

Application of SAN DIEGO GAS & ELECTRIC )  
COMPANY for authority to update its gas and )  
electric revenue requirement and base rates )  
effective January 1, 2016 (U 902-M) )

Application No. 14-11-\_\_\_\_  
Exhibit No.: (SDG&E-06-CWP)

CAPITAL WORKPAPERS TO  
PREPARED DIRECT TESTIMONY  
OF RAYMOND K. STANFORD  
ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA

NOVEMBER 2014



**2016 General Rate Case - APP  
INDEX OF WORKPAPERS**

**Exhibit SDG&E-06-CWP - GAS TRANSMISSION**

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**Overall Summary For Exhibit No. SDG&E-06-CWP**

<b>Area:</b>	<b>GAS TRANSMISSION</b>
<b>Witness:</b>	<b>Raymond K. Stanford</b>

In 2013 \$ (000)			
Adjusted-Forecast			
	2014	2015	2016
<b>A. New Pipelines (BC 4X1)</b>	210	592	1,012
<b>B. Replacements (BC 4X2)</b>	1,213	680	680
<b>C. Relocations (BC 4X3 4X4)</b>	474	474	474
<b>D. Compressor Stations (BC 4X5)</b>	3,127	3,127	3,127
<b>E. Cathodic Protection (BC 4X6)</b>	241	262	262
<b>F. Land Rights (BC 417)</b>	500	0	0
<b>G. M&amp;R Stations (BC 418)</b>	1,184	1,184	1,184
<b>H. Capital Tools (BC 436)</b>	130	130	130
<b>I. Local Engineering Pool (BC 903)</b>	133	133	133
<b>Total</b>	<b>7,212</b>	<b>6,582</b>	<b>7,002</b>

*Note: Totals may include rounding differences.*

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Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Category: A. New Pipelines (BC 4X1)  
Workpaper: VARIOUS

**Summary for Category: A. New Pipelines (BC 4X1)**

	In 2013\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2013	2014	2015	2016
Labor	0	111	247	391
Non-Labor	0	99	345	621
NSE	0	0	0	0
<b>Total</b>	<b>0</b>	<b>210</b>	<b>592</b>	<b>1,012</b>
FTE	0.0	1.8	4.5	7.6

**00411A NRG Joint-venture UEG at Carlsbad**

Labor	0	36	180	324
Non-Labor	0	69	345	621
NSE	0	0	0	0
<b>Total</b>	<b>0</b>	<b>105</b>	<b>525</b>	<b>945</b>
FTE	0.0	0.8	3.8	6.9

**00411B New Pipelines - Blanket W.O. projects**

Labor	0	8	0	0
Non-Labor	0	30	0	0
NSE	0	0	0	0
<b>Total</b>	<b>0</b>	<b>38</b>	<b>0</b>	<b>0</b>
FTE	0.0	0.3	0.0	0.0

**00411C New Transmission Pipelines - Billed Capital**

Labor	0	67	67	67
Non-Labor	0	0	0	0
NSE	0	0	0	0
<b>Total</b>	<b>0</b>	<b>67</b>	<b>67</b>	<b>67</b>
FTE	0.0	0.7	0.7	0.7

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00411A - NRG Joint-venture UEG at Carlsbad**

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Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00411.0  
 Category: A. New Pipelines (BC 4X1)  
 Category-Sub: 1. NRG Joint-venture UEG at Carlsbad  
 Workpaper Group: 00411A - NRG Joint-venture UEG at Carlsbad

**Summary of Results (Constant 2013 \$ in 000s):**

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2009	2010	2011	2012	2013	2014	2015	2016
	<b>Years</b>								
Labor	Zero-Based	0	0	0	0	0	36	180	324
Non-Labor	Zero-Based	0	0	0	0	0	69	345	621
NSE	Zero-Based	0	0	0	0	0	0	0	0
	<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>105</b>	<b>525</b>	<b>945</b>
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.8	3.8	6.9

**Business Purpose:**

Acquire new electrical peaking capability through a joint venture with NRG Energy Corp.

**Physical Description:**

Install new Transmission mains and service lines to serve a new UEG peaker plant in Carlsbad, CA. The plant will be a 588-MW peaking plant.

**Project Justification:**

Closing the San Onofre generating plant, which accounted for approx. 20% of SDGE's power supply, and the looming shutdown of several power plants that use once-through cooling has left SDG&E searching for new power supply. This is an opportunity for NRG to fill some of the power needs for the region. SDG&E has agreed to buy power from the new plant as long as it is a peaker. The new plant will help SDG&E replace its share of the 2,150-MW San Onofre nuclear plant which was permanently shut down in summer of 2013.

*Note: Totals may include rounding differences.*

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Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Budget Code: 00411.0  
Category: A. New Pipelines (BC 4X1)  
Category-Sub: 1. NRG Joint-venture UEG at Carlsbad  
Workpaper Group: 00411A - NRG Joint-venture UEG at Carlsbad

**Forecast Methodology:**

**Labor - Zero-Based**

Labor content is calculated at the average content of the last five years of recorded costs in this BC.

**Non-Labor - Zero-Based**

Non-labor costs are typically for materials, construction equipment and contract labor. Such costs are estimated by experienced pipeline construction management personnel using reference to recent pipeline construction projects of similar scope, pipe size and construction environment.

**NSE - Zero-Based**

None,

**Beginning of Workpaper Sub Details for  
Workpaper Group 00411A**



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Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00411.0  
 Category: A. New Pipelines (BC 4X1)  
 Category-Sub: 1. NRG Joint-venture UEG at Carlsbad  
 Workpaper Group: 00411A - Gas Storage - Compressor Stations - Goleta - Units #2 and #3 Overhauls  
 Workpaper Detail: 00411A.001 - NRG Joint-venture UEG at Carlsbad  
 In-Service Date: 09/30/2016  
 Description:

Gas Transmission - New pipelines

Forecast In 2013 \$(000)				
	Years	2014	2015	2016
Labor		36	180	324
Non-Labor		69	345	621
NSE		0	0	0
	<b>Total</b>	<b>105</b>	<b>525</b>	<b>945</b>
FTE		0.8	3.8	6.9

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00411B - New Pipelines - Blanket W.O. projects**

San Diego Gas & Electric Company  
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Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00411.0  
 Category: A. New Pipelines (BC 4X1)  
 Category-Sub: 2. New Pipelines - Blanket W.O. projects  
 Workpaper Group: 00411B - New Pipelines - Blanket W.O. projects

**Summary of Results (Constant 2013 \$ in 000s):**

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2009	2010	2011	2012	2013	2014	2015	2016
<b>Years</b>									
Labor	Zero-Based	0	0	0	0	0	8	0	0
Non-Labor	Zero-Based	0	0	0	0	0	30	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
<b>Total</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>38</b>	<b>0</b>	<b>0</b>
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.0

**Business Purpose:**

This Budget Code includes costs associated with the design and installation of new transmission pipelines to serve new customer loads and/or to improve the ability to move natural gas to points of critical need at adequate pressure. Includes costs planned in Budget Categories 401, 411, and 421 for "blanket" smaller projects not qualifying for an individual work paper

**Physical Description:**

New pipeline projects include planning, design, permitting, material acquisition, construction, commissioning and impact mitigation for new pipelines and associated valves, fittings, pressure regulating stations and service lines. Projects can range in size and magnitude from a few feet to many miles of large diameter pipeline through urban, suburban, rural or remote terrain within SDG&E's service territory.

**Project Justification:**

New pipelines are extended to customers in accordance with tariff rules approved by the CPUC. Costs for 2014 shown on this work paper are based on the average of the most recent five years' recorded expenditures including collected amounts applied to direct costs.

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Budget Code: 00411.0  
Category: A. New Pipelines (BC 4X1)  
Category-Sub: 2. New Pipelines - Blanket W.O. projects  
Workpaper Group: 00411B - New Pipelines - Blanket W.O. projects

**Forecast Methodology:**

**Labor - Zero-Based**

The labor portion of total direct project costs is derived as a percentage of costs in this BC over the last five recorded years.

**Non-Labor - Zero-Based**

Non-labor costs are typically for materials, construction equipment and contract labor. Such costs are estimated by experienced pipeline construction management personnel using reference to recent pipeline construction projects of similar scope, pipe size and construction environment.

**NSE - Zero-Based**

None. These are pipeline-related projects.

**Beginning of Workpaper Sub Details for  
Workpaper Group 00411B**

San Diego Gas & Electric Company  
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Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00411.0  
 Category: A. New Pipelines (BC 4X1)  
 Category-Sub: 2. New Pipelines - Blanket W.O. projects  
 Workpaper Group: 00411B - Gas Storage - Compressor Stations - Blanket projects  
 Workpaper Detail: 00411B.001 - New Pipelines - Blanket W.O. projects  
 In-Service Date: Not Applicable  
 Description:

Gas Transmission - New Pipelines

Forecast In 2013 \$(000)				
	Years	2014	2015	2016
Labor		8	0	0
Non-Labor		30	0	0
NSE		0	0	0
	<b>Total</b>	<b>38</b>	<b>0</b>	<b>0</b>
FTE		0.3	0.0	0.0

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**00411C - New Transmission Pipelines - Billed Capital**

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00411.0  
 Category: A. New Pipelines (BC 4X1)  
 Category-Sub: 3. New Transmission Pipelines - Billed Capital  
 Workpaper Group: 00411C - New Transmission Pipelines - Billed Capital

**Summary of Results (Constant 2013 \$ in 000s):**

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2009	2010	2011	2012	2013	2014	2015	2016
<b>Years</b>									
Labor	Zero-Based	0	0	0	0	0	67	67	67
Non-Labor	Zero-Based	0	0	0	0	0	0	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
<b>Total</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>67</b>	<b>67</b>	<b>67</b>
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.7	0.7	0.7

**Business Purpose:**

Provide for payment for non-shared engineering and planning services provided to SDG&E by SoCalGas' engineering department.

**Physical Description:**

These are payments for billings sent to SDG&E by SoCalGas in compliance with merger requirements.

**Project Justification:**

Comply with merger requirements and agreements imposed during the merger of the parent companies of the two utilities.

*Note: Totals may include rounding differences.*



San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Budget Code: 00411.0  
Category: A. New Pipelines (BC 4X1)  
Category-Sub: 3. New Transmission Pipelines - Billed Capital  
Workpaper Group: 00411C - New Transmission Pipelines - Billed Capital

**Forecast Methodology:**

**Labor - Zero-Based**

Planned according to the last five years of recorded activity in this BC.

