Low	High
Tranche 1 Cost Estimate	348	289	289	289	105	134
Tranche 2 Cost Estimate	77	64	64	64	213	272

Cost Estimate Changes from RAMP:

GRC forecast is outside the RAMP range due to an update in allocation between HCA and non-HCA tranches.

GRC W	ork Unit/A	Activity Lev	el Estimates

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RA	
Measure	Activities	Activities	Activities	Activities	Low	High
Tranche 1 # of Measurement and Regulation(M&R) repairs and upgrades	315.00	327.00	327.00	327.00	119.00	152.00
Tranche 2 # of Measurement and Regulation(M&R) repairs and upgrades	70.00	72.00	72.00	72.00	240.00	307.00

Work Unit Changes from RAMP:

GRC unit forecast is outside the RAMP range due to an update in allocation between HCA and non-HCA tranches.

Risk	Spend	Efficiency	(RSE)

	GRC RSE	RAMP RSE	
Tranche 1	742.000	841.000	
Tranche 2	317.000	51.000	

Non-Shared Service Workpapers

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: A. PIPELINE & INSTRUMENTATION OPERATIONS
Category-Sub: 1. PIPELINE & INSTRUMENTATION OPERATIONS
Workpaper: 1GT000.000 - Pipeline & Instrumentation Operations

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 (SDG&E-03, Chapter 2).

RAMP Item # 5

RAMP Activity

RAMP Chapter: SDG&E-Risk-3 Incident Related to the High Pressure System (Excluding Dig-in)

RAMP Line Item ID: C14

RAMP Line Item Name: Engineering, Oversight Compliance Review

Tranche(/s): Tranche1: N/A

GRC Forecast Cost Estimates (\$000)
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	2021 Historical Embedded Cost	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R: (2020 Inci	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	Low	High
Tranche 1 Cost Estimate	83	83	83	83	195	249

Cost Estimate Changes from RAMP:

Costs for C14 also in 1GT001 and 1GT002.

GRC Work	Unit/Activity	Level Estimates

Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 F Range A	
Measure	Activities	Activities	Activities	Activities	Low	High
Tranche 1 # of labor hours	1,759.00	1,759.00	1,759.00	1,759.00	4,111.00	5,253.00

Work Unit Changes from RAMP:

Units for C14 also in 1GT001 and 1GT002.

Risk Spend Effic	ciency (RSE)
------------------	--------------

	GRC RSE	RAMP RSE	
Tranche 1	0.000	0.000	

RSE Changes from RAMP:

NA

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: B. COMPRESSOR STATION OPERATIONS - MORENO

Workpaper: 1GT001.000

Summary for Category: B. COMPRESSOR STATION OPERATIONS - MORENO

		In 2021\$ (000) Incu	irred Costs				
	Adjusted-Recorded	Adjusted-Forecast					
	2021	2022	2023	2024			
Labor	1,822	1,822	1,822	1,822			
Non-Labor	1,374	1,374	1,374	1,374			
NSE	0	0	0	0			
Total	3,196	3,196	3,196	3,196			
FTE	14.5	14.5	14.5	14.5			

Workpapers belonging to this Category:

1GT001.000 Compressor Station Operations - Moreno

Labor	1,822	1,822	1,822	1,822
Non-Labor	1,374	1,374	1,374	1,374
NSE	0	0	0	0
Total	3,196	3,196	3,196	3,196
FTE	14.5	14.5	14.5	14.5

Beginning of Workpaper

1GT001.000 - Compressor Station Operations - Moreno

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: B. COMPRESSOR STATION OPERATIONS - MORENO
Category-Sub 1. COMPRESSOR STATION OPERATIONS - MORENO
Workpaper: 1GT001.000 - Compressor Station Operations - Moreno

Activity Description:

The Gas Compression Station Operations is responsible for the safe day-to-day operation and maintenance of SDG&E's Moreno compressor station facility and related infrastructure.

Forecast Explanations:

Labor - Base YR Rec

The TY 2024 forecast was established using the base year recorded methodology. This methodology was selected because 2021 spending best represents the future anticipated annual O&M costs associated with the completion of compressor projects during the forecast period.

