

Application of SAN DIEGO GAS & ELECTRIC)
COMPANY for authority to update its gas and)
electric revenue requirement and base rates)
effective January 1, 2019 (U 902-M))

Application No. 17-10-___

Exhibit No.: (SDG&E-25-WP)

WORKPAPERS TO
PREPARED DIRECT TESTIMONY
OF GAVIN H. WORDEN
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

OCTOBER 2017



2019 General Rate Case - APP
INDEX OF WORKPAPERS

Exhibit SDG&E-25-WP - CYBER SECURITY

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Overall Summary For Exhibit No. SDG&E-25-WP

Area:	CYBER SECURITY
Witness:	Gavin H. Worden

Description	In 2016 \$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
<i>Non-Shared Services</i>	0	0	0	0
<i>Shared Services</i>	6,567	7,121	7,387	7,907
Total	6,567	7,121	7,387	7,907

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
Witness: Gavin H. Worden

Summary of Shared Services Workpapers:

Description	In 2016 \$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
A. SECURITY POLICY & AWARENESS	957	957	957	957
B. DIRECTOR - INFORMATION SECURITY	367	367	367	367
C. SECURITY ENGINEERING	992	1,376	1,434	1,434
D. SECURITY OPERATIONS	1,642	1,699	1,757	1,757
E. SECURITY CONTRACTS	2,587	2,700	2,850	3,370
G. INFORMATION SECURITY PROGRAMS	22	22	22	22
Total	6,567	7,121	7,387	7,907

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: A. SECURITY POLICY & AWARENESS
 Cost Center: 2100-3101.000

Summary for Category: A. SECURITY POLICY & AWARENESS

	In 2016\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
Labor	868	868	868	868
Non-Labor	89	89	89	89
NSE	0	0	0	0
Total	<u>957</u>	<u>957</u>	<u>957</u>	<u>957</u>
FTE	7.5	7.5	7.5	7.5

Cost Centers belonging to this Category:

2100-3101.000 SECURITY POLICY AND AWARENESS

Labor	868	868	868	868
Non-Labor	89	89	89	89
NSE	0	0	0	0
Total	<u>957</u>	<u>957</u>	<u>957</u>	<u>957</u>
FTE	7.5	7.5	7.5	7.5

Note: Totals may include rounding differences.

Beginning of Workpaper
2100-3101.000 - SECURITY POLICY AND AWARENESS

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: A. SECURITY POLICY & AWARENESS
 Category-Sub: 1. SECURITY POLICY & AWARENESS
 Cost Center: 2100-3101.000 - SECURITY POLICY AND AWARENESS

Activity Description:

This cost center provides Data & Privacy Governance support, including IT security awareness and training, and Privacy, Legislative, and Data Governance enterprise wide.

Forecast Explanations:

Labor - Base YR Rec

This method is most appropriate because the base year most accurately represents the current state of the IT workpapers. 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 IT department to another.

Non-Labor - Base YR Rec

This method is most appropriate because the base year most accurately represents the current state of the IT workpapers. 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 IT department to another.

NSE - Base YR Rec

N/A

Summary of Results:

		In 2016\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2012	2013	2014	2015	2016	2017	2018	2019	
	Labor	728	223	567	637	868	868	868	868	
	Non-Labor	-14	11	32	76	89	89	89	89	
	NSE	0	0	0	0	0	0	0	0	
	Total	714	235	599	713	957	957	957	957	
	FTE	6.6	2.0	5.7	6.2	7.6	7.5	7.5	7.5	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: A. SECURITY POLICY & AWARENESS
 Category-Sub: 1. SECURITY POLICY & AWARENESS
 Cost Center: 2100-3101.000 - SECURITY POLICY AND AWARENESS

Cost Center Allocations (Incurred Costs):

	2016 Adjusted-Recorded					2017 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	12	4	0	16	0.0	12	4	0	16	0.0
Directly Allocated	0	0	0	0	0.0	0	0	0	0	0.0
Subj. To % Alloc.	856	85	0	941	7.5	856	85	0	941	7.5
Total Incurred	868	89	0	957	7.5	868	89	0	957	7.5
% Allocation										
Retained	34.00%	34.00%				36.42%	36.42%			
SEU	62.00%	62.00%				59.94%	59.94%			
CORP	4.00%	4.00%				3.64%	3.64%			
Unreg	0.00%	0.00%				0.00%	0.00%			

	2018 Adjusted-Forecast					2019 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	12	4	0	16	0.0	12	4	0	16	0.0
Directly Allocated	0	0	0	0	0.0	0	0	0	0	0.0
Subj. To % Alloc.	856	85	0	941	7.5	856	85	0	941	7.5
Total Incurred	868	89	0	957	7.5	868	89	0	957	7.5
% Allocation										
Retained	36.42%	36.42%				36.42%	36.42%			
SEU	59.94%	59.94%				59.94%	59.94%			
CORP	3.64%	3.64%				3.64%	3.64%			
Unreg	0.00%	0.00%				0.00%	0.00%			

Cost Center Allocation Percentage Drivers/Methodology:

Cost Center Allocation Percentage for 2016

Cost center shared service allocations based on LAN ID s.

Cost Center Allocation Percentage for 2017

Cost center shared service allocations based on LAN ID s - Revisd for 2017 allocations.

Cost Center Allocation Percentage for 2018

Cost center shared service allocations based on LAN ID s - Revisd for 2017 allocations.

Cost Center Allocation Percentage for 2019

Cost center shared service allocations based on LAN ID s - Revisd for 2017 allocations.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: A. SECURITY POLICY & AWARENESS
 Category-Sub: 1. SECURITY POLICY & AWARENESS
 Cost Center: 2100-3101.000 - SECURITY POLICY AND AWARENESS

Summary of Adjustments to Forecast:

In 2016 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2017	2018	2019	2017	2018	2019	2017	2018	2019
Labor	Base YR Rec	868	868	868	0	0	0	868	868	868
Non-Labor	Base YR Rec	89	89	89	0	0	0	89	89	89
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		957	957	957	0	0	0	957	957	957
FTE	Base YR Rec	7.5	7.5	7.5	0.0	0.0	0.0	7.5	7.5	7.5

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

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: A. SECURITY POLICY & AWARENESS
 Category-Sub: 1. SECURITY POLICY & AWARENESS
 Cost Center: 2100-3101.000 - SECURITY POLICY AND AWARENESS

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	593	183	473	543	744
Non-Labor	-16	11	31	75	89
NSE	0	0	0	0	0
Total	577	194	504	618	833
FTE	5.7	1.7	4.8	5.3	6.4
Adjustments (Nominal \$) **					
Labor	2	0	0	0	0
Non-Labor	3	0	0	0	0
NSE	0	0	0	0	0
Total	5	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	595	183	473	543	744
Non-Labor	-13	11	31	75	89
NSE	0	0	0	0	0
Total	582	194	504	618	833
FTE	5.7	1.7	4.8	5.3	6.4
Vacation & Sick (Nominal \$)					
Labor	85	29	76	84	123
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	85	29	76	84	123
FTE	0.9	0.3	0.9	0.9	1.2
Escalation to 2016\$					
Labor	48	11	19	10	0
Non-Labor	-1	1	1	1	0
NSE	0	0	0	0	0
Total	47	12	20	12	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	728	223	567	637	868
Non-Labor	-14	11	32	76	89
NSE	0	0	0	0	0
Total	714	235	599	713	957
FTE	6.6	2.0	5.7	6.2	7.6

* 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
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: A. SECURITY POLICY & AWARENESS
 Category-Sub: 1. SECURITY POLICY & AWARENESS
 Cost Center: 2100-3101.000 - SECURITY POLICY AND AWARENESS

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	2	0	0	0	0
Non-Labor	3	0	0	0	0
NSE	0	0	0	0	0
Total	5	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0

Detail of Adjustments to Recorded:

Year	Adj Group	Labor	NLbr	NSE	FTE	Adj Type	RefID
2012	Other	-78	-3	0	-1.0	CCTR Transf To 2200-2469.000	MEHLERS20170223160921417
Explanation: Employee transfer from SDG&E to SCG (2200-2469)							
2012	Other	80	6	0	1.0	1-Sided Adj	MEHLERS20170223151922723
Explanation: Employee Transfer from 2200-2470.							
2012 Total		2	3	0	0.0		
2013 Total		0	0	0	0.0		
2014 Total		0	0	0	0.0		
2015 Total		0	0	0	0.0		
2016 Total		0	0	0	0.0		

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
Witness: Gavin H. Worden
Category: A. SECURITY POLICY & AWARENESS
Category-Sub: 1. SECURITY POLICY & AWARENESS
Cost Center: 2100-3101.000 - SECURITY POLICY AND AWARENESS

RAMP Item # 1

Ref ID: MEHLERS20170303090436710

RAMP Chapter: SDG&E-7

Program Name: Cyber Security

Program Description: Security Policy and Awareness

Risk/Mitigation:

Risk: Cyber Security Risk

Mitigation: See Subsidiary Workpaper

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC

Forecast Method: Base Year

Work Type: Non-Mandated

Work Type Citation: See Subsidiary Work Paper

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 0

Explanation:

