

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

Application No. 17-10-\_\_\_

Exhibit No.: (SDG&E-09-CWP)

CAPITAL WORKPAPERS TO  
PREPARED DIRECT TESTIMONY  
OF DEANNA R. HAINES  
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA

OCTOBER 2017



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

**Exhibit SDG&E-09-CWP - GAS ENGINEERING**

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San Diego Gas & Electric Company  
 2019 GRC - APP  
 Capital Workpapers

**Overall Summary For Exhibit No. SDG&E-09-CWP**

<b>Area:</b>	<b>GAS ENGINEERING</b>
<b>Witness:</b>	<b>Deanna R. Haines</b>

In 2016 \$ (000)			
Adjusted-Forecast			
	2017	2018	2019
<b>A. GAS TRANSMISSION LAND RIGHTS</b>	113	113	113
<b>B. GAS TRANSMISSION AUXILIARY EQUIPMENT</b>	28	28	28
<b>C. GAS TRANSMISSION CAPITAL TOOLS</b>	54	54	54
<b>D. GAS TRANSMISSION SUPERVISION &amp; ENGINEERING PO</b>	73	73	73
<b>Total</b>	<b>268</b>	<b>268</b>	<b>268</b>

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
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Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Category: A. GAS TRANSMISSION LAND RIGHTS  
 Workpaper: 004170

**Summary for Category: A. GAS TRANSMISSION LAND RIGHTS**

	In 2016\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
Labor	14	0	0	0
Non-Labor	56	113	113	113
NSE	0	0	0	0
<b>Total</b>	<u>70</u>	<u>113</u>	<u>113</u>	<u>113</u>
FTE	0.1	0.0	0.0	0.0

**004170 Gas Transmission - Land Rights**

Labor	14	0	0	0
Non-Labor	56	113	113	113
NSE	0	0	0	0
<b>Total</b>	<u>70</u>	<u>113</u>	<u>113</u>	<u>113</u>
FTE	0.1	0.0	0.0	0.0

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**004170 - Gas Transmission - Land Rights**

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00417.0  
 Category: A. GAS TRANSMISSION LAND RIGHTS  
 Category-Sub: 1. Gas Transmission Land Rights  
 Workpaper Group: 004170 - Gas Transmission - Land Rights

**Summary of Results (Constant 2016 \$ in 000s):**

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2012	2013	2014	2015	2016	2017	2018	2019
	<b>Years</b>								
Labor	Zero-Based	1	0	1	4	14	0	0	0
Non-Labor	5-YR Average	0	24	62	425	56	113	113	113
NSE	5-YR Average	0	0	0	0	0	0	0	0
	<b>Total</b>	<b>1</b>	<b>25</b>	<b>63</b>	<b>429</b>	<b>69</b>	<b>113</b>	<b>113</b>	<b>113</b>
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0

**Business Purpose:**

Purchase or renew easements, rights of way or other land rights for the purposes of installing and maintaining Transmission pipelines. Many rights of way expire after a defined period of time and must be renewed with the current land owners. This workpaper provides capital funding for such negotiations.

**Physical Description:**

Generally, rights-of-way that expire after a defined period must be renewed with the current land owners to enable SDG&E to continue to locate, maintain, and service its facilities. This Budget Code provides capital funding for easements, rights-of-way and other land rights costs, including costs incurred to secure those rights. Negotiating and paying for land rights within certain areas, such as restricted areas, Tribal lands, and other limited access locations, are activities (and associated costs) that are incurred in furtherance of the utility's obligation to serve its customers. If these land rights are not acquired, the utility would have to explore other alternatives (e.g., build arounds), as the land owner may demand eviction and abandonment of pipeline.

**Project Justification:**

Land acquisition varies according to many factors, among them the overall economic climate in general and the real estate market, in particular, which is often the function of supply versus demand. These factors are beyond the control or influence of SDG&E.

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
Witness: Deanna R. Haines  
Budget Code: 00417.0  
Category: A. GAS TRANSMISSION LAND RIGHTS  
Category-Sub: 1. Gas Transmission Land Rights  
Workpaper Group: 004170 - Gas Transmission - Land Rights

**Forecast Methodology:**

**Labor - Zero-Based**

The capital forecast for this workpaper does not include a labor component based on the historical trend of budget code 417.

**Non-Labor - 5-YR Average**

The non-labor capital forecast is based on the five-year average.