Non-Labor - Base YR Rec

The TY 2024 forecast was established using the base year recorded methodology. This methodology was selected because 2021 spending best represents the future anticipated annual O&M costs associated with the completion of compressor projects during the forecast period.

NSE - Base YR Rec

Not applicable.

Summary of Results:

[In 2021\$ (000) Incurred Costs								
		Adjι	ısted-Recor	Ad	justed-Fore	cast			
Years	2017	2018	2019	2020	2021	2022	2023	2024	
Labor	1,556	1,820	1,797	1,870	1,822	1,822	1,822	1,822	
Non-Labor	1,859	1,570	1,241	1,560	1,374	1,374	1,374	1,374	
NSE	0	0	0	0	0	0	0	0	
Total	3,415	3,390	3,038	3,430	3,196	3,196	3,196	3,196	
FTE	13.1	15.2	14.8	15.0	14.5	14.5	14.5	14.5	

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: B. COMPRESSOR STATION OPERATIONS - MORENO
Category-Sub: 1. COMPRESSOR STATION OPERATIONS - MORENO
Workpaper: 1GT001.000 - Compressor Station Operations - Moreno

Summary of Adjustments to Forecast:

	In 2021 \$(000) Incurred Costs										
Forecast	Forecast Method Base Forecast			st	Forecast Adjustments			Adjusted-Forecast			
Years	S	2022	2023	2024	2022	2023	2024	2022	2023	2024	
Labor	Base YR Rec	1,822	1,822	1,822	0	0	0	1,822	1,822	1,822	
Non-Labor	Base YR Rec	1,374	1,374	1,374	0	0	0	1,374	1,374	1,374	
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0	
Total		3,196	3,196	3,196	0	0	0	3,196	3,196	3,196	
FTE	Base YR Rec	14.5	14.5	14.5	0.0	0.0	0.0	14.5	14.5	14.5	

	<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	NSE	<u>Total</u>	<u>FTE</u>	Adj Type	
- 1								

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: B. COMPRESSOR STATION OPERATIONS - MORENO
Category-Sub: 1. COMPRESSOR STATION OPERATIONS - MORENO
Workpaper: 1GT001.000 - Compressor Station Operations - Moreno

Determination of Adjusted-Recorded (Incurred Costs):

Determination of Aujusteu-	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	1,214	1,455	1,474	1,548	1,584
Non-Labor	1,667	1,447	1,168	1,620	1,463
NSE	0	0	0	0	0
Total	2,881	2,903	2,642	3,169	3,048
FTE	11.2	13.0	12.3	12.4	12.4
djustments (Nominal \$) **					
Labor	0	0	11	39	0
Non-Labor	0	0	0	-157	-89
NSE	0	0	0	0	0
Total	0	0	11	-118	-89
FTE	0.0	0.0	0.5	0.6	0.0
Recorded-Adjusted (Nomina	al \$)				
Labor	1,214	1,455	1,485	1,587	1,584
Non-Labor	1,667	1,447	1,168	1,463	1,374
NSE	0	0	0	0	0
Total	2,881	2,903	2,653	3,050	2,958
FTE	11.2	13.0	12.8	13.0	12.4
acation & Sick (Nominal \$)					
Labor	180	221	213	225	238
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	180	221	213	225	238
FTE	1.9	2.2	2.0	2.0	2.1
scalation to 2021\$					
Labor	162	144	99	58	0
Non-Labor	192	123	73	97	0
NSE	0	0	0	0	0
Total	354	267	172	155	0
FTE	0.0	0.0	0.0	0.0	0.0
ecorded-Adjusted (Consta	nt 2021\$)				
Labor	1,556	1,820	1,797	1,870	1,822
Non-Labor	1,859	1,570	1,241	1,560	1,374
NSE	0	0	0	0	0
Total	3,415	3,390	3,038	3,430	3,196
FTE	13.1	15.2	14.8	15.0	14.5

^{*} After company-wide exclusions of Non-GRC costs

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

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: B. COMPRESSOR STATION OPERATIONS - MORENO
Category-Sub: 1. COMPRESSOR STATION OPERATIONS - MORENO
Workpaper: 1GT001.000 - Compressor Station Operations - Moreno

Summary of Adjustments to Recorded:

