

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. 17-10-007

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

REVISED WORKPAPERS TO
PREPARED DIRECT TESTIMONY
OF GINA OROZCO-MEJIA
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

DECEMBER 2017



**2019 General Rate Case - REVISED
INDEX OF WORKPAPERS**

Exhibit SDG&E-04-WP-R - GAS DISTRIBUTION

DOCUMENT	PAGE
Overall Summary For Exhibit No. SDG&E-04-WP-R	1
<i>Summary of Non-Shared Services Workpapers</i>	2
Category: A. Field Operations & Maintenance	3
..1GD000.000 - FIELD O&M - OTHER SERVICES	5
..1GD000.001 - FIELD O&M - LEAK SURVEY	11
..1GD000.002 - FIELD O&M - LOCATE & MARK	19
..1GD000.003 - FIELD O&M - MAIN MAINTENANCE	27
..1GD000.004 - FIELD O&M - SERVICE MAINTENANCE	34
..1GD000.005 - FIELD O&M - TOOLS FITTINGS & MATERIALS	40
..1GD000.006 - FIELD O&M - ELECTRIC SUPPORT	46
..1GD000.007 - FIELD O&M - SUPERVISION & TRAINING	51
..1GD002.000 - MEASUREMENT & REGULATION	62
..1GD003.000 - CATHODIC PROTECTION	68
Category: B. Asset Management	75
..1GD001.000 - ASSET MANAGEMENT	76
Category: C. Operations Management & Training	90
..1GD004.000 - OPERATIONS MANAGEMENT & TRAINING	91
<i>Appendix A: List of Non-Shared Cost Centers</i>	107

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

Area:	GAS DISTRIBUTION
Witness:	Gina Orozco-Mejia

Description	In 2016 \$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
Non-Shared Services	25,778	26,058	28,400	29,533
Shared Services	0	0	0	0
Total	25,778	26,058	28,400	29,533

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
 2019 GRC - REVISED
 Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia

Summary of Non-Shared Services Workpapers:

Description	In 2016 \$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
A. Field Operations & Maintenance	20,120	20,357	21,666	22,854
B. Asset Management	1,719	1,864	2,204	2,169
C. Operations Management & Training	3,939	3,837	4,530	4,510
Total	25,778	26,058	28,400	29,533

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Workpaper: VARIOUS

Summary for Category: A. Field Operations & Maintenance

	In 2016\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
Labor	15,181	15,371	16,583	17,450
Non-Labor	4,940	4,988	5,084	5,405
NSE	0	0	0	0
Total	20,121	20,359	21,667	22,855
FTE	175.2	176.5	187.3	195.1

Workpapers belonging to this Category:

1GD000.000 Field O&M - Other Services

Labor	247	141	141	141
Non-Labor	116	61	61	61
NSE	0	0	0	0
Total	363	202	202	202
FTE	3.0	1.7	1.7	1.7

1GD000.001 Field O&M - Leak Survey

Labor	1,413	1,413	1,413	1,668
Non-Labor	159	159	159	174
NSE	0	0	0	0
Total	1,572	1,572	1,572	1,842
FTE	16.5	16.5	16.5	19.5

1GD000.002 Field O&M - Locate & Mark

Labor	1,587	1,521	1,708	1,745
Non-Labor	1,439	1,485	1,664	1,844
NSE	0	0	0	0
Total	3,026	3,006	3,372	3,589
FTE	17.6	16.9	18.6	18.8

1GD000.003 Field O&M - Main Maintenance

Labor	1,962	2,063	2,264	2,464
Non-Labor	1,003	1,009	872	958
NSE	0	0	0	0
Total	2,965	3,072	3,136	3,422
FTE	20.0	20.6	22.0	23.5

1GD000.004 Field O&M - Service Maintenance

Labor	1,477	1,511	1,602	1,693
Non-Labor	157	149	162	174
NSE	0	0	0	0
Total	1,634	1,660	1,764	1,867
FTE	15.7	15.5	16.0	16.6

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Workpaper: VARIOUS

	In 2016\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
1GD000.005 Field O&M - Tools Fittings & Materials				
Labor	367	433	433	433
Non-Labor	556	577	577	577
NSE	0	0	0	0
Total	923	1,010	1,010	1,010
FTE	4.5	5.6	5.6	5.6
1GD000.006 Field O&M - Electric Support				
Labor	278	267	267	267
Non-Labor	138	158	158	158
NSE	0	0	0	0
Total	416	425	425	425
FTE	2.9	3.1	3.1	3.1
1GD000.007 Field O&M - Supervision & Training				
Labor	3,192	3,192	3,517	3,655
Non-Labor	328	328	333	338
NSE	0	0	0	0
Total	3,520	3,520	3,850	3,993
FTE	38.0	38.0	41.1	42.4
1GD002.000 Measurement & Regulation				
Labor	3,047	3,049	3,167	3,313
Non-Labor	826	834	865	903
NSE	0	0	0	0
Total	3,873	3,883	4,032	4,216
FTE	36.1	35.7	36.8	38.0
1GD003.000 Cathodic Protection				
Labor	1,611	1,781	2,071	2,071
Non-Labor	218	228	233	218
NSE	0	0	0	0
Total	1,829	2,009	2,304	2,289
FTE	20.9	22.9	25.9	25.9

Note: Totals may include rounding differences.

Beginning of Workpaper
1GD000.000 - Field O&M - Other Services

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 1. Other Services
 Workpaper: 1GD000.000 - Field O&M - Other Services

Activity Description:

This group includes labor and non-labor expenses associated with support activities not captured in the other subgroups. Activities include inspection and repairing of customer's meters, house regulators and house lines, and providing patrolling and other support to Transmission facilities and pipelines.

Forecast Explanations:

Labor - 5-YR Average

This group captures the costs associated with support provided to a wide variety of activities not recorded in the other groups. Due to the wide range of activities included in this group, the costs fluctuate from year to year. Therefore, a five year average was selected to project future costs.

Non-Labor - 5-YR Average

This group captures the costs associated with support provided to a wide variety of activities not recorded in the other groups. Due to the wide range of activities included in this group, the costs fluctuate from year to year. Therefore, a five year average was selected to project future costs.

NSE - 5-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		92	103	129	136	247	142	142	142	
Non-Labor		42	72	31	44	116	61	61	61	
NSE		0	0	0	0	0	0	0	0	
Total		134	175	160	180	362	203	203	203	
FTE		1.0	1.3	1.6	1.3	3.1	1.6	1.6	1.6	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 1. Other Services
 Workpaper: 1GD000.000 - Field O&M - Other Services

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	5-YR Average	141	141	141	0	0	0	141	141	141
Non-Labor	5-YR Average	61	61	61	0	0	0	61	61	61
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		202	202	202	0	0	0	202	202	202
FTE	5-YR Average	1.7	1.7	1.7	0.0	0.0	0.0	1.7	1.7	1.7

<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.

SDG&E/GAS DISTRIBUTION/Exh No:SDG&E-04-WP-R/Witness: G. Orozco-Mejia

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 1. Other Services
Workpaper: 1GD000.000 - Field O&M - Other Services

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	73	83	106	112	212
Non-Labor	40	70	31	44	116
NSE	0	0	0	0	0
Total	114	153	137	155	327
FTE	0.9	1.1	1.3	1.1	2.6
Adjustments (Nominal \$) **					
Labor	0	0	0	3	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	3	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	73	83	106	115	212
Non-Labor	40	70	31	44	116
NSE	0	0	0	0	0
Total	114	153	137	159	327
FTE	0.9	1.1	1.3	1.1	2.6
Vacation & Sick (Nominal \$)					
Labor	11	13	17	18	35
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	11	13	17	18	35
FTE	0.1	0.2	0.2	0.2	0.5
Escalation to 2016\$					
Labor	8	7	6	3	0
Non-Labor	2	2	0	0	0
NSE	0	0	0	0	0
Total	9	8	6	3	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	92	103	129	136	247
Non-Labor	42	72	31	44	116
NSE	0	0	0	0	0
Total	134	175	160	180	362
FTE	1.0	1.3	1.5	1.3	3.1

* 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 - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 1. Other Services
 Workpaper: 1GD000.000 - Field O&M - Other Services

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	0	0	0	3	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	3	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	-189	0	0	-1.7	1-Sided Adj	ASUSTARI20161103133718767
Explanation:		Moving Gas Distribution District Operations Manager labor from 1GD000.000 (Other) to 1GD000.007 (Supervision & Training) - consistent with forecast.					
2012	Other	189	0	0	1.7	CCTR Transf From 2100-3665.000	CTRINH20161101131343830
Explanation:		Transfer Gas Distribution District Operations Manager labor from 1FC002.000 to 1GD000.007 in order to align historical costs with the workgroup in which the activity will be forecasted					
2012 Total		0	0	0	0.0		
2013	Other	-176	0	0	-1.6	1-Sided Adj	ASUSTARI20161103133951620
Explanation:		Moving Gas Distribution District Operations Manager labor from 1GD000.000 (Other) to 1GD000.007 (Supervision & Training) -consistent with forecast.					
2013	Other	176	0	0	1.6	CCTR Transf From 2100-3668.000	CTRINH20161101131512430
Explanation:		Transfer Gas Distribution District Operations Manager labor from 1FC002.000 to 1GD000.007 in order to align historical costs with the workgroup in which the activity will be forecasted.					
2013 Total		0	0	0	0.0		
2014 Total							
0 0 0 0.0							
2015	Other	3	0	0	0.0	1-Sided Adj	ASUSTARI20161028105243720
Explanation:		Dec 2015 My Time Missing Labor Accrual					
2015 Total		3	0	0	0.0		

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
 2019 GRC - REVISED
 Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 1. Other Services
 Workpaper: 1GD000.000 - Field O&M - Other Services

<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	0	0	0.0		

Note: Totals may include rounding differences.

Beginning of Workpaper
1GD000.001 - Field O&M - Leak Survey

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 2. Leak Survey
 Workpaper: 1GD000.001 - Field O&M - Leak Survey

Activity Description:

This group includes labor and non-labor expenses associated with surveying the SDG&E gas distribution system for leaks. This includes the following surveys: residential gas lines and meter set assemblies (MSAs); atmospheric corrosion (ACOR); business districts; transmission lines; area odor investigations; and highway and railroad crossings. Also included in this group are surveys from special requests such as slide areas and construction projects with blasting.

Forecast Explanations:

Labor - Base YR Rec

Labor and non-labor expenses increased from 2014 to 2016 due to increased overtime and addition of two leak patrollers in order to meet compliance requirements and increased customer area odor call-outs taking priority over routine work. Year 2016 was chosen as the base expense for future years as it best represents the new normal course of business. To this base are added incremental expenses in 2019 for the transfer of annual Aldyl-A pipe survey to routine O&M from DIMP. Incremental expenses are needed to meet business needs.

Non-Labor - Base YR Rec

Labor and non-labor expenses increased from 2014 to 2016 due to increased overtime and addition of two leak patrollers in order to meet compliance requirements and increased customer area odor call-outs taking priority over routine work. Year 2016 was chosen as the base expense for future years as it best represents the new normal course of business. To this base are added incremental expenses in 2019 for the transfer of annual Aldyl-A pipe survey to routine O&M from DIMP. Incremental expenses are needed to meet business needs.

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		1,314	1,148	1,129	1,289	1,413	1,412	1,412	1,667	
Non-Labor		197	169	138	172	159	158	158	173	
NSE		0	0	0	0	0	0	0	0	
Total		1,510	1,316	1,267	1,461	1,571	1,570	1,570	1,840	
FTE		17.3	15.1	14.0	15.8	16.4	16.5	16.5	19.5	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 2. Leak Survey
 Workpaper: 1GD000.001 - Field O&M - Leak Survey

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	1,413	1,413	1,413	0	0	255	1,413	1,413	1,668
Non-Labor	Base YR Rec	159	159	159	0	0	15	159	159	174
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		1,571	1,571	1,571	0	0	270	1,571	1,571	1,841
FTE	Base YR Rec	16.5	16.5	16.5	0.0	0.0	3.0	16.5	16.5	19.5

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID
2017 Total		0	0	0	0	0.0		
2018 Total		0	0	0	0	0.0		
2019	Other	255	15	0	270	3.0	1-Sided Adj	ASUSTARI20161130091016947
2019 Total		255	15	0	270	3.0		

Explanation: D. Three Leak Patrollers - to perform leak survey on high pressure pipelines bi-annually; and begin an annual Aldyl-A survey. (Total combined labor is 3 X \$85K= \$255K beginning in TY2019 and thereafter); Non-labor expense is 3 X 5K= \$15K total beginning in TY2019 and thereafter.

Note: Totals may include rounding differences.

SDG&E/GAS DISTRIBUTION/Exh No:SDG&E-04-WP-R/Witness: G. Orozco-Mejia

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 2. Leak Survey
Workpaper: 1GD000.001 - Field O&M - Leak Survey

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	1,028	716	722	1,020	1,181
Non-Labor	189	165	137	171	159
NSE	0	0	0	0	0
Total	1,217	881	859	1,191	1,340
FTE	14.6	10.1	9.4	12.6	13.6
Adjustments (Nominal \$) **					
Labor	22	210	208	71	31
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	22	210	208	71	31
FTE	0.3	2.7	2.5	0.8	0.3
Recorded-Adjusted (Nominal \$)					
Labor	1,050	926	930	1,091	1,212
Non-Labor	189	165	137	171	159
NSE	0	0	0	0	0
Total	1,239	1,091	1,067	1,262	1,370
FTE	14.9	12.8	11.9	13.4	13.9
Vacation & Sick (Nominal \$)					
Labor	152	147	149	168	201
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	152	147	149	168	201
FTE	2.4	2.2	2.1	2.3	2.5
Escalation to 2016\$					
Labor	111	74	51	30	0
Non-Labor	8	4	1	1	0
NSE	0	0	0	0	0
Total	119	78	52	31	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	1,314	1,148	1,129	1,289	1,413
Non-Labor	197	169	138	172	159
NSE	0	0	0	0	0
Total	1,510	1,316	1,267	1,461	1,571
FTE	17.3	15.0	14.0	15.7	16.4

* After company-wide exclusions of Non-GRC costs

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

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 2. Leak Survey
 Workpaper: 1GD000.001 - Field O&M - Leak Survey

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	22	210	208	71	31
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	22	210	208	71	31
FTE	0.3	2.7	2.5	0.8	0.3

Detail of Adjustments to Recorded:

Year	Adj Group	Labor	NLbr	NSE	FTE	Adj Type	RefID
2012	Other	22	0	0	0.3	1-Sided Adj	ASUSTARI20161028101634967
Explanation:		Moving leak survey charges by FERC account from Field O&M - Main Maintenance 1GD000.003 to Field O&M - Leak Survey 1GD000.001.					
2012 Total		22	0	0	0.3		
2013	Other	210	0	0	2.7	1-Sided Adj	ASUSTARI20161028101829720
Explanation:		Moving leak survey charges by FERC account from Field O&M - Main Maintenance 1GD000.003 to Field O&M - Leak Survey 1GD000.001.					
2013 Total		210	0	0	2.7		
2014	Other	208	0	0	2.5	1-Sided Adj	ASUSTARI20161028101947873
Explanation:		Moving leak survey charges by FERC account from Field O&M - Main Maintenance 1GD000.003 to Field O&M - Leak Survey 1GD000.001.					
2014 Total		208	0	0	2.5		
2015	Other	56	0	0	0.6	1-Sided Adj	ASUSTARI20161028102107933
Explanation:		Moving leak survey charges by FERC account from Field O&M - Main Maintenance 1GD000.003 to Field O&M - Leak Survey 1GD000.001.					
2015	Other	15	0	0	0.2	1-Sided Adj	ASUSTARI20161028105326550
Explanation:		Dec 2015 My Time Missing Labor Accrual					
2015 Total		71	0	0	0.8		

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
 2019 GRC - REVISED
 Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 2. Leak Survey
 Workpaper: 1GD000.001 - Field O&M - Leak Survey

<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	Other	31	0	0	0.3	1-Sided Adj	ASUSTARI20161028102915300
Explanation: Moving leak survey charges by FERC account from Field O&M - Main Maintenance 1GD000.003 to Field O&M - Leak Survey 1GD000.001.							
2016 Total		31	0	0	0.3		

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 2. Leak Survey
 Workpaper: 1GD000.001 - Field O&M - Leak Survey

RAMP Item # 1

Ref ID: BWILSON20170309070624880

RAMP Chapter: SDG&E-3

Program Name: Leak Surveys, Pipeline Patrols, Bridge Span Inspections

Program Description: Patrolling, Leakage Surveys, atmospheric corrosion control and odorization of gas. Mandated under Federal Regulations DOT/PHMSA Title 49

Risk/Mitigation:

Risk: SDG&E Employee Contractor & Safety

Mitigation: Safety Policies and Programs

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	1,245	1,245	1,245
High	1,494	1,494	1,494

Funding Source: CPUC-GRC

Forecast Method: Base Year

Work Type: Mandated

Work Type Citation: CPUC GO112-F and DOT/PHMSA Title 49. CFR192

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 211

Explanation: RAMP base estimated to remain constant throughout 2016 and forecast years.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 2. Leak Survey
Workpaper: 1GD000.001 - Field O&M - Leak Survey

RAMP Item # 2

Ref ID: BWILSON20170309132021820

RAMP Chapter: SDG&E-16

Program Name: Leak Mitigation, Unstable Earth, Bridge and Span, Pipeline Patrol

Program Description: Leak surveys, inspection of bridges and spans, self audits all at code required intervals

Risk/Mitigation:

Risk: SDG&E Medium-Pressure Pipeline Failure

Mitigation: Maintenance

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	1,497	1,497	1,497
High	1,655	1,655	1,655

Funding Source: CPUC-GRC

Forecast Method: Base Year

Work Type: Mandated

Work Type Citation: These programs are mandated by the Federal Code of Regulation (CFR) 49 Part 192 Subpart M.