**NSE - 5-YR Average**

Not applicable

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00417.0  
 Category: A. GAS TRANSMISSION LAND RIGHTS  
 Category-Sub: 1. Gas Transmission Land Rights  
 Workpaper Group: 004170 - Gas Transmission - Land Rights

**Summary of Adjustments to Forecast**

In 2016 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2017	2018	2019	2017	2018	2019	2017	2018	2019
Labor	Zero-Based	0	0	0	0	0	0	0	0	0
Non-Labor	5-YR Average	113	113	113	0	0	0	113	113	113
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
<b>Total</b>		<b>113</b>	<b>113</b>	<b>113</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>113</b>	<b>113</b>	<b>113</b>
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Forecast Adjustment Details**

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>RefID</u>
<b>2017 Total</b>		0	0	0	0	0.0	
<b>2018 Total</b>		0	0	0	0	0.0	
<b>2019 Total</b>		0	0	0	0	0.0	

*Note: Totals may include rounding differences.*



San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00417.0  
 Category: A. GAS TRANSMISSION LAND RIGHTS  
 Category-Sub: 1. Gas Transmission Land Rights  
 Workpaper Group: 004170 - Gas Transmission - Land Rights

**Determination of Adjusted-Recorded:**

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	1	0	1	4	12
Non-Labor	0	25	63	428	56
NSE	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>25</b>	<b>64</b>	<b>432</b>	<b>67</b>
FTE	0.0	0.0	0.0	0.0	0.1
<b>Adjustments (Nominal \$)**</b>					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	1	0	1	4	12
Non-Labor	0	25	63	428	56
NSE	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>25</b>	<b>64</b>	<b>432</b>	<b>67</b>
FTE	0.0	0.0	0.0	0.0	0.1
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	0	0	0	1	2
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>2</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Escalation to 2016\$</b>					
Labor	0	0	0	0	0
Non-Labor	0	0	-1	-3	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>-1</b>	<b>-3</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2016\$)</b>					
Labor	1	0	1	4	14
Non-Labor	0	24	62	425	56
NSE	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>25</b>	<b>63</b>	<b>429</b>	<b>69</b>
FTE	0.0	0.0	0.0	0.0	0.1

\* After company-wide exclusions of Non-GRC costs

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

Note: Totals may include rounding differences.

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00417.0  
 Category: A. GAS TRANSMISSION LAND RIGHTS  
 Category-Sub: 1. Gas Transmission Land Rights  
 Workpaper Group: 004170 - Gas Transmission - Land Rights

**Summary of Adjustments to Recorded:**

		In Nominal \$(000)				
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	
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
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>Total</u>	<u>FTE</u>	<u>RefID</u>
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*Note: Totals may include rounding differences.*

**Beginning of Workpaper Sub Details for  
Workpaper Group 004170**

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00417.0  
 Category: A. GAS TRANSMISSION LAND RIGHTS  
 Category-Sub: 1. Gas Transmission Land Rights  
 Workpaper Group: 004170 - Gas Transmission - Land Rights  
 Workpaper Detail: 004170.001 - Gas Transmission Land Rights

In-Service Date: Not Applicable

Description:

Purchase or renew easements rights of way or other land rights for the purposes of installing and maintaining Transmission pipelines. Many rights of way expire after a defined period of time and must be renewed with the current land owners. This workpaper provides capital funding for such lease agreements.

<b>Forecast In 2016 \$(000)</b>			
<b>Years</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Labor	0	0	0
Non-Labor	113	113	113
NSE	0	0	0
<b>Total</b>	<b>113</b>	<b>113</b>	<b>113</b>
FTE	0.0	0.0	0.0

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Category: B. GAS TRANSMISSION AUXILIARY EQUIPMENT  
 Workpaper: VARIOUS

**Summary for Category: B. GAS TRANSMISSION AUXILIARY EQUIPMENT**

	In 2016\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
Labor	7	7	7	7
Non-Labor	11	21	21	21
NSE	0	0	0	0
<b>Total</b>	<b>18</b>	<b>28</b>	<b>28</b>	<b>28</b>
FTE	0.1	0.1	0.1	0.1

**004190 Auxiliary Equipment BC 419**

Labor	7	7	7	7
Non-Labor	11	11	11	11
NSE	0	0	0	0
<b>Total</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>18</b>
FTE	0.1	0.1	0.1	0.1

**004390 Auxiliary Equipment - BC 439**

Labor	0	0	0	0
Non-Labor	0	10	10	10
NSE	0	0	0	0
<b>Total</b>	<b>0</b>	<b>10</b>	<b>10</b>	<b>10</b>
FTE	0.0	0.0	0.0	0.0

