

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-26-WP)

WORKPAPERS TO  
PREPARED DIRECT TESTIMONY  
OF LANCE R. MUELLER  
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-26-WP - CYBERSECURITY**

DOCUMENT	PAGE
<b>Overall Summary For Exhibit No. SDG&amp;E-26-WP</b>	<b>1</b>
<b><i>Summary of Non-Shared Services Workpapers</i></b>	<b>2</b>
Category: A. Cybersecurity	3
..1CS001.000 - NON-SHARED CYBERSECURITY	4
<b><i>Summary of Shared Services Workpapers</i></b>	<b>11</b>
Category: A. Cybersecurity	12
..2100-3101.000 - SHARED CYBERSECURITY	13
<b><i>Appendix A: List of Non-Shared Cost Centers</i></b>	<b>25</b>

**Overall Summary For Exhibit No. SDG&E-26-WP**

<b>Area:</b>	<b>CYBERSECURITY</b>
<b>Witness:</b>	<b>Lance R. Mueller</b>

Description	In 2021 \$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
<b>Non-Shared Services</b>	19	19	19	19
<b>Shared Services</b>	13,773	15,658	16,004	16,358
<b>Total</b>	<b>13,792</b>	<b>15,677</b>	<b>16,023</b>	<b>16,377</b>

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
 2024 GRC - APP  
 Non-Shared Service Workpapers

Area: CYBERSECURITY  
 Witness: Lance R. Mueller

**Summary of Non-Shared Services Workpapers:**

Description	In 2021 \$ (000) Incurred Costs			
	Adjusted-Recorded 2021	Adjusted-Forecast		
		2022	2023	2024
A. Cybersecurity	19	19	19	19
<b>Total</b>	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
 2024 GRC - APP  
 Non-Shared Service Workpapers

Area: CYBERSECURITY  
 Witness: Lance R. Mueller  
 Category: A. Cybersecurity  
 Workpaper: 1CS001.000

**Summary for Category: A. Cybersecurity**

	In 2021\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	0	0	0	0
Non-Labor	19	19	19	19
NSE	0	0	0	0
<b>Total</b>	<u>19</u>	<u>19</u>	<u>19</u>	<u>19</u>
FTE	0.0	0.0	0.0	0.0

**Workpapers belonging to this Category:**

**1CS001.000 Non-shared Cybersecurity**

Labor	0	0	0	0
Non-Labor	19	19	19	19
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total</b>	<u>19</u>	<u>19</u>	<u>19</u>	<u>19</u>
FTE	0.0	0.0	0.0	0.0

*Note: Totals may include rounding differences.*

**Beginning of Workpaper**  
**1CS001.000 - Non-shared Cybersecurity**

San Diego Gas & Electric Company  
2024 GRC - APP  
Non-Shared Service Workpapers

Area: CYBERSECURITY  
 Witness: Lance R. Mueller  
 Category: A. Cybersecurity  
 Category-Sub: 1. Cybersecurity  
 Workpaper: 1CS001.000 - Non-shared Cybersecurity

**Activity Description:**

These non-shared SDG&E cybersecurity costs represent labor and non-labor for the cybersecurity area where 100% of the activities directly support the objectives of operating and maintaining SDG&E infrastructure systems safely and reliably. The types of functions in this area include compliance with North American Electric Reliability Corporation (NERC) Critical Infrastructure Protection (CIP) regulatory requirements.

**Forecast Explanations:**

**Labor - Base YR Rec**

Historical costs have fluctuated between various workgroups as a result of either internal organizational changes, transfers of responsibilities, or shifting of cost drivers from one area of the Cybersecurity department to another. Therefore, base year methodology is most appropriate because the base year expenditures closely represent the future state of Cybersecurity forecasts.

**Non-Labor - Base YR Rec**

Historical costs have fluctuated between various workgroups as a result of either internal organizational changes, transfers of responsibilities, or shifting of cost drivers from one area of the Cybersecurity department to another. Therefore, base year methodology is most appropriate because the base year expenditures closely represent the future state of Cybersecurity forecasts.

**NSE - Base YR Rec**

N/A

**Summary of Results:**

		In 2021\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2017	2018	2019	2020	2021	2022	2023	2024	
Labor		105	129	90	0	0	0	0	0	
Non-Labor		6	4	23	19	19	19	19	19	
NSE		0	0	0	0	0	0	0	0	
<b>Total</b>		<b>111</b>	<b>133</b>	<b>113</b>	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>	<b>19</b>	
FTE		0.7	0.9	0.7	0.0	0.0	0.0	0.0	0.0	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - APP  
Non-Shared Service Workpapers

Area: CYBERSECURITY  
 Witness: Lance R. Mueller  
 Category: A. Cybersecurity  
 Category-Sub: 1. Cybersecurity  
 Workpaper: 1CS001.000 - Non-shared Cybersecurity