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 1629

Explanation: Calculated 2016 actual costs on leak survey cost center.

Beginning of Workpaper
1GD000.002 - Field O&M - Locate & Mark

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 3. Locate & Mark
Workpaper: 1GD000.002 - Field O&M - Locate & Mark

Activity Description:

This group includes labor and non-labor expenses to locate and mark out multiple underground facilities which include distribution and transmission gas facilities, secondary and primary electric underground, and electric transmission. The activities under this cost workgroup are preventative in nature and are required to avert damages caused by third-party excavators working near gas and electric underground substructures. Depending on availability of company locate and mark resources, contract resources are also utilized.

Forecast Explanations:

Labor - 5-YR Linear

The cumulative expense trend of labor and non-labor has increased from 2012 to 2016 due to increased outsourcing of locate and mark services (non-labor contract resources) in order to meet compliance requirements; increased stand-by and mark-out requests to meet city franchise work; and an increased amount of customer Dig Alert tickets. SDG&E expects a continued rise in this activity due to SB661 requiring any person who plans to conduct any excavation to contact the appropriate regional notification center before commencing excavation. In addition, there is a continued increase in total employment growth per HIS Global Insight forecasts. Using a historical average or base forecast would not appropriately account for the increase in work anticipated over the forecast period. Thus, to reflect these changing conditions and an increase in Locate and Mark work, a five-year (2012 through 2016) linear trend was used to calculate the cumulative Labor and Non-Labor request for this group.

Non-Labor - 5-YR Linear

The cumulative expense trend of labor and non-labor has increased from 2012 to 2016 due to increased outsourcing of locate and mark services (non-labor contract resources) in order to meet compliance requirements; increased stand-by and mark-out requests to meet city franchise work; and an increased amount of customer Dig Alert tickets. SDG&E expects a continued rise in this activity due to SB661 requiring any person who plans to conduct any excavation to contact the appropriate regional notification center before commencing excavation. In addition, there is a continued increase in total employment growth per HIS Global Insight forecasts. Using a historical average or base forecast would not appropriately account for the increase in work anticipated over the forecast period. Thus, to reflect these changing conditions and an increase in Locate and Mark work, a five-year (2012 through 2016) linear trend was used to calculate the cumulative Labor and Non-Labor request for this group.

NSE - 5-YR Linear

N/A

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 3. Locate & Mark
 Workpaper: 1GD000.002 - Field O&M - Locate & Mark

Summary of Results:

		In 2016\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2012	2013	2014	2015	2016	2017	2018	2019	
Labor		1,930	1,910	2,033	1,617	1,587	1,522	1,708	1,745	
Non-Labor		683	770	787	1,053	1,439	1,484	1,664	1,844	
NSE		0	0	0	0	0	0	0	0	
Total		2,613	2,680	2,820	2,669	3,026	3,006	3,372	3,589	
FTE		22.9	21.8	23.6	18.8	17.6	16.9	18.6	18.8	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 3. Locate & Mark
Workpaper: 1GD000.002 - Field O&M - Locate & Mark

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	5-YR Linear	1,521	1,423	1,325	0	285	420	1,521	1,708	1,745
Non-Labor	5-YR Linear	1,485	1,664	1,844	0	0	0	1,485	1,664	1,844
NSE	5-YR Linear	0	0	0	0	0	0	0	0	0
Total		3,006	3,088	3,169	0	285	420	3,006	3,373	3,589
FTE	5-YR Linear	16.9	15.5	14.2	0.0	3.1	4.6	16.9	18.6	18.8

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID
2017 Total		0	0	0	0	0.0		

2018 Other -95 0 0 -95 -1.0 1-Sided Adj ASUSTARI20170511094902540

Explanation: B. RAMP Risk ID 02/SDG&E Dig-Ins Adjustment to identify RAMP RISK ID 2 /SDG&E Dig-Ins costs within the base forecast methodology (5yr Linear trend). This adjustment is a labor expense of \$(95)K in 2018 and \$(140)K in TY2019 and thereafter.

2018 RAMP Incremental 380 0 0 380 4.1 1-Sided Adj ASUSTARI20170309195633487

Explanation: A. RAMP Risk ID 02/SDG&E Dig-Ins - Incremental expense required to provide additional training for Locate & Mark (L&M) personnel; Additional standbys for observation on high pressure pipelines; Estimated combined expenses for these activities will require \$380K in 2018, \$560K in TY2019 and thereafter. There are no non-labor expenses.

2018 Total		285	0	0	285	3.1		
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2019 RAMP Incremental 560 0 0 560 6.0 1-Sided Adj ASUSTARI20170310092502673

Explanation: A. RAMP Risk ID 02/SDG&E Dig-Ins - Incremental expense required to provide additional training for Locate & Mark (L&M) personnel; Additional standbys for observation on high pressure pipelines; Estimated combined expenses for these activities will require \$380K in 2018, \$560K in TY2019 and thereafter. There are no non-labor expenses.

2019 Other -140 0 0 -140 -1.4 1-Sided Adj ASUSTARI20170511094928387

Explanation: B. RAMP Risk ID 02/SDG&E Dig-Ins Adjustment to identify RAMP RISK ID 2 /SDG&E Dig-Ins costs within the base forecast methodology (5yr Linear trend). This adjustment is a labor expense of \$(95)K in 2018 and \$(140)K in TY2019 and thereafter.

Note: Totals may include rounding differences.

SDG&E/GAS DISTRIBUTION/Exh No:SDG&E-04-WP-R/Witness: G. Orozco-Mejia

San Diego Gas & Electric Company
 2019 GRC - REVISED
 Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 3. Locate & Mark
 Workpaper: 1GD000.002 - Field O&M - Locate & Mark

<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>
2019 Total		420	0	0	420	4.6		

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 3. Locate & Mark
Workpaper: 1GD000.002 - Field O&M - Locate & Mark

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	1,543	1,541	1,674	1,329	1,361
Non-Labor	656	753	783	1,046	1,439
NSE	0	0	0	0	0
Total	2,199	2,294	2,457	2,375	2,800
FTE	19.7	18.6	20.0	15.5	14.9
Adjustments (Nominal \$) **					
Labor	0	0	0	39	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	39	0
FTE	0.0	0.0	0.0	0.5	0.0
Recorded-Adjusted (Nominal \$)					
Labor	1,543	1,541	1,674	1,368	1,361
Non-Labor	656	753	783	1,046	1,439
NSE	0	0	0	0	0
Total	2,199	2,294	2,457	2,414	2,800
FTE	19.7	18.6	20.0	16.0	14.9
Vacation & Sick (Nominal \$)					
Labor	224	244	267	211	226
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	224	244	267	211	226
FTE	3.2	3.3	3.6	2.8	2.7
Escalation to 2016\$					
Labor	164	124	91	38	0
Non-Labor	26	17	5	7	0
NSE	0	0	0	0	0
Total	190	141	96	44	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	1,930	1,910	2,033	1,617	1,587
Non-Labor	683	770	787	1,053	1,439
NSE	0	0	0	0	0
Total	2,613	2,680	2,820	2,669	3,026
FTE	22.9	21.9	23.6	18.8	17.6

* 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 - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 3. Locate & Mark
 Workpaper: 1GD000.002 - Field O&M - Locate & Mark

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	0	0	0	39	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	39	0
FTE	0.0	0.0	0.0	0.5	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 Total		0	0	0	0.0		
2015	Other	39	0	0	0.5	1-Sided Adj	ASUSTARI20161028105413600
2015 Total		39	0	0	0.5		
2016 Total		0	0	0	0.0		

Explanation: Dec 2015 My Time Missing Labor Accrual

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 3. Locate & Mark
 Workpaper: 1GD000.002 - Field O&M - Locate & Mark

RAMP Item # 1

Ref ID: ASUSTARI20170309194151783

RAMP Chapter: SDG&E-2

Program Name: Locate & Mark Training, Field Activities, Staff Support, Pipeline Observations (stand-by),

Program Description: Training, certification and compliance of Federal and State laws. Prevention of damage to substructures due to unsafe excavation practices . Staff to translate federal and state regulations into company Gas Standards. Surveillance of excavations in the vicinity of high pressure gas lines to prevent damage.

Risk/Mitigation:

Risk: SDG&E Dig-Ins

Mitigation: Training, Locate & Mark Activities, Prevention and Improvements

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	2,557	2,718	2,761
High	2,825	3,003	3,050

Funding Source: CPUC-GRC

Forecast Method: Trend

Work Type: Mandated

Work Type Citation: CFR Part 192

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 2542

Explanation: Used consistent methodology as historical years. Also added were 2016 actuals for Utiliquest and USA fees charged to Gas orders.

Beginning of Workpaper
1GD000.003 - Field O&M - Main Maintenance

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 4. Main Maintenance
 Workpaper: 1GD000.003 - Field O&M - Main Maintenance

Activity Description:

Main maintenance work is generally corrective in nature and is required to keep the natural gas system operating safely and reliably. The work in this workgroup is designed to meet federal, i.e., 49 C.F.R. §192, and state, i.e., CPUC General Order 112-F, pipeline safety regulations and to extend the life of distribution main pipelines and related infrastructure. Main maintenance work is primarily comprised of labor and non-labor expenses associated with investigating and repairing leaks in distribution mains as well as moving, lowering, and raising short sections of gas distribution mains, vaults, valves, and related structures.

Forecast Explanations:

Labor - 5-YR Linear

A variety of factors influence the level of spending on main maintenance in a given year. These factors include increasing government regulations, aging infrastructure, public safety, municipality requirements, material failure, infrastructure, and economic conditions. The labor and non-labor expenses have experienced an upward trend in costs. This upward trend is forecasted to continue as work pressures continue to increase. Therefore, a five-year (2012 through 2016) historical linear trend was used to forecast the base level of future labor expenses. Using an average forecasting method would not be appropriate for this work category as it would not fully fund future critical compliance and maintenance work.

Non-Labor - 5-YR Linear

A variety of factors influence the level of spending on main maintenance in a given year. These factors include increasing government regulations, aging infrastructure, public safety, municipality requirements, material failure, infrastructure, and economic conditions. The labor and non-labor expenses have experienced an upward trend in costs. This upward trend is forecasted to continue as work pressures continue to increase. Therefore, a five-year (2012 through 2016) historical linear trend was used to forecast the base level of future non-labor expenses. Using an average forecasting method would not be appropriate for this work category as it would not fully fund future critical compliance and maintenance work.

NSE - 5-YR Linear

N/A

Summary of Results:

		In 2016\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2012	2013	2014	2015	2016	2017	2018	2019	
Labor		1,120	1,322	1,245	1,648	1,962	2,063	2,264	2,465	
Non-Labor		620	737	722	875	1,003	1,010	872	958	
NSE		0	0	0	0	0	0	0	0	
Total		1,740	2,059	1,967	2,523	2,965	3,073	3,136	3,423	
FTE		13.4	16.0	14.1	17.3	20.1	20.6	22.0	23.5	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 4. Main Maintenance
 Workpaper: 1GD000.003 - Field O&M - Main Maintenance

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	5-YR Linear	2,063	2,264	2,464	0	0	0	2,063	2,264	2,464
Non-Labor	5-YR Linear	1,063	1,153	1,244	-54	-281	-286	1,009	872	958
NSE	5-YR Linear	0	0	0	0	0	0	0	0	0
Total		3,125	3,417	3,708	-54	-281	-286	3,071	3,136	3,422
FTE	5-YR Linear	20.6	22.0	23.5	0.0	0.0	0.0	20.6	22.0	23.5

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID	
2017	FOF-Ongoing	0	-54	0	-54	0.0	1-Sided Adj	BWILSON20170719151005023	
Explanation:		A. FOF Group 101 benefits related to contracting/procurement efficiencies. Non-labor savings are \$54K in 2017, \$281K in 2018, and \$286K in TY2019.							
2017 Total		0	-54	0	-54	0.0			
2018	FOF-Ongoing	0	-281	0	-281	0.0	1-Sided Adj	BWILSON20170719151112350	
Explanation:		A. FOF Group 101 benefits related to contracting/procurement efficiencies. Non-labor savings are \$54K in 2017, \$281K in 2018, and \$286K in TY2019.							
2018 Total		0	-281	0	-281	0.0			
2019	FOF-Ongoing	0	-286	0	-286	0.0	1-Sided Adj	BWILSON20170719151150413	
Explanation:		A. FOF Group 101 benefits related to contracting/procurement efficiencies. Non-labor savings are \$54K in 2017, \$281K in 2018, and \$286K in TY2019.							
2019 Total		0	-286	0	-286	0.0			

Note: Totals may include rounding differences.

SDG&E/GAS DISTRIBUTION/Exh No:SDG&E-04-WP-R/Witness: G. Orozco-Mejia

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 4. Main Maintenance
Workpaper: 1GD000.003 - Field O&M - Main Maintenance

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	917	1,277	1,233	1,300	1,714
Non-Labor	545	720	718	869	1,003
NSE	0	0	0	0	0
Total	1,462	1,997	1,952	2,169	2,717
FTE	11.8	16.3	14.6	13.7	17.3
Adjustments (Nominal \$) **					
Labor	-22	-210	-208	95	-31
Non-Labor	51	0	0	0	0
NSE	0	0	0	0	0
Total	29	-210	-208	95	-31
FTE	-0.3	-2.7	-2.5	1.0	-0.3
Recorded-Adjusted (Nominal \$)					
Labor	896	1,067	1,025	1,395	1,683
Non-Labor	596	720	718	869	1,003
NSE	0	0	0	0	0
Total	1,491	1,787	1,744	2,264	2,686
FTE	11.5	13.6	12.1	14.7	17.0
Vacation & Sick (Nominal \$)					
Labor	130	169	164	215	279
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	130	169	164	215	279
FTE	1.9	2.3	2.1	2.5	3.1
Escalation to 2016\$					
Labor	95	86	56	38	0
Non-Labor	24	17	4	6	0
NSE	0	0	0	0	0
Total	119	102	60	44	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	1,120	1,322	1,245	1,648	1,962
Non-Labor	620	737	722	875	1,003
NSE	0	0	0	0	0
Total	1,740	2,059	1,967	2,523	2,965
FTE	13.4	15.9	14.2	17.2	20.1

* 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 - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 4. Main Maintenance
 Workpaper: 1GD000.003 - Field O&M - Main Maintenance

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	-22	-210	-208	95	-31
Non-Labor	51	0	0	0	0
NSE	0	0	0	0	0
Total	29	-210	-208	95	-31
FTE	-0.3	-2.7	-2.5	1.0	-0.3

Detail of Adjustments to Recorded:

Year	Adj Group	Labor	NLbr	NSE	FTE	Adj Type	RefID
2012	Other	-22	0	0	-0.3	1-Sided Adj	ASUSTARI20161028101558550
Explanation:		Moving leak survey charges by FERC account from Field O&M - Main Maintenance 1GD000.003 to Field O&M - Leak Survey 1GD000.001.					
2012	Other	0	51	0	0.0	1-Sided Adj	ASUSTARI20161028103110377
Explanation:		Moving Bridge Span costs from Asset Management (1GD001.000) to Field O&M - Main Maintenance (1GD000.003) consistent with forecast.					
2012 Total		-22	51	0	-0.3		
2013	Other	-210	0	0	-2.7	1-Sided Adj	ASUSTARI20161028101745453
Explanation:		Moving leak survey charges by FERC account from Field O&M - Main Maintenance 1GD000.003 to Field O&M - Leak Survey 1GD000.001.					
2013 Total		-210	0	0	-2.7		
2014	Other	-208	0	0	-2.5	1-Sided Adj	ASUSTARI20161028101912100
Explanation:		Moving leak survey charges by FERC account from Field O&M - Main Maintenance 1GD000.003 to Field O&M - Leak Survey 1GD000.001.					
2014 Total		-208	0	0	-2.5		
2015	Other	-56	0	0	-0.6	1-Sided Adj	ASUSTARI20161028102047037
Explanation:		Moving leak survey charges by FERC account from Field O&M - Main Maintenance 1GD000.003 to Field O&M - Leak Survey 1GD000.001.					