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**004190 - Auxiliary Equipment BC 419**

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00419.0  
 Category: B. GAS TRANSMISSION AUXILIARY EQUIPMENT  
 Category-Sub: 2. Blanket  
 Workpaper Group: 004190 - Auxiliary Equipment BC 419

**Summary of Results (Constant 2016 \$ in 000s):**

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2012	2013	2014	2015	2016	2017	2018	2019
<b>Years</b>									
Labor	Base YR Rec	0	0	0	0	7	7	7	7
Non-Labor	Base YR Rec	0	0	0	48	11	11	11	11
NSE	Base YR Rec	0	0	0	0	0	0	0	0
<b>Total</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>48</b>	<b>18</b>	<b>18</b>	<b>18</b>	<b>18</b>
FTE	Base YR Rec	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.1

**Business Purpose:**

Requested funding in this category includes new installations or upgrades of aging SDG&E M&R station and pipeline system control and telemetry systems which link with and provide information to, but are not a direct part of SoCalGas centralized SCADA computer system. Assets which reside on the upstream side of the remote communications network to SoCalGas central SCADA system are defined and requested under SoCalGas plant category 309/319.

**Physical Description:**

Included are local controls and communication devices such as programmable logic controllers (PLCs), pressure transmitters, UPS systems, temperature probes, gas quality remote sensors, and communication interfaces/technologies. This equipment is used to control the flow of gas in pipelines, valves and regulator stations both locally and through the initiation of remote commands from central SCADA system.

**Project Justification:**

This capital work sustains reliable operation of critical transmission assets to the extent that they are not compromised by equipment deployed past its useful life. These assets require replacement due to aging, change in use patterns, and enhancement of the transmission system to contend with gas quality and capacity issues.

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
Witness: Deanna R. Haines  
Budget Code: 00419.0  
Category: B. GAS TRANSMISSION AUXILIARY EQUIPMENT  
Category-Sub: 2. Blanket  
Workpaper Group: 004190 - Auxiliary Equipment BC 419

**Forecast Methodology:**

**Labor - Base YR Rec**

The forecast method used is the base-year of recorded costs in this budget code.

**Non-Labor - Base YR Rec**

The forecast method used is the base-year of recorded costs in this budget code.

**NSE - Base YR Rec**

Not Applicable



San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00419.0  
 Category: B. GAS TRANSMISSION AUXILIARY EQUIPMENT  
 Category-Sub: 2. Blanket  
 Workpaper Group: 004190 - Auxiliary Equipment BC 419

**Summary of Adjustments to Forecast**

In 2016 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2017	2018	2019	2017	2018	2019	2017	2018	2019
Labor	Base YR Rec	7	7	7	0	0	0	7	7	7
Non-Labor	Base YR Rec	10	10	10	1	1	1	11	11	11
NSE	Base YR Rec	0	0	0	0	0	0	0	0	0
<b>Total</b>		<b>17</b>	<b>17</b>	<b>17</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>18</b>	<b>18</b>	<b>18</b>
FTE	Base YR Rec	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1

**Forecast Adjustment Details**

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	RefID
2017 Total		0	0	0	0	0.0	
2018 Total		0	0	0	0	0.0	
2019 Total		0	0	0	0	0.0	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00419.0  
 Category: B. GAS TRANSMISSION AUXILIARY EQUIPMENT  
 Category-Sub: 2. Blanket  
 Workpaper Group: 004190 - Auxiliary Equipment BC 419

**Determination of Adjusted-Recorded:**

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	0	0	0	0	6
Non-Labor	0	0	0	49	11
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>49</b>	<b>17</b>
FTE	0.0	0.0	0.0	0.0	0.1
<b>Adjustments (Nominal \$)**</b>					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	0	0	0	0	6
Non-Labor	0	0	0	49	11
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>49</b>	<b>17</b>
FTE	0.0	0.0	0.0	0.0	0.1
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	0	0	0	0	1
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Escalation to 2016\$</b>					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2016\$)</b>					
Labor	0	0	0	0	7
Non-Labor	0	0	0	48	11
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>48</b>	<b>18</b>
FTE	0.0	0.0	0.0	0.0	0.1

\* After company-wide exclusions of Non-GRC costs

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

Note: Totals may include rounding differences.