Supplemental Workpapers for Workpaper 2100-3101.000

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

		Cost Center O&M by Mitigation (000s)																		
Company	Cost Center	L/NL	2017					2018					2019							
			Identify	Protect	Detect	Respond	Recover	Total	Identify	Protect	Detect	Respond	Recover	Total	Identify	Protect	Detect	Respond	Recover	Total
2100	2100-3101	Labor	182	540	17	118	10	868	182	540	17	118	10	868	182	540	17	118	10	868
2100	2100-3101	Non-Labor	30	38	2	19	0	89	30	38	2	19	0	89	30	38	2	19	0	89
2100	2100-3101 Total		212	578	19	138	10	957	212	578	19	138	10	957	212	578	19	138	10	957
2100	2100-3763	Labor	89	72	16	98	6	282	89	72	16	98	6	282	89	72	16	98	6	282
2100	2100-3763	Non-Labor	32	15	5	32	1	85	32	15	5	32	1	85	32	15	5	32	1	85
2100	2100-3763 Total		122	87	21	130	7	367	122	87	21	130	7	367	122	87	21	130	7	367
2100	2100-3774	Labor	153	793	38	44	3	1,031	162	838	40	46	3	1,089	162	838	40	46	3	1,089
2100	2100-3774	Non-Labor	114	220	4	6	0	344	114	220	4	6	0	344	114	220	4	6	0	344
2100	2100-3774 Total		267	1,013	42	50	3	1,375	276	1,058	44	52	3	1,433	276	1,058	44	52	3	1,433
2100	2100-3775	Labor	218	458	733	229	6	1,643	225	474	758	237	7	1,701	225	474	758	237	7	1,701
2100	2100-3775	Non-Labor	8	22	16	10	1	56	8	22	16	10	1	56	8	22	16	10	1	56
2100	2100-3775 Total		226	480	748	238	7	1,699	233	496	774	247	7	1,757	233	496	774	247	7	1,757
2100	2100-3781	Non-Labor	405	945	540	810	0	2,700	428	998	570	855	0	2,850	506	1,180	674	1,011	0	3,370
2100	2100-3781 Total		405	945	540	810	0	2,700	428	998	570	855	0	2,850	506	1,180	674	1,011	0	3,370
2100	2100-3976	Labor	5	4	1	6	0	16	5	4	1	6	0	16	5	4	1	6	0	16
2100	2100-3976	Non-Labor	2	1	0	2	0	6	2	1	0	2	0	6	2	1	0	2	0	6
2100	2100-3976 Total		7	5	1	8	0	22	7	5	1	8	0	22	7	5	1	8	0	22
2100 Total	Labor		648	1,868	805	494	25	3,840	664	1,929	833	505	25	3,956	664	1,929	833	505	25	3,956
2100 Total	Non-Labor		592	1,240	567	879	2	3,280	614	1,293	597	924	2	3,430	692	1,475	701	1,080	2	3,950
2100 Total	Total		1,239	3,108	1,372	1,373	28	7,120	1,278	3,221	1,430	1,429	28	7,386	1,356	3,403	1,534	1,585	28	7,906
2200	2200-2469	Labor	19	301	0	12	0	332	19	301	0	12	0	332	19	301	0	12	0	332
2200	2200-2469	Non-Labor	146	228	1	1	0	377	146	228	1	1	0	377	146	228	1	1	0	377
2200	2200-2469 Total		166	530	1	13	0	709	166	530	1	13	0	709	166	530	1	13	0	709
2200 Total	Labor		19	301	0	12	0	332	19	301	0	12	0	332	19	301	0	12	0	332
2200 Total	Non-Labor		146	228	1	1	0	377	146	228	1	1	0	377	146	228	1	1	0	377
2200 Total	Total		166	530	1	13	0	709	166	530	1	13	0	709	166	530	1	13	0	709
Grand Total	Labor		667	2,169	805	506	25	4,172	683	2,230	833	516	25	4,288	683	2,230	833	516	25	4,288
Grand Total	Non-Labor		738	1,468	567	881	2	3,657	760	1,521	597	926	2	3,807	838	1,703	701	1,082	2	4,327
Grand Total	Total		1,405	3,637	1,373	1,386	28	7,829	1,444	3,751	1,431	1,442	28	8,095	1,522	3,933	1,535	1,598	28	8,615

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: B. DIRECTOR - INFORMATION SECURITY
 Cost Center: 2100-3763.000

Summary for Category: B. DIRECTOR - INFORMATION SECURITY

	In 2016\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
Labor	282	282	282	282
Non-Labor	85	85	85	85
NSE	0	0	0	0
Total	<u>367</u>	<u>367</u>	<u>367</u>	<u>367</u>
FTE	2.1	2.0	2.0	2.0

Cost Centers belonging to this Category:

2100-3763.000 DIRECTOR - INFORMATION SECURITY

Labor	282	282	282	282
Non-Labor	85	85	85	85
NSE	0	0	0	0
Total	<u>367</u>	<u>367</u>	<u>367</u>	<u>367</u>
FTE	2.1	2.0	2.0	2.0

Note: Totals may include rounding differences.

Beginning of Workpaper
2100-3763.000 - DIRECTOR - INFORMATION SECURITY

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: B. DIRECTOR - INFORMATION SECURITY
 Category-Sub: 1. DIRECTOR - INFORMATION SECURITY
 Cost Center: 2100-3763.000 - DIRECTOR - INFORMATION SECURITY

Activity Description:

This cost center includes the Director of IT Information Security and his administrative support. Activities include department level management for Information Security, including Security Engineering, Security Operations, IT regulatory compliance, and IT security maintenance contracts, enterprise-wide.

Forecast Explanations:

Labor - Base YR Rec

This method is most appropriate because the base year most accurately represents the current state of the IT workpapers. 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 IT department to another.

Non-Labor - Base YR Rec

This method is most appropriate because the base year most accurately represents the current state of the IT workpapers. 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 IT department to another.

NSE - Base YR Rec

N/A

Summary of Results:

		In 2016\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2012	2013	2014	2015	2016	2017	2018	2019	
Labor		140	185	310	230	282	282	282	282	
Non-Labor		151	68	61	40	85	85	85	85	
NSE		0	0	0	0	0	0	0	0	
Total		290	253	371	269	367	367	367	367	
FTE		0.9	1.9	2.2	1.9	2.1	2.0	2.0	2.0	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: B. DIRECTOR - INFORMATION SECURITY
 Category-Sub: 1. DIRECTOR - INFORMATION SECURITY
 Cost Center: 2100-3763.000 - DIRECTOR - INFORMATION SECURITY

Cost Center Allocations (Incurred Costs):

	2016 Adjusted-Recorded					2017 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	3	5	0	8	0.0	3	5	0	8	0.0
Directly Allocated	0	0	0	0	0.0	0	0	0	0	0.0
Subj. To % Alloc.	279	80	0	359	2.1	279	80	0	359	2.0
Total Incurred	282	85	0	367	2.1	282	85	0	367	2.0
% Allocation										
Retained	34.50%	34.50%				36.42%	36.42%			
SEU	61.91%	61.91%				59.94%	59.94%			
CORP	3.59%	3.59%				3.64%	3.64%			
Unreg	0.00%	0.00%				0.00%	0.00%			

	2018 Adjusted-Forecast					2019 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	3	5	0	8	0.0	3	5	0	8	0.0
Directly Allocated	0	0	0	0	0.0	0	0	0	0	0.0
Subj. To % Alloc.	279	80	0	359	2.0	279	80	0	359	2.0
Total Incurred	282	85	0	367	2.0	282	85	0	367	2.0
% Allocation										
Retained	36.42%	36.42%				36.42%	36.42%			
SEU	59.94%	59.94%				59.94%	59.94%			
CORP	3.64%	3.64%				3.64%	3.64%			
Unreg	0.00%	0.00%				0.00%	0.00%			

Cost Center Allocation Percentage Drivers/Methodology:

Cost Center Allocation Percentage for 2016

Cost center shared service allocations based on LAN ID s.

Cost Center Allocation Percentage for 2017

Cost center shared service allocations based on LAN ID s - Revisd for 2017 allocations.

Cost Center Allocation Percentage for 2018

Cost center shared service allocations based on LAN ID s - Revisd for 2017 allocations.

Cost Center Allocation Percentage for 2019

Cost center shared service allocations based on LAN ID s - Revisd for 2017 allocations.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: B. DIRECTOR - INFORMATION SECURITY
 Category-Sub: 1. DIRECTOR - INFORMATION SECURITY
 Cost Center: 2100-3763.000 - DIRECTOR - INFORMATION SECURITY

Summary of Adjustments to Forecast:

In 2016 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2017	2018	2019	2017	2018	2019	2017	2018	2019
Labor	Base YR Rec	282	282	282	0	0	0	282	282	282
Non-Labor	Base YR Rec	85	85	85	0	0	0	85	85	85
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		367	367	367	0	0	0	367	367	367
FTE	Base YR Rec	2.1	2.1	2.1	-0.1	-0.1	-0.1	2.0	2.0	2.0

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID	
2017	Other	0	0	0	0	-0.1	1-Sided Adj	MEHLERS20161116160222637	
Explanation:		Adjusted to 2.0 FTE s							
2017 Total		0	0	0	0	-0.1			
2018	Other	0	0	0	0	-0.1	1-Sided Adj	MEHLERS20161116160301140	
Explanation:		1.7 FTE s total							
2018 Total		0	0	0	0	-0.1			
2019	Other	0	0	0	0	-0.1	1-Sided Adj	MEHLERS20161116160310850	
Explanation:		1.7 FTE s total							
2019 Total		0	0	0	0	-0.1			

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: B. DIRECTOR - INFORMATION SECURITY
 Category-Sub: 1. DIRECTOR - INFORMATION SECURITY
 Cost Center: 2100-3763.000 - DIRECTOR - INFORMATION SECURITY

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	114	151	269	205	242
Non-Labor	141	65	61	41	85
NSE	0	0	0	0	0
Total	255	216	330	246	327
FTE	0.8	1.6	1.8	1.5	1.8
Adjustments (Nominal \$) **					
Labor	0	0	-10	-9	0
Non-Labor	0	0	-3	-3	0
NSE	0	0	0	0	0
Total	0	0	-13	-12	0
FTE	0.0	0.0	0.1	0.1	0.0
Recorded-Adjusted (Nominal \$)					
Labor	114	151	259	196	242
Non-Labor	141	65	59	39	85
NSE	0	0	0	0	0
Total	255	216	317	235	327
FTE	0.8	1.6	1.9	1.6	1.8
Vacation & Sick (Nominal \$)					
Labor	17	24	41	30	40
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	17	24	41	30	40
FTE	0.1	0.3	0.3	0.3	0.3
Escalation to 2016\$					
Labor	9	9	10	4	0
Non-Labor	10	3	2	1	0
NSE	0	0	0	0	0
Total	19	12	12	4	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	140	185	310	230	282
Non-Labor	151	68	61	40	85
NSE	0	0	0	0	0
Total	290	253	371	269	367
FTE	0.9	1.9	2.2	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
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: B. DIRECTOR - INFORMATION SECURITY
 Category-Sub: 1. DIRECTOR - INFORMATION SECURITY
 Cost Center: 2100-3763.000 - DIRECTOR - INFORMATION SECURITY