**Summary of Adjustments to Forecast:**

In 2021 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	Base YR Rec	0	0	0	0	0	0	0	0	0
Non-Labor	Base YR Rec	19	19	19	0	0	0	19	19	19
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
<b>Total</b>		<b>19</b>	<b>19</b>	<b>19</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>19</b>	<b>19</b>	<b>19</b>
FTE	Base YR Rec	0.0	0.0	0.0	0.0	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>	<u>Adj Type</u>
-------------	--------------	-------------	------------	--------------	------------	-----------------

*Note: Totals may include rounding differences.*



San Diego Gas & Electric Company  
2024 GRC - APP  
Non-Shared Service Workpapers

Area: CYBERSECURITY  
Witness: Lance R. Mueller  
Category: A. Cybersecurity  
Category-Sub: 1. Cybersecurity  
Workpaper: 1CS001.000 - Non-shared Cybersecurity

**Determination of Adjusted-Recorded (Incurred Costs):**

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	82	103	74	0	0
Non-Labor	5	4	22	21	22
NSE	0	0	0	0	0
<b>Total</b>	<b>87</b>	<b>107</b>	<b>96</b>	<b>21</b>	<b>22</b>
FTE	0.7	0.8	0.6	0.0	0.0
<b>Adjustments (Nominal \$) **</b>					
Labor	0	0	0	0	0
Non-Labor	0	0	0	-3	-2
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-3</b>	<b>-2</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	82	103	74	0	0
Non-Labor	5	4	22	18	19
NSE	0	0	0	0	0
<b>Total</b>	<b>87</b>	<b>107</b>	<b>96</b>	<b>18</b>	<b>19</b>
FTE	0.6	0.8	0.6	0.0	0.0
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	12	16	11	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>12</b>	<b>16</b>	<b>11</b>	<b>0</b>	<b>0</b>
FTE	0.1	0.1	0.1	0.0	0.0
<b>Escalation to 2021\$</b>					
Labor	11	10	5	0	0
Non-Labor	1	0	2	1	0
NSE	0	0	0	0	0
<b>Total</b>	<b>12</b>	<b>11</b>	<b>7</b>	<b>1</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2021\$)</b>					
Labor	105	129	90	0	0
Non-Labor	6	4	23	19	19
NSE	0	0	0	0	0
<b>Total</b>	<b>111</b>	<b>133</b>	<b>113</b>	<b>19</b>	<b>19</b>
FTE	0.7	0.9	0.7	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 - APP  
Non-Shared Service Workpapers

Area: CYBERSECURITY  
 Witness: Lance R. Mueller  
 Category: A. Cybersecurity  
 Category-Sub: 1. Cybersecurity  
 Workpaper: 1CS001.000 - Non-shared Cybersecurity

**Summary of Adjustments to Recorded:**

In Nominal \$ (000) Incurred Costs						
	Years	2017	2018	2019	2020	2021
Labor		0	0	0	0	0
Non-Labor		0	0	0	-3	-2
NSE		0	0	0	0	0
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>-3</b>	<b>-2</b>
FTE		0.0	0.0	0.0	0.0	0.0

**Detail of Adjustments to Recorded:**

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>
<b>2017 Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.0</b>	
<b>2018 Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.0</b>	
<b>2019 Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0.0</b>	
2020	0	-3	0	0.0	1-Sided Adj
<b>2020 Total</b>	<b>0</b>	<b>-3</b>	<b>0</b>	<b>0.0</b>	
2021	0	-2	0	0.0	1-Sided Adj
<b>2021 Total</b>	<b>0</b>	<b>-2</b>	<b>0</b>	<b>0.0</b>	

**Explanation:** Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).

**Explanation:** Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - APP  
Non-Shared Service Workpapers

Area: CYBERSECURITY  
 Witness: Lance R. Mueller  
 Category: A. Cybersecurity  
 Category-Sub: 1. Cybersecurity  
 Workpaper: 1CS001.000 - Non-shared Cybersecurity

**RAMP Item # 1**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-6 Cybersecurity

RAMP Line Item ID: C01 - C05

RAMP Line Item Name: All Mitigations

Tranche(/s): Tranche1: Overall

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$)	
					Low	High
Tranche 1 Cost Estimate	19	19	19	19	7,174	9,166

**Cost Estimate Changes from RAMP:**

Notable change in forecast estimate from RAMP: Modeling all five RAMP mitigations (C01 - C05) in two workpapers; The RAMP range is the sum of ranges for all five mitigations; The forecast reflects pre-allocation values while RAMP ranges reflect post-allocation values between SoCalGas and SDG&E.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities	
					Low	High
Tranche 1 FTE & no-single unit	0.00	0.00	0.00	0.00	0.00	0.00

**Work Unit Changes from RAMP:**

Units were not defined during RAMP filing. Labor can be identified with FTE units, and for non-labor there is no single unit defined. Numerical units in the boxes represent FTEs identified.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	520.000	160.000

**RSE Changes from RAMP:**

San Diego Gas & Electric Company  
2024 GRC - APP  
Non-Shared Service Workpapers

Area: CYBERSECURITY  
Witness: Lance R. Mueller  
Category: A. Cybersecurity  
Category-Sub: 1. Cybersecurity  
Workpaper: 1CS001.000 - Non-shared Cybersecurity