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 4. Main Maintenance
 Workpaper: 1GD000.003 - Field O&M - Main Maintenance

<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	Other	151	0	0	1.6	1-Sided Adj	ASUSTARI20161028105502350
Explanation: Dec 2015 My Time Missing Labor Accrual							
2015 Total		95	0	0	1.0		
2016	Other	-31	0	0	-0.3	1-Sided Adj	ASUSTARI20161028102728273
Explanation: Moving leak survey charges by FERC account from Field O&M - Main Maintenance 1GD000.003 to Field O&M - Leak Survey 1GD000.001.							
2016 Total		-31	0	0	-0.3		

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 4. Main Maintenance
Workpaper: 1GD000.003 - Field O&M - Main Maintenance

RAMP Item # 1

Ref ID: MHOM20171206152852173

RAMP Chapter: SDG&E-16

Program Name: Leak Repair

Program Description: Leak repair is the result of leak mitigation and pipeline patrol. The activity involves replacing pipe or components that are poorly performing by leaking.

Risk/Mitigation:

Risk: SDG&E Employee Contractor & Public Safety

Mitigation: Safety Policies & Programs

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	1,140	1,235	1,330
High	1,260	1,365	1,470

Funding Source: CPUC-GRC

Forecast Method: Base Year

Work Type: Mandated

Work Type Citation: GO 112-F, 49 CFR 192, Subpart M

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 1250

Explanation: Note: Incremental amounts shown in years 2018-2019 are absorbed in forecast methodology.

Beginning of Workpaper
1GD000.004 - Field O&M - Service Maintenance

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 5. Service Maintenance
Workpaper: 1GD000.004 - Field O&M - Service Maintenance

Activity Description:

Service maintenance work is generally corrective in nature and is required to keep the natural gas system operating safely and reliably. The work in this workgroup is designed to meet federal, i.e., 49 C.F.R. §192, and state, i.e., CPUC General Order 112-F, pipeline safety regulations and to extend the life of distribution service pipelines and related infrastructure. Service maintenance work is primarily comprised of labor and non-labor expenses associated with investigating and repairing leaks in distribution services, changing service valves, checking the condition of coating at the MSA, testing service pipe for leaks, inspecting and testing service pipe after repairs have been made, and installing, maintaining and removing temporary feeds. Also included in this subgroup are expenses for moving, lowering, and raising sections of distribution services. Rearranging and changing the location of an existing service may be required due to alterations in buildings or grounds, and municipal improvements such as street widening or sewer and water system work.

Forecast Explanations:

Labor - 5-YR Linear

A variety of factors influence the level of spending on service maintenance in a given year. These factors include increasing government regulations, aging infrastructure, public safety, municipality requirements, material failure, infrastructure, and economic conditions. The labor and non-labor expenses have experienced an upward trend in costs. This upward trend is forecasted to continue as work pressures continue to increase. Therefore, a five-year (2012 through 2016) historical linear trend was used to forecast the base level of future labor expenses. Using an average forecasting method would not be appropriate for this work category as it would not fully fund future critical compliance and maintenance work.

Non-Labor - 5-YR Linear

A variety of factors influence the level of spending on service maintenance in a given year. These factors include increasing government regulations, aging infrastructure, public safety, municipality requirements, material failure, infrastructure, and economic conditions. The labor and non-labor expenses have experienced an upward trend in costs. This upward trend is forecasted to continue as work pressures continue to increase. Therefore, a five-year (2012 through 2016) historical linear trend was used to forecast the base level of future non-labor expenses. Using an average forecasting method would not be appropriate for this work category as it would not fully fund future critical compliance and maintenance work.

NSE - 5-YR Linear

N/A

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 5. Service Maintenance
 Workpaper: 1GD000.004 - Field O&M - Service Maintenance

Summary of Results:

		In 2016\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2012	2013	2014	2015	2016	2017	2018	2019	
Labor		1,162	1,144	985	1,423	1,477	1,510	1,602	1,693	
Non-Labor		97	124	55	128	157	150	161	174	
NSE		0	0	0	0	0	0	0	0	
Total		1,259	1,267	1,040	1,551	1,634	1,660	1,763	1,867	
FTE		13.7	13.4	10.9	15.1	15.7	15.5	16.1	16.6	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 5. Service Maintenance
 Workpaper: 1GD000.004 - Field O&M - Service Maintenance

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	5-YR Linear	1,511	1,602	1,693	0	0	0	1,511	1,602	1,693
Non-Labor	5-YR Linear	149	162	174	0	0	0	149	162	174
NSE	5-YR Linear	0	0	0	0	0	0	0	0	0
Total		1,660	1,763	1,867	0	0	0	1,660	1,763	1,867
FTE	5-YR Linear	15.5	16.0	16.6	0.0	0.0	0.0	15.5	16.0	16.6

<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.

SDG&E/GAS DISTRIBUTION/Exh No:SDG&E-04-WP-R/Witness: G. Orozco-Mejia

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 5. Service Maintenance
Workpaper: 1GD000.004 - Field O&M - Service Maintenance

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	929	923	811	1,165	1,267
Non-Labor	93	121	54	127	157
NSE	0	0	0	0	0
Total	1,022	1,044	866	1,292	1,424
FTE	11.8	11.3	9.3	12.4	13.3
Adjustments (Nominal \$) **					
Labor	0	0	0	39	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	39	0
FTE	0.0	0.0	0.0	0.4	0.0
Recorded-Adjusted (Nominal \$)					
Labor	929	923	811	1,204	1,267
Non-Labor	93	121	54	127	157
NSE	0	0	0	0	0
Total	1,022	1,044	866	1,331	1,424
FTE	11.8	11.3	9.3	12.8	13.3
Vacation & Sick (Nominal \$)					
Labor	135	146	130	186	210
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	135	146	130	186	210
FTE	1.9	2.0	1.7	2.2	2.4
Escalation to 2016\$					
Labor	99	74	44	33	0
Non-Labor	4	3	0	1	0
NSE	0	0	0	0	0
Total	102	77	45	34	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	1,162	1,144	985	1,423	1,477
Non-Labor	97	124	55	128	157
NSE	0	0	0	0	0
Total	1,259	1,267	1,040	1,551	1,634
FTE	13.7	13.3	11.0	15.0	15.7

* After company-wide exclusions of Non-GRC costs

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

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 5. Service Maintenance
 Workpaper: 1GD000.004 - Field O&M - Service Maintenance

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	0	0	0	39	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	39	0
FTE	0.0	0.0	0.0	0.4	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 Total		0	0	0	0.0		
2015	Other	39	0	0	0.4	1-Sided Adj	ASUSTARI20161028105538417
2015 Total		39	0	0	0.4		
2016 Total		0	0	0	0.0		

Explanation: Dec 2015 My Time Missing Labor Accrual

Note: Totals may include rounding differences.

Beginning of Workpaper
1GD000.005 - Field O&M - Tools Fittings & Materials

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 6. Tools Fittings & Materials
 Workpaper: 1GD000.005 - Field O&M - Tools Fittings & Materials

Activity Description:

This group includes labor and non-labor expenses necessary for small tools, small pipe fittings, miscellaneous pipeline materials, and miscellaneous installation materials used during construction and maintenance activities and those held in inventory as vehicle truck stock. These materials are necessary on the job to provide complete and safe work results. This also includes tool repair and maintenance.

Forecast Explanations:

Labor - 5-YR Average

Labor and non-labor expenses associated with activities in this group tend to fluctuate from year to year; therefore a 5 year average best represents the forecasted level of funding.

Non-Labor - 5-YR Average

Labor and non-labor expenses associated with activities in this group tend to fluctuate from year to year; therefore a 5 year average best represents the forecasted level of funding.

NSE - 5-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		411	451	434	501	367	433	433	433	
Non-Labor		814	552	494	469	556	576	576	576	
NSE		0	0	0	0	0	0	0	0	
Total		1,226	1,003	927	970	923	1,009	1,009	1,009	
FTE		5.8	6.0	5.5	6.2	4.5	5.6	5.6	5.6	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 6. Tools Fittings & Materials
 Workpaper: 1GD000.005 - Field O&M - Tools Fittings & Materials

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	5-YR Average	433	433	433	0	0	0	433	433	433
Non-Labor	5-YR Average	577	577	577	0	0	0	577	577	577
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
Total		1,010	1,010	1,010	0	0	0	1,010	1,010	1,010
FTE	5-YR Average	5.6	5.6	5.6	0.0	0.0	0.0	5.6	5.6	5.6

<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.

SDG&E/GAS DISTRIBUTION/Exh No:SDG&E-04-WP-R/Witness: G. Orozco-Mejia

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 6. Tools Fittings & Materials
Workpaper: 1GD000.005 - Field O&M - Tools Fittings & Materials

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	307	364	357	417	315
Non-Labor	656	469	435	459	533
NSE	0	0	0	0	0
Total	963	833	792	876	848
FTE	4.7	5.1	4.7	5.2	3.8
Adjustments (Nominal \$) **					
Labor	22	0	0	8	0
Non-Labor	127	70	56	7	23
NSE	0	0	0	0	0
Total	149	70	56	14	23
FTE	0.3	0.0	0.0	0.1	0.0
Recorded-Adjusted (Nominal \$)					
Labor	329	364	357	424	315
Non-Labor	783	539	491	466	556
NSE	0	0	0	0	0
Total	1,112	903	848	890	871
FTE	5.0	5.1	4.7	5.3	3.8
Vacation & Sick (Nominal \$)					
Labor	48	58	57	65	52
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	48	58	57	65	52
FTE	0.8	0.9	0.8	0.9	0.7
Escalation to 2016\$					
Labor	35	29	19	12	0
Non-Labor	31	12	3	3	0
NSE	0	0	0	0	0
Total	66	42	22	15	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	411	451	434	501	367
Non-Labor	814	552	494	469	556
NSE	0	0	0	0	0
Total	1,226	1,003	927	970	923
FTE	5.8	6.0	5.5	6.2	4.5

* 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 - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 6. Tools Fittings & Materials
 Workpaper: 1GD000.005 - Field O&M - Tools Fittings & Materials

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	22	0	0	8	0
Non-Labor	127	70	56	7	23
NSE	0	0	0	0	0
Total	149	70	56	14	23
FTE	0.3	0.0	0.0	0.1	0.0

Detail of Adjustments to Recorded:

Year	Adj Group	Labor	NLbr	NSE	FTE	Adj Type	RefID
2012	Other	22	0	0	0.3	1-Sided Adj	ASUSTARI20161028103454497
Explanation:		Moving Union retro pay labor from Field O&M - Tools (1GD000.005) to Field O&M - Supervision & Training (1GD000.007). Note it was a credit in 2012, so Supervision & Training will see a decrease.					
2012	Other	0	127	0	0.0	1-Sided Adj	ASUSTARI20161028104027157
Explanation:		Moving tools from 1GD004.000 Operations Mgmt & Training to 1GD000.005 Field O&M - Tools consistent with forecast.					
2012 Total		22	127	0	0.3		
2013	Other	0	70	0	0.0	1-Sided Adj	ASUSTARI20161028104159397
Explanation:		Moving tools from 1GD004.000 Operations Mgmt & Training to 1GD000.005 Field O&M - Tools consistent with forecast.					
2013 Total		0	70	0	0.0		
2014	Other	0	56	0	0.0	1-Sided Adj	ASUSTARI20161028104313257
Explanation:		Moving tools from 1GD004.000 Operations Mgmt & Training to 1GD000.005 Field O&M - Tools consistent with forecast.					
2014 Total		0	56	0	0.0		
2015	Other	0	7	0	0.0	1-Sided Adj	ASUSTARI20161028104424743
Explanation:		Moving tools from 1GD004.000 Operations Mgmt & Training to 1GD000.005 Field O&M - Tools consistent with forecast.					

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 6. Tools Fittings & Materials
 Workpaper: 1GD000.005 - Field O&M - Tools Fittings & Materials

<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	Other	8	0	0	0.1	1-Sided Adj	ASUSTARI20161028105616167
Explanation: Dec 2015 My Time Missing Labor Accrual							
2015 Total		8	7	0	0.1		
2016	Other	0	14	0	0.0	1-Sided Adj	ASUSTARI20170223112123290
Explanation: Moving tools from 1GD000.007 Field O&M - Supervision & Training to 1GD000.005 Field O&M - Tools consistent with forecast.							
2016	Other	0	9	0	0.0	1-Sided Adj	ASUSTARI20170223112225890
Explanation: Moving tools from 1GD004.000 Operations Mgmt & Training to 1GD000.005 Field O&M - Tools consistent with forecast.							
2016 Total		0	23	0	0.0		

Note: Totals may include rounding differences.

Beginning of Workpaper
1GD000.006 - Field O&M - Electric Support

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 7. Electric Support
 Workpaper: 1GD000.006 - Field O&M - Electric Support

Activity Description:

Gas Distribution provides crew, and street repair support to Electric Distribution primarily for the Corrective Maintenance Program (CMP), the Quality Control Repairs and Inspection Program, the restoration of outages, and transformer change outs.

Forecast Explanations:

Labor - 3-YR Average

Electric Distribution maintenance support expenses vary from year to year therefore, a 3 year-average best represents future funding requirements.

Non-Labor - 3-YR Average

Electric Distribution maintenance support expenses vary from year to year therefore, a 3 year-average best represents future funding requirements.

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		799	542	273	249	278	267	267	267	
Non-Labor		91	124	171	165	138	158	158	158	
NSE		0	0	0	0	0	0	0	0	
Total		890	666	444	413	417	425	425	425	
FTE		9.4	6.9	3.4	3.0	3.0	3.1	3.1	3.1	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 7. Electric Support
 Workpaper: 1GD000.006 - Field O&M - Electric Support

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	267	267	267	0	0	0	267	267	267
Non-Labor	3-YR Average	158	158	158	0	0	0	158	158	158
NSE	3-YR Average	0	0	0	0	0	0	0	0	0
Total		425	425	425	0	0	0	425	425	425
FTE	3-YR Average	3.1	3.1	3.1	0.0	0.0	0.0	3.1	3.1	3.1

<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.