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	0	0	-10	-9	0
Non-Labor	0	0	-3	-3	0
NSE	0	0	0	0	0
Total	0	0	-13	-12	0
FTE	0.0	0.0	0.1	0.1	0.0

Detail of Adjustments to Recorded:

Year	Adj Group	Labor	NLbr	NSE	FTE	Adj Type	RefID
2012 Total		0	0	0	0.0		
2013 Total		0	0	0	0.0		
2014	Other	-10	-3	0	0.1	CCTR Transf To 2100-3976.000	MEHLERS20170223150155403
2014 Total		-10	-3	0	0.1		
2015	Other	-9	-3	0	0.1	CCTR Transf To 2100-3976.000	MEHLERS20170223145817807
2015 Total		-9	-3	0	0.1		
2016 Total		0	0	0	0.0		

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
Witness: Gavin H. Worden
Category: B. DIRECTOR - INFORMATION SECURITY
Category-Sub: 1. DIRECTOR - INFORMATION SECURITY
Cost Center: 2100-3763.000 - DIRECTOR - INFORMATION SECURITY

RAMP Item # 1

Ref ID: MEHLERS20170303091134397

RAMP Chapter: SDG&E-7

Program Name: Cyber Security

Program Description: Cyber Security

Risk/Mitigation:

Risk: Cyber Security Risk

Mitigation: See Subsidiary Work Paper

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC

Forecast Method: Trend

Work Type: Non-Mandated

Work Type Citation: See Subsidiary Workpaper

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 367

Explanation: 0

Supplemental Workpapers for Workpaper 2100-3763.000

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

		Cost Center O&M by Mitigation (000s)																		
Company	Cost Center	L/NL	2017					2018					2019							
			Identify	Protect	Detect	Respond	Recover	Total	Identify	Protect	Detect	Respond	Recover	Total	Identify	Protect	Detect	Respond	Recover	Total
2100	2100-3101	Labor	182	540	17	118	10	868	182	540	17	118	10	868	182	540	17	118	10	868
2100	2100-3101	Non-Labor	30	38	2	19	0	89	30	38	2	19	0	89	30	38	2	19	0	89
2100	2100-3101 Total		212	578	19	138	10	957	212	578	19	138	10	957	212	578	19	138	10	957
2100	2100-3763	Labor	89	72	16	98	6	282	89	72	16	98	6	282	89	72	16	98	6	282
2100	2100-3763	Non-Labor	32	15	5	32	1	85	32	15	5	32	1	85	32	15	5	32	1	85
2100	2100-3763 Total		122	87	21	130	7	367	122	87	21	130	7	367	122	87	21	130	7	367
2100	2100-3774	Labor	153	793	38	44	3	1,031	162	838	40	46	3	1,089	162	838	40	46	3	1,089
2100	2100-3774	Non-Labor	114	220	4	6	0	344	114	220	4	6	0	344	114	220	4	6	0	344
2100	2100-3774 Total		267	1,013	42	50	3	1,375	276	1,058	44	52	3	1,433	276	1,058	44	52	3	1,433
2100	2100-3775	Labor	218	458	733	229	6	1,643	225	474	758	237	7	1,701	225	474	758	237	7	1,701
2100	2100-3775	Non-Labor	8	22	16	10	1	56	8	22	16	10	1	56	8	22	16	10	1	56
2100	2100-3775 Total		226	480	748	238	7	1,699	233	496	774	247	7	1,757	233	496	774	247	7	1,757
2100	2100-3781	Non-Labor	405	945	540	810	0	2,700	428	998	570	855	0	2,850	506	1,180	674	1,011	0	3,370
2100	2100-3781 Total		405	945	540	810	0	2,700	428	998	570	855	0	2,850	506	1,180	674	1,011	0	3,370
2100	2100-3976	Labor	5	4	1	6	0	16	5	4	1	6	0	16	5	4	1	6	0	16
2100	2100-3976	Non-Labor	2	1	0	2	0	6	2	1	0	2	0	6	2	1	0	2	0	6
2100	2100-3976 Total		7	5	1	8	0	22	7	5	1	8	0	22	7	5	1	8	0	22
2100 Total	Labor		648	1,868	805	494	25	3,840	664	1,929	833	505	25	3,956	664	1,929	833	505	25	3,956
2100 Total	Non-Labor		592	1,240	567	879	2	3,280	614	1,293	597	924	2	3,430	692	1,475	701	1,080	2	3,950
2100 Total	Total		1,239	3,108	1,372	1,373	28	7,120	1,278	3,221	1,430	1,429	28	7,386	1,356	3,403	1,534	1,585	28	7,906
2200	2200-2469	Labor	19	301	0	12	0	332	19	301	0	12	0	332	19	301	0	12	0	332
2200	2200-2469	Non-Labor	146	228	1	1	0	377	146	228	1	1	0	377	146	228	1	1	0	377
2200	2200-2469 Total		166	530	1	13	0	709	166	530	1	13	0	709	166	530	1	13	0	709
2200 Total	Labor		19	301	0	12	0	332	19	301	0	12	0	332	19	301	0	12	0	332
2200 Total	Non-Labor		146	228	1	1	0	377	146	228	1	1	0	377	146	228	1	1	0	377
2200 Total	Total		166	530	1	13	0	709	166	530	1	13	0	709	166	530	1	13	0	709
Grand Total	Labor		667	2,169	805	506	25	4,172	683	2,230	833	516	25	4,288	683	2,230	833	516	25	4,288
Grand Total	Non-Labor		738	1,468	567	881	2	3,657	760	1,521	597	926	2	3,807	838	1,703	701	1,082	2	4,327
Grand Total	Total		1,405	3,637	1,373	1,386	28	7,829	1,444	3,751	1,431	1,442	28	8,095	1,522	3,933	1,535	1,598	28	8,615

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: C. SECURITY ENGINEERING
 Cost Center: 2100-3774.000

Summary for Category: C. SECURITY ENGINEERING

	In 2016\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
Labor	759	1,032	1,090	1,090
Non-Labor	233	345	345	345
NSE	0	0	0	0
Total	992	1,377	1,435	1,435
FTE	6.9	9.4	9.9	9.9

Cost Centers belonging to this Category:

2100-3774.000 SECURITY ENGINEERING

Labor	759	1,032	1,090	1,090
Non-Labor	233	345	345	345
NSE	0	0	0	0
Total	992	1,377	1,435	1,435
FTE	6.9	9.4	9.9	9.9

Note: Totals may include rounding differences.

Beginning of Workpaper
2100-3774.000 - SECURITY ENGINEERING

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: C. SECURITY ENGINEERING
 Category-Sub: 1. SECURITY ENGINEERING
 Cost Center: 2100-3774.000 - SECURITY ENGINEERING

Activity Description:

The Security Engineering section provides enterprise-scale security functions and integration services for business, operational, and IT technology assets.

Forecast Explanations:

Labor - 3-YR Average

This method is most appropriate because the base year most accurately represents the current state of the IT workpapers. 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 IT department to another.

Non-Labor - 3-YR Average

This method is most appropriate because the base year most accurately represents the current state of the IT workpapers. 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 IT department to another.

NSE - 3-YR Average

N/A

Summary of Results:

		In 2016\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2012	2013	2014	2015	2016	2017	2018	2019	
Labor		733	805	1,160	1,004	759	1,031	1,089	1,089	
Non-Labor		181	113	110	270	233	344	344	344	
NSE		0	0	0	0	0	0	0	0	
Total		914	918	1,271	1,275	992	1,375	1,433	1,433	
FTE		6.4	7.1	10.7	9.1	6.9	9.4	9.9	9.9	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: C. SECURITY ENGINEERING
 Category-Sub: 1. SECURITY ENGINEERING
 Cost Center: 2100-3774.000 - SECURITY ENGINEERING

Cost Center Allocations (Incurred Costs):

	2016 Adjusted-Recorded					2017 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	46	25	0	71	0.4	34	64	0	98	0.3
Directly Allocated	0	0	0	0	0.0	0	0	0	0	0.0
Subj. To % Alloc.	713	209	0	922	6.5	997	280	0	1,277	9.1
Total Incurred	759	234	0	993	6.9	1,031	344	0	1,375	9.4
% Allocation										
Retained	34.50%	34.50%				36.42%	36.42%			
SEU	61.91%	61.91%				59.94%	59.94%			
CORP	3.59%	3.59%				3.64%	3.64%			
Unreg	0.00%	0.00%				0.00%	0.00%			

	2018 Adjusted-Forecast					2019 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	34	64	0	98	0.3	34	64	0	98	0.3
Directly Allocated	0	0	0	0	0.0	0	0	0	0	0.0
Subj. To % Alloc.	1,055	280	0	1,335	9.6	1,055	280	0	1,335	9.6
Total Incurred	1,089	344	0	1,433	9.9	1,089	344	0	1,433	9.9
% Allocation										
Retained	36.42%	36.42%				36.42%	36.42%			
SEU	59.94%	59.94%				59.94%	59.94%			
CORP	3.64%	3.64%				3.64%	3.64%			
Unreg	0.00%	0.00%				0.00%	0.00%			

Cost Center Allocation Percentage Drivers/Methodology:

Cost Center Allocation Percentage for 2016

Cost center shared service allocations based on LAN ID s.

Cost Center Allocation Percentage for 2017

Cost center shared service allocations based on LAN ID s - Revisd for 2017 allocations.

Cost Center Allocation Percentage for 2018

Cost center shared service allocations based on LAN ID s - Revisd for 2017 allocations.