**Non-Labor - Zero-Based**

Planned according to the last five years of recorded activity in this BC.

**NSE - Zero-Based**

Does not apply. Labor only.

**Beginning of Workpaper Sub Details for  
Workpaper Group 00411C**

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00411.0  
 Category: A. New Pipelines (BC 4X1)  
 Category-Sub: 3. New Transmission Pipelines - Billed Capital  
 Workpaper Group: 00411C - New Transmission Pipelines - Billed Capital  
 Workpaper Detail: 00411C.001 - New Transmission Pipelines - Billed Capital  
 In-Service Date: Not Applicable  
 Description:

Gas Transmission - New Pipelines

<b>Forecast In 2013 \$(000)</b>				
	<b>Years</b>	<u>2014</u>	<u>2015</u>	<u>2016</u>
Labor		67	67	67
Non-Labor		0	0	0
NSE		0	0	0
	<b>Total</b>	<b>67</b>	<b>67</b>	<b>67</b>
FTE		0.7	0.7	0.7

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Category: B. Replacements (BC 4X2)  
Workpaper: 004120

**Summary for Category: B. Replacements (BC 4X2)**

	In 2013\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2013	2014	2015	2016
Labor	69	96	47	47
Non-Labor	1,157	1,117	633	633
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total</b>	<b>1,226</b>	<b>1,213</b>	<b>680</b>	<b>680</b>
FTE	0.7	0.9	0.5	0.5

**004120 GT PL REPLACE/EXTERNAL DRIVEN**

Labor	69	96	47	47
Non-Labor	1,157	1,117	633	633
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
<b>Total</b>	<b>1,226</b>	<b>1,213</b>	<b>680</b>	<b>680</b>
FTE	0.7	0.9	0.5	0.5

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**004120 - GT PL REPLACE/EXTERNAL DRIVEN**

San Diego Gas & Electric Company  
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Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00412.0  
 Category: B. Replacements (BC 4X2)  
 Category-Sub: 1. Replacements  
 Workpaper Group: 004120 - GT PL REPLACE/EXTERNAL DRIVEN

**Summary of Results (Constant 2013 \$ in 000s):**

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2009	2010	2011	2012	2013	2014	2015	2016
<b>Years</b>									
Labor	Zero-Based	78	46	29	12	69	96	47	47
Non-Labor	Zero-Based	1,359	397	165	82	1,157	1,117	633	633
NSE	Zero-Based	0	0	0	0	0	0	0	0
<b>Total</b>		<b>1,436</b>	<b>443</b>	<b>194</b>	<b>94</b>	<b>1,226</b>	<b>1,213</b>	<b>680</b>	<b>680</b>
FTE	Zero-Based	0.8	0.5	0.2	0.1	0.7	0.9	0.5	0.5

**Business Purpose:**

This Budget Code includes costs associated with the design and installation of transmission pipeline replacements. Typically, transmission pipelines are replaced due to either condition of existing pipeline or hazardous condition affecting the existing pipeline location. Pipelines with a history of leakage, poor coating, or that are difficult to cathodically protect are routinely evaluated for possible replacement. Not included on this work paper is the cost impact of D.O.T. pipeline integrity requirements found in CFR 49, Part 192, Subpart O.

**Physical Description:**

Projects in this Budget Code include the cost to plan, design, permit, acquire materials, construct, commission and mitigate impacts for the replacement of pipeline, fittings, valves and associated pressure regulating stations and service lines. Multiple projects are completed each year ranging in size and magnitude from a few feet to several miles of replacement. Projects can involve difficult and hazardous access with many logistical challenges caused by weather or physical terrain.

**Project Justification:**

The estimate for 2014 comes from the operations area of the company and people familiar with local projects, none of which qualify for separate work paper treatment. The estimates for 2015 and 2016 are based on an average of the most recent 5 years of recorded costs and on the experience and judgment of local pipeline people with knowledge of trends in construction costs and materials performance. Costs in this budget category over the past five years have averaged 70% collectible.

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Budget Code: 00412.0  
Category: B. Replacements (BC 4X2)  
Category-Sub: 1. Replacements  
Workpaper Group: 004120 - GT PL REPLACE/EXTERNAL DRIVEN

**Forecast Methodology:**

**Labor - Zero-Based**

2014 is from Transmission Operations' 5-yr capital plan. 2015 and 2016 are 5-yr average.

**Non-Labor - Zero-Based**

2014 is from Transmission Operations' 5-yr capital plan. 2015 and 2016 are 5-yr average.

**NSE - Zero-Based**

None.

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00412.0  
 Category: B. Replacements (BC 4X2)  
 Category-Sub: 1. Replacements  
 Workpaper Group: 004120 - GT PL REPLACE/EXTERNAL DRIVEN

**Adjustments to Forecast**

In 2013 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2014	2015	2016	2014	2015	2016	2014	2015	2016
Labor	Zero-Based	96	47	47	0	0	0	96	47	47
Non-Labor	Zero-Based	1,117	633	633	0	0	0	1,117	633	633
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
<b>Total</b>		<b>1,213</b>	<b>680</b>	<b>680</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,213</b>	<b>680</b>	<b>680</b>
FTE	Zero-Based	0.9	0.5	0.5	0.0	0.0	0.0	0.9	0.5	0.5

**Forecast Adjustment Details**

<u>Year/Explanation</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>RefID</u>
<b>2014 Total</b>	0	0	0	0	0.0	
<b>2015 Total</b>	0	0	0	0	0.0	
<b>2016 Total</b>	0	0	0	0	0.0	

*Note: Totals may include rounding differences.*



San Diego Gas & Electric Company  
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Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Budget Code: 00412.0  
Category: B. Replacements (BC 4X2)  
Category-Sub: 1. Replacements  
Workpaper Group: 004120 - GT PL REPLACE/EXTERNAL DRIVEN

**Determination of Adjusted-Recorded:**

	2009 (\$000)	2010 (\$000)	2011 (\$000)	2012 (\$000)	2013 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	160	146	176	226	276
Non-Labor	5,080	13,397	13,238	9,566	10,833
NSE	0	0	0	0	0
<b>Total</b>	<b>5,241</b>	<b>13,544</b>	<b>13,414</b>	<b>9,792</b>	<b>11,108</b>
FTE	1.8	1.4	1.2	2.1	2.3
<b>Adjustments (Nominal \$)**</b>					
Labor	0	0	0	0	0
Non-Labor	1,271	682	0	19	1,048
NSE	0	0	0	0	0
<b>Total</b>	<b>1,271</b>	<b>682</b>	<b>0</b>	<b>19</b>	<b>1,048</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	160	146	176	226	276
Non-Labor	6,351	14,080	13,238	9,585	11,881
NSE	0	0	0	0	0
<b>Total</b>	<b>6,511</b>	<b>14,226</b>	<b>13,414</b>	<b>9,811</b>	<b>12,156</b>
FTE	1.8	1.4	1.2	2.1	2.3
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	28	25	29	36	45
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>28</b>	<b>25</b>	<b>29</b>	<b>36</b>	<b>45</b>
FTE	0.3	0.3	0.2	0.3	0.4
<b>Escalation to 2013\$</b>					
Labor	43	30	16	-1	0
Non-Labor	1,449	2,500	1,004	-31	0
NSE	0	0	0	0	0
<b>Total</b>	<b>1,492</b>	<b>2,531</b>	<b>1,020</b>	<b>-31</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2013\$)</b>					
Labor	231	202	220	261	321
Non-Labor	7,800	16,580	14,243	9,554	11,881
NSE	0	0	0	0	0
<b>Total</b>	<b>8,031</b>	<b>16,782</b>	<b>14,463</b>	<b>9,816</b>	<b>12,202</b>
FTE	2.1	1.7	1.4	2.4	2.7

\* 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  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00412.0  
 Category: B. Replacements (BC 4X2)  
 Category-Sub: 1. Replacements  
 Workpaper Group: 004120 - GT PL REPLACE/EXTERNAL DRIVEN

**Adjustments to Recorded:**

In Nominal \$(000)					
Years	2009	2010	2011	2012	2013
Labor	0	0	0	0	0
Non-Labor	1,271	682	0	19	1,048
NSE	0	0	0	0	0
<b>Total</b>	<b>1,271</b>	<b>682</b>	<b>0</b>	<b>19</b>	<b>1,048</b>
FTE	0.0	0.0	0.0	0.0	0.0

**Detail of Adjustments to Recorded in Nominal \$:**

Year/Explanation	Labor	NLbr	NSE	Total	FTE	RefID
<b>2009</b>	0	1,271	0	1,271	0.0	TPMJW20131121155743
Removed negative CIAC amounts to show actual SDGE expenditure. (Per GRC prodedural guidance.)						
<b>2009 Total</b>	0	1,271	0	1,271	0.0	
<b>2010</b>	0	682	0	682	0.0	TPMJW20131121155827
Removed negative CIAC amounts to show actual SDGE expenditure. (Per GRC prodedural guidance.)						
<b>2010 Total</b>	0	682	0	682	0.0	
<b>2011 Total</b>	0	0	0	0	0.0	
<b>2012</b>	0	19	0	19	0.0	TPMJW20131121155906
Removed negative CIAC amounts to show actual SDGE expenditure. (Per GRC prodedural guidance.)						
<b>2012 Total</b>	0	19	0	19	0.0	
<b>2013</b>	0	1,048	0	1,048	0.0	TPMJW20140218153112
Removed negative CIAC amounts per case Mgt.						
<b>2013 Total</b>	0	1,048	0	1,048	0.0	

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Sub Details for  
Workpaper Group 004120**

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00412.0  
 Category: B. Replacements (BC 4X2)  
 Category-Sub: 1. Replacements  
 Workpaper Group: 004120 - GT Stor Wells / Externally Driven  
 Workpaper Detail: 004120.001 - Gas Transmission Line Replacements - non-PIP Collectible portion  
 In-Service Date: Not Applicable  
 Description:

Gas Transmission - Non-PIP Pipeline replacements.