SDG&E/GAS DISTRIBUTION/Exh No:SDG&E-04-WP-R/Witness: G. Orozco-Mejia

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 7. Electric Support
Workpaper: 1GD000.006 - Field O&M - Electric Support

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	639	438	225	207	239
Non-Labor	87	121	170	164	138
NSE	0	0	0	0	0
Total	726	558	395	371	377
FTE	8.1	5.9	2.9	2.6	2.5
Adjustments (Nominal \$) **					
Labor	0	0	0	3	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	3	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	639	438	225	210	239
Non-Labor	87	121	170	164	138
NSE	0	0	0	0	0
Total	726	558	395	374	377
FTE	8.1	5.9	2.9	2.6	2.5
Vacation & Sick (Nominal \$)					
Labor	93	69	36	32	40
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	93	69	36	32	40
FTE	1.3	1.0	0.5	0.4	0.4
Escalation to 2016\$					
Labor	68	35	12	6	0
Non-Labor	4	3	1	1	0
NSE	0	0	0	0	0
Total	71	38	13	7	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	799	542	273	249	278
Non-Labor	91	124	171	165	138
NSE	0	0	0	0	0
Total	890	666	444	413	417
FTE	9.4	6.9	3.4	3.0	2.9

* 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 - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 7. Electric Support
 Workpaper: 1GD000.006 - Field O&M - Electric Support

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	0	0	0	3	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	3	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 Total		0	0	0	0.0		
2013 Total		0	0	0	0.0		
2014	Other	-49	0	0	-0.4	1-Sided Adj	ASUSTARI20161103134202500
Explanation: Moving Gas Distribution District Operations Manager labor from 1GD000.006 (Electric Support) to 1GD000.007 (Supervision & Training) - consistent with forecast.							
2014	Other	49	0	0	0.4	CCTR Transf From 2100-3667.000	CTRINH20161101131613097
Explanation: Transfer Gas Distribution District Operations Manager labor from 1FC002.000 to 1GD000.007 in order to align historical costs with the workgroup in which the activity will be forecasted.							
2014 Total		0	0	0	0.0		
2015	Other	3	0	0	0.0	1-Sided Adj	ASUSTARI20161028105640887
Explanation: Dec 2015 My Time Missing Labor Accrual							
2015 Total		3	0	0	0.0		
2016 Total		0	0	0	0.0		

Note: Totals may include rounding differences.

Beginning of Workpaper
1GD000.007 - Field O&M - Supervision & Training

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 8. Supervision & Training
 Workpaper: 1GD000.007 - Field O&M - Supervision & Training

Activity Description:

This group includes labor and non-labor expenses for all supervision and management in the operating districts; training expenses for all gas employees within the districts; and the non-client cost center related labor and non-labor expenses for the Traffic Control organization. Non-labor expenses include office supplies, telephone expenses, mileage expenses, employee uniforms, training expenses, traffic control signs, and professional dues.

Forecast Explanations:

Labor - Base YR Rec

In 2016 there was an increase in labor and non-labor costs due to a ramp-up of field supervision for additional oversight in field activities; in addition, increased training expenses occurred for gas personnel due to new and more intensive training requirements and schedules. Because of these recent expense level changes, a historical average would not represent future resource needs. Therefore, the 2016 base was chosen as the base expense for future years with added incremental expenses. In the forecast years, additional growth in construction activities will require the addition of field supervisors.

Non-Labor - Base YR Rec

In 2016 there was an increase in labor and non-labor costs due to a ramp-up of field supervision for additional oversight in field activities; in addition, increased training expenses occurred for gas personnel due to new and more intensive training requirements and schedules. Because of these recent expense level changes, a historical average would not represent future resource needs. Therefore, the 2016 base was chosen as the base expense for future years with added incremental expenses. In the forecast years, additional growth in construction activities will require the addition of field supervisors.

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		2,388	2,690	2,148	2,178	3,192	3,192	3,517	3,655	
Non-Labor		227	212	214	194	328	328	333	338	
NSE		0	0	0	0	0	0	0	0	
Total		2,615	2,902	2,362	2,373	3,520	3,520	3,850	3,993	
FTE		29.5	33.1	26.1	26.4	37.9	38.0	41.1	42.4	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 8. Supervision & Training
 Workpaper: 1GD000.007 - Field O&M - Supervision & Training

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	3,192	3,192	3,192	0	325	463	3,192	3,517	3,655
Non-Labor	Base YR Rec	328	328	328	0	5	10	328	333	338
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		3,520	3,520	3,520	0	330	473	3,520	3,850	3,993
FTE	Base YR Rec	38.0	38.0	38.0	0.0	3.1	4.4	38.0	41.1	42.4

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID
2017 Total		0	0	0	0	0.0		

2018 Other 48 5 0 53 0.4 1-Sided Adj ASUSTARI20161130091924690

Explanation: C. Three Field Supervisors - will be added one beginning in 2018 and two more in 2019 to address growth in capital work. These positions will charge 40% of their time to O&M. Estimated expenses are 1 X \$120 X 0.40 = \$48K in 2018 and 3 X \$120K X 0.40 = \$144K in TY2019 and thereafter. Non-Labor expenses are estimated to be \$5K in 2018 and 2 X \$5K = \$10K in 2019 and thereafter.

2018 RAMP Incremental 277 0 0 277 2.7 1-Sided Adj BWILSON20170309143840567

Explanation: B. RAMP Risk ID 17/SDG&E Workforce Planning - Incremental expense to provide compliance, technical and leadership training classes and program support (Supervisor University). Hire three resources to run the program. This is a new proposed activity. Estimated combined labor expenses for these activities will require \$277K in 2018 and \$319K in TY2019 and thereafter. There are no identified non-labor expenses.

2018 Total		325	5	0	330	3.1		
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2019 Other 144 10 0 154 1.2 1-Sided Adj ASUSTARI20161130091943853

Explanation: C. Three Field Supervisors - will be added one beginning in 2018 and two more in 2019 to address growth in capital work. These positions will charge 40% of their time to O&M. Estimated expenses are 1 X \$120 X 0.40 = \$48K in 2018 and 3 X \$120K X 0.40 = \$144K in TY2019 and thereafter. Non-Labor expenses are estimated to be \$5K in 2018 and 2 X \$5K = \$10K in 2019 and thereafter.

2019 RAMP Incremental 319 0 0 319 3.2 1-Sided Adj BWILSON20170309143913487

Note: Totals may include rounding differences.

SDG&E/GAS DISTRIBUTION/Exh No:SDG&E-04-WP-R/Witness: G. Orozco-Mejia

San Diego Gas & Electric Company
 2019 GRC - REVISED
 Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 8. Supervision & Training
 Workpaper: 1GD000.007 - Field O&M - Supervision & Training

<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>
Explanation:	B. RAMP Risk ID 17/SDG&E Workforce Planning - Incremental expense to provide compliance, technical and leadership training classes and program support (Supervisor University). Hire three resources to run the program. This is a new proposed activity. Estimated combined labor expenses for these activities will require \$277K in 2018 and \$319K in TY2019 and thereafter. There are no identified non-labor expenses.							
2019 Total		463	10	0	473	4.4		

Note: Totals may include rounding differences.

SDG&E/GAS DISTRIBUTION/Exh No:SDG&E-04-WP-R/Witness: G. Orozco-Mejia

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 8. Supervision & Training
Workpaper: 1GD000.007 - Field O&M - Supervision & Training

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	1,742	1,995	1,720	1,817	2,738
Non-Labor	218	207	212	193	342
NSE	0	0	0	0	0
Total	1,960	2,202	1,933	2,010	3,080
FTE	24.0	26.6	21.7	22.2	32.2
Adjustments (Nominal \$) **					
Labor	167	176	49	27	0
Non-Labor	0	0	0	0	-14
NSE	0	0	0	0	0
Total	167	176	49	27	-14
FTE	1.4	1.6	0.4	0.3	0.0
Recorded-Adjusted (Nominal \$)					
Labor	1,909	2,171	1,769	1,843	2,738
Non-Labor	218	207	212	193	328
NSE	0	0	0	0	0
Total	2,127	2,378	1,982	2,036	3,066
FTE	25.4	28.2	22.1	22.5	32.2
Vacation & Sick (Nominal \$)					
Labor	277	344	283	285	454
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	277	344	283	285	454
FTE	4.1	4.9	4.0	3.9	5.8
Escalation to 2016\$					
Labor	202	175	96	51	0
Non-Labor	9	5	1	1	0
NSE	0	0	0	0	0
Total	211	179	98	52	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	2,388	2,690	2,148	2,178	3,192
Non-Labor	227	212	214	194	328
NSE	0	0	0	0	0
Total	2,615	2,902	2,362	2,373	3,520
FTE	29.5	33.1	26.1	26.4	38.0

* 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 - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 8. Supervision & Training
 Workpaper: 1GD000.007 - Field O&M - Supervision & Training

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	167	176	49	27	0
Non-Labor	0	0	0	0	-14
NSE	0	0	0	0	0
Total	167	176	49	27	-14
FTE	1.4	1.6	0.4	0.3	0.0

Detail of Adjustments to Recorded:

Year	Adj Group	Labor	NLbr	NSE	FTE	Adj Type	RefID
2012	Other	-22	0	0	-0.3	1-Sided Adj	ASUSTARI20161028103553937
Explanation:		Moving Union retro pay labor from Field O&M - Tools (1GD000.005) to Field O&M - Supervision & Training (1GD000.007). Note it was a credit in 2012, so Supervision & Training will see a decrease.					
2012	Other	189	0	0	1.7	1-Sided Adj	ASUSTARI20161103133759313
Explanation:		Moving Gas Distribution District Operations Manager labor from 1GD000.000 (Other) to 1GD000.007 (Supervision & Training) - consistent with forecast.					
2012 Total		167	0	0	1.4		
2013	Other	176	0	0	1.6	1-Sided Adj	ASUSTARI20161103134028940
Explanation:		Moving Gas Distribution District Operations Manager labor from 1GD000.000 (Other) to 1GD000.007 (Supervision & Training) -consistent with forecast.					
2013 Total		176	0	0	1.6		
2014	Other	49	0	0	0.4	1-Sided Adj	ASUSTARI20161103134233943
Explanation:		Moving Gas Distribution District Operations Manager labor from 1GD000.006 (Electric Support) to 1GD000.007 (Supervision & Training) - consistent with forecast.					
2014 Total		49	0	0	0.4		
2015	Other	27	0	0	0.3	1-Sided Adj	ASUSTARI20161028105816777
Explanation:		Dec 2015 My Time Missing Labor Accrual					
2015 Total		27	0	0	0.3		

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
 2019 GRC - REVISED
 Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 8. Supervision & Training
 Workpaper: 1GD000.007 - Field O&M - Supervision & Training

<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	Other	0	-14	0	0.0	1-Sided Adj	ASUSTARI20170223112017717
Explanation: Moving tools from 1GD000.007 Field O&M - Supervision & Training to 1GD000.005 Field O&M - Tools consistent with forecast.							
2016 Total		0	-14	0	0.0		

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 8. Supervision & Training
 Workpaper: 1GD000.007 - Field O&M - Supervision & Training

RAMP Item # 1

Ref ID: BWILSON20170308141852750

RAMP Chapter: SDG&E-3

Program Name: Traffic Control Work Group and Equip

Program Description: Traffic Control for Employee and Public Safety. FY impact only 2015 going forward.

Risk/Mitigation:

Risk: SDG&E Employee Contractor & Public Safety

Mitigation: Safety Policies & Programs

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	1,814	1,814	1,814
High	2,177	2,177	2,177

Funding Source: CPUC-GRC

Forecast Method: Base Year

Work Type: Mandated

Work Type Citation: CA Manual for uniform traffic control

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 1875

Explanation: Used labor actuals 3.2M (previously provided by HR) and added the 2016 actual spend to vendors Pro's/Co's 4.3M. Took total 7.5M * 25% OM

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 8. Supervision & Training
Workpaper: 1GD000.007 - Field O&M - Supervision & Training

RAMP Item # 2

Ref ID: BWILSON20170309142919730

RAMP Chapter: SDG&E-17

Program Name: Compliance, technical, and leadership training classes and programs

Program Description: • Annual ESCMP/OpQual • Welding School • Proposed: Supervisor University

Risk/Mitigation:

Risk: SDG&E Workforce Planning

Mitigation: Improvements

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	103	175	203
High	159	379	434

Funding Source: CPUC-GRC

Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: N/A

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 0

Explanation: 2016 value zero. Program expected to begin in 2018.

Supplemental Workpapers for Workpaper 1GD000.007

SDG&E-GOM-Capital-SUP-006

San Diego Gas and Electric Company -- Gas Distribution -- Witness Gina Orozco-Mejia
 Supplemental Workpaper - Summary of Capital and O&M RAMP Incremental Expenses
 Reference: Capital Workpapers: SDG&E-04-CWP; O&M Workpapers: SDG&E-04-WP

[A] Workpaper Detail:	[B] Testimony Section	[C] RAMP Risk ID:	[D] Expense Element	[E] RAMP Activity	[F] Unit	[G] Unit Cost	2019 GRC Forecast - \$(000) of \$2016					
							2017		2018		2019	
							[H] Units	[I] [GxH] Forecast	[J] Units	[K] [GxJ] Forecast	[L] Units	[M] [GxL] Forecast
005080.002	IV. I (BC 508)	Risk ID 16	Capital	Early Vintage Steel Replacement ¹	1 Mile Replacement	\$1,000,000	1.9	\$1,900	5.5	\$5,485	7.4	\$7,385
005080.003	IV. I (BC 508)	Risk ID 16	Capital	Pre-1933 Threaded Steel Main Removal ²	1 Mile Replacement	\$1,000,000	0.0	\$0	7.4	\$7,385	14.8	\$14,770
1GD001.000	III. B. 1	Risk ID 16	O&M	Dresser Mechanical Coupling Removal ³	Hours (Work Order Review)	\$80	780.0	\$62	0.0	\$0	0.0	\$0
005100.002	IV. K (BC 510)	Risk ID 16	Capital	Dresser Mechanical Coupling Removal ³	1 Fitting Removal	\$160,000	5.8	\$926	4.3	\$6,952	49.1	\$7,876
1GD001.000	III. B. 1	Risk ID 16	O&M	Oil Drip Piping Removal ⁴	Hours (Work Order Review)	\$80	176.0	\$14	0.0	\$0	0.0	\$0
005100.003	IV. K (BC 510)	Risk ID 16	Capital	Oil Drip Piping Removal ⁴	1 Oil Drip Removal	\$160,000	0.0	\$0	58.0	\$9,275	58.0	\$9,275
1GD001.000	III. B. 1	Risk ID 16	O&M	Buried Piping in Vaults Replacement	Hours (Work Order Review)	\$80	0.0	\$0	2,713.0	\$217	2,713.0	\$217
005100.004	IV. K (BC 510)	Risk ID 16	Capital	Buried Piping in Vaults Replacement	1 Buried Vault and Piping Removal	\$160,000	0.0	\$0	0.0	\$0	48.2	\$7,719
005100.005	IV. K (BC 510)	Risk ID 16	Capital	Closed Valves Between Medium and High Pressure	1 Valve Removal	\$160,000	0.0	\$0	22.3	\$3,570	0.0	\$0
009020.003	IV. M (BC 902)	Risk ID 16	Capital	CP Reliability Enhancement ⁵	1 CP Station (Data Verification & Modeling)	\$8,000	0.0	\$0	128.4	\$1,027	418.6	\$3,349
1GD000.007	III. A. 8	Risk ID 17	O&M	Supervisor University ⁶	1 FTE	\$100,000	0.0	\$0	2.7	\$277	3.2	\$319

NOTES:

- 1,2 / Vintage steel and Pre-1933 threaded steel replacement unit based on 1 mile of pipe with 106 services. Number of services is based on experience under DREAMS program.
- 3/ Approximately 100 Dresser couplings require removal. Each Dresser coupling will require 2 PCF fittings, traffic control and 3 excavations per job.
- 4/ Approximately 120 oil drips require removal. Each oil drip will require 2 PCF fittings, traffic control and 3 excavations per job.
- 5/ Approximately 547 CP stations will be modeled to predict station performance. Each CP station will need 20 hours data / attribute validation and 80 hours to establish in model.
- 6/ Implement dedicated training group and curriculum specific to Field Supervisor development.

Beginning of Workpaper
1GD002.000 - Measurement & Regulation

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 9. Measurement & Regulation
 Workpaper: 1GD002.000 - Measurement & Regulation

Activity Description:

This group includes the cost of labor, materials used and expenses incurred in maintaining large meters, instruments, company CNG facilities, inspection and maintenance of gas regulator stations and other equipment used in measuring and regulating gas within gas distribution system operations other than the measurement of gas deliveries to customers.