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00419.0  
 Category: B. GAS TRANSMISSION AUXILIARY EQUIPMENT  
 Category-Sub: 2. Blanket  
 Workpaper Group: 004190 - Auxiliary Equipment BC 419

**Summary of Adjustments to Recorded:**

		In Nominal \$(000)				
	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
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
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>Total</u>	<u>FTE</u>	<u>RefID</u>
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*Note: Totals may include rounding differences.*

**Beginning of Workpaper Sub Details for  
Workpaper Group 004190**

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00419.0  
 Category: B. GAS TRANSMISSION AUXILIARY EQUIPMENT  
 Category-Sub: 2. Blanket  
 Workpaper Group: 004190 - GT Stor Aux Equip & Infrastr / Externally Driven  
 Workpaper Detail: 004190.001 - Blanket for SDG&E Aux. Equipment  
 In-Service Date: Not Applicable

Description:

Requested funding in this category includes new installations or upgrades of aging SDG&E M&R station and pipeline system control and telemetry systems which link with and provide information to, but are not a direct part of SoCalGas centralized SCADA computer system. Assets which reside on the upstream side of the remote communications network to SoCalGas central SCADA system are defined and requested under SoCalGas plant category 309/319. Included are local controls and communication devices such as programmable logic controllers (PLCs), pressure transmitters, UPS systems, temperature probes, gas quality remote sensors, and communication interfaces/technologies. This equipment is used to control the flow of gas in pipelines, valves and regulator stations both locally and through the initiation of remote commands from central SCADA system. This capital work sustains reliable operation of critical transmission assets to the extent that they are not compromised by equipment deployed past its useful life. These assets require replacement due to aging, change in use patterns, and enhancement of the transmission system to contend with gas quality and capacity issues.

<b>Forecast In 2016 \$(000)</b>				
	<b>Years</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Labor		7	7	7
Non-Labor		11	11	11
NSE		0	0	0
	<b>Total</b>	<b>18</b>	<b>18</b>	<b>18</b>
FTE		0.1	0.1	0.1

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**004390 - Auxiliary Equipment - BC 439**

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00439.0  
 Category: B. GAS TRANSMISSION AUXILIARY EQUIPMENT  
 Category-Sub: 2. Blanket  
 Workpaper Group: 004390 - Auxiliary Equipment - BC 439

**Summary of Results (Constant 2016 \$ in 000s):**

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2012	2013	2014	2015	2016	2017	2018	2019
<b>Years</b>									
Labor	Base YR Rec	8	0	0	0	0	0	0	0
Non-Labor	5-YR Average	49	0	0	0	0	10	10	10
NSE	5-YR Average	0	0	0	0	0	0	0	0
<b>Total</b>		<b>56</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>10</b>	<b>10</b>	<b>10</b>
FTE	Base YR Rec	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Business Purpose:**

Requested funding in this category includes new installations or upgrades of aging SDG&E M&R station and pipeline system control and telemetry systems which link with and provide information to, but are not a direct part of SoCalGas centralized SCADA computer system. Assets which reside on the upstream side of the remote communications network to SoCalGas central SCADA system are defined and requested under SoCalGas plant category 309/319.

**Physical Description:**

Included are local controls and communication devices such as programmable logic controllers (PLCs), pressure transmitters, UPS systems, temperature probes, gas quality remote sensors, and communication interfaces/technologies. This equipment is used to control the flow of gas in pipelines, valves and regulator stations both locally and through the initiation of remote commands from central SCADA system.

**Project Justification:**

This capital work sustains reliable operation of critical transmission assets to the extent that they are not compromised by equipment deployed past its useful life. These assets require replacement due to aging, change in use patterns, and enhancement of the transmission system to contend with gas quality and capacity issues.

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
Witness: Deanna R. Haines  
Budget Code: 00439.0  
Category: B. GAS TRANSMISSION AUXILIARY EQUIPMENT  
Category-Sub: 2. Blanket  
Workpaper Group: 004390 - Auxiliary Equipment - BC 439

**Forecast Methodology:**

**Labor - Base YR Rec**

Selected base year as the forecast methodology because it is anticipated that no labor expenditures are required in this category.

**Non-Labor - 5-YR Average**

The forecast method used is the five-year of recorded costs in this budget code.