<b>Forecast In 2013 \$(000)</b>				
	<b>Years</b>	<u>2014</u>	<u>2015</u>	<u>2016</u>
Labor		67	33	33
Non-Labor		782	443	443
NSE		0	0	0
	<b>Total</b>	<b>849</b>	<b>476</b>	<b>476</b>
FTE		0.7	0.4	0.4

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00412.0  
 Category: B. Replacements (BC 4X2)  
 Category-Sub: 1. Replacements  
 Workpaper Group: 004120 - GT Stor Wells / Externally Driven  
 Workpaper Detail: 004120.002 - Gas Transmission Line Replacements - Non-Collectible Portion  
 In-Service Date: Not Applicable  
 Description:

Gas Transmission - Non-PIP Pipeline replacements.
---

<b>Forecast In 2013 \$(000)</b>				
	<b>Years</b>	<u><b>2014</b></u>	<u><b>2015</b></u>	<u><b>2016</b></u>
Labor		29	14	14
Non-Labor		335	190	190
NSE		0	0	0
	<b>Total</b>	<b>364</b>	<b>204</b>	<b>204</b>
FTE		0.2	0.1	0.1

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Category: C. Relocations (BC 4X3 4X4)  
Workpaper: VARIOUS

**Summary for Category: C. Relocations (BC 4X3 4X4)**

	In 2013\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2013	2014	2015	2016
Labor	0	15	15	15
Non-Labor	0	459	459	459
NSE	0	0	0	0
<b>Total</b>	<b>0</b>	<b>474</b>	<b>474</b>	<b>474</b>
FTE	0.0	0.1	0.1	0.1

**004130 GT PL RELOC-FWAY/EXTERNAL DRIVEN**

Labor	0	0	0	0
Non-Labor	0	298	298	298
NSE	0	0	0	0
<b>Total</b>	<b>0</b>	<b>298</b>	<b>298</b>	<b>298</b>
FTE	0.0	0.0	0.0	0.0

**004140 GT PL RELOC-FRAN/PRV ROW/EXTERNAL DRIVEN**

Labor	0	15	15	15
Non-Labor	0	161	161	161
NSE	0	0	0	0
<b>Total</b>	<b>0</b>	<b>176</b>	<b>176</b>	<b>176</b>
FTE	0.0	0.1	0.1	0.1

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**004130 - GT PL RELOC-FWAY/EXTERNAL DRIVEN**

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00413.0  
 Category: C. Relocations (BC 4X3 4X4)  
 Category-Sub: 1. GT PL RELOC-FWAY/EXTERNAL DRIVEN  
 Workpaper Group: 004130 - GT PL RELOC-FWAY/EXTERNAL DRIVEN

**Summary of Results (Constant 2013 \$ in 000s):**

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2009	2010	2011	2012	2013	2014	2015	2016
	<b>Years</b>								
Labor	5-YR Average	0	0	0	0	0	0	0	0
Non-Labor	5-YR Average	914	105	186	288	0	298	298	298
NSE	5-YR Average	0	0	0	0	0	0	0	0
	<b>Total</b>	<b>914</b>	<b>105</b>	<b>186</b>	<b>288</b>	<b>0</b>	<b>298</b>	<b>298</b>	<b>298</b>
FTE	5-YR Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Business Purpose:**

This Budget Code includes costs associated with pipeline and associated facility relocations necessitated by CalTrans construction projects.

**Physical Description:**

Relocate and replace pipelines and related facilities found to be in conflict with Cal Trans construction projects. Individual projects will vary from less than \$10,000 to as high as multiple hundreds of thousands of dollars.

**Project Justification:**

To meet operating, right of way, and franchise agreement requirements. Ongoing projects with Cal Trans are not always known during the annual budgeting process. Throughout the year, SDG&E is required to relocate pipelines during the same year they are being submitted to SDG&E. Costs are driven by safety and regulatory compliance as well as contractual requirements.

*Note: Totals may include rounding differences.*



San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Budget Code: 00413.0  
Category: C. Relocations (BC 4X3 4X4)  
Category-Sub: 1. GT PL RELOC-FWAY/EXTERNAL DRIVEN  
Workpaper Group: 004130 - GT PL RELOC-FWAY/EXTERNAL DRIVEN

**Forecast Methodology:**

**Labor - 5-YR Average**

Planned years are estimated at 5-yr averages. Labor is broken out according to the dollar ratio during the most recent five recorded years.

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

Planned years are estimated at 5-yr averages. Non-Labor is broken out according to the dollar ratio during the most recent five recorded years.

**NSE - 5-YR Average**

None.

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00413.0  
 Category: C. Relocations (BC 4X3 4X4)  
 Category-Sub: 1. GT PL RELOC-FWAY/EXTERNAL DRIVEN  
 Workpaper Group: 004130 - GT PL RELOC-FWAY/EXTERNAL DRIVEN

**Adjustments to Forecast**

In 2013 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2014	2015	2016	2014	2015	2016	2014	2015	2016
Labor	5-YR Average	0	0	0	0	0	0	0	0	0
Non-Labor	5-YR Average	298	298	298	0	0	0	298	298	298
NSE	5-YR Average	0	0	0	0	0	0	0	0	0
<b>Total</b>		<b>298</b>	<b>298</b>	<b>298</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>298</b>	<b>298</b>	<b>298</b>
FTE	5-YR Average	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Forecast Adjustment Details**

<u>Year/Explanation</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>RefID</u>
<b>2014 Total</b>	0	0	0	0	0.0	
<b>2015 Total</b>	0	0	0	0	0.0	
<b>2016 Total</b>	0	0	0	0	0.0	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Budget Code: 00413.0  
Category: C. Relocations (BC 4X3 4X4)  
Category-Sub: 1. GT PL RELOC-FWAY/EXTERNAL DRIVEN  
Workpaper Group: 004130 - GT PL RELOC-FWAY/EXTERNAL DRIVEN

**Determination of Adjusted-Recorded:**

	2009 (\$000)	2010 (\$000)	2011 (\$000)	2012 (\$000)	2013 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	294	287	139	318	117
Non-Labor	3,943	4,793	2,816	6,023	3,868
NSE	0	0	0	0	0
<b>Total</b>	<b>4,236</b>	<b>5,080</b>	<b>2,955</b>	<b>6,341</b>	<b>3,985</b>
FTE	3.4	3.2	1.5	3.6	1.2
<b>Adjustments (Nominal \$)**</b>					
Labor	0	0	0	0	0
Non-Labor	744	0	148	148	0
NSE	0	0	0	0	0
<b>Total</b>	<b>744</b>	<b>0</b>	<b>148</b>	<b>148</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	294	287	139	318	117
Non-Labor	4,686	4,793	2,964	6,171	3,868
NSE	0	0	0	0	0
<b>Total</b>	<b>4,980</b>	<b>5,080</b>	<b>3,103</b>	<b>6,489</b>	<b>3,985</b>
FTE	3.4	3.2	1.5	3.6	1.2
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	53	50	23	51	19
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>53</b>	<b>50</b>	<b>23</b>	<b>51</b>	<b>19</b>
FTE	0.6	0.6	0.3	0.6	0.2
<b>Escalation to 2013\$</b>					
Labor	79	60	12	-1	0
Non-Labor	1,069	851	225	-20	0
NSE	0	0	0	0	0
<b>Total</b>	<b>1,149</b>	<b>911</b>	<b>237</b>	<b>-21</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2013\$)</b>					
Labor	426	397	175	368	136
Non-Labor	5,756	5,645	3,189	6,152	3,868
NSE	0	0	0	0	0
<b>Total</b>	<b>6,182</b>	<b>6,041</b>	<b>3,364</b>	<b>6,520</b>	<b>4,005</b>
FTE	4.0	3.8	1.8	4.2	1.4

\* 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  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00413.0  
 Category: C. Relocations (BC 4X3 4X4)  
 Category-Sub: 1. GT PL RELOC-FWAY/EXTERNAL DRIVEN  
 Workpaper Group: 004130 - GT PL RELOC-FWAY/EXTERNAL DRIVEN

**Adjustments to Recorded:**

In Nominal \$(000)					
Years	2009	2010	2011	2012	2013
Labor	0	0	0	0	0
Non-Labor	744	0	148	148	0
NSE	0	0	0	0	0
<b>Total</b>	<b>744</b>	<b>0</b>	<b>148</b>	<b>148</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0

**Detail of Adjustments to Recorded in Nominal \$:**

Year/Explanation	Labor	NLbr	NSE	Total	FTE	RefID
<b>2009</b>	0	744	0	744	0.0	TPMJW20131121161303!
This is a recalculation from GRID BW for this BC by cost element showing using net of debits and CIAC negatives.						
<b>2009 Total</b>	0	744	0	744	0.0	
<b>2010 Total</b>	0	0	0	0	0.0	
<b>2011</b>	0	148	0	148	0.0	TPMJW20140218153931!
Removed negative CIAC amount per case Mgt.						
<b>2011 Total</b>	0	148	0	148	0.0	
<b>2012</b>	0	0	0	0	0.0	TPMJW20131121161449!
Restored original amount.						
	0	148	0	148	0.0	TPMJW20131121162223!
Removes negative CIAC amounts to show actual SDGE expenditures. (Per GRC procedural guidance.)						
<b>2012 Total</b>	0	148	0	148	0.0	
<b>2013 Total</b>	0	0	0	0	0.0	

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Sub Details for  
Workpaper Group 004130**

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00413.0  
 Category: C. Relocations (BC 4X3 4X4)  
 Category-Sub: 1. GT PL RELOC-FWAY/EXTERNAL DRIVEN  
 Workpaper Group: 004130 - GT Stor Pipelines / Externally Driven  
 Workpaper Detail: 004130.001 - Gas Transmission Line Relocations due to Freeway projects.  
 In-Service Date: Not Applicable  
 Description:

Forecast In 2013 \$(000)					
Years		2014	2015	2016	
Labor		0	0	0	
Non-Labor		298	298	298	
NSE		0	0	0	
	<b>Total</b>	<b>298</b>	<b>298</b>	<b>298</b>	
FTE		0.0	0.0	0.0	

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**004140 - GT PL RELOC-FRAN/PRV ROW/EXTERNAL DRIVEN**

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00414.0  
 Category: C. Relocations (BC 4X3 4X4)  
 Category-Sub: 2. GT PL RELOC-FRAN/PRV ROW/EXTERNAL DRIVEN  
 Workpaper Group: 004140 - GT PL RELOC-FRAN/PRV ROW/EXTERNAL DRIVEN

**Summary of Results (Constant 2013 \$ in 000s):**

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2009	2010	2011	2012	2013	2014	2015	2016
Years									
Labor	Zero-Based	0	0	15	0	0	15	15	15
Non-Labor	Zero-Based	0	0	160	9	0	161	161	161
NSE	Zero-Based	0	0	0	0	0	0	0	0
<b>Total</b>		<b>0</b>	<b>0</b>	<b>175</b>	<b>8</b>	<b>0</b>	<b>176</b>	<b>176</b>	<b>176</b>
FTE	Zero-Based	0.0	0.0	0.1	0.0	0.0	0.1	0.1	0.1

**Business Purpose:**

This Budget Code includes costs associated with the modification and relocation of transmission pipelines to accommodate planned private property development, municipal public works and street improvement projects, and other work required due to right-of-way agreements, contract and franchise requirements.