Forecast Explanations:

Labor - 5-YR Linear

Labor and non-labor expenses increased collectively from 2012 to 2016 due to the continued expansion of the workforce to meet work demands stemming from an increase in construction activities, system growth, and increased regulatory and compliance requirements. Due to the continued expense level increases year over year, a historical average would not represent future resource needs. Therefore, a 5-year linear trend best represents the change in business practice related to more stringent regulatory and compliance requirements, system growth, and increased construction activity.

Non-Labor - 5-YR Linear

Labor and non-labor expenses increased collectively from 2012 to 2016 due to the continued expansion of the workforce to meet work demands stemming from an increase in construction activities, system growth, and increased regulatory and compliance requirements. Due to the continued expense level increases year over year, a historical average would not represent future resource needs. Therefore, a 5-year linear trend best represents the change in business practice related to more stringent regulatory and compliance requirements, system growth, and increased construction activity.

NSE - 5-YR Linear

N/A

Summary of Results:

		In 2016\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2012	2013	2014	2015	2016	2017	2018	2019	
Labor		2,401	2,446	2,694	2,614	3,047	3,049	3,167	3,313	
Non-Labor		609	788	685	730	826	834	865	902	
NSE		0	0	0	0	0	0	0	0	
Total		3,011	3,235	3,379	3,345	3,873	3,883	4,032	4,215	
FTE		30.9	30.5	32.9	32.0	36.2	35.7	36.8	38.0	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 9. Measurement & Regulation
Workpaper: 1GD002.000 - Measurement & Regulation

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	5-YR Linear	3,078	3,224	3,370	-29	-57	-57	3,049	3,167	3,313
Non-Labor	5-YR Linear	841	878	916	-7	-13	-13	834	865	903
NSE	5-YR Linear	0	0	0	0	0	0	0	0	0
Total		3,919	4,102	4,286	-36	-70	-70	3,883	4,032	4,216
FTE	5-YR Linear	36.1	37.3	38.5	-0.4	-0.5	-0.5	35.7	36.8	38.0

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID	
2017	FOF-Ongoing	-29	-7	0	-36	-0.4	1-Sided Adj	ASUSTARI20161201153240237	
Explanation:		A. FOF - Savings in the Pipeline Operations group by transferring meter work in Pipeline Operations to Customer Service establishing all meter work performed in one operating group. Labor savings are \$-29K in 2017, \$-57K in 2018 and TY2019 and thereafter. Non-Labor savings are \$-7K in 2017, \$-13K in 2018 and TY2019 and thereafter.							
2017 Total		-29	-7	0	-36	-0.4			
2018	FOF-Ongoing	-57	-13	0	-70	-0.5	1-Sided Adj	DBENTLEY20170306162213637	
Explanation:		A. FOF - Savings in the Pipeline Operations group by transferring meter work in Pipeline Operations to Customer Service establishing all meter work performed in one operating group. Labor savings are \$-29K in 2017, \$-57K in 2018 and TY2019 and thereafter. Non-Labor savings are \$-7K in 2017, \$-13K in 2018 and TY2019 and thereafter.							
2018 Total		-57	-13	0	-70	-0.5			
2019	FOF-Ongoing	-57	-13	0	-70	-0.5	1-Sided Adj	DBENTLEY20170306162322887	
Explanation:		A. FOF - Savings in the Pipeline Operations group by transferring meter work in Pipeline Operations to Customer Service establishing all meter work performed in one operating group. Labor savings are \$-29K in 2017, \$-57K in 2018 and TY2019 and thereafter. Non-Labor savings are \$-7K in 2017, \$-13K in 2018 and TY2019 and thereafter.							
2019 Total		-57	-13	0	-70	-0.5			

Note: Totals may include rounding differences.

SDG&E/GAS DISTRIBUTION/Exh No:SDG&E-04-WP-R/Witness: G. Orozco-Mejia

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 9. Measurement & Regulation
Workpaper: 1GD002.000 - Measurement & Regulation

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	1,920	1,974	2,219	2,165	2,613
Non-Labor	586	770	681	725	826
NSE	0	0	0	0	0
Total	2,505	2,745	2,900	2,890	3,439
FTE	26.6	26.0	28.0	26.7	30.6
Adjustments (Nominal \$) **					
Labor	0	0	0	47	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	47	0
FTE	0.0	0.0	0.0	0.6	0.0
Recorded-Adjusted (Nominal \$)					
Labor	1,920	1,974	2,219	2,212	2,613
Non-Labor	586	770	681	725	826
NSE	0	0	0	0	0
Total	2,505	2,745	2,900	2,938	3,439
FTE	26.6	26.0	28.0	27.3	30.6
Vacation & Sick (Nominal \$)					
Labor	278	313	354	342	434
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	278	313	354	342	434
FTE	4.3	4.6	5.0	4.8	5.6
Escalation to 2016\$					
Labor	204	159	121	61	0
Non-Labor	24	18	4	5	0
NSE	0	0	0	0	0
Total	227	177	125	65	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	2,401	2,446	2,694	2,614	3,047
Non-Labor	609	788	685	730	826
NSE	0	0	0	0	0
Total	3,011	3,235	3,379	3,345	3,873
FTE	30.9	30.6	33.0	32.1	36.2

* After company-wide exclusions of Non-GRC costs

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

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 9. Measurement & Regulation
 Workpaper: 1GD002.000 - Measurement & Regulation

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	0	0	0	47	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	47	0
FTE	0.0	0.0	0.0	0.6	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 Total		0	0	0	0.0		
2015	Other	47	0	0	0.6	1-Sided Adj	ASUSTARI20161028105904247
2015 Total		47	0	0	0.6		
2016 Total		0	0	0	0.0		

Explanation: Dec 2015 My Time Missing Labor Accrual

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 9. Measurement & Regulation
Workpaper: 1GD002.000 - Measurement & Regulation

RAMP Item # 1

Ref ID: BWILSON20170310062356177

RAMP Chapter: SDG&E-16

Program Name: Regulator Station Inspections, Meter Set Assembly (MSA), Valve Inspection, Meter and Regulators

Program Description: Inspect meters, regulators to evaluate and confirm overpressure protection is in place and maintained.

Risk/Mitigation:

Risk: Medium Pressure Pipeline Failure

Mitigation: Scheduled monitoring and survey activities

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	2,273	2,273	2,273
High	2,513	2,513	2,513

Funding Source: CPUC-GRC

Forecast Method: Base Year

Work Type: Mandated

Work Type Citation: GO 112-F and 49 CFR 192

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 2400

Explanation: RAMP base estimated to remain constant throughout 2016 and forecast years.

Beginning of Workpaper
1GD003.000 - Cathodic Protection

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 10. Cathodic Protection
Workpaper: 1GD003.000 - Cathodic Protection

Activity Description:

This group includes labor and non-labor costs for cathodic protection (CP) system maintenance. Examples of maintenance activities performed within this workgroup include monitoring CP system performance, installing anodes, troubleshooting system shorts and interference, repairing or replacing broken wires to anodes or test stations, raising test station lids as a result of the re-pavement of streets adding test points on pipelines, installing insulators on mains and services, and CP rectifier and other code required inspections.

Forecast Explanations:

Labor - Base YR Rec

Labor and non-labor expenses have collectively increased year over year with notable spikes in 2015 and 2016 due to increased overtime in order to meet code compliance requirements and the preliminary field verification work associated with the separately protected service line remediation project. Because of these recent expense level changes, a historical average would not represent future resource needs. Therefore, 2016 was chosen as the base expense for future years as it best represents the new normal base course of business. To this base are added incremental expenses. In the forecast years, additional growth will require the addition of CP Electricians and one Technical Advisor.

Non-Labor - Base YR Rec

Labor and non-labor expenses have collectively increased year over year with notable spikes in 2015 and 2016 due to increased overtime in order to meet code compliance requirements and the preliminary field verification work associated with the separately protected service line remediation project. Because of these recent expense level changes, a historical average would not represent future resource needs. Therefore, 2016 was chosen as the base expense for future years as it best represents the new normal base course of business. To this base are added incremental expenses. In the forecast years, additional growth will require the addition of CP Electricians and one Technical Advisor.

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		912	993	1,129	1,284	1,611	1,781	2,071	2,071	
Non-Labor		148	109	91	145	218	228	233	218	
NSE		0	0	0	0	0	0	0	0	
Total		1,060	1,101	1,220	1,429	1,829	2,009	2,304	2,289	
FTE		11.4	12.2	12.9	14.8	20.8	22.9	25.9	25.9	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 10. Cathodic Protection
Workpaper: 1GD003.000 - Cathodic 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	Base YR Rec	1,611	1,611	1,611	170	460	460	1,781	2,071	2,071
Non-Labor	Base YR Rec	218	218	218	10	15	0	228	233	218
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		1,829	1,829	1,829	180	475	460	2,009	2,304	2,289
FTE	Base YR Rec	20.9	20.9	20.9	2.0	5.0	5.0	22.9	25.9	25.9

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID
2017	Other	170	10	0	180	2.0	1-Sided Adj	ASUSTARI20161130093504270

Explanation: A. Four CP Electricians - (2 CP Electricians in 2017 and an additional 2 in 2018) are required for - CP 10% and other magnesium anode area reads. Labor expense is estimated to be \$85K X 2 = \$170K in 2017; \$85 X 2 + \$170K = \$340K in 2018 and TY2019 and thereafter. Non-Labor expenses will be \$5K X 2 = \$10K in 2017 and 2018 only.

2017 Total		170	10	0	180	2.0		
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2018	Other	340	10	0	350	4.0	1-Sided Adj	ASUSTARI20161130093551793
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Explanation: A. Four CP Electricians - (2 CP Electricians in 2017 and an additional 2 in 2018) are required for - CP 10% and other magnesium anode area reads. Labor expense is estimated to be \$85K X 2 = \$170K in 2017; \$85 X 2 + \$170K = \$340K in 2018 and TY2019 and thereafter. Non-Labor expenses will be \$5K X 2 = \$10K in 2017 and 2018 only.

2018	Other	120	5	0	125	1.0	1-Sided Adj	ASUSTARI20161130094817193
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Explanation: C. One Technical Advisor - will be added beginning in 2018 to provide CP system integrity analysis and prioritization of work activities. Labor expense is estimated to be 1 X \$120K = \$120K for 2018 and TY2019 and thereafter. Non-Labor expenses are estimated to be 1 X \$5K = \$5K in 2018 for one year only.

2018 Total		460	15	0	475	5.0		
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2019	Other	340	0	0	340	4.0	1-Sided Adj	ASUSTARI20161130093623060
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Explanation: A. Four CP Electricians - (2 CP Electricians in 2017 and an additional 2 in 2018) are required for - CP 10% and other magnesium anode area reads. Labor expense is estimated to be \$85K X 2 = \$170K in 2017; \$85 X 2 + \$170K = \$340K in 2018 and TY2019 and thereafter. Non-Labor expenses will be \$5K X 2 = \$10K in 2017 and 2018 only.

Note: Totals may include rounding differences.

SDG&E/GAS DISTRIBUTION/Exh No:SDG&E-04-WP-R/Witness: G. Orozco-Mejia

San Diego Gas & Electric Company
 2019 GRC - REVISED
 Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 10. Cathodic Protection
 Workpaper: 1GD003.000 - Cathodic Protection

<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>	
2019	Other	120	0	0	120	1.0	1-Sided Adj	ASUSTARI20161130094833007	
Explanation:		C. One Technical Advisor - will be added beginning in 2018 to provide CP system integrity analysis and prioritization of work activities. Labor expense is estimated to be 1 X \$120K = \$120K for 2018 and TY2019 and thereafter. Non-Labor expenses are estimated to be 1 X \$5K = \$5K in 2018 for one year only.							
2019 Total		460	0	0	460	5.0			

Note: Totals may include rounding differences.

SDG&E/GAS DISTRIBUTION/Exh No:SDG&E-04-WP-R/Witness: G. Orozco-Mejia

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 10. Cathodic Protection
Workpaper: 1GD003.000 - Cathodic Protection

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	729	801	930	1,087	1,382
Non-Labor	142	106	90	144	218
NSE	0	0	0	0	0
Total	871	907	1,020	1,231	1,600
FTE	9.8	10.3	11.1	12.7	17.7
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	729	801	930	1,087	1,382
Non-Labor	142	106	90	144	218
NSE	0	0	0	0	0
Total	871	907	1,020	1,231	1,600
FTE	9.8	10.3	11.1	12.7	17.7
Vacation & Sick (Nominal \$)					
Labor	106	127	149	168	229
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	106	127	149	168	229
FTE	1.6	1.8	2.0	2.2	3.2
Escalation to 2016\$					
Labor	77	64	51	30	0
Non-Labor	6	2	1	1	0
NSE	0	0	0	0	0
Total	83	67	51	31	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	912	993	1,129	1,284	1,611
Non-Labor	148	109	91	145	218
NSE	0	0	0	0	0
Total	1,060	1,101	1,220	1,429	1,829
FTE	11.4	12.1	13.1	14.9	20.9

* 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 - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: A. Field Operations & Maintenance
 Category-Sub: 10. Cathodic Protection
 Workpaper: 1GD003.000 - Cathodic 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	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 - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: A. Field Operations & Maintenance
Category-Sub: 10. Cathodic Protection
Workpaper: 1GD003.000 - Cathodic Protection

RAMP Item # 1

Ref ID: ASUSTARI20170309192738370

RAMP Chapter: SDG&E-16

Program Name: Cathodic Protection

Program Description: System protection requirements mandated by CFR 49 Part 192 Subpart I. This program maintains cathodically protected assets by repairing, replacing, or retrofitting components.

Risk/Mitigation:

Risk: SDG&E Medium Pressure Pipeline Failure

Mitigation: Requirements for Corrosion Control

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	1,462	1,462	1,462
High	1,616	1,616	1,616

Funding Source: CPUC-GRC

Forecast Method: Base Year

Work Type: Mandated

Work Type Citation: CFR 49 Part 192 Subpart I.

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 1500

Explanation: RAMP base estimated to remain constant throughout 2016 and forecast years.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: B. Asset Management
Workpaper: 1GD001.000

Summary for Category: B. Asset Management

	In 2016\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
Labor	1,041	1,171	1,491	1,491
Non-Labor	677	692	712	677
NSE	0	0	0	0
Total	1,718	1,863	2,203	2,168
FTE	14.5	15.9	20.9	20.9

Workpapers belonging to this Category:

1GD001.000 Asset Management

Labor	1,041	1,171	1,491	1,491
Non-Labor	677	692	712	677
NSE	0	0	0	0
Total	1,718	1,863	2,203	2,168
FTE	14.5	15.9	20.9	20.9

Note: Totals may include rounding differences.

Beginning of Workpaper
1GD001.000 - Asset Management

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: B. Asset Management
 Category-Sub: 1. Asset Management
 Workpaper: 1GD001.000 - Asset Management

Activity Description:

SDG&E's technical office provides many of the technical and administrative services needed for the successful and timely completion of the O&M activities in Gas Distribution. This workgroup records the labor and non-labor costs for services provided by the Technical Office. Activities performed by this office include items such as identifying construction design requirements, evaluating pressure specifications, conducting pipeline planning, providing project drawings, identifying material selection, preparing work order estimates, acquiring third-party contract services, processing as-built drawings from the field to create a final record of pipeline system additions and changes, and obtaining permits for construction from city, county, state, and federal agencies.

Forecast Explanations:

Labor - Base YR Rec

Labor and non-labor expenses increased collectively in 2016 due to incremental planning, engineering, and facility mapping activities as the level of maintenance work, general construction activity, municipality work, and customer generated activity increased. Due to these recent incremental cost drivers, a historical average would not represent future business needs. Therefore, 2016 was chosen as the base level of expense for future years. To this base are added incremental expenses. Incremental expenses are needed to support the growth in activity in the Gas Graphical Information Systems (GGIS) workgroup group and Technical Services workgroup.

Non-Labor - Base YR Rec

Labor and non-labor expenses increased collectively in 2016 due to incremental planning, engineering, and facility mapping activities as the level of maintenance work, general construction activity, municipality work, and customer generated activity increased. Due to these recent incremental cost drivers, a historical average would not represent future business needs. Therefore, 2016 was chosen as the base level of expense for future years. To this base are added incremental expenses. Incremental expenses are needed to support the growth in activity in the Gas Graphical Information Systems (GGIS) workgroup group and Technical Services workgroup.