	In Nominal \$ (000) Incurred Costs									
Years 2017 2018 2019 2020 2021										
Labor		0	0	11	39	0				
Non-Labor		0	0	0	-157	-89				
NSE		0	0	0	0	0				
	Total		0	11	-118	-89				
FTE		0.0	0.0	0.5	0.6	0.0				

Detail of Adjustments to Recorded:

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	Adj Type
2017 Total	0	0	0	0.0	
2018 Total	0	0	0	0.0	
2019	0	0	0	0.1	CCTR Transf From 2200-2440.000
Explanation:	Moving transmission costs to	correct witness	area		
2019	5	0	0	0.1	CCTR Transf From 2200-2554.000
Explanation:	Moving transmission costs to	correct witness	area		
2019	1	0	0	0.1	CCTR Transf From 2200-2556.000
Explanation:	Moving transmission costs to	correct witness	area		
2019	5	0	0	0.1	CCTR Transf From 2200-2581.000
Explanation:	Moving transmission costs to	correct witness	area		
2019	0	0	0	0.1	CCTR Transf From 2200-2588.000
Explanation:	Moving transmission costs to	correct witness	area		
2019 Total	11	0	0	0.5	
2020	0	-263	0	0.0	1-Sided Adj
Explanation:	Incremental COVID-related of Catastrophic Event Memorar		-	requested for	or recovery through a non-GRC
2020	0	0	0	0.1	CCTR Transf From 2200-0733.000
Explanation:	Moving transmission costs to	correct witness	area		
2020	11	0	0	0.1	CCTR Transf From 2200-2554.000
Explanation:	Moving transmission costs to	correct witness	area		
2020	4	0	0	0.1	CCTR Transf From 2200-2556.000
Explanation:	Moving transmission costs to	correct witness	area		

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: B. COMPRESSOR STATION OPERATIONS - MORENO
Category-Sub: 1. COMPRESSOR STATION OPERATIONS - MORENO
Workpaper: 1GT001.000 - Compressor Station Operations - Moreno

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	Adj Type		
2020	0	0	0	0.1	CCTR Transf From 2200-2557.000		
Explanation:	Moving transmission costs	to correct witness	area				
2020	23	57	0	0.1	CCTR Transf From 2200-2581.000		
Explanation:	tion: Moving transmission costs to correct witness area						
2020	0	49	0	0.1	CCTR Transf From 2200-2588.000		
Explanation:	Moving transmission costs	to correct witness	area				
2020 Total	39	-157	0	0.6			
2021	0	-89	0	0.0	1-Sided Adj		
Explanation:	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).						
2021 Total	0	-89	0	0.0			

Non-Shared Service Workpapers

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: B. COMPRESSOR STATION OPERATIONS - MORENO
Category-Sub: 1. COMPRESSOR STATION OPERATIONS - MORENO
Workpaper: 1GT001.000 - Compressor Station Operations - Moreno

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: C09

RAMP Line Item Name: Compressor Station

Tranche(/s): Tranche1: Transmission - Facilities

GRC Forecast Cost Estimates (\$000)

	2021 Historical Embedded Cost	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inci	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	Low	High
Tranche 1 Cost Estimate	3,113	3,113	3,113	3,113	2,099	2,683

Cost Estimate Changes from RAMP:

None.

GRC W	Vork U	nit/Activity	Level	Estimates
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Unit of	2021 Historical Embedded	2022 Forecast	2023 Forecast	2024 Forecast	2024 RA	
Measure	Activities	Activities	Activities	Activities	Low	High
Tranche 1 # of Compressor Station Maintenance orders	489.00	489.00	489.00	489.00	440.00	562.00

Work Unit Changes from RAMP:

None.

Risk Spend Efficiency (RSE)

	GRC RSE	RAMP RSE	
Tranche 1	7.000	403.000	

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 (SDG&E-03, Chapter 2).