**NSE - 5-YR Average**

Not Applicable



San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00439.0  
 Category: B. GAS TRANSMISSION AUXILIARY EQUIPMENT  
 Category-Sub: 2. Blanket  
 Workpaper Group: 004390 - Auxiliary Equipment - BC 439

**Summary of Adjustments to Forecast**

In 2016 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2017	2018	2019	2017	2018	2019	2017	2018	2019
Labor	Base YR Rec	0	0	0	0	0	0	0	0	0
Non-Labor	5-YR Average	9	9	9	1	1	1	10	10	10
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
<b>Total</b>		<b>9</b>	<b>9</b>	<b>9</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>10</b>	<b>10</b>	<b>10</b>
FTE	Base YR Rec	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Forecast Adjustment Details**

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	RefID
<b>2017 Total</b>		0	0	0	0	0.0	
<b>2018 Total</b>		0	0	0	0	0.0	
<b>2019 Total</b>		0	0	0	0	0.0	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00439.0  
 Category: B. GAS TRANSMISSION AUXILIARY EQUIPMENT  
 Category-Sub: 2. Blanket  
 Workpaper Group: 004390 - Auxiliary Equipment - BC 439

**Determination of Adjusted-Recorded:**

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	7	0	0	0	0
Non-Labor	49	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>56</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
FTE	0.1	0.0	0.0	0.0	0.0
<b>Adjustments (Nominal \$)**</b>					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	7	0	0	0	0
Non-Labor	49	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>56</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
FTE	0.1	0.0	0.0	0.0	0.0
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	1	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Escalation to 2016\$</b>					
Labor	0	0	0	0	0
Non-Labor	-1	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>-1</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2016\$)</b>					
Labor	8	0	0	0	0
Non-Labor	49	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>56</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
FTE	0.1	0.0	0.0	0.0	0.0

\* After company-wide exclusions of Non-GRC costs

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

Note: Totals may include rounding differences.

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00439.0  
 Category: B. GAS TRANSMISSION AUXILIARY EQUIPMENT  
 Category-Sub: 2. Blanket  
 Workpaper Group: 004390 - Auxiliary Equipment - BC 439

**Summary of Adjustments to Recorded:**

		In Nominal \$(000)				
	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
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
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>Total</u>	<u>FTE</u>	<u>RefID</u>
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*Note: Totals may include rounding differences.*

**Beginning of Workpaper Sub Details for  
Workpaper Group 004390**

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00439.0  
 Category: B. GAS TRANSMISSION AUXILIARY EQUIPMENT  
 Category-Sub: 2. Blanket  
 Workpaper Group: 004390 - Auxiliary Equipment - BC 439  
 Workpaper Detail: 004390.001 - 2100/439  
 In-Service Date: Not Applicable

Description:

Requested funding in this category includes new installations or upgrades of aging SDG&E M&R station and pipeline system control and telemetry systems which link with and provide information to, but are not a direct part of SoCalGas centralized SCADA computer system. Assets which reside on the upstream side of the remote communications network to SoCalGas central SCADA system are defined and requested under SoCalGas plant category 309/319. Included are local controls and communication devices such as programmable logic controllers (PLCs), pressure transmitters, UPS systems, temperature probes, gas quality remote sensors, and communication interfaces/technologies. This equipment is used to control the flow of gas in pipelines, valves and regulator stations both locally and through the initiation of remote commands from central SCADA system. This capital work sustains reliable operation of critical transmission assets to the extent that they are not compromised by equipment deployed past its useful life. These assets require replacement due to aging, change in use patterns, and enhancement of the transmission system to contend with gas quality and capacity issues.

<b>Forecast In 2016 \$(000)</b>				
	<b>Years</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>
Labor		0	0	0
Non-Labor		10	10	10
NSE		0	0	0
	<b>Total</b>	<b>10</b>	<b>10</b>	<b>10</b>
FTE		0.0	0.0	0.0

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Category: C. GAS TRANSMISSION CAPITAL TOOLS  
 Workpaper: 004360

**Summary for Category: C. GAS TRANSMISSION CAPITAL TOOLS**

	In 2016\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
Labor	-1	2	2	2
Non-Labor	119	52	52	52
NSE	0	0	0	0
<b>Total</b>	<b>118</b>	<b>54</b>	<b>54</b>	<b>54</b>
FTE	0.0	0.1	0.1	0.1

**004360 GT CAPITAL TOOLS**

Labor	-1	2	2	2
Non-Labor	119	52	52	52
NSE	0	0	0	0
<b>Total</b>	<b>118</b>	<b>54</b>	<b>54</b>	<b>54</b>
FTE	0.0	0.1	0.1	0.1

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group  
004360 - GT CAPITAL TOOLS**

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00436.0  
 Category: C. GAS TRANSMISSION CAPITAL TOOLS  
 Category-Sub: 3. Capital Tools  
 Workpaper Group: 004360 - GT CAPITAL TOOLS