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		1,500	1,313	1,168	1,076	1,041	1,171	1,491	1,491	
Non-Labor		470	406	316	213	677	693	713	678	
NSE		0	0	0	0	0	0	0	0	
Total		1,970	1,719	1,484	1,289	1,719	1,864	2,204	2,169	
FTE		22.3	20.1	19.7	15.1	14.4	15.9	20.9	20.9	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: B. Asset Management
Category-Sub: 1. Asset Management
Workpaper: 1GD001.000 - Asset Management

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	1,041	1,041	1,041	130	450	450	1,171	1,491	1,491
Non-Labor	Base YR Rec	677	677	677	15	35	0	692	712	677
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		1,719	1,719	1,719	145	485	450	1,864	2,204	2,169
FTE	Base YR Rec	14.5	14.5	14.5	1.4	6.4	6.4	15.9	20.9	20.9

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID	
2017	Other	12	10	0	22	0.2	1-Sided Adj	ASUSTARI20161130092352503	
Explanation:		A. Four - Technical Support Analysts (TSA)s - will be added in the Technical Services design groups, 2 in 2017 and 2 more in 2018, in order to support increased workload. These positions will charge 10% of their time to O&M. Estimated expenses are 2 X \$60K X 0.10 = \$12K in 2017, 4 X \$60K X .10= \$24K for 2018 and thereafter. Non-Labor expenses are estimated to be 2 X \$5K=\$10K in 2017 and 2018 only.							
2017	RAMP Incremental	62	0	0	62	0.6	1-Sided Adj	BWILSON20170310094150293	
Explanation:		E. RAMP Risk ID 16/SDG&E Medium Pressure Pipeline Failure – Dresser Mechanical Couplings – Evaluate Dresser coupling field locations, excavate, and assess the weld housing to encapsulate the dresser mechanical couplings in and near downtown San Diego. Labor expenses for this activity (analysis) are estimated to be \$62K in 2017 for one year only. There are no Non-Labor expenses identified for this year.							
2017	RAMP Incremental	14	0	0	14	0.1	1-Sided Adj	BWILSON20170310100056417	
Explanation:		C. RAMP Risk ID 16/SDG&E Medium Pressure Pipeline Failure – Oil Drip Piping - This project is designed to verify the location of above ground and buried oil drip lines and containers. Labor expenses for this activity are estimated to be \$14K in 2017 for one year only. There are no non-labor expenses identified for this year.							
2017	Other	42	5	0	47	0.5	1-Sided Adj	ASUSTARI20170510112658800	
Explanation:		H. Two GIS Analysts - will be added in the GGISS group one beginning in 2017. These positions will charge 52% of their time to O&M. Estimated expenses are 1 X \$80K X 0.52=\$42K in 2017 and 2 X \$80K X 0.52=\$84K in 2018, TY2019 and thereafter. Non-Labor expenses are estimated to be 1 X \$5K=\$5K in 2017 and in 2018 only							
2017 Total		130	15	0	145	1.4			

Note: Totals may include rounding differences.

SDG&E/GAS DISTRIBUTION/Exh No:SDG&E-04-WP-R/Witness: G. Orozco-Mejia

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: B. Asset Management
Category-Sub: 1. Asset Management
Workpaper: 1GD001.000 - Asset Management

<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>
2018	Other	24	10	0	34	0.4	1-Sided Adj	ASUSTARI20161130092414973
Explanation:		A. Four - Technical Support Analysts (TSA)s - will be added in the Technical Services design groups, 2 in 2017 and 2 more in 2018, in order to support increased workload. These positions will charge 10% of their time to O&M. Estimated expenses are 2 X \$60K X 0.10 = \$12K in 2017, 4 X \$60K X .10= \$24K for 2018 and thereafter. Non-Labor expenses are estimated to be 2 X \$5K=\$10K in 2017 and 2018 only.						
2018	Other	125	20	0	145	2.0	1-Sided Adj	ASUSTARI20161130092613900
Explanation:		G. Four GIS Technicians - will be added in the GGISS group beginning 2018. This addition is for system growth, mobile home park replacement mapping, mapping support to newly added leak surveys and GO 112-F reporting. These positions will charge 52% of their time to O&M. Estimated expenses are 4 X \$60K X 0.52 = \$125K in 2018, TY2019 and thereafter. Non-Labor expenses are estimated to be 4 X \$5K=\$20K in 2018 for one year only.						
2018	Other	84	5	0	89	1.0	1-Sided Adj	ASUSTARI20161130092818340
Explanation:		H. Two GIS Analysts - will be added in the GGISS group one beginning in 2017. These positions will charge 52% of their time to O&M. Estimated expenses are 1 X \$80K X 0.52=\$42K in 2017 and 2 X \$80K X 0.52=\$84K in 2018, TY2019 and thereafter. Non-Labor expenses are estimated to be 1 X \$5K=\$5K in 2017 and in 2018 only						
2018	RAMP Incremental	217	0	0	217	3.0	1-Sided Adj	ASUSTARI20170510113743793
Explanation:		F. RAMP Risk ID 16/SDG&E Medium Pressure Pipeline Failure – Buried Piping in Vaults - SDG&E will assess the coating and the condition of the above-ground and below-ground facilities within the vaults and the need for mitigation. Labor expenses for this activity (analysis) is estimated to be \$217K in 2018 and TY2019 only. There are no non-labor expenses identified.						
2018 Total		450	35	0	485	6.4		

2019	Other	24	0	0	24	0.4	1-Sided Adj	ASUSTARI20161130092438540
Explanation:		A. Four - Technical Support Analysts (TSA)s - will be added in the Technical Services design groups, 2 in 2017 and 2 more in 2018, in order to support increased workload. These positions will charge 10% of their time to O&M. Estimated expenses are 2 X \$60K X 0.10 = \$12K in 2017, 4 X \$60K X .10= \$24K for 2018 and thereafter. Non-Labor expenses are estimated to be 2 X \$5K=\$10K in 2017 and 2018 only.						
2019	Other	125	0	0	125	2.0	1-Sided Adj	ASUSTARI20161130092708823
Explanation:		G. Four GIS Technicians - will be added in the GGISS group beginning 2018. This addition is for system growth, mobile home park replacement mapping, mapping support to newly added leak surveys and GO 112-F reporting. These positions will charge 52% of their time to O&M. Estimated expenses are 4 X \$60K X 0.52 = \$125K in 2018, TY2019 and thereafter. Non-Labor expenses are estimated to be 4 X \$5K=\$20K in 2018 for one year only.						

Note: Totals may include rounding differences.

SDG&E/GAS DISTRIBUTION/Exh No:SDG&E-04-WP-R/Witness: G. Orozco-Mejia

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: B. Asset Management
 Category-Sub: 1. Asset Management
 Workpaper: 1GD001.000 - Asset Management

<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>
2019	Other	84	0	0	84	1.0	1-Sided Adj	ASUSTARI20161130092838057
Explanation:		H. Two GIS Analysts - will be added in the GGISS group one beginning in 2017. These positions will charge 52% of their time to O&M. Estimated expenses are 1 X \$80K X 0.52=\$42K in 2017 and 2 X \$80K X 0.52=\$84K in 2018, TY2019 and thereafter. Non-Labor expenses are estimated to be 1 X \$5K=\$5K in 2017 and in 2018 only						
2019	RAMP Incremental	217	0	0	217	3.0	1-Sided Adj	ASUSTARI20170510114739363
Explanation:		F. RAMP Risk ID 16/SDG&E Medium Pressure Pipeline Failure – Buried Piping in Vaults - SDG&E will assess the coating and the condition of the above-ground and below-ground facilities within the vaults and the need for mitigation. Labor expenses for this activity (analysis) is estimated to be \$217K in 2018 and TY2019 only. There are no non-labor expenses identified.						
2019 Total		450	0	0	450	6.4		

Note: Totals may include rounding differences.

SDG&E/GAS DISTRIBUTION/Exh No:SDG&E-04-WP-R/Witness: G. Orozco-Mejia

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: B. Asset Management
Category-Sub: 1. Asset Management
Workpaper: 1GD001.000 - Asset Management

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	1,199	1,060	962	910	893
Non-Labor	503	397	314	212	677
NSE	0	0	0	0	0
Total	1,702	1,456	1,276	1,122	1,571
FTE	19.2	17.0	16.7	12.9	12.3
Adjustments (Nominal \$) **					
Labor	0	0	0	0	0
Non-Labor	-51	0	0	0	0
NSE	0	0	0	0	0
Total	-51	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	1,199	1,060	962	910	893
Non-Labor	452	397	314	212	677
NSE	0	0	0	0	0
Total	1,651	1,456	1,276	1,122	1,571
FTE	19.2	17.0	16.7	12.9	12.3
Vacation & Sick (Nominal \$)					
Labor	174	168	154	141	148
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	174	168	154	141	148
FTE	3.1	3.0	3.0	2.3	2.2
Escalation to 2016\$					
Labor	127	85	52	25	0
Non-Labor	18	9	2	1	0
NSE	0	0	0	0	0
Total	145	94	54	26	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	1,500	1,313	1,168	1,076	1,041
Non-Labor	470	406	316	213	677
NSE	0	0	0	0	0
Total	1,970	1,719	1,484	1,289	1,719
FTE	22.3	20.0	19.7	15.2	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 - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: B. Asset Management
 Category-Sub: 1. Asset Management
 Workpaper: 1GD001.000 - Asset Management

Summary of Adjustments to Recorded:

In Nominal \$ (000) Incurred Costs					
Years	2012	2013	2014	2015	2016
Labor	0	0	0	0	0
Non-Labor	-51	0	0	0	0
NSE	0	0	0	0	0
Total	-51	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	0	-51	0	0.0	1-Sided Adj	ASUSTARI20161028103031290
Explanation:		Moving Bridge Span costs from Asset Management (1GD001.000) to Field O&M - Main Maintenance (1GD000.003) consistent with forecast.					
2012 Total		0	-51	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 - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: B. Asset Management
 Category-Sub: 1. Asset Management
 Workpaper: 1GD001.000 - Asset Management

RAMP Item # 1

Ref ID: ASUSTARI20170309174534520

RAMP Chapter: SDG&E-16

Program Name: Utility Conflict Review (Right of Way)

Program Description: Inspection of the property area where pipelines are located and addresses encroachment, which is tangible property belonging to either the owner or a third party, which has unlawfully been or will be placed within the Company's right of way. This is mandated by CFR 49 Part 192 Subpart M.

Risk/Mitigation:

Risk: Medium pressure pipeline failure

Mitigation: Maintenance

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	767	767	767
High	847	847	847

Funding Source: CPUC-GRC

Forecast Method: Base Year

Work Type: Mandated

Work Type Citation: CFR 49 Part 192 Subpart M.

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 174

Explanation: Calculated using the FUS and Contracted # of conflict checks for 2016 * 50% O&M. The reason this value is lower than the range calculated for 2017-2019 in the original RAMP form is because the original estimate didn't account for the 50% labor split to Capital. This is the true estimate for 2016.

San Diego Gas & Electric Company
 2019 GRC - REVISED
 Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: B. Asset Management
 Category-Sub: 1. Asset Management
 Workpaper: 1GD001.000 - Asset Management

RAMP Item # 2

Ref ID: ASUSTARI20170310100759307

RAMP Chapter: SDG&E-16

Program Name: Gas Standards Review

Program Description: All procedures in Gas Standards are reviewed yearly for updated regulator information & updating standard procedures

Risk/Mitigation:

Risk: SDG&E Medium Pressure Pipeline Failure

Mitigation: Operations

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	65	65	65
High	71	71	71

Funding Source: CPUC-GRC

Forecast Method: Base Year

Work Type: Non-Mandated

Work Type Citation: NA

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 68

Explanation: BW 2100-0177 O&M labor for PT call-in employee performing standard review. Amount in line with base year amount expected to remain constant.

San Diego Gas & Electric Company
 2019 GRC - REVISED
 Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: B. Asset Management
 Category-Sub: 1. Asset Management
 Workpaper: 1GD001.000 - Asset Management

RAMP Item # 3

Ref ID: BWILSON20170310094150293

RAMP Chapter: SDG&E-16

Program Name: Dresser Mechanical Coupling Removal

Program Description: This program consists of evaluating the coupling field location, excavating, and assessing the weld housing to encapsulate the dresser mechanical couplings main in and near downtown San Diego.

Risk/Mitigation:

Risk: SDG&E Medium-Pressure Pipeline Failure

Mitigation: Encapsulate Dresser couplings

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	53	0	0
High	72	0	0

Funding Source: CPUC-GRC

Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: N/A

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 0

Explanation: One-time cost expected in 2017 only. 2016 zero. 2018/2019 zero.

San Diego Gas & Electric Company
 2019 GRC - REVISED
 Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: B. Asset Management
 Category-Sub: 1. Asset Management
 Workpaper: 1GD001.000 - Asset Management

RAMP Item # 4

Ref ID: BWILSON20170310100056417

RAMP Chapter: SDG&E-16

Program Name: Oil Drip Piping

Program Description: This project is designed to verify the location of above ground and buried oil drip lines and containers. As part of the process, SDG&E consults with Pipeline Operations and Region Engineering to determine and remove facilities that are not necessary.

Risk/Mitigation:

Risk: SDG&E Medium-Pressure Pipeline Failure

Mitigation: Verify locations and remove

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	12	0	0
High	16	0	0

Funding Source: CPUC-GRC

Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: N/A

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 0

Explanation: One-time costs expected in 2017. 2016 zero. 2018-2019 zero.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: B. Asset Management
 Category-Sub: 1. Asset Management
 Workpaper: 1GD001.000 - Asset Management

RAMP Item # 5

Ref ID: BWILSON20170310101109723

RAMP Chapter: SDG&E-16

Program Name: Buried Piping in Vaults

Program Description: SDG&E has pipeline buried in vaults that may be corroded by above ground facilities and pitting of below ground piping. This activity will determine the locations vaults containing medium and high pressure facilities. SDG&E will assess the coating and the condition of the above-ground and below-ground facilities within the vaults.

Risk/Mitigation:

Risk: SDG&E Medium-Pressure Pipeline Failure

Mitigation: Coat or remove affected buried piping in vaults

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	369	0	0
High	499	0	0

Funding Source: CPUC-GRC

Forecast Method: Zero-Based

Work Type: Non-Mandated

Work Type Citation: 49 CFR 192, GO 112-F

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 0

Explanation: RAMP item expected to begin 2018. Original amount moved from 2017 and split into 2018/2019. New activity, zero value in 2016.