Cost Center Allocation Percentage for 2019

Cost center shared service allocations based on LAN ID s - Revisd for 2017 allocations.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: C. SECURITY ENGINEERING
 Category-Sub: 1. SECURITY ENGINEERING
 Cost Center: 2100-3774.000 - SECURITY ENGINEERING

Summary of Adjustments to Forecast:

In 2016 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2017	2018	2019	2017	2018	2019	2017	2018	2019
Labor	3-YR Average	975	975	975	57	115	115	1,032	1,090	1,090
Non-Labor	3-YR Average	205	205	205	140	140	140	345	345	345
NSE	3-YR Average	0	0	0	0	0	0	0	0	0
Total		1,179	1,179	1,179	197	255	255	1,376	1,434	1,434
FTE	3-YR Average	8.9	8.9	8.9	0.5	1.0	1.0	9.4	9.9	9.9

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID	
2017	RAMP Incremental	57	0	0	57	0.5	1-Sided Adj	MEHLERS20161115135230410	
Explanation:		RAMP - Cyber Security (RAMP Chapter 07) Addition of new resource (Infrastructure Tech - months)							
2017	RAMP Incremental	0	140	0	140	0.0	1-Sided Adj	MEHLERS20161130084543817	
Explanation:		RAMP - Cyber Security (RAMP Chapter 07) Annualization of BIT9 resource (based on \$250K/yr). Resource was partial year 2016.							
2017 Total		57	140	0	197	0.5			
2018	RAMP Incremental	0	140	0	140	0.0	1-Sided Adj	MEHLERS20161130084554723	
Explanation:		RAMP - Cyber Security (RAMP Chapter 07) Annualization of BIT9 resource (based on \$250K/yr)							
2018	RAMP Incremental	115	0	0	115	1.0	1-Sided Adj	MEHLERS20161130090111490	
Explanation:		RAMP - Cyber Security (RAMP Chapter 07) Additional Resource (Infrastructure Tech - Full Year)							
2018 Total		115	140	0	255	1.0			
2019	RAMP Incremental	0	140	0	140	0.0	1-Sided Adj	MEHLERS20161130084604710	
Explanation:		RAMP - Cyber Security (RAMP Chapter 07) Annualization of BIT9 resource (based on \$250K/yr)							
2019	RAMP Incremental	115	0	0	115	1.0	1-Sided Adj	MEHLERS20161130091045667	
Explanation:		RAMP - Cyber Security (RAMP Chapter 07) Additional Resource (Infrastructure Tech - Full Year)							
2019 Total		115	140	0	255	1.0			

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
Witness: Gavin H. Worden
Category: C. SECURITY ENGINEERING
Category-Sub: 1. SECURITY ENGINEERING
Cost Center: 2100-3774.000 - SECURITY ENGINEERING

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	598	660	968	856	651
Non-Labor	169	108	107	266	233
NSE	0	0	0	0	0
Total	767	768	1,074	1,122	884
FTE	5.5	6.0	9.1	7.7	5.8
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	598	660	968	856	651
Non-Labor	169	108	107	266	233
NSE	0	0	0	0	0
Total	767	768	1,074	1,122	884
FTE	5.5	6.0	9.1	7.7	5.8
Vacation & Sick (Nominal \$)					
Labor	87	105	155	132	108
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	87	105	155	132	108
FTE	0.9	1.0	1.6	1.3	1.1
Escalation to 2016\$					
Labor	48	40	38	16	0
Non-Labor	12	6	4	4	0
NSE	0	0	0	0	0
Total	60	45	42	21	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	733	805	1,160	1,004	759
Non-Labor	181	113	110	270	233
NSE	0	0	0	0	0
Total	914	918	1,271	1,275	992
FTE	6.4	7.0	10.7	9.0	6.9

* 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
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: C. SECURITY ENGINEERING
 Category-Sub: 1. SECURITY ENGINEERING
 Cost Center: 2100-3774.000 - SECURITY ENGINEERING

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
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>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>RefID</u>
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Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
Witness: Gavin H. Worden
Category: C. SECURITY ENGINEERING
Category-Sub: 1. SECURITY ENGINEERING
Cost Center: 2100-3774.000 - SECURITY ENGINEERING

RAMP Item # 1

Ref ID: MEHLERS20161115135230410

RAMP Chapter: SDG&E-7

Program Name: Cyber Security (Labor)

Program Description: SECURITY ENGINEERING

Risk/Mitigation:

Risk: Cyber Security Risk

Mitigation: See Subsidiary Workpaper

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC

Forecast Method: Trend

Work Type: Non-Mandated

Work Type Citation: See Subsidiary Workpaper

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 0

Explanation: 0

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
Witness: Gavin H. Worden
Category: C. SECURITY ENGINEERING
Category-Sub: 1. SECURITY ENGINEERING
Cost Center: 2100-3774.000 - SECURITY ENGINEERING

RAMP Item # 2

Ref ID: MEHLERS20161130084543817

RAMP Chapter: SDG&E-7

Program Name: Cyber Security - (Non Labor)

Program Description: SECURITY ENGINEERING

Risk/Mitigation:

Risk: Cyber Security Risk

Mitigation: See Subsidiary Workpaper

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC

Forecast Method: Trend

Work Type: Non-Mandated

Work Type Citation: See Subsidiary Workpaper

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 1174

Explanation: 0

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
Witness: Gavin H. Worden
Category: C. SECURITY ENGINEERING
Category-Sub: 1. SECURITY ENGINEERING
Cost Center: 2100-3774.000 - SECURITY ENGINEERING

RAMP Item # 3

Ref ID: MEHLERS20170303091756930

RAMP Chapter: SDG&E-7

Program Name: Cyber Security

Program Description: SECURITY ENGINEERING

Risk/Mitigation:

Risk: Cyber Security Risk

Mitigation: See Subsidiary Workpaper

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC

Forecast Method: Base Year

Work Type: Non-Mandated

Work Type Citation: See Subsidiary Workpaper

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 993

Explanation: 0

Supplemental Workpapers for Workpaper 2100-3774.000

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

		Cost Center O&M by Mitigation (000s)																		
Company	Cost Center	L/NL	2017					2018					2019							
			Identify	Protect	Detect	Respond	Recover	Total	Identify	Protect	Detect	Respond	Recover	Total	Identify	Protect	Detect	Respond	Recover	Total
2100	2100-3101	Labor	182	540	17	118	10	868	182	540	17	118	10	868	182	540	17	118	10	868
2100	2100-3101	Non-Labor	30	38	2	19	0	89	30	38	2	19	0	89	30	38	2	19	0	89
2100	2100-3101 Total		212	578	19	138	10	957	212	578	19	138	10	957	212	578	19	138	10	957
2100	2100-3763	Labor	89	72	16	98	6	282	89	72	16	98	6	282	89	72	16	98	6	282
2100	2100-3763	Non-Labor	32	15	5	32	1	85	32	15	5	32	1	85	32	15	5	32	1	85
2100	2100-3763 Total		122	87	21	130	7	367	122	87	21	130	7	367	122	87	21	130	7	367
2100	2100-3774	Labor	153	793	38	44	3	1,031	162	838	40	46	3	1,089	162	838	40	46	3	1,089
2100	2100-3774	Non-Labor	114	220	4	6	0	344	114	220	4	6	0	344	114	220	4	6	0	344
2100	2100-3774 Total		267	1,013	42	50	3	1,375	276	1,058	44	52	3	1,433	276	1,058	44	52	3	1,433
2100	2100-3775	Labor	218	458	733	229	6	1,643	225	474	758	237	7	1,701	225	474	758	237	7	1,701
2100	2100-3775	Non-Labor	8	22	16	10	1	56	8	22	16	10	1	56	8	22	16	10	1	56
2100	2100-3775 Total		226	480	748	238	7	1,699	233	496	774	247	7	1,757	233	496	774	247	7	1,757
2100	2100-3781	Non-Labor	405	945	540	810	0	2,700	428	998	570	855	0	2,850	506	1,180	674	1,011	0	3,370
2100	2100-3781 Total		405	945	540	810	0	2,700	428	998	570	855	0	2,850	506	1,180	674	1,011	0	3,370
2100	2100-3976	Labor	5	4	1	6	0	16	5	4	1	6	0	16	5	4	1	6	0	16
2100	2100-3976	Non-Labor	2	1	0	2	0	6	2	1	0	2	0	6	2	1	0	2	0	6
2100	2100-3976 Total		7	5	1	8	0	22	7	5	1	8	0	22	7	5	1	8	0	22
2100 Total	Labor		648	1,868	805	494	25	3,840	664	1,929	833	505	25	3,956	664	1,929	833	505	25	3,956
2100 Total	Non-Labor		592	1,240	567	879	2	3,280	614	1,293	597	924	2	3,430	692	1,475	701	1,080	2	3,950
2100 Total	Total		1,239	3,108	1,372	1,373	28	7,120	1,278	3,221	1,430	1,429	28	7,386	1,356	3,403	1,534	1,585	28	7,906
2200	2200-2469	Labor	19	301	0	12	0	332	19	301	0	12	0	332	19	301	0	12	0	332
2200	2200-2469	Non-Labor	146	228	1	1	0	377	146	228	1	1	0	377	146	228	1	1	0	377
2200	2200-2469 Total		166	530	1	13	0	709	166	530	1	13	0	709	166	530	1	13	0	709
2200 Total	Labor		19	301	0	12	0	332	19	301	0	12	0	332	19	301	0	12	0	332
2200 Total	Non-Labor		146	228	1	1	0	377	146	228	1	1	0	377	146	228	1	1	0	377
2200 Total	Total		166	530	1	13	0	709	166	530	1	13	0	709	166	530	1	13	0	709
Grand Total	Labor		667	2,169	805	506	25	4,172	683	2,230	833	516	25	4,288	683	2,230	833	516	25	4,288
Grand Total	Non-Labor		738	1,468	567	881	2	3,657	760	1,521	597	926	2	3,807	838	1,703	701	1,082	2	4,327
Grand Total	Total		1,405	3,637	1,373	1,386	28	7,829	1,444	3,751	1,431	1,442	28	8,095	1,522	3,933	1,535	1,598	28	8,615

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
Witness: Gavin H. Worden
Category: D. SECURITY OPERATIONS
Cost Center: 2100-3775.000

Summary for Category: D. SECURITY OPERATIONS

	In 2016\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
Labor	1,585	1,642	1,700	1,700
Non-Labor	56	56	56	56
NSE	0	0	0	0
Total	<u>1,641</u>	<u>1,698</u>	<u>1,756</u>	<u>1,756</u>
FTE	14.5	15.0	15.5	15.5

Cost Centers belonging to this Category:

2100-3775.000 SECURITY OPERATIONS

Labor	1,585	1,642	1,700	1,700
Non-Labor	56	56	56	56
NSE	0	0	0	0
Total	<u>1,641</u>	<u>1,698</u>	<u>1,756</u>	<u>1,756</u>
FTE	14.5	15.0	15.5	15.5

Note: Totals may include rounding differences.