**Summary of Results (Constant 2016 \$ in 000s):**

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2012	2013	2014	2015	2016	2017	2018	2019
	<b>Years</b>								
Labor	5-YR Average	1	1	5	4	-1	2	2	2
Non-Labor	5-YR Average	27	32	71	14	119	52	52	52
NSE	5-YR Average	0	0	0	0	0	0	0	0
	<b>Total</b>	<b>27</b>	<b>32</b>	<b>77</b>	<b>18</b>	<b>118</b>	<b>54</b>	<b>54</b>	<b>54</b>
FTE	5-YR Average	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1

**Business Purpose:**

Acquire and replace Capital Tools used on a daily basis by the operating employees in the SDG&E territory.

**Physical Description:**

Hand tools, Volt/Amp Meters, Leak detectors, GPS receivers, and pressure gauges.

**Project Justification:**

Purchases are mostly to replace old, worn, obsolete or damaged tools used in by field operations.

*Note: Totals may include rounding differences.*



San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
Witness: Deanna R. Haines  
Budget Code: 00436.0  
Category: C. GAS TRANSMISSION CAPITAL TOOLS  
Category-Sub: 3. Capital Tools  
Workpaper Group: 004360 - GT CAPITAL TOOLS

**Forecast Methodology:**

**Labor - 5-YR Average**

The forecast method used is the five-year average of recorded costs in this budget code. The five-year average is both fair and conservative, and it best represents the capital expenditures projected in this category.

**Non-Labor - 5-YR Average**

The forecast method used is the five-year average of recorded costs in this budget code. The five-year average is both fair and conservative, and it best represents the capital expenditures projected in this category.

**NSE - 5-YR Average**

Not Applicable

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00436.0  
 Category: C. GAS TRANSMISSION CAPITAL TOOLS  
 Category-Sub: 3. Capital Tools  
 Workpaper Group: 004360 - GT CAPITAL TOOLS

**Summary of Adjustments to Forecast**

In 2016 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2017	2018	2019	2017	2018	2019	2017	2018	2019
Labor	5-YR Average	1	1	1	1	1	1	2	2	2
Non-Labor	5-YR Average	52	52	52	0	0	0	52	52	52
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
<b>Total</b>		<b>53</b>	<b>53</b>	<b>53</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>54</b>	<b>54</b>	<b>54</b>
FTE	5-YR Average	0.0	0.0	0.0	0.1	0.1	0.1	0.1	0.1	0.1

**Forecast Adjustment Details**

Year	Adj Group	Labor	NLbr	NSE	Total	FTE	RefID		
2017	Other	0	0	0	0	0.1	NMOATAZE20170310180134987		
<b>Explanation:</b>		To align forecast							
<b>2017 Total</b>		0	0	0	0	0.1			
2018	Other	0	0	0	0	0.1	NMOATAZE20170310180151847		
<b>Explanation:</b>		To align forecast							
<b>2018 Total</b>		0	0	0	0	0.1			
2019	Other	0	0	0	0	0.1	NMOATAZE20170310180212407		
<b>Explanation:</b>		To align forecast							
<b>2019 Total</b>		0	0	0	0	0.1			

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
Witness: Deanna R. Haines  
Budget Code: 00436.0  
Category: C. GAS TRANSMISSION CAPITAL TOOLS  
Category-Sub: 3. Capital Tools  
Workpaper Group: 004360 - GT CAPITAL TOOLS

**Determination of Adjusted-Recorded:**

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	1	0	4	4	-1
Non-Labor	27	32	73	14	119
NSE	0	0	0	0	0
<b>Total</b>	<b>28</b>	<b>32</b>	<b>78</b>	<b>18</b>	<b>118</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Adjustments (Nominal \$)**</b>					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	1	0	4	4	-1
Non-Labor	27	32	73	14	119
NSE	0	0	0	0	0
<b>Total</b>	<b>28</b>	<b>32</b>	<b>78</b>	<b>18</b>	<b>118</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	0	0	1	1	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>1</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Escalation to 2016\$</b>					
Labor	0	0	0	0	0
Non-Labor	0	0	-2	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>-2</b>	<b>0</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2016\$)</b>					
Labor	1	1	5	4	-1
Non-Labor	27	32	71	14	119
NSE	0	0	0	0	0
<b>Total</b>	<b>27</b>	<b>32</b>	<b>77</b>	<b>18</b>	<b>118</b>
FTE	0.0	0.0	0.0	0.0	0.0

\* After company-wide exclusions of Non-GRC costs

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

Note: Totals may include rounding differences.