Non-Shared Service Workpapers

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: B. COMPRESSOR STATION OPERATIONS - MORENO
Category-Sub: 1. COMPRESSOR STATION OPERATIONS - MORENO
Workpaper: 1GT001.000 - Compressor Station Operations - Moreno

RAMP Item # 2

RAMP Activity

RAMP Chapter: SDG&E-Risk-3 Incident Related to the High Pressure System (Excluding Dig-in)

RAMP Line Item ID: C14

RAMP Line Item Name: Engineering, Oversight Compliance Review

Tranche(/s): Tranche1: N/A

GRC Forecast Cost Estima	ites (\$000)					
	2021 Historical Embedded Cost	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP R (2020 Inc	ange
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	Low	High
Tranche 1 Cost Estimate	83	83	83	83	195	249
Cost Estimate Changes fro	om RAMP:					

GRC Work Unit/Activity Leve	l Estimates					
Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 F Range A Low	
Tranche 1 # of labor hours	1,759.00	1,759.00	1,759.00	1,759.00	4,111.00	5,253.00
Work Unit Changes from RAI Units also used in 1GT000 and						

Risk Spend Efficiency (RSE)			
	GRC RSE	RAMP RSE	
Tranche 1	0.000	0.000	
RSE Changes from RAMP:			

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: C. TECHNICAL SERVICES

Workpaper: 1GT002.000

Summary for Category: C. TECHNICAL SERVICES

		In 2021\$ (000) Inc	curred Costs	
	Adjusted-Recorded		Adjusted-Forecast	t
	2021	2022	2023	2024
Labor	40	40	40	40
Non-Labor	5	5	5	5
NSE	0	0	0	0
Total	45	45	45	45
FTE	0.5	0.5	0.5	0.5

Workpapers belonging to this Category:

1GT002.000 Technical Services	1GT002	.000 Te	chnical	Services
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Labor	40	40	40	40
Non-Labor	5	5	5	5
NSE	0	0	0	0
Total	45	45	45	45
FTE	0.5	0.5	0.5	0.5

Beginning of Workpaper 1GT002.000 - Technical Services

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: C. TECHNICAL SERVICES
Category-Sub 1. TECHNICAL SERVICES
Workpaper: 1GT002.000 - Technical Services

Activity Description:

The Technical Services function includes the activities related to instrumentation, control, project support, and environmental services in support of the day-to-day operations and maintenance of the gas transmission system.

Forecast Explanations:

Labor - Base YR Rec

The TY 2024 forecast was developed using the base year recorded methodology. Given the activities described previously and a review of historical costs and underlying cost drivers, SDG&E determined this forecast methodology best reflects the anticipated needs of Technical Services during the forecast period.

Non-Labor - Base YR Rec

The TY 2024 forecast was developed using the base year recorded methodology. Given the activities described previously and a review of historical costs and underlying cost drivers, SDG&E determined this forecast methodology best reflects the anticipated needs of Technical Services during the forecast period.

NSE - Base YR Rec

Not applicable

Summary of Results:

				ln 2021\$ (00	0) Incurred (Costs		
		Adju	ısted-Recor	Ad	justed-Fored	cast		
Years	2017	2018	2019	2020	2021	2022	2023	2024
Labor	34	31	30	38	40	40	40	40
Non-Labor	13	23	36	7	5	5	5	5
NSE	0	0	0	0	0	0	0	0
Total	48	54	66	44	45	45	45	45
FTE	0.3	0.3	0.3	0.5	0.5	0.5	0.5	0.5

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: C. TECHNICAL SERVICES
Category-Sub: 1. TECHNICAL SERVICES

Workpaper: 1GT002.000 - Technical Services

Summary of Adjustments to Forecast:

			In 202	1 \$(000) li	ncurred Co	sts				
Forecast	t Method	Bas	se Foreca	st	Forec	ast Adjust	ments	Adjus	ted-Forec	ast
Years	5	2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	Base YR Rec	40	40	40	0	0	0	40	40	40
Non-Labor	Base YR Rec	5	5	5	0	0	0	5	5	5
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Tota	I	45	45	45	0	0	0	45	45	45
FTE	Base YR Rec	0.5	0.5	0.5	0.0	0.0	0.0	0.5	0.5	0.5

Year	Labor	NLbr	NSE	Total	FTE	Adj Type	
<u>i cai</u>		ITEDI	INOL	IOlai			

Non-Shared Service Workpapers

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: C. TECHNICAL SERVICES
Category-Sub: 1. TECHNICAL SERVICES