**Physical Description:**

This Budget Code contains forecasts for a number of pipeline relocation projects required to meet the regulatory requirements or contract clauses of operating, right of way, franchise, and 3rd party developer agreements. Specific projects with cities and developers are not always clear during the annual budgeting process. These projects can range in magnitude from less than one hundred feet of pipe to accommodate a storm drain or sewer installation to several miles of relocated pipe, fittings, valves and appurtenances needed to accommodate residential development over large tracts of previously undeveloped land throughout our service territory. Throughout the year, SDG&E can be required to relocate pipelines during the same year the request is received by SDG&E due to the immediate needs of third party developers or municipal agencies.

Individual projects in this budget code can vary in cost from less than \$10,000 to as high as several hundreds of thousands of dollars.

**Project Justification:**

Pipelines are relocated according to the requirements of municipal franchises and property developers. Some are collectible and others are not, usually depending on rights of way or franchise content.

*Note: Totals may include rounding differences.*



San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Budget Code: 00414.0  
Category: C. Relocations (BC 4X3 4X4)  
Category-Sub: 2. GT PL RELOC-FRAN/PRV ROW/EXTERNAL DRIVEN  
Workpaper Group: 004140 - GT PL RELOC-FRAN/PRV ROW/EXTERNAL DRIVEN

**Forecast Methodology:**

**Labor - Zero-Based**

Activity in this BC varies considerably over the years. This forecast repeats the experience in 2011, the most recent year in which there has been activity over the last five years. Labor is a repeat of the 2011 content.

**Non-Labor - Zero-Based**

Activity in this BC varies considerably over the years. This forecast repeats the experience in 2011, the most recent year in which there has been activity over the last five years. Non-labor is a repeat of the 2011 content.

**NSE - Zero-Based**

None.

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00414.0  
 Category: C. Relocations (BC 4X3 4X4)  
 Category-Sub: 2. GT PL RELOC-FRAN/PRV ROW/EXTERNAL DRIVEN  
 Workpaper Group: 004140 - GT PL RELOC-FRAN/PRV ROW/EXTERNAL DRIVEN

**Adjustments to Forecast**

In 2013 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2014	2015	2016	2014	2015	2016	2014	2015	2016
Labor	Zero-Based	15	15	15	0	0	0	15	15	15
Non-Labor	Zero-Based	161	161	161	0	0	0	161	161	161
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
<b>Total</b>		<b>176</b>	<b>176</b>	<b>176</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>176</b>	<b>176</b>	<b>176</b>
FTE	Zero-Based	0.1	0.1	0.1	0.0	0.0	0.0	0.1	0.1	0.1

**Forecast Adjustment Details**

<u>Year/Explanation</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>RefID</u>
<b>2014 Total</b>	0	0	0	0	0.0	
<b>2015 Total</b>	0	0	0	0	0.0	
<b>2016 Total</b>	0	0	0	0	0.0	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Budget Code: 00414.0  
Category: C. Relocations (BC 4X3 4X4)  
Category-Sub: 2. GT PL RELOC-FRAN/PRV ROW/EXTERNAL DRIVEN  
Workpaper Group: 004140 - GT PL RELOC-FRAN/PRV ROW/EXTERNAL DRIVEN

**Determination of Adjusted-Recorded:**

	2009 (\$000)	2010 (\$000)	2011 (\$000)	2012 (\$000)	2013 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	587	642	457	458	1,100
Non-Labor	9,273	3,968	3,957	5,733	8,001
NSE	0	0	0	0	0
<b>Total</b>	<b>9,860</b>	<b>4,610</b>	<b>4,414</b>	<b>6,191</b>	<b>9,101</b>
FTE	5.4	6.7	4.1	4.6	11.3
<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	587	642	457	458	1,100
Non-Labor	9,273	3,968	3,957	5,733	8,001
NSE	0	0	0	0	0
<b>Total</b>	<b>9,860</b>	<b>4,610</b>	<b>4,414</b>	<b>6,191</b>	<b>9,101</b>
FTE	5.4	6.7	4.1	4.6	11.3
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	106	112	76	73	183
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>106</b>	<b>112</b>	<b>76</b>	<b>73</b>	<b>183</b>
FTE	1.0	1.2	0.7	0.8	1.9
<b>Escalation to 2013\$</b>					
Labor	158	134	40	-2	0
Non-Labor	2,116	705	300	-18	0
NSE	0	0	0	0	0
<b>Total</b>	<b>2,274</b>	<b>839</b>	<b>341</b>	<b>-20</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2013\$)</b>					
Labor	851	888	573	530	1,282
Non-Labor	11,389	4,673	4,257	5,715	8,001
NSE	0	0	0	0	0
<b>Total</b>	<b>12,240</b>	<b>5,561</b>	<b>4,830</b>	<b>6,245</b>	<b>9,284</b>
FTE	6.4	7.9	4.8	5.4	13.2

\* 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  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00414.0  
 Category: C. Relocations (BC 4X3 4X4)  
 Category-Sub: 2. GT PL RELOC-FRAN/PRV ROW/EXTERNAL DRIVEN  
 Workpaper Group: 004140 - GT PL RELOC-FRAN/PRV ROW/EXTERNAL DRIVEN

**Adjustments to Recorded:**

		In Nominal \$(000)				
Years		2009	2010	2011	2012	2013
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

**Detail of Adjustments to Recorded in Nominal \$:**

Year/Explanation	Labor	NLbr	NSE	Total	FTE	RefID
<b>2009 Total</b>	0	0	0	0	0.0	
<b>2010 Total</b>	0	0	0	0	0.0	
<b>2011</b>	0	0	0	0	0.0	TPMJW20131121163237
Removes CIAC amounts to show actual SDGE expenditures. (Per GRC procedural guidance.)						
<b>2011 Total</b>	0	0	0	0	0.0	
<b>2012 Total</b>	0	0	0	0	0.0	
<b>2013 Total</b>	0	0	0	0	0.0	

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Sub Details for  
Workpaper Group 004140**

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00414.0  
 Category: C. Relocations (BC 4X3 4X4)  
 Category-Sub: 2. GT PL RELOC-FRAN/PRV ROW/EXTERNAL DRIVEN  
 Workpaper Group: 004140 - GT Stor Purifi Equip / Externally Driven  
 Workpaper Detail: 004140.001 - GT - Relocate Lines due to Freeway (CalTrans) activities  
 In-Service Date: Not Applicable  
 Description:

Forecast In 2013 \$(000)				
Years		2014	2015	2016
Labor		15	15	15
Non-Labor		161	161	161
NSE		0	0	0
	<b>Total</b>	<b>176</b>	<b>176</b>	<b>176</b>
FTE		0.1	0.1	0.1

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Category: D. Compressor Stations (BC 4X5)  
Workpaper: 004150

**Summary for Category: D. Compressor Stations (BC 4X5)**

	In 2013\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2013	2014	2015	2016
Labor	161	179	179	179
Non-Labor	1,962	2,948	2,948	2,948
NSE	0	0	0	0
<b>Total</b>	<b>2,123</b>	<b>3,127</b>	<b>3,127</b>	<b>3,127</b>
FTE	1.8	1.9	1.9	1.9

**004150 Compressor Stations**

Labor	161	179	179	179
Non-Labor	1,962	2,948	2,948	2,948
NSE	0	0	0	0
<b>Total</b>	<b>2,123</b>	<b>3,127</b>	<b>3,127</b>	<b>3,127</b>
FTE	1.8	1.9	1.9	1.9

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group  
004150 - Compressor Stations**



San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00415.0  
 Category: D. Compressor Stations (BC 4X5)  
 Category-Sub: 1. Compressor Stations  
 Workpaper Group: 004150 - Compressor Stations

**Summary of Results (Constant 2013 \$ in 000s):**

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2009	2010	2011	2012	2013	2014	2015	2016
Years									
Labor	Zero-Based	79	111	121	102	161	179	179	179
Non-Labor	Zero-Based	3,940	4,720	2,407	1,691	1,962	2,948	2,948	2,948
NSE	Zero-Based	0	0	0	0	0	0	0	0
<b>Total</b>		<b>4,019</b>	<b>4,832</b>	<b>2,527</b>	<b>1,793</b>	<b>2,123</b>	<b>3,127</b>	<b>3,127</b>	<b>3,127</b>
FTE	Zero-Based	0.7	1.2	1.3	1.0	1.8	1.9	1.9	1.9

**Business Purpose:**

This Budget Code includes costs associated with the installation and replacement of compressor station equipment used in operating the transmission system. The nature of compressor station operation requires consistent maintenance and replacement of key engine components and controls equipment to sustain the reliability and safety of the facility. To keep operating costs down, reliance is made on automating data gathering systems to monitor performance data such as flows, pressures, and temperatures. The upgrade and replacement of controls consisting of out dated technology is critical to enable the station to operate at its highest efficiency and that proper testing and diagnostics can be executed when the engine units are down.

**Physical Description:**

Individual project scopes can consist of one or a combination of the following installations: engine control panels, oxidation catalysts, evaporative ponds, cooling tower, blowdown silencer, station auxiliary systems, turbos, station physical security, and clearance pockets.

**Project Justification:**

Existing compressor station equipment has a finite life requiring regular replacement and/or upgrade as recommended by manufacturers or as required by operating experience to maintain reliability and transportation ability for the Southern California market. In addition, the need has been identified to harden the physical security at a critical compressor station. This need was driven by two factors. The first factor was the Transportation Security Administration (TSA) guidelines to objectively identify gas assets deemed as critical. The second factor was the various security breaches that recently occurred affecting the energy sector.

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Budget Code: 00415.0  
Category: D. Compressor Stations (BC 4X5)  
Category-Sub: 1. Compressor Stations  
Workpaper Group: 004150 - Compressor Stations

**Forecast Methodology:**

**Labor - Zero-Based**

The 5-year average is used for years 2014, 2015, and 2016. To the five-year average recorded costs is added an estimate for billed capital for engineering and/or planning provided by So Cal Gas to SDG&E. Such costs are accounted as indirects and are thus not included in the booked recorded costs. Labor amount is estimated using the last five years of recorded costs.