The RSEs for Cybersecurity were calculated at the activity/mitigation level, and have not been split up between O&M and Capital. O&M is reflected in 2 workpapers (one shared and one non-shared). The respective RSE's for Cybersecurity Mitigations are listed below. GRC RSE's = 295 Internal Defenses, 366 Obsolete Information Technology (IT) Infrastructure and Application Replacement, 520 Operational Technology, 497 Perimeter Defenses, 199 Sensitive Data Protection RAMP RSE's = 95 Internal Defenses, 102 Obsolete Information Technology (IT) Infrastructure and Application Replacement, 112 Operational Technology, 160 Perimeter Defenses, 62 Sensitive Data Protection

San Diego Gas & Electric Company  
 2024 GRC - APP  
 Shared Services Workpapers

Area: CYBERSECURITY  
 Witness: Lance R. Mueller

**Summary of Shared Services Workpapers:**

Description	In 2021 \$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
A. Cybersecurity	13,773	15,658	16,004	16,358
<b>Total</b>	<b>13,773</b>	<b>15,658</b>	<b>16,004</b>	<b>16,358</b>

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - APP  
Shared Services Workpapers

Area: CYBERSECURITY  
 Witness: Lance R. Mueller  
 Category: A. Cybersecurity  
 Cost Center: 2100-3101.000

**Summary for Category: A. Cybersecurity**

	In 2021\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2021	2022	2023	2024
Labor	7,465	8,553	8,825	9,097
Non-Labor	6,308	7,105	7,179	7,261
NSE	0	0	0	0
<b>Total</b>	<b>13,773</b>	<b>15,658</b>	<b>16,004</b>	<b>16,358</b>
FTE	56.9	63.7	65.4	67.1

**Cost Centers belonging to this Category:**

**2100-3101.000 Shared Cybersecurity**

Labor	7,465	8,553	8,825	9,097
Non-Labor	6,308	7,105	7,179	7,261
NSE	0	0	0	0
<b>Total</b>	<b>13,773</b>	<b>15,658</b>	<b>16,004</b>	<b>16,358</b>
FTE	56.9	63.7	65.4	67.1

*Note: Totals may include rounding differences.*

**Beginning of Workpaper**  
**2100-3101.000 - Shared Cybersecurity**

San Diego Gas & Electric Company  
2024 GRC - APP  
Shared Services Workpapers

Area: CYBERSECURITY  
 Witness: Lance R. Mueller  
 Category: A. Cybersecurity  
 Category-Sub: 1. Cybersecurity  
 Cost Center: 2100-3101.000 - Shared Cybersecurity

**Activity Description:**

The shared SDG&E cybersecurity costs represent labor and non-labor for the cybersecurity area where costs are shared between multiple business units and support the objectives of operating and maintaining the company infrastructure systems safely and reliably. Cybersecurity supports the necessary resources and systems maintenance needs of the following functional cybersecurity areas: threat Intelligence; monitoring, alerting and detection; systems operations; incident response; insider threat; vulnerability management; assessments; compliance; risk management; program office; consulting and engineering.

**Forecast Explanations:**

**Labor - Base YR Rec**

Historical costs have fluctuated between various workgroups as a result of either internal organizational changes, transfers of responsibilities, or shifting of cost drivers from one area of the Cybersecurity department to another. Therefore, base year methodology is most appropriate because the base year expenditures closely represent the future state of Cybersecurity forecasts.

**Non-Labor - Base YR Rec**

Historical costs, such as contractor services and cost of software/hardware systems maintenance, have fluctuated as a result of shifting cost drivers in the Cybersecurity department. Therefore, base year methodology is most appropriate because the base year expenditures closely represent the future state of Cybersecurity forecasts.

**NSE - Base YR Rec**

N/A

**Summary of Results:**

		In 2021\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2017	2018	2019	2020	2021	2022	2023	2024	
Labor		4,212	5,678	5,708	6,770	7,465	8,553	8,825	9,097	
Non-Labor		3,711	4,799	4,060	6,707	6,308	7,105	7,179	7,261	
NSE		0	0	0	0	0	0	0	0	
<b>Total</b>		<b>7,923</b>	<b>10,477</b>	<b>9,769</b>	<b>13,477</b>	<b>13,773</b>	<b>15,658</b>	<b>16,004</b>	<b>16,358</b>	
FTE		31.6	41.8	41.9	51.4	56.9	63.7	65.4	67.1	

*Note: Totals may include rounding differences.*



San Diego Gas & Electric Company  
2024 GRC - APP  
Shared Services Workpapers

Area: CYBERSECURITY  
 Witness: Lance R. Mueller  
 Category: A. Cybersecurity  
 Category-Sub: 1. Cybersecurity  
 Cost Center: 2100-3101.000 - Shared Cybersecurity