Beginning of Workpaper
2100-3775.000 - SECURITY OPERATIONS

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: D. SECURITY OPERATIONS
 Category-Sub: 1. SECURITY OPERATIONS
 Cost Center: 2100-3775.000 - SECURITY OPERATIONS

Activity Description:

This cost center provides enterprise system-wide security operations support, including incident response & forensics, digital investigations, threat and vulnerability management.

Forecast Explanations:

Labor - Base YR Rec

This method is most appropriate because the base year most accurately represents the current state of the IT workpapers. 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 IT department to another.

Non-Labor - Base YR Rec

This method is most appropriate because the base year most accurately represents the current state of the IT workpapers. 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 IT department to another.

NSE - Base YR Rec

N/A

Summary of Results:

		In 2016\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2012	2013	2014	2015	2016	2017	2018	2019	
Labor		1,435	1,173	1,396	1,562	1,585	1,643	1,701	1,701	
Non-Labor		535	330	316	153	56	56	56	56	
NSE		0	0	0	0	0	0	0	0	
Total		1,970	1,503	1,712	1,715	1,642	1,699	1,757	1,757	
FTE		13.6	11.1	13.3	15.5	14.5	15.0	15.5	15.5	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: D. SECURITY OPERATIONS
 Category-Sub: 1. SECURITY OPERATIONS
 Cost Center: 2100-3775.000 - SECURITY OPERATIONS

Cost Center Allocations (Incurred Costs):

	2016 Adjusted-Recorded					2017 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	41	1	0	42	0.0	41	1	0	42	0.0
Directly Allocated	0	0	0	0	0.0	0	0	0	0	0.0
Subj. To % Alloc.	1,545	55	0	1,600	14.5	1,602	55	0	1,657	15.0
Total Incurred	1,586	56	0	1,642	14.5	1,643	56	0	1,699	15.0
% Allocation										
Retained	34.50%	34.50%				36.42%	36.42%			
SEU	61.91%	61.91%				59.94%	59.94%			
CORP	3.59%	3.59%				3.64%	3.64%			
Unreg	0.00%	0.00%				0.00%	0.00%			

	2018 Adjusted-Forecast					2019 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	41	1	0	42	0.0	41	1	0	42	0.0
Directly Allocated	0	0	0	0	0.0	0	0	0	0	0.0
Subj. To % Alloc.	1,660	55	0	1,715	15.5	1,660	55	0	1,715	15.5
Total Incurred	1,701	56	0	1,757	15.5	1,701	56	0	1,757	15.5
% Allocation										
Retained	36.42%	36.42%				36.42%	36.42%			
SEU	59.94%	59.94%				59.94%	59.94%			
CORP	3.64%	3.64%				3.64%	3.64%			
Unreg	0.00%	0.00%				0.00%	0.00%			

Cost Center Allocation Percentage Drivers/Methodology:

Cost Center Allocation Percentage for 2016

Cost center shared service allocations based on LAN ID s.

Cost Center Allocation Percentage for 2017

Cost center shared service allocations based on LAN ID s - Revisd for 2017 allocations.

Cost Center Allocation Percentage for 2018

Cost center shared service allocations based on LAN ID s - Revisd for 2017 allocations.

Cost Center Allocation Percentage for 2019

Cost center shared service allocations based on LAN ID s - Revisd for 2017 allocations.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: D. SECURITY OPERATIONS
 Category-Sub: 1. SECURITY OPERATIONS
 Cost Center: 2100-3775.000 - SECURITY OPERATIONS

Summary of Adjustments to Forecast:

In 2016 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2017	2018	2019	2017	2018	2019	2017	2018	2019
Labor	Base YR Rec	1,585	1,585	1,585	57	115	115	1,642	1,700	1,700
Non-Labor	Base YR Rec	56	56	56	0	0	0	56	56	56
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		1,642	1,642	1,642	57	115	115	1,699	1,757	1,757
FTE	Base YR Rec	14.5	14.5	14.5	0.5	1.0	1.0	15.0	15.5	15.5

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID	
2017	RAMP Incremental	57	0	0	57	0.5	1-Sided Adj	MEHLERS20161116085930330	
Explanation:		RAMP - Cyber Security (RAMP Chapter 07) Addition of new resource (Infrastructure Tech partial year)							
2017 Total		57	0	0	57	0.5			
2018	RAMP Incremental	115	0	0	115	1.0	1-Sided Adj	MEHLERS20161130091220783	
Explanation:		RAMP - Cyber Security (RAMP Chapter 07) Addition of new resource.							
2018 Total		115	0	0	115	1.0			
2019	RAMP Incremental	115	0	0	115	1.0	1-Sided Adj	MEHLERS20161130091232797	
Explanation:		RAMP - Cyber Security (RAMP Chapter 07) Addition of new resource.							
2019 Total		115	0	0	115	1.0			

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
Witness: Gavin H. Worden
Category: D. SECURITY OPERATIONS
Category-Sub: 1. SECURITY OPERATIONS
Cost Center: 2100-3775.000 - SECURITY OPERATIONS

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	1,360	963	1,164	1,331	1,360
Non-Labor	509	313	305	150	56
NSE	0	0	0	0	0
Total	1,870	1,276	1,470	1,482	1,416
FTE	13.7	9.4	11.3	13.2	12.3
Adjustments (Nominal \$) **					
Labor	-190	0	0	0	0
Non-Labor	-9	0	0	0	0
NSE	0	0	0	0	0
Total	-199	0	0	0	0
FTE	-2.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	1,170	963	1,164	1,331	1,360
Non-Labor	500	313	305	150	56
NSE	0	0	0	0	0
Total	1,671	1,276	1,470	1,482	1,416
FTE	11.7	9.4	11.3	13.2	12.3
Vacation & Sick (Nominal \$)					
Labor	170	153	186	206	226
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	170	153	186	206	226
FTE	1.9	1.6	2.0	2.3	2.2
Escalation to 2016\$					
Labor	95	58	46	25	0
Non-Labor	35	16	10	2	0
NSE	0	0	0	0	0
Total	130	74	57	28	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	1,435	1,173	1,396	1,562	1,585
Non-Labor	535	330	316	153	56
NSE	0	0	0	0	0
Total	1,970	1,503	1,712	1,715	1,642
FTE	13.6	11.0	13.3	15.5	14.5

* 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
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: D. SECURITY OPERATIONS
 Category-Sub: 1. SECURITY OPERATIONS
 Cost Center: 2100-3775.000 - SECURITY OPERATIONS

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	-190	0	0	0	0
Non-Labor	-9	0	0	0	0
NSE	0	0	0	0	0
Total	-199	0	0	0	0
FTE	-2.0	0.0	0.0	0.0	0.0

Detail of Adjustments to Recorded:

Year	Adj Group	Labor	NLbr	NSE	FTE	Adj Type	RefID
2012	Other	-190	-9	0	-2.0	CCTR Transf To 2200-2469.000	MEHLERS20170223155412793

Explanation: Employee transfer from SDG&E to SCG (2200-2469)

2012 Total	-190	-9	0	-2.0
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2013 Total	0	0	0	0.0
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2014 Total	0	0	0	0.0
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2015 Total	0	0	0	0.0
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2016 Total	0	0	0	0.0
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Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
Witness: Gavin H. Worden
Category: D. SECURITY OPERATIONS
Category-Sub: 1. SECURITY OPERATIONS
Cost Center: 2100-3775.000 - SECURITY OPERATIONS

RAMP Item # 1

Ref ID: MEHLERS20161116085930330

RAMP Chapter: SDG&E-7

Program Name: Cyber Security - (Labor)

Program Description: SECURITY OPERATIONS

Risk/Mitigation:

Risk: Cyber Security

Mitigation: See Subsidiary Workpaper

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC

Forecast Method: Trend

Work Type: Non-Mandated

Work Type Citation: See Subsidiary Workpaper

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 0

Explanation: 0

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
Witness: Gavin H. Worden
Category: D. SECURITY OPERATIONS
Category-Sub: 1. SECURITY OPERATIONS
Cost Center: 2100-3775.000 - SECURITY OPERATIONS

RAMP Item # 2

Ref ID: MEHLERS20170303093536050

RAMP Chapter: SDG&E-7

Program Name: Cyber Security

Program Description: SECURITY OPERATIONS

Risk/Mitigation:

Risk: Cyber Security

Mitigation: See Subsidiary Work Paper

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC

Forecast Method: Average

Work Type: Non-Mandated

Work Type Citation: See Subsidiary Workpaper

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 1642

Explanation: 0

Supplemental Workpapers for Workpaper 2100-3775.000

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

		Cost Center O&M by Mitigation (000s)																		
Company	Cost Center	L/NL	2017					2018					2019							
			Identify	Protect	Detect	Respond	Recover	Total	Identify	Protect	Detect	Respond	Recover	Total	Identify	Protect	Detect	Respond	Recover	Total
2100	2100-3101	Labor	182	540	17	118	10	868	182	540	17	118	10	868	182	540	17	118	10	868
2100	2100-3101	Non-Labor	30	38	2	19	0	89	30	38	2	19	0	89	30	38	2	19	0	89
2100	2100-3101 Total		212	578	19	138	10	957	212	578	19	138	10	957	212	578	19	138	10	957
2100	2100-3763	Labor	89	72	16	98	6	282	89	72	16	98	6	282	89	72	16	98	6	282
2100	2100-3763	Non-Labor	32	15	5	32	1	85	32	15	5	32	1	85	32	15	5	32	1	85
2100	2100-3763 Total		122	87	21	130	7	367	122	87	21	130	7	367	122	87	21	130	7	367
2100	2100-3774	Labor	153	793	38	44	3	1,031	162	838	40	46	3	1,089	162	838	40	46	3	1,089
2100	2100-3774	Non-Labor	114	220	4	6	0	344	114	220	4	6	0	344	114	220	4	6	0	344
2100	2100-3774 Total		267	1,013	42	50	3	1,375	276	1,058	44	52	3	1,433	276	1,058	44	52	3	1,433
2100	2100-3775	Labor	218	458	733	229	6	1,643	225	474	758	237	7	1,701	225	474	758	237	7	1,701
2100	2100-3775	Non-Labor	8	22	16	10	1	56	8	22	16	10	1	56	8	22	16	10	1	56
2100	2100-3775 Total		226	480	748	238	7	1,699	233	496	774	247	7	1,757	233	496	774	247	7	1,757
2100	2100-3781	Non-Labor	405	945	540	810	0	2,700	428	998	570	855	0	2,850	506	1,180	674	1,011	0	3,370
2100	2100-3781 Total		405	945	540	810	0	2,700	428	998	570	855	0	2,850	506	1,180	674	1,011	0	3,370
2100	2100-3976	Labor	5	4	1	6	0	16	5	4	1	6	0	16	5	4	1	6	0	16
2100	2100-3976	Non-Labor	2	1	0	2	0	6	2	1	0	2	0	6	2	1	0	2	0	6
2100	2100-3976 Total		7	5	1	8	0	22	7	5	1	8	0	22	7	5	1	8	0	22
2100 Total	Labor		648	1,868	805	494	25	3,840	664	1,929	833	505	25	3,956	664	1,929	833	505	25	3,956
2100 Total	Non-Labor		592	1,240	567	879	2	3,280	614	1,293	597	924	2	3,430	692	1,475	701	1,080	2	3,950
2100 Total	Total		1,239	3,108	1,372	1,373	28	7,120	1,278	3,221	1,430	1,429	28	7,386	1,356	3,403	1,534	1,585	28	7,906
2200	2200-2469	Labor	19	301	0	12	0	332	19	301	0	12	0	332	19	301	0	12	0	332
2200	2200-2469	Non-Labor	146	228	1	1	0	377	146	228	1	1	0	377	146	228	1	1	0	377
2200	2200-2469 Total		166	530	1	13	0	709	166	530	1	13	0	709	166	530	1	13	0	709
2200 Total	Labor		19	301	0	12	0	332	19	301	0	12	0	332	19	301	0	12	0	332
2200 Total	Non-Labor		146	228	1	1	0	377	146	228	1	1	0	377	146	228	1	1	0	377
2200 Total	Total		166	530	1	13	0	709	166	530	1	13	0	709	166	530	1	13	0	709
Grand Total	Labor		667	2,169	805	506	25	4,172	683	2,230	833	516	25	4,288	683	2,230	833	516	25	4,288
Grand Total	Non-Labor		738	1,468	567	881	2	3,657	760	1,521	597	926	2	3,807	838	1,703	701	1,082	2	4,327
Grand Total	Total		1,405	3,637	1,373	1,386	28	7,829	1,444	3,751	1,431	1,442	28	8,095	1,522	3,933	1,535	1,598	28	8,615

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: E. SECURITY CONTRACTS
 Cost Center: 2100-3781.000

Summary for Category: E. SECURITY CONTRACTS

	In 2016\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
Labor	0	0	0	0
Non-Labor	0	0	0	0
NSE	2,587	2,700	2,850	3,370
Total	2,587	2,700	2,850	3,370
FTE	0.0	0.0	0.0	0.0

Cost Centers belonging to this Category:

2100-3781.000 CRITICAL INFRASTRUCTURE PROTECTION

Labor	0	0	0	0
Non-Labor	0	0	0	0
NSE	2,587	2,700	2,850	3,370
Total	2,587	2,700	2,850	3,370
FTE	0.0	0.0	0.0	0.0

Note: Totals may include rounding differences.

Beginning of Workpaper
2100-3781.000 - CRITICAL INFRASTRUCTURE PROTECTION

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: E. SECURITY CONTRACTS
 Category-Sub: 1. SECURITY CONTRACTS
 Cost Center: 2100-3781.000 - CRITICAL INFRASTRUCTURE PROTECTION

Activity Description:

This cost center contains all IT Security Contracts, including system-wide hardware and software maintenance agreements.

Forecast Explanations:

Labor - Zero-Based

N/A

Non-Labor - Zero-Based

This method is most appropriate because the base year most accurately represents the current state of the IT workpapers. 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 IT department to another.

NSE - Zero-Based

N/A

Summary of Results:

		In 2016\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2012	2013	2014	2015	2016	2017	2018	2019	
Labor		0	0	0	0	0	0	0	0	
Non-Labor		0	0	0	0	0	0	0	0	
NSE		873	534	500	1,663	2,587	2,700	2,850	3,370	
Total		873	534	500	1,663	2,587	2,700	2,850	3,370	
FTE		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: E. SECURITY CONTRACTS
 Category-Sub: 1. SECURITY CONTRACTS
 Cost Center: 2100-3781.000 - CRITICAL INFRASTRUCTURE PROTECTION

Cost Center Allocations (Incurred Costs):

	2016 Adjusted-Recorded					2017 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	0	0	0	0	0.0	0	0	0	0	0.0
Directly Allocated	0	0	0	0	0.0	0	0	0	0	0.0
Subj. To % Alloc.	0	0	2,587	2,587	0.0	0	0	2,700	2,700	0.0
Total Incurred	0	0	2,587	2,587	0.0	0	0	2,700	2,700	0.0
% Allocation										
Retained	34.50%	34.50%				36.42%	36.42%			
SEU	61.91%	61.91%				59.94%	59.94%			
CORP	3.59%	3.59%				3.64%	3.64%			
Unreg	0.00%	0.00%				0.00%	0.00%			

	2018 Adjusted-Forecast					2019 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	0	0	0	0	0.0	0	0	0	0	0.0
Directly Allocated	0	0	0	0	0.0	0	0	0	0	0.0
Subj. To % Alloc.	0	0	2,850	2,850	0.0	0	0	3,370	3,370	0.0
Total Incurred	0	0	2,850	2,850	0.0	0	0	3,370	3,370	0.0
% Allocation										
Retained	36.42%	36.42%				36.42%	36.42%			
SEU	59.94%	59.94%				59.94%	59.94%			
CORP	3.64%	3.64%				3.64%	3.64%			
Unreg	0.00%	0.00%				0.00%	0.00%			

Cost Center Allocation Percentage Drivers/Methodology:

Cost Center Allocation Percentage for 2016

Cost center shared service allocations based on LAN ID s.

Cost Center Allocation Percentage for 2017

Cost center shared service allocations based on LAN ID s - Revisd for 2017 allocations.

Cost Center Allocation Percentage for 2018

Cost center shared service allocations based on LAN ID s - Revisd for 2017 allocations.

Cost Center Allocation Percentage for 2019

Cost center shared service allocations based on LAN ID s - Revisd for 2017 allocations..

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: E. SECURITY CONTRACTS
 Category-Sub: 1. SECURITY CONTRACTS
 Cost Center: 2100-3781.000 - CRITICAL INFRASTRUCTURE PROTECTION

Summary of Adjustments to Forecast:

In 2016 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2017	2018	2019	2017	2018	2019	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	0	0	0
Non-Labor	Zero-Based	0	0	0	0	0	0	0	0	0
NSE	Zero-Based	0	0	0	2,700	2,850	3,370	2,700	2,850	3,370
Total		0	0	0	2,700	2,850	3,370	2,700	2,850	3,370
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID	
2017	RAMP Incremental	0	0	2,700	2,700	0.0	1-Sided Adj	MEHLERS20161115091449130	
Explanation:		RAMP - Cyber Security (RAMP Chapter 07) 2017 Forecast							
2017 Total		0	0	2,700	2,700	0.0			
2018	RAMP Incremental	0	0	2,850	2,850	0.0	1-Sided Adj	MEHLERS20161115091508933	
Explanation:		RAMP - Cyber Security (RAMP Chapter 07) 2018 forecast							
2018 Total		0	0	2,850	2,850	0.0			
2019	RAMP Incremental	0	0	2,950	2,950	0.0	1-Sided Adj	MEHLERS20161115091537840	
Explanation:		RAMP - Cyber Security (RAMP Chapter 07) 2019 forecast							
2019	RAMP Incremental	0	0	420	420	0.0	1-Sided Adj	MEHLERS20170309165836007	
Explanation:		RAMP - Cyber Security (RAMP Chapter 07) Incremental maintenance costs associated with Grid Modernization capital projects.							
2019 Total		0	0	3,370	3,370	0.0			

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: E. SECURITY CONTRACTS
 Category-Sub: 1. SECURITY CONTRACTS
 Cost Center: 2100-3781.000 - CRITICAL INFRASTRUCTURE PROTECTION

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	0	0	0	0	0
Non-Labor	816	507	483	1,637	2,587
NSE	0	0	0	0	0
Total	816	507	483	1,637	2,587
FTE	0.0	0.0	0.0	0.0	0.0
Adjustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	-816	-507	-483	-1,637	-2,587
NSE	816	507	483	1,637	2,587
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	816	507	483	1,637	2,587
Total	816	507	483	1,637	2,587
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 2016\$					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	58	26	16	27	0
Total	58	26	16	27	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	873	534	500	1,663	2,587
Total	873	534	500	1,663	2,587
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
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: E. SECURITY CONTRACTS
 Category-Sub: 1. SECURITY CONTRACTS
 Cost Center: 2100-3781.000 - CRITICAL INFRASTRUCTURE PROTECTION

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	0	0	0	0	0
Non-Labor	-816	-507	-483	-1,637	-2,587
NSE	816	507	483	1,637	2,587
Total	0	0	0	0	0.056
FTE	0.0	0.0	0.0	0.0	0.0

Detail of Adjustments to Recorded:

Year	Adj Group	Labor	NLbr	NSE	FTE	Adj Type	RefID
2012	Other	0	-816	816	0.0	1-Sided Adj	MEHLERS20161115091139840
Explanation:		Adjust NL to NSE					
2012 Total		0	-816	816	0.0		
2013	Other	0	-507	507	0.0	1-Sided Adj	MEHLERS20161115091116480
Explanation:		Adjust NL to NSE					
2013 Total		0	-507	507	0.0		
2014	Other	0	-483	483	0.0	1-Sided Adj	MEHLERS20161115091047590
Explanation:		Adjust NL to NSE					
2014 Total		0	-483	483	0.0		
2015	Other	0	-1,637	1,637	0.0	1-Sided Adj	MEHLERS20161115090949917
Explanation:		Adjust NL to NSE					
2015 Total		0	-1,637	1,637	0.0		
2016	Other	0	-2,587	2,587	0.0	1-Sided Adj	MEHLERS20161115090921290
Explanation:		Adjust NL to NSE					
2016	Other	0	0	0	0.0	1-Sided Adj	MEHLERS20170222082253767
Explanation:		Adjust out charging error					

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
Witness: Gavin H. Worden
Category: E. SECURITY CONTRACTS
Category-Sub: 1. SECURITY CONTRACTS
Cost Center: 2100-3781.000 - CRITICAL INFRASTRUCTURE PROTECTION

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>RefID</u>
2016 Total		0	-2,587	2,587	0.0		

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
Witness: Gavin H. Worden
Category: E. SECURITY CONTRACTS
Category-Sub: 1. SECURITY CONTRACTS
Cost Center: 2100-3781.000 - CRITICAL INFRASTRUCTURE PROTECTION

RAMP Item # 1

Ref ID: MEHLERS20161115091449130

RAMP Chapter: SDG&E-7

Program Name: Cyber Security - Contracts

Program Description: Security Contracts

Risk/Mitigation:

Risk: Cyber Security Risk

Mitigation: See Subsidiary Workpaper

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC

Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: See Subsidiary Workpaper

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 0

Explanation: 0

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
Witness: Gavin H. Worden
Category: E. SECURITY CONTRACTS
Category-Sub: 1. SECURITY CONTRACTS
Cost Center: 2100-3781.000 - CRITICAL INFRASTRUCTURE PROTECTION

RAMP Item # 2

Ref ID: TP1JMY20170801183359243

RAMP Chapter: SDG&E-7

Program Name: Cyber Security

Program Description: Security Contracts

Risk/Mitigation:

Risk: Cyber Security Risk

Mitigation: See Subsidiary Workpaper

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC

Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: See Subsidiary Workpaper

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 0

Explanation:

Supplemental Workpapers for Workpaper 2100-3781.000

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

		Cost Center O&M by Mitigation (000s)																				
Company	Cost Center	L/NL	2017					2018					2018					2019				
			Identify	Protect	Detect	Respond	Recover	Total	Identify	Protect	Detect	Respond	Recover	Total	Identify	Protect	Detect	Respond	Recover	Total		
2100	2100-3101	Labor	182	540	17	118	10	868	182	540	17	118	10	868	182	540	17	118	10	868		
2100	2100-3101	Non-Labor	30	38	2	19	0	89	30	38	2	19	0	89	30	38	2	19	0	89		
2100	2100-3101 Total		212	578	19	138	10	957	212	578	19	138	10	957	212	578	19	138	10	957		
2100	2100-3763	Labor	89	72	16	98	6	282	89	72	16	98	6	282	89	72	16	98	6	282		
2100	2100-3763	Non-Labor	32	15	5	32	1	85	32	15	5	32	1	85	32	15	5	32	1	85		
2100	2100-3763 Total		122	87	21	130	7	367	122	87	21	130	7	367	122	87	21	130	7	367		
2100	2100-3774	Labor	153	793	38	44	3	1,031	162	838	40	46	3	1,089	162	838	40	46	3	1,089		
2100	2100-3774	Non-Labor	114	220	4	6	0	344	114	220	4	6	0	344	114	220	4	6	0	344		
2100	2100-3774 Total		267	1,013	42	50	3	1,375	276	1,058	44	52	3	1,433	276	1,058	44	52	3	1,433		
2100	2100-3775	Labor	218	458	733	229	6	1,643	225	474	758	237	7	1,701	225	474	758	237	7	1,701		
2100	2100-3775	Non-Labor	8	22	16	10	1	56	8	22	16	10	1	56	8	22	16	10	1	56		
2100	2100-3775 Total		226	480	748	238	7	1,699	233	496	774	247	7	1,757	233	496	774	247	7	1,757		
2100	2100-3781	Non-Labor	405	945	540	810	0	2,700	428	998	570	855	0	2,850	506	1,180	674	1,011	0	3,370		
2100	2100-3781 Total		405	945	540	810	0	2,700	428	998	570	855	0	2,850	506	1,180	674	1,011	0	3,370		
2100	2100-3976	Labor	5	4	1	6	0	16	5	4	1	6	0	16	5	4	1	6	0	16		
2100	2100-3976	Non-Labor	2	1	0	2	0	6	2	1	0	2	0	6	2	1	0	2	0	6		
2100	2100-3976 Total		7	5	1	8	0	22	7	5	1	8	0	22	7	5	1	8	0	22		
2100 Total	Labor		648	1,868	805	494	25	3,840	664	1,929	833	505	25	3,956	664	1,929	833	505	25	3,956		
2100 Total	Non-Labor		592	1,240	567	879	2	3,280	614	1,293	597	924	2	3,430	692	1,475	701	1,080	2	3,950		
2100 Total	Total		1,239	3,108	1,372	1,373	28	7,120	1,278	3,221	1,430	1,429	28	7,386	1,356	3,403	1,534	1,585	28	7,906		
2200	2200-2469	Labor	19	301	0	12	0	332	19	301	0	12	0	332	19	301	0	12	0	332		
2200	2200-2469	Non-Labor	146	228	1	1	0	377	146	228	1	1	0	377	146	228	1	1	0	377		
2200	2200-2469 Total		166	530	1	13	0	709	166	530	1	13	0	709	166	530	1	13	0	709		
2200 Total	Labor		19	301	0	12	0	332	19	301	0	12	0	332	19	301	0	12	0	332		
2200 Total	Non-Labor		146	228	1	1	0	377	146	228	1	1	0	377	146	228	1	1	0	377		
2200 Total	Total		166	530	1	13	0	709	166	530	1	13	0	709	166	530	1	13	0	709		
Grand Total	Labor		667	2,169	805	506	25	4,172	683	2,230	833	516	25	4,288	683	2,230	833	516	25	4,288		
Grand Total	Non-Labor		738	1,468	567	881	2	3,657	760	1,521	597	926	2	3,807	838	1,703	701	1,082	2	4,327		
Grand Total	Total		1,405	3,637	1,373	1,386	28	7,829	1,444	3,751	1,431	1,442	28	8,095	1,522	3,933	1,535	1,598	28	8,615		

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: G. INFORMATION SECURITY PROGRAMS
 Cost Center: 2100-3976.000

Summary for Category: G. INFORMATION SECURITY PROGRAMS

	In 2016\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
Labor	16	16	16	16
Non-Labor	6	6	6	6
NSE	0	0	0	0
Total	<u>22</u>	<u>22</u>	<u>22</u>	<u>22</u>
FTE	0.1	0.1	0.1	0.1

Cost Centers belonging to this Category:

2100-3976.000 INFORMATION SECURITY PROGRAMS

Labor	16	16	16	16
Non-Labor	6	6	6	6
NSE	0	0	0	0
Total	<u>22</u>	<u>22</u>	<u>22</u>	<u>22</u>
FTE	0.1	0.1	0.1	0.1

Note: Totals may include rounding differences.

Beginning of Workpaper
2100-3976.000 - INFORMATION SECURITY PROGRAMS

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: G. INFORMATION SECURITY PROGRAMS
 Category-Sub: 1. INFORMATION SECURITY PROGRAMS
 Cost Center: 2100-3976.000 - INFORMATION SECURITY PROGRAMS

Activity Description:

This cost center contains provides support for the Information Security portfolio of capital projects and maintenance contracts.

Forecast Explanations:

Labor - Base YR Rec

This method is most appropriate because the base year most accurately represents the current state of the IT workpapers. 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 IT department to another.

Non-Labor - Base YR Rec

This method is most appropriate because the base year most accurately represents the current state of the IT workpapers. 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 IT department to another.

NSE - Base YR Rec

N/A

Summary of Results:

		In 2016\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2012	2013	2014	2015	2016	2017	2018	2019	
Labor		53	19	12	11	16	16	16	16	
Non-Labor		6	0	3	3	6	6	6	6	
NSE		0	0	0	0	0	0	0	0	
Total		59	20	15	13	22	22	22	22	
FTE		0.5	0.1	-0.1	-0.1	0.1	0.1	0.1	0.1	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: G. INFORMATION SECURITY PROGRAMS
 Category-Sub: 1. INFORMATION SECURITY PROGRAMS
 Cost Center: 2100-3976.000 - INFORMATION SECURITY PROGRAMS

Cost Center Allocations (Incurred Costs):

	2016 Adjusted-Recorded					2017 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	0	0	0	0	0.0	0	0	0	0	0.0
Directly Allocated	0	0	0	0	0.0	0	0	0	0	0.0
Subj. To % Alloc.	16	6	0	22	0.1	16	6	0	22	0.1
Total Incurred	16	6	0	22	0.1	16	6	0	22	0.1
% Allocation										
Retained	34.50%	34.50%				36.42%	36.42%			
SEU	61.91%	61.91%				59.94%	59.94%			
CORP	3.59%	3.59%				3.64%	3.64%			
Unreg	0.00%	0.00%				0.00%	0.00%			

	2018 Adjusted-Forecast					2019 Adjusted-Forecast				
	Labor	Non-Labor	NSE	Total	FTE	Labor	Non-Labor	NSE	Total	FTE
Directly Retained	0	0	0	0	0.0	0	0	0	0	0.0
Directly Allocated	0	0	0	0	0.0	0	0	0	0	0.0
Subj. To % Alloc.	16	6	0	22	0.1	16	6	0	22	0.1
Total Incurred	16	6	0	22	0.1	16	6	0	22	0.1
% Allocation										
Retained	36.42%	36.42%				36.42%	36.42%			
SEU	59.94%	59.94%				59.94%	59.94%			
CORP	3.64%	3.64%				3.64%	3.64%			
Unreg	0.00%	0.00%				0.00%	0.00%			

Cost Center Allocation Percentage Drivers/Methodology:

Cost Center Allocation Percentage for 2016

Cost center shared service allocations based on LAN ID s.