**Non-Labor - Zero-Based**

The 5-year average is used for years 2014, 2015, and 2016. Non-labor amount is estimated using the last five years of recorded costs.

**NSE - Zero-Based**

None.

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00415.0  
 Category: D. Compressor Stations (BC 4X5)  
 Category-Sub: 1. Compressor Stations  
 Workpaper Group: 004150 - Compressor Stations

**Adjustments to Forecast**

In 2013 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2014	2015	2016	2014	2015	2016	2014	2015	2016
Labor	Zero-Based	179	179	179	0	0	0	179	179	179
Non-Labor	Zero-Based	2,948	2,948	2,948	0	0	0	2,948	2,948	2,948
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
<b>Total</b>		<b>3,127</b>	<b>3,127</b>	<b>3,127</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>3,127</b>	<b>3,127</b>	<b>3,127</b>
FTE	Zero-Based	1.9	1.9	1.9	0.0	0.0	0.0	1.9	1.9	1.9

**Forecast Adjustment Details**

<u>Year/Explanation</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>RefID</u>
<b>2014 Total</b>	0	0	0	0	0.0	
<b>2015 Total</b>	0	0	0	0	0.0	
<b>2016 Total</b>	0	0	0	0	0.0	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Budget Code: 00415.0  
Category: D. Compressor Stations (BC 4X5)  
Category-Sub: 1. Compressor Stations  
Workpaper Group: 004150 - Compressor Stations

**Determination of Adjusted-Recorded:**

	2009 (\$000)	2010 (\$000)	2011 (\$000)	2012 (\$000)	2013 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	56	82	98	89	139
Non-Labor	3,208	4,008	2,237	1,697	1,962
NSE	0	0	0	0	0
<b>Total</b>	<b>3,263</b>	<b>4,090</b>	<b>2,335</b>	<b>1,786</b>	<b>2,101</b>
FTE	0.6	1.0	1.1	0.9	1.5
<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	56	82	98	89	139
Non-Labor	3,208	4,008	2,237	1,697	1,962
NSE	0	0	0	0	0
<b>Total</b>	<b>3,263</b>	<b>4,090</b>	<b>2,335</b>	<b>1,786</b>	<b>2,101</b>
FTE	0.6	1.0	1.1	0.9	1.5
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	9	13	14	13	22
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>9</b>	<b>13</b>	<b>14</b>	<b>13</b>	<b>22</b>
FTE	0.1	0.2	0.2	0.1	0.3
<b>Escalation to 2013\$</b>					
Labor	15	17	9	0	0
Non-Labor	732	712	170	-5	0
NSE	0	0	0	0	0
<b>Total</b>	<b>747</b>	<b>729</b>	<b>178</b>	<b>-6</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2013\$)</b>					
Labor	79	111	121	102	161
Non-Labor	3,940	4,720	2,407	1,691	1,962
NSE	0	0	0	0	0
<b>Total</b>	<b>4,019</b>	<b>4,832</b>	<b>2,527</b>	<b>1,793</b>	<b>2,123</b>
FTE	0.7	1.2	1.3	1.0	1.8

\* 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  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00415.0  
 Category: D. Compressor Stations (BC 4X5)  
 Category-Sub: 1. Compressor Stations  
 Workpaper Group: 004150 - Compressor Stations

**Adjustments to Recorded:**

		In Nominal \$(000)				
Years		2009	2010	2011	2012	2013
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

**Detail of Adjustments to Recorded in Nominal \$:**

Year/Explanation	Labor	NLbr	NSE	Total	FTE	RefID
<b>2009 Total</b>	0	0	0	0	0.0	
<b>2010 Total</b>	0	0	0	0	0.0	
<b>2011 Total</b>	0	0	0	0	0.0	
<b>2012 Total</b>	0	0	0	0	0.0	
<b>2013 Total</b>	0	0	0	0	0.0	

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Sub Details for  
Workpaper Group 004150**

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00415.0  
 Category: D. Compressor Stations (BC 4X5)  
 Category-Sub: 1. Compressor Stations  
 Workpaper Group: 004150 - Compressor Stations  
 Workpaper Detail: 004150.001 - Gas Transmission Compressor Stations operated by SDGE  
 In-Service Date: Not Applicable  
 Description:

This work paper includes costs associated with the installation and replacement of compressor station equipment used in operating the transmission system.

Forecast In 2013 \$(000)				
	Years	2014	2015	2016
Labor		115	115	115
Non-Labor		2,948	2,948	2,948
NSE		0	0	0
	<b>Total</b>	<b>3,063</b>	<b>3,063</b>	<b>3,063</b>
FTE		1.2	1.2	1.2

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00415.0  
 Category: D. Compressor Stations (BC 4X5)  
 Category-Sub: 1. Compressor Stations  
 Workpaper Group: 004150 - Compressor Stations  
 Workpaper Detail: 004150.002 - Billed Capital paid by SDGE

In-Service Date: Not Applicable

Description:

Gas Transmission - Compressor Stations

Forecast In 2013 \$(000)				
	Years	2014	2015	2016
Labor		64	64	64
Non-Labor		0	0	0
NSE		0	0	0
	<b>Total</b>	<b>64</b>	<b>64</b>	<b>64</b>
FTE		0.7	0.7	0.7

*Note: Totals may include rounding differences.*



San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Category: E. Cathodic Protection (BC 4X6)  
Workpaper: 004160

**Summary for Category: E. Cathodic Protection (BC 4X6)**

	In 2013\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2013	2014	2015	2016
Labor	11	79	86	86
Non-Labor	72	162	176	176
NSE	0	0	0	0
<b>Total</b>	<u>83</u>	<u>241</u>	<u>262</u>	<u>262</u>
FTE	0.1	0.7	0.8	0.8

**004160 GT CATHODIC PROTECTION/EXTERNAL DRIVEN**

Labor	11	79	86	86
Non-Labor	72	162	176	176
NSE	0	0	0	0
<b>Total</b>	<u>83</u>	<u>241</u>	<u>262</u>	<u>262</u>
FTE	0.1	0.7	0.8	0.8

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**004160 - GT CATHODIC PROTECTION/EXTERNAL DRIVEN**

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00416.0  
 Category: E. Cathodic Protection (BC 4X6)  
 Category-Sub: 1. Cathodic Protection  
 Workpaper Group: 004160 - GT CATHODIC PROTECTION/EXTERNAL DRIVEN

**Summary of Results (Constant 2013 \$ in 000s):**

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2009	2010	2011	2012	2013	2014	2015	2016
Years									
Labor	Zero-Based	6	22	42	31	11	79	86	86
Non-Labor	Zero-Based	51	37	102	0	72	162	176	176
NSE	Zero-Based	0	0	0	0	0	0	0	0
<b>Total</b>		<b>57</b>	<b>58</b>	<b>144</b>	<b>30</b>	<b>83</b>	<b>241</b>	<b>262</b>	<b>262</b>
FTE	Zero-Based	0.0	0.2	0.3	0.2	0.1	0.7	0.8	0.8

**Business Purpose:**

This Budget Code includes costs associated with the installation of cathodic protection equipment used to preserve the integrity of transmission pipelines by protecting them from external corrosion. These projects are mandated by federal and state minimum pipeline safety regulations, and provide for the maintenance of adequate cathodic protection on company facilities.

**Physical Description:**

Typical expenditures include the replacement of surface anode beds, deep well anodes and/or rectifier systems, installation of new cathodic protection stations, and applying cathodic protection to existing steel mains and service lines. Cathodic protection projects may also include the installation of new remote satellite communication technology which allows for more efficient operation and monitoring of the cathodic protection system.

**Project Justification:**

Application of cathodic protection provides greater system protection against corrosion. It allows SDG&E to meet Federal and State safety compliance requirements, ensuring reliability of transportation into Southern California market.

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Budget Code: 00416.0  
Category: E. Cathodic Protection (BC 4X6)  
Category-Sub: 1. Cathodic Protection  
Workpaper Group: 004160 - GT CATHODIC PROTECTION/EXTERNAL DRIVEN

**Forecast Methodology:**

**Labor - Zero-Based**

All forecast years are zero-based on the Region's estimates in their 5-yr capital plan. The labor content was estimated based on the Labor/Non-Labor ratio in the five most recent recorded years.

**Non-Labor - Zero-Based**

All forecast years are zero-based on the Region's estimates in their 5-yr capital plan. The Non-labor content was estimated based on the Labor/Non-Labor ratio in the five most recent recorded years.

**NSE - Zero-Based**

None.

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00416.0  
 Category: E. Cathodic Protection (BC 4X6)  
 Category-Sub: 1. Cathodic Protection  
 Workpaper Group: 004160 - GT CATHODIC PROTECTION/EXTERNAL DRIVEN

**Adjustments to Forecast**

In 2013 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2014	2015	2016	2014	2015	2016	2014	2015	2016
Labor	Zero-Based	79	86	86	0	0	0	79	86	86
Non-Labor	Zero-Based	162	176	176	0	0	0	162	176	176
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
<b>Total</b>		<b>241</b>	<b>262</b>	<b>262</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>241</b>	<b>262</b>	<b>262</b>
FTE	Zero-Based	0.7	0.8	0.8	0.0	0.0	0.0	0.7	0.8	0.8

**Forecast Adjustment Details**

<u>Year/Explanation</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>RefID</u>
<b>2014 Total</b>	0	0	0	0	0.0	
<b>2015 Total</b>	0	0	0	0	0.0	
<b>2016 Total</b>	0	0	0	0	0.0	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00416.0  
 Category: E. Cathodic Protection (BC 4X6)  
 Category-Sub: 1. Cathodic Protection  
 Workpaper Group: 004160 - GT CATHODIC PROTECTION/EXTERNAL DRIVEN