**Cost Center Allocations (Incurred Costs):**

	2021 Adjusted-Recorded					2022 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	83	22	0	105	0.5	83	22	0	105	0.5
Directly Allocated	0	0	0	0	0.0	0	0	0	0	0.0
Subj. To % Alloc.	7,382	6,286	0	13,668	56.4	8,470	7,083	0	15,553	63.2
<b>Total Incurred</b>	<b>7,465</b>	<b>6,308</b>	<b>0</b>	<b>13,773</b>	<b>56.9</b>	<b>8,553</b>	<b>7,105</b>	<b>0</b>	<b>15,658</b>	<b>63.7</b>
<b>% Allocation</b>										
Retained	40.88%	40.88%				43.22%	43.22%			
SEU	50.53%	50.53%				48.75%	48.75%			
CORP	3.64%	3.64%				2.86%	2.86%			
Unreg	4.95%	4.95%				5.17%	5.17%			

	2023 Adjusted-Forecast					2024 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	83	22	0	105	0.5	83	22	0	105	0.5
Directly Allocated	0	0	0	0	0.0	0	0	0	0	0.0
Subj. To % Alloc.	8,742	7,157	0	15,899	64.9	9,014	7,239	0	16,253	66.6
<b>Total Incurred</b>	<b>8,825</b>	<b>7,179</b>	<b>0</b>	<b>16,004</b>	<b>65.4</b>	<b>9,097</b>	<b>7,261</b>	<b>0</b>	<b>16,358</b>	<b>67.1</b>
<b>% Allocation</b>										
Retained	43.21%	43.21%				43.20%	43.20%			
SEU	48.74%	48.74%				48.73%	48.73%			
CORP	2.86%	2.86%				2.86%	2.86%			
Unreg	5.19%	5.19%				5.21%	5.21%			

**Cost Center Allocation Percentage Drivers/Methodology:**

**Cost Center Allocation Percentage for 2021**

Allocations are based on a weighted average of all cost centers within the workpaper.

**Cost Center Allocation Percentage for 2022**

Allocations are based on a weighted average of all cost centers within the workpaper.

**Cost Center Allocation Percentage for 2023**

Allocations are based on a weighted average of all cost centers within the workpaper.

**Cost Center Allocation Percentage for 2024**

Allocations are based on a weighted average of all cost centers within the workpaper.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company  
2024 GRC - APP  
Shared Services Workpapers

Area: CYBERSECURITY  
 Witness: Lance R. Mueller  
 Category: A. Cybersecurity  
 Category-Sub: 1. Cybersecurity  
 Cost Center: 2100-3101.000 - Shared Cybersecurity

**Summary of Adjustments to Forecast:**

In 2021 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2022	2023	2024	2022	2023	2024	2022	2023	2024
Labor	Base YR Rec	7,465	7,465	7,465	1,088	1,360	1,632	8,553	8,825	9,097
Non-Labor	Base YR Rec	6,308	6,308	6,308	797	871	953	7,105	7,179	7,261
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
<b>Total</b>		<b>13,773</b>	<b>13,773</b>	<b>13,773</b>	<b>1,885</b>	<b>2,231</b>	<b>2,585</b>	<b>15,658</b>	<b>16,004</b>	<b>16,358</b>
FTE	Base YR Rec	56.9	56.9	56.9	6.8	8.5	10.2	63.7	65.4	67.1

**Forecast Adjustment Details:**

Year	Labor	NLbr	NSE	Total	FTE	Adj Type
2022	1,088	797	0	1,885	6.8	1-Sided Adj
<b>Explanation:</b>	Labor: Adding 6.8 internal FTEs to support growing Cyber initiatives. 4 @ 100% O&M, 4 @ 70% O&M.  Non-labor: \$53K adjustment to account for unbundled maintenance that starts in late 2021 and continues in forecast years. Higher due to amortization schedule. \$744K adjustment for additional Professional Services needed for ongoing Cybersecurity Initiatives and threat protection					
<b>2022 Total</b>	<b>1,088</b>	<b>797</b>	<b>0</b>	<b>1,885</b>	<b>6.8</b>	
2023	1,360	871	0	2,231	8.5	1-Sided Adj
<b>Explanation:</b>	Labor: Adding 6.8 internal FTEs to support growing Cyber initiatives. 4 @ 100% O&M, 4 @ 70% O&M.  Non-labor: \$53K adjustment to account for unbundled maintenance that starts in late 2021 and continues in forecast years. Higher due to amortization schedule. \$818K adjustment for additional Professional Services needed for ongoing Cybersecurity Initiatives and threat protection					
<b>2023 Total</b>	<b>1,360</b>	<b>871</b>	<b>0</b>	<b>2,231</b>	<b>8.5</b>	
2024	1,632	953	0	2,585	10.2	1-Sided Adj
<b>Explanation:</b>	Labor: Adding 6.8 internal FTEs to support growing Cyber initiatives. 4 @ 100% O&M, 4 @ 70% O&M.  Non-labor: \$53K adjustment to account for unbundled maintenance that starts in late 2021 and continues in forecast years. Higher due to amortization schedule. \$900K adjustment for additional Professional Services needed for ongoing Cybersecurity Initiatives and threat protection					
<b>2024 Total</b>	<b>1,632</b>	<b>953</b>	<b>0</b>	<b>2,585</b>	<b>10.2</b>	

Note: Totals may include rounding differences.