Supplemental Workpapers for Workpaper 1GD001.000

SDG&E-GOM-Capital-SUP-006

San Diego Gas and Electric Company -- Gas Distribution -- Witness Gina Orozco-Mejia
 Supplemental Workpaper - Summary of Capital and O&M RAMP Incremental Expenses
 Reference: Capital Workpapers: SDG&E-04-CWP; O&M Workpapers: SDG&E-04-WP

[A] Workpaper Detail:	[B] Testimony Section	[C] RAMP Risk ID:	[D] Expense Element	[E] RAMP Activity	[F] Unit	[G] Unit Cost	2019 GRC Forecast - \$(000) of \$2016					
							2017		2018		2019	
							[H] Units	[I] [GxH] Forecast	[J] Units	[K] [GxJ] Forecast	[L] Units	[M] [GxL] Forecast
005080.002	IV. I (BC 508)	Risk ID 16	Capital	Early Vintage Steel Replacement ¹	1 Mile Replacement	\$1,000,000	1.9	\$1,900	5.5	\$5,485	7.4	\$7,385
005080.003	IV. I (BC 508)	Risk ID 16	Capital	Pre-1933 Threaded Steel Main Removal ²	1 Mile Replacement	\$1,000,000	0.0	\$0	7.4	\$7,385	14.8	\$14,770
1GD001.000	III. B. 1	Risk ID 16	O&M	Dresser Mechanical Coupling Removal ³	Hours (Work Order Review)	\$80	780.0	\$62	0.0	\$0	0.0	\$0
005100.002	IV. K (BC 510)	Risk ID 16	Capital	Dresser Mechanical Coupling Removal ³	1 Fitting Removal	\$160,000	5.8	\$926	4.3	\$6,952	49.1	\$7,876
1GD001.000	III. B. 1	Risk ID 16	O&M	Oil Drip Piping Removal ⁴	Hours (Work Order Review)	\$80	176.0	\$14	0.0	\$0	0.0	\$0
005100.003	IV. K (BC 510)	Risk ID 16	Capital	Oil Drip Piping Removal ⁴	1 Oil Drip Removal	\$160,000	0.0	\$0	58.0	\$9,275	58.0	\$9,275
1GD001.000	III. B. 1	Risk ID 16	O&M	Buried Piping in Vaults Replacement	Hours (Work Order Review)	\$80	0.0	\$0	2,713.0	\$217	2,713.0	\$217
005100.004	IV. K (BC 510)	Risk ID 16	Capital	Buried Piping in Vaults Replacement	1 Buried Vault and Piping Removal	\$160,000	0.0	\$0	0.0	\$0	48.2	\$7,719
005100.005	IV. K (BC 510)	Risk ID 16	Capital	Closed Valves Between Medium and High Pressure	1 Valve Removal	\$160,000	0.0	\$0	22.3	\$3,570	0.0	\$0
009020.003	IV. M (BC 902)	Risk ID 16	Capital	CP Reliability Enhancement ⁵	1 CP Station (Data Verification & Modeling)	\$8,000	0.0	\$0	128.4	\$1,027	418.6	\$3,349
1GD000.007	III. A. 8	Risk ID 17	O&M	Supervisor University ⁶	1 FTE	\$100,000	0.0	\$0	2.7	\$277	3.2	\$319

NOTES:

- 1,2 / Vintage steel and Pre-1933 threaded steel replacement unit based on 1 mile of pipe with 106 services. Number of services is based on experience under DREAMS program.
- 3/ Approximately 100 Dresser couplings require removal. Each Dresser coupling will require 2 PCF fittings, traffic control and 3 excavations per job.
- 4/ Approximately 120 oil drips require removal. Each oil drip will require 2 PCF fittings, traffic control and 3 excavations per job.
- 5/ Approximately 547 CP stations will be modeled to predict station performance. Each CP station will need 20 hours data / attribute validation and 80 hours to establish in model.
- 6/ Implement dedicated training group and curriculum specific to Field Supervisor development.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: C. Operations Management & Training
Workpaper: 1GD004.000

Summary for Category: C. Operations Management & Training

	In 2016\$ (000) Incurred Costs			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
Labor	2,704	2,699	3,028	3,028
Non-Labor	1,235	1,138	1,502	1,482
NSE	0	0	0	0
Total	3,939	3,837	4,530	4,510
FTE	26.7	26.7	30.1	30.1

Workpapers belonging to this Category:

1GD004.000 Operations Management & Training

Labor	2,704	2,699	3,028	3,028
Non-Labor	1,235	1,138	1,502	1,482
NSE	0	0	0	0
Total	3,939	3,837	4,530	4,510
FTE	26.7	26.7	30.1	30.1

Note: Totals may include rounding differences.

Beginning of Workpaper
1GD004.000 - Operations Management & Training

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: C. Operations Management & Training
Category-Sub: 1. Operations Management & Training
Workpaper: 1GD004.000 - Operations Management & Training

Activity Description:

This group includes labor and non-labor expenses for management and staff support in Gas Technical Services (GTS); Gas Operations Training group, based at the SKILLS training center; and Gas Distribution leadership. Work completed within this group includes Gas Technical Services and Gas Distribution leadership; developing and maintaining gas distribution construction and operating standards; evaluating new field technologies; development of field training materials and providing the skills training both in classroom and simulation format; providing code required welder testing, training and welding inspection; and managing the Operator Qualification (OQ) program for SDG&E gas employees and contractors.

Forecast Explanations:

Labor - Base YR Rec

In projecting the future expense requirements for these functions the 2012 through 2016 historical spending for this workgroup was reviewed. In general, operations leadership, field management, operations support, and personnel training increase as levels of work and workforce increase; as new programs, processes and technologies are implemented; and as regulatory or compliance requirements change. In 2016 levels of work requiring management and training support substantially increased. Additionally GO112-F implementation now requires: the Operator Qualification of Applicant Installers for new construction if performing trench related tasks; and the equipment and facilities used by an operator for training and qualification of employees, contractors, and applicant installers must be identical or very similar to the equipment and facilities the employee will be using for performing the task in the field. Because of these upward pressures and new requirements, a historic trend or average for labor in this group would not be representative of required base funding level. A base year methodology with incremental expenses to reflect the new business needs in the future was selected. Added to this base level are incremental funds for ongoing refinement of the Operator Qualification program and growth in training development and instruction.

Non-Labor - Base YR Rec

In projecting the future expense requirements for these functions the 2012 through 2016 historical spending for this workgroup was reviewed. In general, operations leadership, field management, operations support, and personnel training increase as levels of work and workforce increase; as new programs, processes and technologies are implemented; and as regulatory or compliance requirements change. In 2016 levels of work requiring management and training support substantially increased. Additionally GO112-F implementation now requires: the Operator Qualification of Applicant Installers for new construction if performing trench related tasks; and the equipment and facilities used by an operator for training and qualification of employees, contractors, and applicant installers must be identical or very similar to the equipment and facilities the employee will be using for performing the task in the field. Because of these upward pressures and new requirements, a historic trend or average for Non-labor in this group would not be representative of required base funding level. A base year methodology with incremental expenses to reflect the new business needs in the future was selected. Added to this base level are incremental funds for ongoing refinement of the Operator Qualification program and growth in training development and instruction.

NSE - Base YR Rec

N/A

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: C. Operations Management & Training
 Category-Sub: 1. Operations Management & Training
 Workpaper: 1GD004.000 - Operations Management & Training

Summary of Results:

		In 2016\$ (000) Incurred Costs								
		Adjusted-Recorded					Adjusted-Forecast			
Years		2012	2013	2014	2015	2016	2017	2018	2019	
Labor		2,192	2,354	2,077	2,305	2,704	2,700	3,029	3,029	
Non-Labor		528	658	588	593	1,235	1,138	1,502	1,482	
NSE		0	0	0	0	0	0	0	0	
Total		2,720	3,012	2,665	2,898	3,939	3,838	4,531	4,511	
FTE		22.9	23.7	20.9	20.5	26.7	26.7	30.1	30.1	

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: C. Operations Management & Training
 Category-Sub: 1. Operations Management & Training
 Workpaper: 1GD004.000 - Operations Management & Training

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	2,704	2,704	2,704	-5	324	324	2,699	3,028	3,028
Non-Labor	Base YR Rec	1,235	1,235	1,235	-97	267	247	1,138	1,502	1,482
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
Total		3,939	3,939	3,939	-102	591	571	3,837	4,530	4,510
FTE	Base YR Rec	26.7	26.7	26.7	0.0	3.4	3.4	26.7	30.1	30.1

Forecast Adjustment Details:

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj Type	RefID	
2017	Other	0	70	0	70	0.0	1-Sided Adj	ASUSTARI20161130095642767	
Explanation:		A. Records Management System Funds will be required for setup and licensing for ITS and Veriforce records management systems for monitoring and tracking employee and contractor Operator Qualification records and Drug and Alcohol testing records. Non-Labor expenses are estimated to be \$70K in 2017 and \$60K in 2018, TY 2019 and thereafter. There are no labor expenses estimated for this project.							
2017	FOF-Ongoing	-5	-147	0	-152	0.0	1-Sided Adj	ASUSTARI20161201153512770	
Explanation:		T. FOF - Savings in administrative tasks for field supervisors; one-call service expense, and improvements in tracking construction materials availability and location. Non-labor savings in training expenses and Operator Qualification training Combined labor savings are \$-5K in 2017, \$12K in 2018 and TY2019 and thereafter. Combined non-Labor savings are \$-147K in 2017, \$-173K in 2018 and TY2019 and thereafter.							
2017	FOF-Implementation	0	-20	0	-20	0.0	1-Sided Adj	DBENTLEY20170306162814610	
Explanation:		J. FOF - One time implementation non-labor savings related to the purchase of ITS software which allows switching from paper format to electronic for classroom and Operator Qualification training. Non-Labor savings are \$-20K in 2017 only.							
2017 Total		-5	-97	0	-102	0.0			

2018 Other 0 60 0 60 0.0 1-Sided Adj ASUSTARI20161130095651793

Explanation: A. Records Management System Funds will be required for setup and licensing for ITS and Veriforce records management systems for monitoring and tracking employee and contractor Operator Qualification records and Drug and Alcohol testing records. Non-Labor expenses are estimated to be \$70K in 2017 and \$60K in 2018, TY 2019 and thereafter. There are no labor expenses estimated for this project.

Note: Totals may include rounding differences.

SDG&E/GAS DISTRIBUTION/Exh No:SDG&E-04-WP-R/Witness: G. Orozco-Mejia

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: C. Operations Management & Training
 Category-Sub: 1. Operations Management & Training
 Workpaper: 1GD004.000 - Operations Management & Training

<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>	
2018	Other	0	120	0	120	0.0	1-Sided Adj	ASUSTARI20170510131028167	
Explanation:		B. Contract resource (Instructional design) will be required to DEVELOP training for Field Utility Specialists in 2018 and 2019. Non-Labor expense is estimated to be \$120K in 2018 and 2019 and thereafter.							
2018	Other	22	5	0	27	0.3	1-Sided Adj	ASUSTARI20161130101027263	
Explanation:		D. One Shop Assistant Due to the increase in customer meter sets and regulator stations requiring fabrication in the Welding Shop and for shop tools maintenance, one Shop Assistant will be required beginning in 2018. Labor expenses are 25% O&M. Labor expenses are .25 X \$85K = \$22K beginning in 2018 and thereafter. Non-Labor expense is 1 X \$5K = \$5K in 2018 only.							
2018	Other	120	5	0	125	1.0	1-Sided Adj	ASUSTARI20161130101119070	
Explanation:		N. One Emergency Response Technical Advisor to assist in coordinating tabletop and functional gas incident emergency exercises, provide staff support to the San Diego Region Gas Emergency (GEC), and update GEC procedures and operating manual, one Technical Advisor will be required beginning in 2018. Labor expense is estimated to be 1 X \$120K = \$120K for 2018 and TY2019 and thereafter. Non-Labor expenses are estimated to be 1 X \$5K = \$5K in 2018 for one year only.							
2018	Other	60	5	0	65	1.0	1-Sided Adj	ASUSTARI20161130101221387	
Explanation:		O. One Project Specialist Beginning in 2018 one Project Specialist will be added to focus on increased reporting and Operator Qualification requirements and compliance support as a result of the implementation of the new CPUC GO-112F. Labor expenses are estimated to be 1 X \$60K = \$60K for 2018 and TY 2019 and thereafter. Non-Labor expenses are estimated to be 1 X \$5K = \$5K in 2018 for one year only.							
2018	FOF-Ongoing	12	-173	0	-161	0.1	1-Sided Adj	ASUSTARI20161201153603850	
Explanation:		T. FOF - Savings in administrative tasks for field supervisors; one-call service expense, and improvements in tracking construction materials availability and location. Non-labor savings in training expenses and Operator Qualification training Combined labor savings are -\$5K in 2017, \$12K in 2018 and TY2019 and thereafter. Combined non-Labor savings are -\$147K in 2017, -\$173K in 2018 and TY2019 and thereafter.							
2018	Other	0	120	0	120	0.0	1-Sided Adj	ASUSTARI20170510131134343	
Explanation:		C. Contract resource (Instructor) will be required to CONDUCT training for Gas Transmission and Moreno Compressor Station operators in 2018 and 2019.. Non-Labor expense is estimated to be \$120K in 2018 and 2019 and thereafter.							
2018	Other	0	120	0	120	0.0	1-Sided Adj	ASUSTARI20170510131319373	
Explanation:		Q. Contract resource (instructional design) to DEVELOP training for the Moreno Compressor station. This includes operations skills, OpQual, and instrumentation training for Moreno personnel. This will be required beginning in 2018 at 100% O&M. Non-Labor expenses are estimated to be 1 X \$120K for 2018 and thereafter. There is no labor expense.							

Note: Totals may include rounding differences.

SDG&E/GAS DISTRIBUTION/Exh No:SDG&E-04-WP-R/Witness: G. Orozco-Mejia

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: C. Operations Management & Training
Category-Sub: 1. Operations Management & Training
Workpaper: 1GD004.000 - Operations Management & Training

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	Adj_Type	RefID	
2018	Other	110	5	0	115	1.0	1-Sided Adj	ASUSTARI20170510131634157	
Explanation:		S. One Project Manager To begin implementing SDG&E Gas Distribution approach to compliance with API 1173 and Pipeline Safety Management System (PSMS) objectives. This will require one Project Manager beginning in 2018 and thereafter. (1 X \$110K = \$110K) Non-labor is estimated to be 1 X \$5K = \$5K in 2018 only.							
2018 Total		324	267	0	591	3.4			

2019	Other	0	60	0	60	0.0	1-Sided Adj	ASUSTARI20161130095700030	
Explanation:		A. Records Management System Funds will be required for setup and licensing for ITS and Veriforce records management systems for monitoring and tracking employee and contractor Operator Qualification records and Drug and Alcohol testing records. Non-Labor expenses are estimated to be \$70K in 2017 and \$60K in 2018, TY 2019 and thereafter. There are no labor expenses estimated for this project.							

2019	Other	110	0	0	110	1.0	1-Sided Adj	ASUSTARI20170510134202373	
Explanation:		S. One Project Manager To begin implementing SDG&E Gas Distribution approach to compliance with API 1173 and Pipeline Safety Management System (PSMS) objectives. This will require one Project Manager beginning in 2018 and thereafter. (1 X \$110K = \$110K) Non-labor is estimated to be 1 X \$5K = \$5K in 2018 only.							

2019	Other	22	0	0	22	0.3	1-Sided Adj	ASUSTARI20161130101041650	
Explanation:		D. One Shop Assistant Due to the increase in customer meter sets and regulator stations requiring fabrication in the Welding Shop and for shop tools maintenance, one Shop Assistant will be required beginning in 2018. Labor expenses are 25% O&M. Labor expenses are .25 X \$85K = \$22K beginning in 2018 and thereafter. Non-Labor expense is 1 X \$5K = \$5K in 2018 only.							

2019	Other	120	0	0	120	1.0	1-Sided Adj	ASUSTARI20161130101131427	
Explanation:		N. One Emergency Response Technical Advisor to assist in coordinating tabletop and functional gas incident emergency exercises, provide staff support to the San Diego Region Gas Emergency (GEC), and update GEC procedures and operating manual, one Technical Advisor will be required beginning in 2018. Labor expense is estimated to be 1 X \$120K = \$120K for 2018 and TY2019 and thereafter. Non-Labor expenses are estimated to be 1 X \$5K = \$5K in 2018 for one year only.							

2019	Other	60	0	0	60	1.0	1-Sided Adj	ASUSTARI20161130101231913	
Explanation:		O. One Project Specialist Beginning in 2018 one Project Specialist will be added to focus on increased reporting and Operator Qualification requirements and compliance support as a result of the implementation of the new CPUC GO-112F. Labor expenses are estimated to be 1 X \$60K = \$60K for 2018 and TY 2019 and thereafter. Non-Labor expenses are estimated to be 1 X \$5K = \$5K in 2018 for one year only.							

Note: Totals may include rounding differences.

SDG&E/GAS DISTRIBUTION/Exh No:SDG&E-04-WP-R/Witness: G. Orozco-Mejia

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: C. Operations Management & Training
 Category-Sub: 1. Operations Management & Training
 Workpaper: 1GD004.000 - Operations Management & Training

<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>
2019	FOF-Ongoing	12	-173	0	-161	0.1	1-Sided Adj	DBENTLEY20170306161050680
Explanation:		T. FOF - Savings in administrative tasks for field supervisors; one-call service expense, and improvements in tracking construction materials availability and location. Non-labor savings in training expenses and Operator Qualification training Combined labor savings are \$-5K in 2017, \$12K in 2018 and TY2019 and thereafter. Combined non-Labor savings are \$-147K in 2017, \$-173K in 2018 and TY2019 and thereafter.						
2019	Other	0	120	0	120	0.0	1-Sided Adj	ASUSTARI20170510131045047
Explanation:		B. Contract resource (Instructional design) will be required to DEVELOP training for Field Utility Specialists in 2018 and 2019. Non-Labor expense is estimated to be \$120K in 2018 and 2019 and thereafter.						
2019	Other	0	120	0	120	0.0	1-Sided Adj	ASUSTARI20170510131213047
Explanation:		C. Contract resource (Instructor) will be required to CONDUCT training for Gas Transmission and Moreno Compressor Station operators in 2018 and 2019.. Non-Labor expense is estimated to be \$120K in 2018 and 2019 and thereafter.						
2019	Other	0	120	0	120	0.0	1-Sided Adj	ASUSTARI20170510131338983
Explanation:		Q. Contract resource (instructional design) to DEVELOP training for the Moreno Compressor station. This includes operations skills, OpQual, and instrumentation training for Moreno personnel. This will be required beginning in 2018 at 100% O&M. Non-Labor expenses are estimated to be 1 X \$120K for 2018 and thereafter. There is no labor expense.						
2019 Total		324	247	0	571	3.4		

Note: Totals may include rounding differences.