**Determination of Adjusted-Recorded:**

	2009 (\$000)	2010 (\$000)	2011 (\$000)	2012 (\$000)	2013 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	4	16	34	27	10
Non-Labor	41	31	95	0	72
NSE	0	0	0	0	0
<b>Total</b>	<b>46</b>	<b>47</b>	<b>128</b>	<b>27</b>	<b>81</b>
FTE	0.0	0.2	0.3	0.2	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	4	16	34	27	10
Non-Labor	41	31	95	0	72
NSE	0	0	0	0	0
<b>Total</b>	<b>46</b>	<b>47</b>	<b>128</b>	<b>27</b>	<b>81</b>
FTE	0.0	0.2	0.3	0.2	0.1
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	1	3	5	4	2
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>1</b>	<b>3</b>	<b>5</b>	<b>4</b>	<b>2</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Escalation to 2013\$</b>					
Labor	1	3	3	0	0
Non-Labor	9	6	7	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>11</b>	<b>9</b>	<b>10</b>	<b>0</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2013\$)</b>					
Labor	6	22	42	31	11
Non-Labor	51	37	102	0	72
NSE	0	0	0	0	0
<b>Total</b>	<b>57</b>	<b>58</b>	<b>144</b>	<b>30</b>	<b>83</b>
FTE	0.0	0.2	0.3	0.2	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  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00416.0  
 Category: E. Cathodic Protection (BC 4X6)  
 Category-Sub: 1. Cathodic Protection  
 Workpaper Group: 004160 - GT CATHODIC PROTECTION/EXTERNAL DRIVEN

**Adjustments to Recorded:**

		In Nominal \$(000)				
Years		2009	2010	2011	2012	2013
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

**Detail of Adjustments to Recorded in Nominal \$:**

Year/Explanation	Labor	NLbr	NSE	Total	FTE	RefID
<b>2009 Total</b>	0	0	0	0	0.0	
<b>2010 Total</b>	0	0	0	0	0.0	
<b>2011 Total</b>	0	0	0	0	0.0	
<b>2012 Total</b>	0	0	0	0	0.0	
<b>2013 Total</b>	0	0	0	0	0.0	

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Sub Details for  
Workpaper Group 004160**



San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00416.0  
 Category: E. Cathodic Protection (BC 4X6)  
 Category-Sub: 1. Cathodic Protection  
 Workpaper Group: 004160 - GT CATHODIC PROTECTION/EXTERNAL DRIVEN  
 Workpaper Detail: 004160.001 - Transmission - related Cathodic Protection activities  
 In-Service Date: Not Applicable  
 Description:

Gas Transmission - Cathodic Protection

<b>Forecast In 2013 \$(000)</b>				
	<b>Years</b>	<u>2014</u>	<u>2015</u>	<u>2016</u>
Labor		79	86	86
Non-Labor		162	176	176
NSE		0	0	0
	<b>Total</b>	<b>241</b>	<b>262</b>	<b>262</b>
FTE		0.7	0.8	0.8

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Category: F. Land Rights (BC 417)  
Workpaper: 004170

**Summary for Category: F. Land Rights (BC 417)**

	In 2013\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2013	2014	2015	2016
Labor	0	30	0	0
Non-Labor	25	470	0	0
NSE	0	0	0	0
<b>Total</b>	<u>25</u>	<u>500</u>	<u>0</u>	<u>0</u>
FTE	0.0	0.4	0.0	0.0

**004170 Gas Transmission - Land Rights**

Labor	0	30	0	0
Non-Labor	25	470	0	0
NSE	0	0	0	0
<b>Total</b>	<u>25</u>	<u>500</u>	<u>0</u>	<u>0</u>
FTE	0.0	0.4	0.0	0.0

*Note: Totals may include rounding differences.*

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

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00417.0  
 Category: F. Land Rights (BC 417)  
 Category-Sub: 1. Land Rights  
 Workpaper Group: 004170 - Gas Transmission - Land Rights

**Summary of Results (Constant 2013 \$ in 000s):**

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2009	2010	2011	2012	2013	2014	2015	2016
<b>Years</b>									
Labor	Zero-Based	0	0	0	1	0	30	0	0
Non-Labor	Zero-Based	0	0	0	0	25	470	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0
<b>Total</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>25</b>	<b>500</b>	<b>0</b>	<b>0</b>
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.4	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 BC provides capital funding for such negotiations.

**Physical Description:**

Transmission line 2010 crosses a large military reservation southeast of NAS Miramar (former Camp Elliot) and the right of way expires in 2014. The Line occupies a strip of land approximately 50 feet wide and 4,400 feet long within the reservation.

**Project Justification:**

There are few, if any, alternatives to negotiating and paying for land rights within the reservation. The only alternative would be to abandon a very serviceable line and run a new one many miles around the reservation since this line is a principal supply to the Santee area as well as the principal path west to Lines 1600 and 3010 from Line 3012 that carries Mexican gas north to our system.

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Budget Code: 00417.0  
Category: F. Land Rights (BC 417)  
Category-Sub: 1. Land Rights  
Workpaper Group: 004170 - Gas Transmission - Land Rights

**Forecast Methodology:**

**Labor - Zero-Based**

Labor content is calculated at 5.9% based on recorded amounts in 2012 and 2013.

**Non-Labor - Zero-Based**

Estimate is based on the Operations' estimate of approx. \$500k to be spent in 2014 to complete the right-of-way negotiations for Line 2010.

**NSE - Zero-Based**

None. This expenditure is pipeline-related.

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00417.0  
 Category: F. Land Rights (BC 417)  
 Category-Sub: 1. Land Rights  
 Workpaper Group: 004170 - Gas Transmission - Land Rights

**Adjustments to Forecast**

In 2013 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2014	2015	2016	2014	2015	2016	2014	2015	2016
Labor	Zero-Based	30	0	0	0	0	0	30	0	0
Non-Labor	Zero-Based	470	0	0	0	0	0	470	0	0
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
<b>Total</b>		<b>500</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>500</b>	<b>0</b>	<b>0</b>
FTE	Zero-Based	0.4	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0

**Forecast Adjustment Details**

<u>Year/Explanation</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>RefID</u>
<b>2014 Total</b>	0	0	0	0	0.0	
<b>2015 Total</b>	0	0	0	0	0.0	
<b>2016 Total</b>	0	0	0	0	0.0	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Budget Code: 00417.0  
Category: F. Land Rights (BC 417)  
Category-Sub: 1. Land Rights  
Workpaper Group: 004170 - Gas Transmission - Land Rights

**Determination of Adjusted-Recorded:**

	2009 (\$000)	2010 (\$000)	2011 (\$000)	2012 (\$000)	2013 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	0	0	0	1	0
Non-Labor	0	0	0	0	25
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>25</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	0	0	0	1	0
Non-Labor	0	0	0	0	25
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>25</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Vacation &amp; Sick (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>Escalation to 2013\$</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 2013\$)</b>					
Labor	0	0	0	1	0
Non-Labor	0	0	0	0	25
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1</b>	<b>25</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  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00417.0  
 Category: F. Land Rights (BC 417)  
 Category-Sub: 1. Land Rights  
 Workpaper Group: 004170 - Gas Transmission - Land Rights

**Adjustments to Recorded:**

		In Nominal \$(000)				
Years		2009	2010	2011	2012	2013
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

**Detail of Adjustments to Recorded in Nominal \$:**

Year/Explanation	Labor	NLbr	NSE	Total	FTE	RefID
<b>2009 Total</b>	0	0	0	0	0.0	
<b>2010 Total</b>	0	0	0	0	0.0	
<b>2011 Total</b>	0	0	0	0	0.0	
<b>2012</b>	0	0	0	0	0.0	TPMJW20131125113613
Reversing the subtraction of this amount. BC is being used correctly.						
<b>2012 Total</b>	0	0	0	0	0.0	
<b>2013</b>	0	0	0	0	0.0	TPMJW20140304095032
Reversing this subtraction as BC is being used correctly						
<b>2013 Total</b>	0	0	0	0	0.0	

*Note: Totals may include rounding differences.*



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

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00417.0  
 Category: F. Land Rights (BC 417)  
 Category-Sub: 1. Land Rights  
 Workpaper Group: 004170 - Gas Transmission - Land Rights  
 Workpaper Detail: 004170.001 - Right of Way lease renewal for Line 2010  
 In-Service Date: 09/30/2014

Description:

Gas Transmission - Land Rights

Forecast In 2013 \$(000)				
	Years	2014	2015	2016
Labor		30	0	0
Non-Labor		470	0	0
NSE		0	0	0
	<b>Total</b>	<b>500</b>	<b>0</b>	<b>0</b>
FTE		0.4	0.0	0.0

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Category: G. M&R Stations (BC 418)  
Workpaper: 004180

**Summary for Category: G. M&R Stations (BC 418)**

	In 2013\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2013	2014	2015	2016
Labor	124	132	132	132
Non-Labor	264	1,052	1,052	1,052
NSE	0	0	0	0
<b>Total</b>	<b>388</b>	<b>1,184</b>	<b>1,184</b>	<b>1,184</b>
FTE	1.4	1.5	1.5	1.5

**004180 M&R Stations**

Labor	124	132	132	132
Non-Labor	264	1,052	1,052	1,052
NSE	0	0	0	0
<b>Total</b>	<b>388</b>	<b>1,184</b>	<b>1,184</b>	<b>1,184</b>
FTE	1.4	1.5	1.5	1.5

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group  
004180 - M&R Stations**

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Budget Code: 00418.0  
Category: G. M&R Stations (BC 418)  
Category-Sub: 1. M&R Stations  
Workpaper Group: 004180 - M&R Stations

**Summary of Results (Constant 2013 \$ in 000s):**

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2009	2010	2011	2012	2013	2014	2015	2016
Years									
Labor	Zero-Based	184	42	57	46	124	132	132	132
Non-Labor	Zero-Based	2,279	648	421	1,638	264	1,052	1,052	1,052
NSE	Zero-Based	0	0	0	0	0	0	0	0
<b>Total</b>		<b>2,463</b>	<b>691</b>	<b>478</b>	<b>1,684</b>	<b>388</b>	<b>1,184</b>	<b>1,184</b>	<b>1,184</b>
FTE	Zero-Based	1.9	0.5	0.6	0.6	1.4	1.5	1.5	1.5

**Business Purpose:**

This Budget Code includes costs of installing and rebuilding large meter set assemblies (MSAs) for transmission-served customers and pressure limiting stations residing on the gas transmission system. These assets require replacement for three principal reasons: aging, change in use patterns and/or population encroachment, and enhancement of the transmission system to contend with gas quality and capacity issues. The capital work sustains reliable operation of critical transmission assets to the extent that they are not compromised by equipment deployed past its useful life. This includes periodic replacement of local field measurement and control equipment directly linking with Gas Operations SCADA system via remote communications.

**Physical Description:**

Typical expenditures includes the instrumentation necessary for the metering or regulating of natural gas in connection with transmission operations and, in particular, costs associated with additions or replacements of station piping, valves, regulators, control and communications equipment, shelters and enclosures.