SDG&E/CYBERSECURITY/Exh No:SDG&E-26-WP/Witness: L. Mueller

San Diego Gas & Electric Company  
2024 GRC - APP  
Shared Services Workpapers

Area: CYBERSECURITY  
Witness: Lance R. Mueller  
Category: A. Cybersecurity  
Category-Sub: 1. Cybersecurity  
Cost Center: 2100-3101.000 - Shared Cybersecurity

**Determination of Adjusted-Recorded (Incurred Costs):**

	2017 (\$000)	2018 (\$000)	2019 (\$000)	2020 (\$000)	2021 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	1,776	1,078	1,036	1,563	6,490
Non-Labor	3,394	2,520	2,767	2,987	6,360
NSE	0	0	0	0	0
<b>Total</b>	<b>5,170</b>	<b>3,597</b>	<b>3,803</b>	<b>4,550</b>	<b>12,850</b>
FTE	15.1	8.7	7.5	12.1	48.6
<b>Adjustments (Nominal \$) **</b>					
Labor	1,551	3,486	3,694	4,129	0
Non-Labor	-27	1,922	1,079	3,453	-52
NSE	0	0	0	0	0
<b>Total</b>	<b>1,524</b>	<b>5,409</b>	<b>4,774</b>	<b>7,582</b>	<b>-52</b>
FTE	12.0	27.0	28.6	32.1	0.0
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	3,327	4,564	4,730	5,693	6,490
Non-Labor	3,366	4,442	3,846	6,440	6,308
NSE	0	0	0	0	0
<b>Total</b>	<b>6,694</b>	<b>9,006</b>	<b>8,576</b>	<b>12,132</b>	<b>12,798</b>
FTE	27.1	35.8	36.1	44.2	48.6
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	494	691	677	807	975
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>494</b>	<b>691</b>	<b>677</b>	<b>807</b>	<b>975</b>
FTE	4.5	6.0	5.8	7.2	8.3
<b>Escalation to 2021\$</b>					
Labor	391	422	301	270	0
Non-Labor	344	357	214	268	0
NSE	0	0	0	0	0
<b>Total</b>	<b>735</b>	<b>780</b>	<b>515</b>	<b>538</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2021\$)</b>					
Labor	4,212	5,678	5,708	6,770	7,465
Non-Labor	3,711	4,799	4,060	6,707	6,308
NSE	0	0	0	0	0
<b>Total</b>	<b>7,923</b>	<b>10,477</b>	<b>9,769</b>	<b>13,477</b>	<b>13,773</b>
FTE	31.6	41.8	41.9	51.4	56.9

\* 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 - APP  
Shared Services Workpapers

Area: CYBERSECURITY  
Witness: Lance R. Mueller  
Category: A. Cybersecurity  
Category-Sub: 1. Cybersecurity  
Cost Center: 2100-3101.000 - Shared Cybersecurity

**Summary of Adjustments to Recorded:**

In Nominal \$ (000) Incurred Costs					
Years	2017	2018	2019	2020	2021
Labor	1,551	3,486	3,694	4,129	0
Non-Labor	-27	1,922	1,079	3,453	-52
NSE	0	0	0	0	0
<b>Total</b>	<b>1,524</b>	<b>5,409</b>	<b>4,774</b>	<b>7,582</b>	<b>-52</b>
FTE	12.0	27.0	28.6	32.1	0.0

**Detail of Adjustments to Recorded:**

Year	Labor	NLbr	NSE	FTE	Adj Type
2017	-10	-665	0	-0.1	1-Sided Adj
<b>Explanation:</b>	One sided transfer out of affiliate (non-O&M) costs to align with actuals and forecast				
2017	1,561	637	0	12.1	1-Sided Adj
<b>Explanation:</b>	Historical Adjustment for Cybersecurity costs at Corporate				
<b>2017 Total</b>	<b>1,551</b>	<b>-27</b>	<b>0</b>	<b>12.0</b>	
2018	-4	-386	0	-0.1	1-Sided Adj
<b>Explanation:</b>	One sided transfer out of affiliate (non-O&M) costs to align with actuals and forecast				
2018	3,491	2,308	0	27.1	1-Sided Adj
<b>Explanation:</b>	Historical Adjustment for Cybersecurity costs at Corporate				
<b>2018 Total</b>	<b>3,486</b>	<b>1,922</b>	<b>0</b>	<b>27.0</b>	
2019	0	-813	0	-0.1	1-Sided Adj
<b>Explanation:</b>	One sided transfer out of affiliate (non-O&M) costs to align with actuals and forecast				
2019	3,695	1,893	0	28.7	1-Sided Adj
<b>Explanation:</b>	Historical Adjustment for Cybersecurity costs at Corporate				
<b>2019 Total</b>	<b>3,694</b>	<b>1,079</b>	<b>0</b>	<b>28.6</b>	
2020	0	-8	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2020	0	-2	0	0.0	1-Sided Adj
<b>Explanation:</b>	One sided transfer out of affiliate (non-O&M) costs to align with actuals and forecast				
2020	4,129	3,463	0	32.1	1-Sided Adj
<b>Explanation:</b>	Historical Adjustment for Cybersecurity costs at Corporate				

Note: Totals may include rounding differences.