Workpaper: 1GT002.000 - Technical Services

Determination of Adjusted-Recorded (Incurred Costs):

Determination of Adjusted-	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
Recorded (Nominal \$)*					
Labor	27	25	25	32	35
Non-Labor	16	21	34	7	6
NSE	0	0	0	0	0
Total	43	46	59	39	40
FTE	0.3	0.3	0.3	0.4	0.4
Adjustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	-4	0	0	-1	-1
NSE	0	0	0	0	0
Total	-4	0	0	<u>-1</u>	<u>-1</u>
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nomina	al \$)				
Labor	27	25	25	32	35
Non-Labor	12	21	34	6	5
NSE	0	0	0	0	0
Total	39	46	59	38	40
FTE	0.3	0.3	0.3	0.4	0.4
/acation & Sick (Nominal \$)					
Labor	4	4	4	5	5
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	4	4	4	5	5
FTE	0.0	0.0	0.0	0.1	0.1
Escalation to 2021\$					
Labor	4	2	2	1	0
Non-Labor	1	2	2	0	0
NSE	0	0	0	0	0
Total	5	4	4	2	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Consta	nt 2021\$)				
Labor	34	31	30	38	40
Non-Labor	13	23	36	7	5
NSE	0	0	0	0	0
Total	48	54	66	44	45
FTE	0.3	0.3	0.3	0.5	0.5

^{*} After company-wide exclusions of Non-GRC costs

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

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: C. TECHNICAL SERVICES
Category-Sub: 1. TECHNICAL SERVICES
Workpaper: 1GT002.000 - Technical Services

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs								
	Years	2017	2018	2019	2020	2021		
Labor	-	0	0	0	0	0		
Non-Labor		-4	0	0	-1	-0.800		
NSE		0	0	0	0	0		
	Total	-4	0	0 -	-1	-0.800		
FTE		0.0	0.0	0.0	0.0	0.0		

Detail of Adjustments to Recorded:

Year	Labo	or NL	br NS	E I	FTE	Adi Type
2017				0	0.0	1-Sided Adj
Explanation:	Incremental costs that are Memorandum Account (C	·	e requested fo	or recovery	≀ through a n	on-GRC Catastrophic Event
2017 Total		0 -	4	0	0.0	
2018 Total		0	0	0	0.0	
2019 Total		0	0	0	0.0	
2020	() -	1	0	0.0	1-Sided Adj
Explanation:	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).					
2020 Total		0 -	1	0	0.0	
2021	(-	1	0	0.0	1-Sided Adj
Explanation:	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).					
2021 Total		0 -	1	0	0.0	

Non-Shared Service Workpapers

Area: GAS TRANSMISSION

Witness: Rick H. Chiapa

Category: C. TECHNICAL SERVICES

Category-Sub: 1. TECHNICAL SERVICES

Workpaper: 1GT002.000 - Technical Services

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: C14

RAMP Line Item Name: Engineering, Oversight Compliance Review

Tranche(/s): Tranche1: N/A

	2021 Historical Embedded Cost	2022 Forecast	2023 Forecast	2024 Forecast	2024 RAMP Range (2020 Incurred \$)	
	(2021 \$)	(2021 \$)	(2021 \$)	(2021 \$)	Low	High
Tranche 1 Cost Estimate	44	44	44	44	195	249

GRC Work Unit/Activity Level Estimates						
Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 R Range A Low	
Tranche 1 # of labor hours Work Unit Changes from RAI	1,044.00 MP:	1,050.00	1,050.00	1,050.00	4,111.00	5,253.00
Split between 1GT000, 1GT001 and 1GT002.						

Risk Spend Efficiency (RSE)						
	GRC RSE	RAMP RSE				
Tranche 1	0.000	0.000				
RSE Changes from RAMP: N/A						

Non-Shared Service Workpapers

GAS TRANSMISSION Area:

Rick H. Chiapa Witness:

Appendix A: List of Non-Shared Cost Centers

Cost Center	Sub	<u>Description</u>
2100-0170	000	GAS TRANSMISSION MORENO STATION
2100-0172	000	GAS TRANSMISSION - MIRAMAR
2100-3420	000	GAS TRANS TECHNICAL SERVICES