**Project Justification:**

Requested funding includes installation of new meter and regulation equipment associated with operation of the transmission pipeline system. It includes gas meters installed to help manage gas flows and quality on the transmission system, and to provide operating information to gas operations control personnel remotely managing the gas delivery system. Also included in this category are regulating stations used to control and limit gas pressure and the flow of gas within the gas transmission system, such as city gate stations. The installation of this equipment is associated with the safe and reliable local operation of SoCalGas pipelines in conformance with DOT and CPUC requirements for the limiting of pipeline and vessel operating pressures. All pipelines must be operated within their maximum allowable operating pressure parameters, and this equipment, whether for newly-installed pipelines or, where replacement is warranted, sustains this compliance and operating integrity.

In the last five recorded years approximately 38% of the work in this BC has been collectible.

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Budget Code: 00418.0  
Category: G. M&R Stations (BC 418)  
Category-Sub: 1. M&R Stations  
Workpaper Group: 004180 - M&R Stations

**Forecast Methodology:**

**Labor - Zero-Based**

All forecast years are the 5-yr average. To the 5-yr average was added an estimated amount for expected billings for SCG supporting labor ("billed capital"). The labor amount was determined using the Labor/Non-Labor ratio in the most recent recorded year.

**Non-Labor - Zero-Based**

All forecast years are the 5-yr average. The Non-labor amount was determined using the Labor/Non-Labor ratio in the most recent recorded year.

**NSE - Zero-Based**

None.

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00418.0  
 Category: G. M&R Stations (BC 418)  
 Category-Sub: 1. M&R Stations  
 Workpaper Group: 004180 - M&R Stations

**Adjustments to Forecast**

In 2013 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2014	2015	2016	2014	2015	2016	2014	2015	2016
Labor	Zero-Based	132	132	132	0	0	0	132	132	132
Non-Labor	Zero-Based	1,052	1,052	1,052	0	0	0	1,052	1,052	1,052
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
<b>Total</b>		<b>1,184</b>	<b>1,184</b>	<b>1,184</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>1,184</b>	<b>1,184</b>	<b>1,184</b>
FTE	Zero-Based	1.5	1.5	1.5	0.0	0.0	0.0	1.5	1.5	1.5

**Forecast Adjustment Details**

<u>Year/Explanation</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>RefID</u>
<b>2014 Total</b>	0	0	0	0	0.0	
<b>2015 Total</b>	0	0	0	0	0.0	
<b>2016 Total</b>	0	0	0	0	0.0	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Budget Code: 00418.0  
Category: G. M&R Stations (BC 418)  
Category-Sub: 1. M&R Stations  
Workpaper Group: 004180 - M&R Stations

**Determination of Adjusted-Recorded:**

	2009 (\$000)	2010 (\$000)	2011 (\$000)	2012 (\$000)	2013 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	130	31	46	41	107
Non-Labor	-5,737	551	180	1,431	264
NSE	0	0	0	0	0
<b>Total</b>	<b>-5,607</b>	<b>582</b>	<b>226</b>	<b>1,472</b>	<b>371</b>
FTE	1.6	0.4	0.5	0.5	1.2
<b>Adjustments (Nominal \$)**</b>					
Labor	0	0	0	0	0
Non-Labor	7,592	0	212	212	0
NSE	0	0	0	0	0
<b>Total</b>	<b>7,592</b>	<b>0</b>	<b>212</b>	<b>212</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Nominal \$)</b>					
Labor	130	31	46	41	107
Non-Labor	1,856	551	392	1,643	264
NSE	0	0	0	0	0
<b>Total</b>	<b>1,986</b>	<b>582</b>	<b>438</b>	<b>1,684</b>	<b>371</b>
FTE	1.6	0.4	0.5	0.5	1.2
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	20	5	7	6	17
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>20</b>	<b>5</b>	<b>7</b>	<b>6</b>	<b>17</b>
FTE	0.3	0.1	0.1	0.1	0.2
<b>Escalation to 2013\$</b>					
Labor	34	6	4	0	0
Non-Labor	423	98	30	-5	0
NSE	0	0	0	0	0
<b>Total</b>	<b>458</b>	<b>104</b>	<b>34</b>	<b>-5</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2013\$)</b>					
Labor	184	42	57	46	124
Non-Labor	2,279	648	421	1,638	264
NSE	0	0	0	0	0
<b>Total</b>	<b>2,463</b>	<b>691</b>	<b>478</b>	<b>1,684</b>	<b>388</b>
FTE	1.9	0.5	0.6	0.6	1.4

\* 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  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00418.0  
 Category: G. M&R Stations (BC 418)  
 Category-Sub: 1. M&R Stations  
 Workpaper Group: 004180 - M&R Stations

**Adjustments to Recorded:**

In Nominal \$(000)					
Years	2009	2010	2011	2012	2013
Labor	0	0	0	0	0
Non-Labor	7,592	0	212	212	0
NSE	0	0	0	0	0
<b>Total</b>	<b>7,592</b>	<b>0</b>	<b>212</b>	<b>212</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0

**Detail of Adjustments to Recorded in Nominal \$:**

Year/Explanation	Labor	NLbr	NSE	Total	FTE	RefID
<b>2009</b>	0	7,592	0	7,592	0.0	TPMJW20131121164331
Removed CIAC amounts in order to show actual SDGE expenditure. (Per GRC prodecual guidance.)						
<b>2009 Total</b>	0	7,592	0	7,592	0.0	
<b>2010</b>	0	0	0	0	0.0	TPMJW20131121164413
Removed CIAC amounts in order to show actual SDGE expenditure. (Per GRC prodecual guidance.)						
<b>2010 Total</b>	0	0	0	0	0.0	
<b>2011</b>	0	212	0	212	0.0	TPMJW20140218163006
Removed negative CIAC per case mgt.						
<b>2011 Total</b>	0	212	0	212	0.0	
<b>2012</b>	0	212	0	212	0.0	TPMJW20131121164458
Removed CIAC amounts in order to show actual SDGE expenditure. (Per GRC prodecual guidance.)						
<b>2012 Total</b>	0	212	0	212	0.0	
<b>2013 Total</b>	0	0	0	0	0.0	

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Sub Details for  
Workpaper Group 004180**

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00418.0  
 Category: G. M&R Stations (BC 418)  
 Category-Sub: 1. M&R Stations  
 Workpaper Group: 004180 - M&R Stations  
 Workpaper Detail: 004180.001 - Gas Transmission Meter & Regulator Stations - Collectible portion  
 In-Service Date: Not Applicable  
 Description:

Forecast In 2013 \$(000)				
Years		2014	2015	2016
Labor		35	35	35
Non-Labor		400	400	400
NSE		0	0	0
	<b>Total</b>	<b>435</b>	<b>435</b>	<b>435</b>
FTE		0.5	0.5	0.5

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00418.0  
 Category: G. M&R Stations (BC 418)  
 Category-Sub: 1. M&R Stations  
 Workpaper Group: 004180 - M&R Stations  
 Workpaper Detail: 004180.002 - Gas Transmission Meter & Regulator Stations - Non-Collectible portion.  
 In-Service Date: Not Applicable  
 Description:

Forecast In 2013 \$(000)				
Years		2014	2015	2016
Labor		56	56	56
Non-Labor		652	652	652
NSE		0	0	0
	<b>Total</b>	<b>708</b>	<b>708</b>	<b>708</b>
FTE		0.5	0.5	0.5

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00418.0  
 Category: G. M&R Stations (BC 418)  
 Category-Sub: 1. M&R Stations  
 Workpaper Group: 004180 - M&R Stations  
 Workpaper Detail: 004180.003 - Billed Capital - M&R Stations

In-Service Date: Not Applicable

Description:

Gas Transmission - M&R Stations.

Forecast In 2013 \$(000)				
	Years	2014	2015	2016
Labor		41	41	41
Non-Labor		0	0	0
NSE		0	0	0
	<b>Total</b>	<b>41</b>	<b>41</b>	<b>41</b>
FTE		0.5	0.5	0.5

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Category: H. Capital Tools (BC 436)  
 Workpaper: 004360

**Summary for Category: H. Capital Tools (BC 436)**

	In 2013\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2013	2014	2015	2016
Labor	1	0	0	0
Non-Labor	32	130	130	130
NSE	0	0	0	0
<b>Total</b>	<u>33</u>	<u>130</u>	<u>130</u>	<u>130</u>
FTE	0.0	0.0	0.0	0.0

**004360 GT CAPITAL TOOLS / QUALITY-ECON DRIVEN**

Labor	1	0	0	0
Non-Labor	32	130	130	130
NSE	0	0	0	0
<b>Total</b>	<u>33</u>	<u>130</u>	<u>130</u>	<u>130</u>
FTE	0.0	0.0	0.0	0.0

*Note: Totals may include rounding differences.*

**Beginning of Workpaper Group**  
**004360 - GT CAPITAL TOOLS / QUALITY-ECON DRIVEN**

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00436.0  
 Category: H. Capital Tools (BC 436)  
 Category-Sub: 1. Capital Tools  
 Workpaper Group: 004360 - GT CAPITAL TOOLS / QUALITY-ECON DRIVEN

**Summary of Results (Constant 2013 \$ in 000s):**

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2009	2010	2011	2012	2013	2014	2015	2016
<b>Years</b>									
Labor	Zero-Based	0	0	0	1	1	0	0	0
Non-Labor	Zero-Based	0	0	0	27	32	130	130	130
NSE	Zero-Based	0	0	0	0	0	0	0	0
<b>Total</b>		<b>0</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>33</b>	<b>130</b>	<b>130</b>	<b>130</b>
FTE	Zero-Based	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Business Purpose:**

Acquire and replace Capital Tools used on a daily basis by the Gas Transmission operating people of SDG&E.

**Physical Description:**

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

**Project Justification:**

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

*Note: Totals may include rounding differences.*



San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Budget Code: 00436.0  
Category: H. Capital Tools (BC 436)  
Category-Sub: 1. Capital Tools  
Workpaper Group: 004360 - GT CAPITAL TOOLS / QUALITY-ECON DRIVEN

**Forecast Methodology:**

**Labor - Zero-Based**

Have estimated no labor component for these tool purchases.

**Non-Labor - Zero-Based**

Used Transmission Operations' 5-yr capital plan amounts which are estimates by local people based on history and experience as well as awareness of the age and condition of existing tools used on a daily basis.

**NSE - Zero-Based**

None.