San Diego Gas & Electric Company  
2024 GRC - APP  
Shared Services Workpapers

Area: CYBERSECURITY  
 Witness: Lance R. Mueller  
 Category: A. Cybersecurity  
 Category-Sub: 1. Cybersecurity  
 Cost Center: 2100-3101.000 - Shared Cybersecurity

<u>Year</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>
<b>2020 Total</b>	<b>4,129</b>	<b>3,453</b>	<b>0</b>	<b>32.1</b>	
2021	0	-20	0	0.0	1-Sided Adj
<b>Explanation:</b>	Incremental COVID-related costs that are anticipated to be requested for recovery through a non-GRC Catastrophic Event Memorandum Account (CEMA).				
2021	0	-33	0	0.0	1-Sided Adj
<b>Explanation:</b>	One sided transfer out of affiliate (non-O&M) costs to align with actuals and forecast				
<b>2021 Total</b>	<b>0</b>	<b>-52</b>	<b>0</b>	<b>0.0</b>	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2024 GRC - APP  
Shared Services Workpapers

Area: CYBERSECURITY  
 Witness: Lance R. Mueller  
 Category: A. Cybersecurity  
 Category-Sub: 1. Cybersecurity  
 Cost Center: 2100-3101.000 - Shared Cybersecurity

**RAMP Item # 1**

**RAMP Activity**

RAMP Chapter: SDG&E-Risk-6 Cybersecurity  
 RAMP Line Item ID: C01 - C05  
 RAMP Line Item Name: All Mitigations  
 Tranche(/s): Tranche1: Overall

**GRC Forecast Cost Estimates (\$000)**

	2021 Historical Embedded Cost (2021 \$)	2022 Forecast (2021 \$)	2023 Forecast (2021 \$)	2024 Forecast (2021 \$)	2024 RAMP Range (2020 Incurred \$)	
					Low	High
Tranche 1 Cost Estimate	13,773	15,657	16,003	16,358	7,174	9,166

**Cost Estimate Changes from RAMP:**

Notable change in forecast estimate from RAMP: Modeling all five RAMP mitigations (C01 - C05) in two workpapers; The RAMP range is the sum of ranges for all five mitigations; The forecast reflects pre-allocation values while RAMP ranges reflect post-allocation values between SoCalGas and SDG&E.

**GRC Work Unit/Activity Level Estimates**

Unit of Measure	2021 Historical Embedded Activities	2022 Forecast Activities	2023 Forecast Activities	2024 Forecast Activities	2024 RAMP Range Activities	
					Low	High
Tranche 1 FTE & no-single unit	56.90	63.70	65.40	67.10	0.00	0.00

**Work Unit Changes from RAMP:**

Units were not defined during RAMP filing. Labor can be identified with FTE units, and for non-labor there is no single unit defined. Numerical units in the boxes represent FTEs identified.

**Risk Spend Efficiency (RSE)**

	GRC RSE	RAMP RSE
Tranche 1	520.000	160.000

**RSE Changes from RAMP:**

San Diego Gas & Electric Company  
2024 GRC - APP  
Shared Services Workpapers

Area: CYBERSECURITY  
Witness: Lance R. Mueller  
Category: A. Cybersecurity  
Category-Sub: 1. Cybersecurity  
Cost Center: 2100-3101.000 - Shared Cybersecurity

The RSEs for Cybersecurity were calculated at the activity/mitigation level, and have not been split up between O&M and Capital. O&M is reflected in 2 workpapers (one shared and one non-shared). The respective RSE's for Cybersecurity Mitigations are listed below. GRC RSE's = 295 Internal Defenses, 366 Obsolete Information Technology (IT) Infrastructure and Application Replacement, 520 Operational Technology, 497 Perimeter Defenses, 199 Sensitive Data Protection RAMP RSE's = 95 Internal Defenses, 102 Obsolete Information Technology (IT) Infrastructure and Application Replacement, 112 Operational Technology, 160 Perimeter Defenses, 62 Sensitive Data Protection