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00436.0  
 Category: C. GAS TRANSMISSION CAPITAL TOOLS  
 Category-Sub: 3. Capital Tools  
 Workpaper Group: 004360 - GT CAPITAL TOOLS

**Summary of Adjustments to Recorded:**

		In Nominal \$(000)				
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	
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	
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>Total</u>	<u>FTE</u>	<u>RefID</u>
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*Note: Totals may include rounding differences.*

**Beginning of Workpaper Sub Details for  
Workpaper Group 004360**

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00436.0  
 Category: C. GAS TRANSMISSION CAPITAL TOOLS  
 Category-Sub: 3. Capital Tools  
 Workpaper Group: 004360 - GT CAPITAL TOOLS  
 Workpaper Detail: 004360.001 - Cap tools

In-Service Date: Not Applicable

Description:

Acquire and replace Capital Tools used on a daily basis by the Gas Transmission local operating employees in the SDG&E territory. Hand tools, Volt/Amp Meters, Leak detectors, GPS receivers, and pressure gauges. Purchases are mostly to replace old, worn, obsolete or damaged tools used in by Gas Transmission field operations.

Forecast In 2016 \$(000)				
	Years	2017	2018	2019
Labor		2	2	2
Non-Labor		52	52	52
NSE		0	0	0
	<b>Total</b>	<b>54</b>	<b>54</b>	<b>54</b>
FTE		0.1	0.1	0.1

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Category: D. GAS TRANSMISSION SUPERVISION & ENGINEERING POOL  
 Workpaper: 009030

**Summary for Category: D. GAS TRANSMISSION SUPERVISION & ENGINEERING POOL**

	In 2016\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2016	2017	2018	2019
Labor	0	52	52	52
Non-Labor	0	21	21	21
NSE	0	0	0	0
<b>Total</b>	<b>0</b>	<b>73</b>	<b>73</b>	<b>73</b>
FTE	0.0	0.5	0.5	0.5

**009030 Local GT Supervision and Engineering Pool**

Labor	0	52	52	52
Non-Labor	0	21	21	21
NSE	0	0	0	0
<b>Total</b>	<b>0</b>	<b>73</b>	<b>73</b>	<b>73</b>
FTE	0.0	0.5	0.5	0.5

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**009030 - Local GT Supervision and Engineering Pool**



San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00903.0  
 Category: D. GAS TRANSMISSION SUPERVISION & ENGINEERING POOL  
 Category-Sub: 4. Local Engineering Pool  
 Workpaper Group: 009030 - Local GT Supervision and Engineering Pool

**Summary of Results (Constant 2016 \$ in 000s):**

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2012	2013	2014	2015	2016	2017	2018	2019
	<b>Years</b>								
Labor	5-YR Average	86	76	92	7	0	52	52	52
Non-Labor	5-YR Average	16	31	57	0	0	21	21	21
NSE	5-YR Average	0	0	0	0	0	0	0	0
	<b>Total</b>	<b>102</b>	<b>106</b>	<b>149</b>	<b>7</b>	<b>0</b>	<b>73</b>	<b>73</b>	<b>73</b>
FTE	5-YR Average	0.9	0.8	0.9	0.1	0.0	0.5	0.5	0.5

**Business Purpose:**

Provide a pool for overhead charges that will be reassigned to the various budget categories on a direct basis. Charges reside in this Budget Category temporarily and are reassigned on a monthly basis.

**Physical Description:**

Overhead charges stemming from labor spend on capital projects and reassigned to Capital budget categories specific to the Gas Transmission projects.

**Project Justification:**

Continues an established accounting procedure for making charges for certain overheads on a direct cost basis to Gas Transmission's budget categories.

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
Witness: Deanna R. Haines  
Budget Code: 00903.0  
Category: D. GAS TRANSMISSION SUPERVISION & ENGINEERING POOL  
Category-Sub: 4. Local Engineering Pool  
Workpaper Group: 009030 - Local GT Supervision and Engineering Pool

**Forecast Methodology:**

**Labor - 5-YR Average**

The forecast method used is the five-year average of recorded costs in this budget code. The five- year average is both fair and conservative, and it best represents the capital expenditures projected in this category.

**Non-Labor - 5-YR Average**

The forecast method used is the five-year average of recorded costs in this budget code. The five- year average is both fair and conservative, and it best represents the capital expenditures projected in this category.