SDG&E/GAS DISTRIBUTION/Exh No:SDG&E-04-WP-R/Witness: G. Orozco-Mejia

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: C. Operations Management & Training
Category-Sub: 1. Operations Management & Training
Workpaper: 1GD004.000 - Operations Management & Training

Determination of Adjusted-Recorded (Incurred Costs):

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
Recorded (Nominal \$)*					
Labor	1,786	2,007	1,733	1,900	2,255
Non-Labor	634	1,021	639	594	1,244
NSE	0	0	0	0	0
Total	2,420	3,028	2,372	2,494	3,499
FTE	19.8	21.0	17.6	16.7	21.6
Adjustments (Nominal \$) **					
Labor	-34	-107	-23	50	65
Non-Labor	-126	-378	-55	-5	-9
NSE	0	0	0	0	0
Total	-160	-485	-78	46	55
FTE	-0.1	-0.8	0.2	0.8	1.0
Recorded-Adjusted (Nominal \$)					
Labor	1,752	1,900	1,711	1,951	2,320
Non-Labor	508	643	584	589	1,235
NSE	0	0	0	0	0
Total	2,260	2,543	2,295	2,540	3,555
FTE	19.7	20.2	17.8	17.5	22.6
Vacation & Sick (Nominal \$)					
Labor	254	301	273	301	385
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	254	301	273	301	385
FTE	3.2	3.5	3.2	3.1	4.1
Escalation to 2016\$					
Labor	186	153	93	53	0
Non-Labor	20	15	3	4	0
NSE	0	0	0	0	0
Total	206	168	97	57	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2016\$)					
Labor	2,192	2,354	2,077	2,305	2,704
Non-Labor	528	658	588	593	1,235
NSE	0	0	0	0	0
Total	2,720	3,012	2,665	2,898	3,939
FTE	22.9	23.7	21.0	20.6	26.7

* After company-wide exclusions of Non-GRC costs

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

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: C. Operations Management & Training
 Category-Sub: 1. Operations Management & Training
 Workpaper: 1GD004.000 - Operations Management & Training

Summary of Adjustments to Recorded:

		In Nominal \$ (000) Incurred Costs				
Years		2012	2013	2014	2015	2016
Labor		-34	-107	-23	50	65
Non-Labor		-126	-378	-55	-5	-9
NSE		0	0	0	0	0
	Total	-160	-485	-78	46	55
FTE		-0.1	-0.8	0.2	0.8	1.0

Detail of Adjustments to Recorded:

Year	Adj Group	Labor	NLbr	NSE	FTE	Adj Type	RefID
2012	Other	-83	0	0	-0.9	CCTR Transf To 2100-0712.000	ASUSTARI20161028094206840
Explanation:		Transfer due to reorg separating CSF from Gas Distribution and then the Planner Centralization. Moving Business Planner historical labor out of Gas Dist. and to the appropriate Business Planning CC 0712 group 1 AG001.					
2012	Other	0	-127	0	0.0	1-Sided Adj	ASUSTARI20161028103939067
Explanation:		Moving tools from 1GD004.000 Operations Mgmt & Training to 1GD000.005 Field O&M - Tools consistent with forecast.					
2012	Other	48	1	0	0.8	CCTR Transf From 2200-2145.000	CTRINH20161114113713327
Explanation:		Transfer of GTS Admin Labor and Non-Labor costs from USS 2200-2145 to NSS 2100-3459 (Workgroup 1GD004.000) in order to align historical costs with the workgroup in which the activity will be forecasted					
2012 Total		-34	-126	0	-0.1		
2013	Other	-85	0	0	-0.9	CCTR Transf To 2100-0712.000	ASUSTARI20161028094845640
Explanation:		Transfer due to reorg in 2014 separating CSF from Gas Distribution and then the Planner Centralization. Moving Business Planner historical labor out of Gas Dist. and to the appropriate Business Planning CC 0712.					
2013	Other	-70	0	0	-0.7	CCTR Transf To 2100-0639.000	ASUSTARI20161028095453787
Explanation:		Transfer due to reorg in 2014 separating CSF from Gas Distribution. Moving Safety Advisor historical labor out of Gas Dist to appropriate CSF CC 0639					
2013	Other	0	-70	0	0.0	1-Sided Adj	ASUSTARI20161028104132293
Explanation:		Moving tools from 1GD004.000 Operations Mgmt & Training to 1GD000.005 Field O&M - Tools consistent with forecast.					
2013	Other	48	0	0	0.8	CCTR Transf From 2200-2145.000	CTRINH20161114113827357

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: C. Operations Management & Training
 Category-Sub: 1. Operations Management & Training
 Workpaper: 1GD004.000 - Operations Management & Training

<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>
Explanation: Transfer of GTS Admin Labor and Non-Labor costs from USS 2200-2145 to NSS 2100-3459 (Workgroup 1GD004.000) in order to align historical costs with the workgroup in which the activity will be forecasted							
2013	Other	0	-308	0	0.0	CCTR Transf To 2100-0034.000	ASUSTARI20161028110639530
Explanation: Moving CSF tools purchase from GD Operations Mgmt & training Director CC to CSF CC 0034. Aligns history based on reorg moving CSF out of GD.							
2013 Total		-107	-378	0	-0.8		
2014	Other	-73	0	0	-0.7	CCTR Transf To 2100-0639.000	ASUSTARI20161028095634320
Explanation: Transfer due to reorg in 2014 separating CSF from Gas Distribution. Moving Safety Advisor historical labor out of Gas Dist to appropriate CSF CC 0639							
2014	Other	0	-56	0	0.0	1-Sided Adj	ASUSTARI20161028104246320
Explanation: Moving tools from 1GD004.000 Operations Mgmt & Training to 1GD000.005 Field O&M - Tools consistent with forecast.							
2014	Other	51	1	0	0.9	CCTR Transf From 2200-2145.000	CTRINH20161114113857720
Explanation: Transfer of GTS Admin Labor and Non-Labor costs from USS 2200-2145 to NSS 2100-3459 (Workgroup 1GD004.000) in order to align historical costs with the workgroup in which the activity will be forecasted							
2014 Total		-23	-55	0	0.2		
2015	Other	0	-7	0	0.0	1-Sided Adj	ASUSTARI20161028104354570
Explanation: Moving tools from 1GD004.000 Operations Mgmt & Training to 1GD000.005 Field O&M - Tools consistent with forecast.							
2015	Other	50	2	0	0.8	CCTR Transf From 2200-2145.000	CTRINH20161114113918807
Explanation: Transfer of GTS Admin Labor and Non-Labor costs from USS 2200-2145 to NSS 2100-3459 (Workgroup 1GD004.000) in order to align historical costs with the workgroup in which the activity will be forecasted							
2015 Total		50	-5	0	0.8		
2016	Other	65	0	0	1.0	CCTR Transf From 2200-2145.000	CTRINH20170222075747123
Explanation: Transfer of GTS Admin Labor and Non Labor costs from 2200-2145 to 2100-3459 (Workgroup 1GD004) in order to align historical costs with the workgroup in which the activity will be forecasted.							
2016	Other	0	-9	0	0.0	1-Sided Adj	ASUSTARI20170223112203950
Explanation: Moving tools from 1GD004.000 Operations Mgmt & Training to 1GD000.005 Field O&M - Tools consistent with forecast.							

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
 2019 GRC - REVISED
 Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: C. Operations Management & Training
 Category-Sub: 1. Operations Management & Training
 Workpaper: 1GD004.000 - Operations Management & Training

<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		65	-9	0	1.0		

Note: Totals may include rounding differences.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: C. Operations Management & Training
 Category-Sub: 1. Operations Management & Training
 Workpaper: 1GD004.000 - Operations Management & Training

RAMP Item # 1

Ref ID: ASUSTARI20170309191931530

RAMP Chapter: SDG&E-16

Program Name: Distribution Welder Training, Distribution Construction Training, Training Props

Program Description: Certification and training that is required for all distribution employees to work on company assets. This is mandated by CFR 49 Part 192 Subpart N. For safety and distribution staff training, Props are purchased to be used in situation city to simulate real world scenarios while qualifying personnel.

Risk/Mitigation:

Risk: Medium Pressure Pipeline failure

Mitigation: Qualifications of Pipeline Personnel

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	565	624	657
High	691	762	803

Funding Source: CPUC-GRC

Forecast Method: Zero-Based

Work Type: Mandated

Work Type Citation: CFR 49 Part 192 Subpart N.

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 650

Explanation: RAMP estimate for 2016 consistent with expected spend. Additional RAMP incremental amounts in years 2018-2019 are determined part of normal business and absorbed in forecast.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: C. Operations Management & Training
Category-Sub: 1. Operations Management & Training
Workpaper: 1GD004.000 - Operations Management & Training

RAMP Item # 2

Ref ID: ASUSTARI20170310101458233

RAMP Chapter: SDG&E-16

Program Name: Pipeline Safety and Compliance

Program Description: The minimum safety requirements prescribed by CFR 49 Part 192 Subpart L – Operations include locate and mark, emergency preparedness and odorization. These activities are intended to address threats as identified by PHMSA.

Risk/Mitigation:

Risk: SDG&E Medium Pressure Pipeline Failure

Mitigation: Operations

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	86	86	86
High	95	95	95

Funding Source: CPUC-GRC

Forecast Method: Base Year

Work Type: Mandated

Work Type Citation: CFR 49 Part 192 Subpart L

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 90

Explanation: RAMP base estimated to remain constant throughout 2016 and forecast years.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: C. Operations Management & Training
Category-Sub: 1. Operations Management & Training
Workpaper: 1GD004.000 - Operations Management & Training

RAMP Item # 3

Ref ID: ASUSTARI20170310101905830

RAMP Chapter: SDG&E-16

Program Name: QA/QC mostly new construction

Program Description: Inspections of installed assets, welding/bonding procedures, material verification, gas standard compliance, personnel training/qualification verification.

Risk/Mitigation:

Risk: SDG&E Medium Pressure Pipeline Failure

Mitigation: Operations

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	64	64	64
High	71	71	71

Funding Source: CPUC-GRC

Forecast Method: Base Year

Work Type: Mandated

Work Type Citation: DOT

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 68

Explanation: RAMP base estimated to remain constant throughout 2016 and forecast years.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia
Category: C. Operations Management & Training
Category-Sub: 1. Operations Management & Training
Workpaper: 1GD004.000 - Operations Management & Training

RAMP Item # 4

Ref ID: BWILSON20170309150100777

RAMP Chapter: SDG&E-3

Program Name: Job Skills Training and STC -Gas

Program Description: Job Skills Training at the Skills Training Center (Gas)

Risk/Mitigation:

Risk: Employee Contractor & Public Safety

Mitigation: Mandatroy Employee training, refresher programs

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	762	762	762
High	914	914	914

Funding Source: CPUC-GRC

Forecast Method: Base Year

Work Type: Non-Mandated

Work Type Citation: NA

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 800

Explanation: RAMP base estimated to remain constant throughout 2016 and forecast years.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
 Witness: Gina Orozco-Mejia
 Category: C. Operations Management & Training
 Category-Sub: 1. Operations Management & Training
 Workpaper: 1GD004.000 - Operations Management & Training

RAMP Item # 5

Ref ID: BWILSON20170309151051053

RAMP Chapter: SDG&E-3

Program Name: First Responder Outreach Program

Program Description: First Responder gas related safety training and contingency planning. Also includes training and communications to internal personnel.

Risk/Mitigation:

Risk: Employee, Contractor, Public Safety

Mitigation: Customer Communications & First Responder training

Forecast CPUC Cost Estimates (\$000)

	<u>2017</u>	<u>2018</u>	<u>2019</u>
Low	366	366	366
High	439	439	439

Funding Source: CPUC-GRC

Forecast Method: Zero-Based

Work Type: Mandated

Work Type Citation: GO 112-F and 49 CFR 192

Historical Embedded Cost Estimates (\$000)

Embedded Costs: 262

Explanation: 2016 embedded cost consistent with 2015 base value. This amount is lower than the 2017-2019 RAMP range because the incremental amount associated with this program is captured in a GRC incremental adjustment not related to RAMP.

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia

Appendix A: List of Non-Shared Cost Centers

Cost Center	Sub	Description
2100-0079	000	METRO C&O GAS
2100-0081	000	SOUTH STREET REPAIR
2100-0087	000	NORTH COAST C&O CENTER GAS
2100-0093	000	NORTHEAST C&O-GAS
2100-0094	000	NORTH STREET REPAIR
2100-0102	000	BEACH CITIES C&O CENTER GAS
2100-0107	000	EASTERN C&O CENTER GAS
2100-0171	000	PIPELINE OPERATIONS
2100-0173	000	SHOPS SERVICES
2100-0174	000	M&R/SYSTEM PROTECTION SUPERVISOR
2100-0176	000	GAS INSTRUMENT SHOP
2100-0177	000	GAS ENGINEERING
2100-0182	000	GAS GEO INFO SYS/SVC
2100-0183	000	TECH SERVICES - HP PIPELINE & FRCHS
2100-0310	000	GAS TSM & DISTB LVC for Budget Use Only
2100-0637	000	CATHODIC PROTECTION
2100-0654	000	PIPELINE SERVICES
2100-0716	000	WELDING TRAINING & INSPECTION
2100-3400	000	VP Field Services
2100-3402	000	GAS TECHNICAL SERVICES MIRAMAR STAFF
2100-3405	000	CNG MAINTENANCE
2100-3417	000	SVP GAS TRANS & DISTR-NSS
2100-3459	000	CUSTOMER SERVICE-SOUTH INLAND DIRECTOR
2100-3538	000	VP ENGINEERING & OPERATION STAFF
2100-3567	000	GAS DESIGN
2100-3568	000	TECH SERVICES - PROGRAMS
2100-3586	000	SD REG FLD OPS MGR
2100-3606	000	Work Eff Office (WEO)
2100-3625	000	LEAKAGE MITIGATION
2100-3678	000	CONSTRUCTION RESOURCE MGMT
2100-3720	000	NC C&O STREET REPAIR
2100-3723	000	OC GAS DISTRIBUTION
2100-3728	000	EA C&O STREET REPAIR
2100-3729	000	BC C&O STREET REPAIR
2100-3730	000	GAS, LOCATORS, PROJECT MANAGEMENT
2100-3734	000	OPERATIONS TRAINING MANAGER
2100-3767	000	LOCATE & MARK-NORTH
2100-3768	000	LOCATE & MARK-SOUTH
2100-3769	000	LOCATE & MARK-COASTL
2100-3815	000	MOBILE BUSINESS SUPPORT
2100-3889	000	FIELD SRVC SAFETY SUPPORT
2100-3914	000	GOS CPD SUPPORT
2100-3927	000	TRAFFIC CONTROL NORTH
2100-3928	000	TRAFFIC CONTROL SOUTH
2100-3943	000	GAS TECHNICAL SERVICES TRAINING

San Diego Gas & Electric Company
2019 GRC - REVISED
Non-Shared Service Workpapers

Area: GAS DISTRIBUTION
Witness: Gina Orozco-Mejia

Appendix A: List of Non-Shared Cost Centers

Cost Center	Sub	Description
2100-3944	000	QUALIFICATIONS & COMPLIANCE
2100-3947	000	MHP OUTREACH
2100-3948	000	MHP PLAN & CONSTUCT
2100-3957	000	TECH SERVICES - COMPLIANCE