**Supplemental Workpapers for Workpaper 2100-3101.000**



2021											
Workpaper	Cost Center	2021 Forecast	SDGE %	SCG %	Corp %	Unreg %	SDGE \$	SCG \$	CORP \$	UNREG \$	Methodology
2100-3101.000	2100-3774	\$ 1,925,008	43%	53%	4%	0%	829,486	1,024,104	71,418	-	LAN ID w/o unreg
	2100-3781	\$ 4,221,086	43%	53%	4%	0%	1,818,866	2,245,618	156,602	-	LAN ID w/o unreg
	2100-4121	\$ 719,478	43%	53%	4%	0%	310,023	382,762	26,693	-	LAN ID w/o unreg
	2100-3101	\$ 586,396	38%	47%	4%	12%	222,565	275,593	20,789	67,449	LAN ID including unreg
	2100-3775	\$ 1,602,776	38%	47%	4%	12%	608,329	753,270	56,821	184,356	LAN ID including unreg
	2100-3976	\$ 323,388	38%	47%	4%	12%	122,741	151,985	11,465	37,197	LAN ID including unreg
	2100-4123	\$ 244,265	43%	53%	4%	0%	105,254	129,949	9,062	-	LAN ID w/o unreg
	2100-4128	\$ 185,833	43%	53%	4%	0%	80,076	98,863	6,894	-	LAN ID w/o unreg
	2100-4129	\$ 513,877	38%	47%	4%	12%	195,041	241,511	18,218	59,108	LAN ID including unreg
	2100-4130	\$ 921,815	38%	47%	4%	12%	349,872	433,233	32,680	106,030	LAN ID including unreg
	2100-4131	\$ 394,397	38%	47%	4%	12%	149,692	185,358	13,982	45,365	LAN ID including unreg
	2100-4132	\$ 870,655	38%	47%	4%	12%	330,454	409,189	30,866	100,145	LAN ID including unreg
	2100-4133	\$ 742,016	38%	47%	4%	12%	281,630	348,731	26,306	85,349	LAN ID including unreg
	2100-4155	\$ 142,352	38%	47%	4%	12%	54,029	66,902	5,047	16,374	LAN ID including unreg
	2100-4157	\$ 379,331	43%	53%	4%	0%	163,454	201,804	14,073	-	LAN ID w/o unreg
Grand Total		<b>13,772,672</b>					<b>5,621,511</b>	<b>6,948,872</b>	<b>500,915</b>	<b>701,373</b>	

40.82%      50.45%      3.64%      5.09%      2021 Weighted Average of 2100-3101.000

2022											
Workpaper	Cost Center	2022 Forecast	SDGE %	SCG %	Corp %	Unreg %	SDGE \$	SCG \$	CORP \$	UNREG \$	Methodology
2100-3101.000	2100-3774	\$ 2,469,008	43%	53%	4%	0%	1,063,895	1,313,512	91,600	-	LAN ID w/o unreg
	2100-3781	\$ 5,018,068	43%	53%	4%	0%	2,162,285	2,669,612	186,170	-	LAN ID w/o unreg
	2100-4121	\$ 719,478	43%	53%	4%	0%	310,023	382,762	26,693	-	LAN ID w/o unreg
	2100-3101	\$ 586,396	38%	47%	4%	12%	222,565	275,593	20,789	67,449	LAN ID including unreg
	2100-3775	\$ 2,146,776	38%	47%	4%	12%	814,803	1,008,938	76,107	246,929	LAN ID including unreg
	2100-3976	\$ 323,388	38%	47%	4%	12%	122,741	151,985	11,465	37,197	LAN ID including unreg
	2100-4123	\$ 244,265	43%	53%	4%	0%	105,254	129,949	9,062	-	LAN ID w/o unreg
	2100-4128	\$ 185,833	43%	53%	4%	0%	80,076	98,863	6,894	-	LAN ID w/o unreg
	2100-4129	\$ 513,877	38%	47%	4%	12%	195,041	241,511	18,218	59,108	LAN ID including unreg
	2100-4130	\$ 921,815	38%	47%	4%	12%	349,872	433,233	32,680	106,030	LAN ID including unreg
	2100-4131	\$ 394,397	38%	47%	4%	12%	149,692	185,358	13,982	45,365	LAN ID including unreg
	2100-4132	\$ 870,655	38%	47%	4%	12%	330,454	409,189	30,866	100,145	LAN ID including unreg
	2100-4133	\$ 742,016	38%	47%	4%	12%	281,630	348,731	26,306	85,349	LAN ID including unreg
	2100-4155	\$ 142,352	38%	47%	4%	12%	54,029	66,902	5,047	16,374	LAN ID including unreg
	2100-4157	\$ 379,331	43%	53%	4%	0%	163,454	201,804	14,073	-	LAN ID w/o unreg
Grand Total		<b>15,657,654</b>					<b>6,405,814</b>	<b>7,917,943</b>	<b>569,951</b>	<b>763,946</b>	

40.91%      50.57%      3.64%      4.88%      2022 Weighted Average of 2100-3101.000

Note: Totals may include rounding differences.