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00436.0  
 Category: H. Capital Tools (BC 436)  
 Category-Sub: 1. Capital Tools  
 Workpaper Group: 004360 - GT CAPITAL TOOLS / QUALITY-ECON DRIVEN

**Adjustments to Forecast**

In 2013 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2014	2015	2016	2014	2015	2016	2014	2015	2016
Labor	Zero-Based	0	0	0	0	0	0	0	0	0
Non-Labor	Zero-Based	130	130	130	0	0	0	130	130	130
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
<b>Total</b>		<b>130</b>	<b>130</b>	<b>130</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>130</b>	<b>130</b>	<b>130</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/Explanation</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>RefID</u>
<b>2014 Total</b>	0	0	0	0	0.0	
<b>2015 Total</b>	0	0	0	0	0.0	
<b>2016 Total</b>	0	0	0	0	0.0	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00436.0  
 Category: H. Capital Tools (BC 436)  
 Category-Sub: 1. Capital Tools  
 Workpaper Group: 004360 - GT CAPITAL TOOLS / QUALITY-ECON DRIVEN

**Determination of Adjusted-Recorded:**

	2009 (\$000)	2010 (\$000)	2011 (\$000)	2012 (\$000)	2013 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	0	0	0	1	0
Non-Labor	0	0	0	27	32
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>32</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	0	0	0	1	0
Non-Labor	0	0	0	27	32
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>32</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Vacation &amp; Sick (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>Escalation to 2013\$</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 2013\$)</b>					
Labor	0	0	0	1	1
Non-Labor	0	0	0	27	32
NSE	0	0	0	0	0
<b>Total</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>28</b>	<b>33</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  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00436.0  
 Category: H. Capital Tools (BC 436)  
 Category-Sub: 1. Capital Tools  
 Workpaper Group: 004360 - GT CAPITAL TOOLS / QUALITY-ECON DRIVEN

**Adjustments to Recorded:**

		In Nominal \$(000)				
Years		2009	2010	2011	2012	2013
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

**Detail of Adjustments to Recorded in Nominal \$:**

Year/Explanation	Labor	NLbr	NSE	Total	FTE	RefID
<b>2009 Total</b>	0	0	0	0	0.0	
<b>2010 Total</b>	0	0	0	0	0.0	
<b>2011 Total</b>	0	0	0	0	0.0	
<b>2012 Total</b>	0	0	0	0	0.0	
<b>2013 Total</b>	0	0	0	0	0.0	

*Note: Totals may include rounding differences.*

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

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00436.0  
 Category: H. Capital Tools (BC 436)  
 Category-Sub: 1. Capital Tools  
 Workpaper Group: 004360 - GT CAPITAL TOOLS / QUALITY-ECON DRIVEN  
 Workpaper Detail: 004360.001 - Gas Transmission - Capital tool purchases & replacements  
 In-Service Date: Not Applicable  
 Description:

Forecast In 2013 \$(000)					
Years		2014	2015	2016	
Labor		0	0	0	
Non-Labor		130	130	130	
NSE		0	0	0	
	<b>Total</b>	<b>130</b>	<b>130</b>	<b>130</b>	
FTE		0.0	0.0	0.0	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Category: I. Local Engineering Pool (BC 903)  
 Workpaper: 009030

**Summary for Category: I. Local Engineering Pool (BC 903)**

	In 2013\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2013	2014	2015	2016
Labor	76	92	92	92
Non-Labor	31	41	41	41
NSE	0	0	0	0
<b>Total</b>	<b>107</b>	<b>133</b>	<b>133</b>	<b>133</b>
FTE	0.8	1.0	1.0	1.0

**009030 Local Engineering Pool - GT Pool**

Labor	76	92	92	92
Non-Labor	31	41	41	41
NSE	0	0	0	0
<b>Total</b>	<b>107</b>	<b>133</b>	<b>133</b>	<b>133</b>
FTE	0.8	1.0	1.0	1.0

*Note: Totals may include rounding differences.*

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



San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00903.0  
 Category: I. Local Engineering Pool (BC 903)  
 Category-Sub: 1. Local Engineering Pool  
 Workpaper Group: 009030 - Local Engineering Pool - GT Pool

**Summary of Results (Constant 2013 \$ in 000s):**

Forecast Method		Adjusted Recorded					Adjusted Forecast		
		2009	2010	2011	2012	2013	2014	2015	2016
<b>Years</b>									
Labor	4-YR Average	138	114	90	87	76	92	92	92
Non-Labor	4-YR Average	148	25	91	17	31	41	41	41
NSE	4-YR Average	0	0	0	0	0	0	0	0
<b>Total</b>		<b>286</b>	<b>140</b>	<b>181</b>	<b>105</b>	<b>108</b>	<b>133</b>	<b>133</b>	<b>133</b>
FTE	4-YR Average	1.4	1.2	1.0	0.9	0.8	1.0	1.0	1.0

**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 Transmission activity.

**Project Justification:**

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

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Budget Code: 00903.0  
Category: I. Local Engineering Pool (BC 903)  
Category-Sub: 1. Local Engineering Pool  
Workpaper Group: 009030 - Local Engineering Pool - GT Pool

**Forecast Methodology:**

**Labor - 4-YR Average**

Used 4-yr Average because 2009 was out-of-pattern high and I wish to exclude it.

**Non-Labor - 4-YR Average**

Used 4-yr Average because 2009 was out-of-pattern high and I wish to exclude it.

**NSE - 4-YR Average**

None

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00903.0  
 Category: I. Local Engineering Pool (BC 903)  
 Category-Sub: 1. Local Engineering Pool  
 Workpaper Group: 009030 - Local Engineering Pool - GT Pool

**Adjustments to Forecast**

In 2013 \$ (000)										
Forecast Method		Base Forecast			Forecast Adjustments			Adjusted-Forecast		
Years		2014	2015	2016	2014	2015	2016	2014	2015	2016
Labor	4-YR Average	92	92	92	0	0	0	92	92	92
Non-Labor	4-YR Average	41	41	41	0	0	0	41	41	41
NSE	4-YR Average	0	0	0	0	0	0	0	0	0
<b>Total</b>		<b>133</b>	<b>133</b>	<b>133</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>133</b>	<b>133</b>	<b>133</b>
FTE	4-YR Average	1.0	1.0	1.0	0.0	0.0	0.0	1.0	1.0	1.0

**Forecast Adjustment Details**

<u>Year/Explanation</u>	<u>Labor</u>	<u>NLbr</u>	<u>NSE</u>	<u>Total</u>	<u>FTE</u>	<u>RefID</u>
<b>2014 Total</b>	0	0	0	0	0.0	
<b>2015 Total</b>	0	0	0	0	0.0	
<b>2016 Total</b>	0	0	0	0	0.0	

*Note: Totals may include rounding differences.*

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
Witness: Raymond K. Stanford  
Budget Code: 00903.0  
Category: I. Local Engineering Pool (BC 903)  
Category-Sub: 1. Local Engineering Pool  
Workpaper Group: 009030 - Local Engineering Pool - GT Pool

**Determination of Adjusted-Recorded:**

	2009 (\$000)	2010 (\$000)	2011 (\$000)	2012 (\$000)	2013 (\$000)
<b>Recorded (Nominal \$)*</b>					
Labor	30,540	30,036	32,176	33,915	37,698
Non-Labor	-81	-1,743	108	-235	374
NSE	0	0	0	0	0
<b>Total</b>	<b>30,458</b>	<b>28,293</b>	<b>32,285</b>	<b>33,680</b>	<b>38,072</b>
FTE	409.3	384.0	402.8	412.9	443.3
<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	30,540	30,036	32,176	33,915	37,698
Non-Labor	-81	-1,743	108	-235	374
NSE	0	0	0	0	0
<b>Total</b>	<b>30,458</b>	<b>28,293</b>	<b>32,285</b>	<b>33,680</b>	<b>38,072</b>
FTE	409.3	384.0	402.8	412.9	443.3
<b>Vacation &amp; Sick (Nominal \$)</b>					
Labor	5,516	5,249	5,343	5,429	6,265
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
<b>Total</b>	<b>5,516</b>	<b>5,249</b>	<b>5,343</b>	<b>5,429</b>	<b>6,265</b>
FTE	77.4	69.4	68.9	68.5	74.9
<b>Escalation to 2013\$</b>					
Labor	8,228	6,266	2,846	-126	0
Non-Labor	-19	-309	8	1	0
NSE	0	0	0	0	0
<b>Total</b>	<b>8,209</b>	<b>5,956</b>	<b>2,854</b>	<b>-125</b>	<b>0</b>
FTE	0.0	0.0	0.0	0.0	0.0
<b>Recorded-Adjusted (Constant 2013\$)</b>					
Labor	44,283	41,550	40,365	39,218	43,963
Non-Labor	-100	-2,052	117	-235	374
NSE	0	0	0	0	0
<b>Total</b>	<b>44,183</b>	<b>39,498</b>	<b>40,482</b>	<b>38,983</b>	<b>44,337</b>
FTE	486.7	453.4	471.7	481.4	518.2

\* 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  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00903.0  
 Category: I. Local Engineering Pool (BC 903)  
 Category-Sub: 1. Local Engineering Pool  
 Workpaper Group: 009030 - Local Engineering Pool - GT Pool

**Adjustments to Recorded:**

		In Nominal \$(000)				
Years		2009	2010	2011	2012	2013
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

**Detail of Adjustments to Recorded in Nominal \$:**

Year/Explanation	Labor	NLbr	NSE	Total	FTE	RefID
<b>2009 Total</b>	0	0	0	0	0.0	
<b>2010 Total</b>	0	0	0	0	0.0	
<b>2011 Total</b>	0	0	0	0	0.0	
<b>2012 Total</b>	0	0	0	0	0.0	
<b>2013 Total</b>	0	0	0	0	0.0	

*Note: Totals may include rounding differences.*

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

San Diego Gas & Electric Company  
2016 GRC - APP  
Capital Workpapers

Area: GAS TRANSMISSION  
 Witness: Raymond K. Stanford  
 Budget Code: 00903.0  
 Category: I. Local Engineering Pool (BC 903)  
 Category-Sub: 1. Local Engineering Pool  
 Workpaper Group: 009030 - Field Capital Support  
 Workpaper Detail: 009030.001 - Gas Engineering Overheads pool  
 In-Service Date: Not Applicable  
 Description:

Forecast In 2013 \$(000)					
Years		2014	2015	2016	
Labor		92	92	92	
Non-Labor		41	41	41	
NSE		0	0	0	
	<b>Total</b>	<b>133</b>	<b>133</b>	<b>133</b>	
FTE		1.0	1.0	1.0	

*Note: Totals may include rounding differences.*