**NSE - 5-YR Average**

Not Applicable

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00903.0  
 Category: D. GAS TRANSMISSION SUPERVISION & ENGINEERING POOL  
 Category-Sub: 4. Local Engineering Pool  
 Workpaper Group: 009030 - Local GT Supervision and Engineering Pool

**Summary of Adjustments to Forecast**

In 2016 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2017	2018	2019	2017	2018	2019	2017	2018	2019
Labor	5-YR Average	52	52	52	0	0	0	52	52	52
Non-Labor	5-YR Average	20	20	20	1	1	1	21	21	21
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
<b>Total</b>		<b>72</b>	<b>72</b>	<b>72</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>73</b>	<b>73</b>	<b>73</b>
FTE	5-YR Average	0.5	0.5	0.5	0.0	0.0	0.0	0.5	0.5	0.5

**Forecast Adjustment Details**

<u>Year</u>	<u>Adj Group</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>RefID</u>
<b>2017 Total</b>		0	0	0	0	0.0	
<b>2018 Total</b>		0	0	0	0	0.0	
<b>2019 Total</b>		0	0	0	0	0.0	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00903.0  
 Category: D. GAS TRANSMISSION SUPERVISION & ENGINEERING POOL  
 Category-Sub: 4. Local Engineering Pool  
 Workpaper Group: 009030 - Local GT Supervision and Engineering Pool

**Determination of Adjusted-Recorded:**

	2012 (\$000)	2013 (\$000)	2014 (\$000)	2015 (\$000)	2016 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	77	66	81	6	0
Non-Labor	16	31	58	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>92</b>	<b>97</b>	<b>140</b>	<b>6</b>	<b>0</b>
FTE	0.8	0.7	0.8	0.1	0.0
<b>Adjustments (Nominal \$)**</b>					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	77	66	81	6	0
Non-Labor	16	31	58	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>92</b>	<b>97</b>	<b>140</b>	<b>6</b>	<b>0</b>
FTE	0.8	0.7	0.8	0.1	0.0
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	11	10	13	1	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>11</b>	<b>10</b>	<b>13</b>	<b>1</b>	<b>0</b>
FTE	0.1	0.1	0.1	0.0	0.0
<b>Escalation to 2016\$</b>					
Labor	-1	-1	-2	0	0
Non-Labor	0	0	-1	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>-2</b>	<b>-1</b>	<b>-3</b>	<b>0</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2016\$)</b>					
Labor	86	76	92	7	0
Non-Labor	16	31	57	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>102</b>	<b>106</b>	<b>149</b>	<b>7</b>	<b>0</b>
FTE	0.9	0.8	0.9	0.1	0.0

\* After company-wide exclusions of Non-GRC costs

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

Note: Totals may include rounding differences.

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00903.0  
 Category: D. GAS TRANSMISSION SUPERVISION & ENGINEERING POOL  
 Category-Sub: 4. Local Engineering Pool  
 Workpaper Group: 009030 - Local GT Supervision and Engineering Pool

**Summary of Adjustments to Recorded:**

In Nominal \$(000)					
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
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>
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>Total</u>	<u>FTE</u>	<u>RefID</u>
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*Note: Totals may include rounding differences.*

**Beginning of Workpaper Sub Details for  
Workpaper Group 009030**

San Diego Gas & Electric Company  
2019 GRC - APP  
Capital Workpapers

Area: GAS ENGINEERING  
 Witness: Deanna R. Haines  
 Budget Code: 00903.0  
 Category: D. GAS TRANSMISSION SUPERVISION & ENGINEERING POOL  
 Category-Sub: 4. Local Engineering Pool  
 Workpaper Group: 009030 - Field Capital Support  
 Workpaper Detail: 009030.001 - Local Engineering Pool

In-Service Date: 12/31/2019

Description:

Provide a pool for overhead charges that will be reassigned to the various budget categories on a direct basis. Charges reside in this Budget Category temporarily and are reassigned on a monthly basis. Overhead charges stemming from labor spend on capital projects and reassigned to Capital budget categories specific to the Gas Transmission projects. Continues an established accounting procedure for making charges for certain overheads on a direct cost basis to Gas Transmission's budget categories.

Forecast In 2016 \$(000)			
Years	2017	2018	2019
Labor	52	52	52
Non-Labor	21	21	21
NSE	0	0	0
<b>Total</b>	<b>73</b>	<b>73</b>	<b>73</b>
FTE	0.5	0.5	0.5

*Note: Totals may include rounding differences.*