2023											
Workpaper	Cost Center	2023 Forecast	SDGE %	SCG %	Corp %	Unreg %	SDGE \$	SCG \$	CORP \$	UNREG \$	Methodology
2100-3101.000	2100-3774	\$ 2,605,008	43%	53%	4%	0%	1,122,498	1,385,864	96,646	-	LAN ID w/o unreg
	2100-3781	\$ 5,092,442	43%	53%	4%	0%	2,194,333	2,709,179	188,930	-	LAN ID w/o unreg
	2100-4121	\$ 719,478	43%	53%	4%	0%	310,023	382,762	26,693	-	LAN ID w/o unreg
	2100-3101	\$ 586,396	38%	47%	4%	12%	222,565	275,593	20,789	67,449	LAN ID including unreg
	2100-3775	\$ 2,282,776	38%	47%	4%	12%	866,421	1,072,855	80,928	262,572	LAN ID including unreg
	2100-3976	\$ 323,388	38%	47%	4%	12%	122,741	151,985	11,465	37,197	LAN ID including unreg
	2100-4123	\$ 244,265	43%	53%	4%	0%	105,254	129,949	9,062	-	LAN ID w/o unreg
	2100-4128	\$ 185,833	43%	53%	4%	0%	80,076	98,863	6,894	-	LAN ID w/o unreg
	2100-4129	\$ 513,877	38%	47%	4%	12%	195,041	241,511	18,218	59,108	LAN ID including unreg
	2100-4130	\$ 921,815	38%	47%	4%	12%	349,872	433,233	32,680	106,030	LAN ID including unreg
	2100-4131	\$ 394,397	38%	47%	4%	12%	149,692	185,358	13,982	45,365	LAN ID including unreg
	2100-4132	\$ 870,655	38%	47%	4%	12%	330,454	409,189	30,866	100,145	LAN ID including unreg
	2100-4133	\$ 742,016	38%	47%	4%	12%	281,630	348,731	26,306	85,349	LAN ID including unreg
	2100-4155	\$ 142,352	38%	47%	4%	12%	54,029	66,902	5,047	16,374	LAN ID including unreg
	2100-4157	\$ 379,331	43%	53%	4%	0%	163,454	201,804	14,073	-	LAN ID w/o unreg
Grand Total		<b>16,004,028</b>					<b>6,548,083</b>	<b>8,093,779</b>	<b>582,578</b>	<b>779,589</b>	

40.92%      50.57%      3.64%      4.87%      2023 Weighted Average of 2100-3101.000

2024											
Workpaper	Cost Center	2024 Forecast	SDGE %	SCG %	Corp %	Unreg %	SDGE \$	SCG \$	CORP \$	UNREG \$	Methodology
2100-3101.000	2100-3774	\$ 2,741,008	43%	53%	4%	0%	1,181,100	1,458,216	101,691	-	LAN ID w/o unreg
	2100-3781	\$ 5,174,253	43%	53%	4%	0%	2,229,586	2,752,703	191,965	-	LAN ID w/o unreg
	2100-4121	\$ 719,478	43%	53%	4%	0%	310,023	382,762	26,693	-	LAN ID w/o unreg
	2100-3101	\$ 586,396	38%	47%	4%	12%	222,565	275,593	20,789	67,449	LAN ID including unreg
	2100-3775	\$ 2,418,776	38%	47%	4%	12%	918,039	1,136,772	85,750	278,215	LAN ID including unreg
	2100-3976	\$ 323,388	38%	47%	4%	12%	122,741	151,985	11,465	37,197	LAN ID including unreg
	2100-4123	\$ 244,265	43%	53%	4%	0%	105,254	129,949	9,062	-	LAN ID w/o unreg
	2100-4128	\$ 185,833	43%	53%	4%	0%	80,076	98,863	6,894	-	LAN ID w/o unreg
	2100-4129	\$ 513,877	38%	47%	4%	12%	195,041	241,511	18,218	59,108	LAN ID including unreg
	2100-4130	\$ 921,815	38%	47%	4%	12%	349,872	433,233	32,680	106,030	LAN ID including unreg
	2100-4131	\$ 394,397	38%	47%	4%	12%	149,692	185,358	13,982	45,365	LAN ID including unreg
	2100-4132	\$ 870,655	38%	47%	4%	12%	330,454	409,189	30,866	100,145	LAN ID including unreg
	2100-4133	\$ 742,016	38%	47%	4%	12%	281,630	348,731	26,306	85,349	LAN ID including unreg
	2100-4155	\$ 142,352	38%	47%	4%	12%	54,029	66,902	5,047	16,374	LAN ID including unreg
	2100-4157	\$ 379,331	43%	53%	4%	0%	163,454	201,804	14,073	-	LAN ID w/o unreg
Grand Total		<b>16,357,840</b>					<b>6,693,556</b>	<b>8,273,572</b>	<b>595,480</b>	<b>795,232</b>	

40.92%      50.58%      3.64%      4.86%      2024 Weighted Average of 2100-3101.000

Note: Totals may include rounding differences.

San Diego Gas & Electric Company  
2024 GRC - APP  
Non-Shared Service Workpapers

Area: CYBERSECURITY  
Witness: Lance R. Mueller

**Appendix A: List of Non-Shared Cost Centers**

<b>Cost Center</b>	<b>Sub</b>	<b>Description</b>
2100-3840	000	CRITICAL INFRASTRUCTURE PROTECTION
2100-4158	000	NERC CIP COMPLIANCE