Cost Center Allocation Percentage for 2017

Cost center shared service allocations based on LAN ID s. Updated for 2017.

Cost Center Allocation Percentage for 2018

Cost center shared service allocations based on LAN ID s. Updated for 2017.

Cost Center Allocation Percentage for 2019

Cost center shared service allocations based on LAN ID s. Updated for 2017.

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: G. INFORMATION SECURITY PROGRAMS
 Category-Sub: 1. INFORMATION SECURITY PROGRAMS
 Cost Center: 2100-3976.000 - INFORMATION SECURITY PROGRAMS

Summary of Adjustments to Forecast:

In 2016 \$(000) Incurred Costs										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2017	2018	2019	2017	2018	2019	2017	2018	2019
Labor	Base YR Rec	16	16	16	0	0	0	16	16	16
Non-Labor	Base YR Rec	6	6	6	0	0	0	6	6	6
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		22	22	22	0	0	0	22	22	22
FTE	Base YR Rec	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1

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

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
Witness: Gavin H. Worden
Category: G. INFORMATION SECURITY PROGRAMS
Category-Sub: 1. INFORMATION SECURITY PROGRAMS
Cost Center: 2100-3976.000 - INFORMATION SECURITY PROGRAMS

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	0	0	0	0	14
Non-Labor	0	0	0	0	6
NSE	0	0	0	0	0
Total	0	0	0	0	20
FTE	0.0	0.0	0.0	0.0	0.1
Adjustments (Nominal \$) **					
Labor	43	16	10	9	0
Non-Labor	5	0	3	3	0
NSE	0	0	0	0	0
Total	48	16	13	12	0
FTE	0.4	0.1	-0.1	-0.1	0.0
Recorded-Adjusted (Nominal \$)					
Labor	43	16	10	9	14
Non-Labor	5	0	3	3	6
NSE	0	0	0	0	0
Total	48	16	13	12	20
FTE	0.4	0.1	-0.1	-0.1	0.1
Vacation & Sick (Nominal \$)					
Labor	6	3	2	1	2
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	6	3	2	1	2
FTE	0.1	0.0	0.0	0.0	0.0
Escalation to 2016\$					
Labor	3	1	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	4	1	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	53	19	12	11	16
Non-Labor	6	0	3	3	6
NSE	0	0	0	0	0
Total	59	20	15	13	22
FTE	0.5	0.1	-0.1	-0.1	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
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
 Witness: Gavin H. Worden
 Category: G. INFORMATION SECURITY PROGRAMS
 Category-Sub: 1. INFORMATION SECURITY PROGRAMS
 Cost Center: 2100-3976.000 - INFORMATION SECURITY PROGRAMS

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	43	16	10	9	0
Non-Labor	5	0.332	3	3	0
NSE	0	0	0	0	0
Total	48	16	13	12	0
FTE	0.4	0.1	-0.1	-0.1	0.0

Detail of Adjustments to Recorded:

Year	Adj Group	Labor	NLbr	NSE	FTE	Adj Type	RefID
2012	Other	0	-2	0	0.0	CCTR Transf From 2100-3817.000	MEHLERS20161116090734323
Explanation: Transfer to new responsibility cost center 2100-3976							
2012	Other	-43	-4	0	-0.4	CCTR Transf From 2100-3817.000	MEHLERS20161116090759610
Explanation: Transfer to new responsibility cost center 2100-3976							
2012	Other	0	3	0	0.0	CCTR Transf From 2100-3817.000	MEHLERS20161116091057580
Explanation: Move historical costs to new responsibility cost center (2100-3976)							
2012	Other	86	8	0	0.8	CCTR Transf From 2100-3817.000	MEHLERS20161116091133437
Explanation: Move historical costs to new responsibility cost center (2100-3976)							
2012 Total		43	5	0	0.4		
2013	Other	16	0	0	0.1	CCTR Transf From 2100-3817.000	MEHLERS20161116091204283
Explanation: Move historical costs to new responsibility cost center (2100-3976)							
2013 Total		16	0	0	0.1		
2014	Other	10	3	0	-0.1	CCTR Transf From 2100-3763.000	MEHLERS20170223150155403
Explanation: Transfer labor and estimated misc non labor to new IS Programs cost center (2100-3976)							
2014 Total		10	3	0	-0.1		
2015	Other	9	3	0	-0.1	CCTR Transf From 2100-3763.000	MEHLERS20170223145817807
Explanation: Transfer labor and estimated misc non labor to new IS Programs cost center (2100-3976)							

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
Witness: Gavin H. Worden
Category: G. INFORMATION SECURITY PROGRAMS
Category-Sub: 1. INFORMATION SECURITY PROGRAMS
Cost Center: 2100-3976.000 - INFORMATION SECURITY PROGRAMS

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>FTE</u>	<u>Adj Type</u>	<u>RefID</u>
2015 Total		9	3	0	-0.1		
2016 Total		0	0	0	0.0		

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

Area: CYBER SECURITY
Witness: Gavin H. Worden
Category: G. INFORMATION SECURITY PROGRAMS
Category-Sub: 1. INFORMATION SECURITY PROGRAMS
Cost Center: 2100-3976.000 - INFORMATION SECURITY PROGRAMS

RAMP Item # 1

Ref ID: MEHLERS20170303104129873

RAMP Chapter: SDG&E-7

Program Name: Cyber Security

Program Description: Security Programs

Risk/Mitigation:

Risk: Cyber Security

Mitigation: See Subsidiary Workpaper

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	0	0	0
High	0	0	0

Funding Source: CPUC-GRC

Forecast Method: Trend

Work Type: Non-Mandated

Work Type Citation: See Subsidiary Workpaper

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 22

Explanation: 0

Supplemental Workpapers for Workpaper 2100-3976.000

San Diego Gas & Electric Company
2019 GRC - APP
Shared Services Workpapers

		Cost Center O&M by Mitigation (000s)																		
Company	Cost Center	L/NL	2017					2018					2019							
			Identify	Protect	Detect	Respond	Recover	Total	Identify	Protect	Detect	Respond	Recover	Total	Identify	Protect	Detect	Respond	Recover	Total
2100	2100-3101	Labor	182	540	17	118	10	868	182	540	17	118	10	868	182	540	17	118	10	868
2100	2100-3101	Non-Labor	30	38	2	19	0	89	30	38	2	19	0	89	30	38	2	19	0	89
2100	2100-3101 Total		212	578	19	138	10	957	212	578	19	138	10	957	212	578	19	138	10	957
2100	2100-3763	Labor	89	72	16	98	6	282	89	72	16	98	6	282	89	72	16	98	6	282
2100	2100-3763	Non-Labor	32	15	5	32	1	85	32	15	5	32	1	85	32	15	5	32	1	85
2100	2100-3763 Total		122	87	21	130	7	367	122	87	21	130	7	367	122	87	21	130	7	367
2100	2100-3774	Labor	153	793	38	44	3	1,031	162	838	40	46	3	1,089	162	838	40	46	3	1,089
2100	2100-3774	Non-Labor	114	220	4	6	0	344	114	220	4	6	0	344	114	220	4	6	0	344
2100	2100-3774 Total		267	1,013	42	50	3	1,375	276	1,058	44	52	3	1,433	276	1,058	44	52	3	1,433
2100	2100-3775	Labor	218	458	733	229	6	1,643	225	474	758	237	7	1,701	225	474	758	237	7	1,701
2100	2100-3775	Non-Labor	8	22	16	10	1	56	8	22	16	10	1	56	8	22	16	10	1	56
2100	2100-3775 Total		226	480	748	238	7	1,699	233	496	774	247	7	1,757	233	496	774	247	7	1,757
2100	2100-3781	Non-Labor	405	945	540	810	0	2,700	428	998	570	855	0	2,850	506	1,180	674	1,011	0	3,370
2100	2100-3781 Total		405	945	540	810	0	2,700	428	998	570	855	0	2,850	506	1,180	674	1,011	0	3,370
2100	2100-3976	Labor	5	4	1	6	0	16	5	4	1	6	0	16	5	4	1	6	0	16
2100	2100-3976	Non-Labor	2	1	0	2	0	6	2	1	0	2	0	6	2	1	0	2	0	6
2100	2100-3976 Total		7	5	1	8	0	22	7	5	1	8	0	22	7	5	1	8	0	22
2100 Total	Labor		648	1,868	805	494	25	3,840	664	1,929	833	505	25	3,956	664	1,929	833	505	25	3,956
2100 Total	Non-Labor		592	1,240	567	879	2	3,280	614	1,293	597	924	2	3,430	692	1,475	701	1,080	2	3,950
2100 Total	Total		1,239	3,108	1,372	1,373	28	7,120	1,278	3,221	1,430	1,429	28	7,386	1,356	3,403	1,534	1,585	28	7,906
2200	2200-2469	Labor	19	301	0	12	0	332	19	301	0	12	0	332	19	301	0	12	0	332
2200	2200-2469	Non-Labor	146	228	1	1	0	377	146	228	1	1	0	377	146	228	1	1	0	377
2200	2200-2469 Total		166	530	1	13	0	709	166	530	1	13	0	709	166	530	1	13	0	709
2200 Total	Labor		19	301	0	12	0	332	19	301	0	12	0	332	19	301	0	12	0	332
2200 Total	Non-Labor		146	228	1	1	0	377	146	228	1	1	0	377	146	228	1	1	0	377
2200 Total	Total		166	530	1	13	0	709	166	530	1	13	0	709	166	530	1	13	0	709
Grand Total	Labor		667	2,169	805	506	25	4,172	683	2,230	833	516	25	4,288	683	2,230	833	516	25	4,288
Grand Total	Non-Labor		738	1,468	567	881	2	3,657	760	1,521	597	926	2	3,807	838	1,703	701	1,082	2	4,327
Grand Total	Total		1,405	3,637	1,373	1,386	28	7,829	1,444	3,751	1,431	1,442	28	8,095	1,522	3,933	1,535	1,598	28	8,615