

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-07-CWP)

CAPITAL WORKPAPERS TO
PREPARED DIRECT TESTIMONY
OF MARIA T. MARTINEZ
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-07-CWP - TIMP & DIMP

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Overall Summary For Exhibit No. SDG&E-07-CWP

Area:	TIMP & DIMP
Witness:	Maria T. Martinez

In 2013 \$ (000)			
Adjusted-Forecast			
	2014	2015	2016
A. TIMP	5,180	3,996	3,996
B. DIMP	2,777	2,794	20,219
Total	7,957	6,790	24,215

Note: Totals may include rounding differences.

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Capital Workpapers

Area: TIMP & DIMP
Witness: Maria T. Martinez
Category: A. TIMP
Workpaper: 034680

Summary for Category: A. TIMP

	In 2013\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2013	2014	2015	2016
Labor	1,234	513	395	395
Non-Labor	22,273	4,667	3,601	3,601
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	23,507	5,180	3,996	3,996
FTE	13.2	6.0	5.0	5.0

034680 PIPELINE INTEGRITY FOR GAS TRANSMISSION

Labor	1,234	513	395	395
Non-Labor	22,273	4,667	3,601	3,601
NSE	<u>0</u>	<u>0</u>	<u>0</u>	<u>0</u>
Total	23,507	5,180	3,996	3,996
FTE	13.2	6.0	5.0	5.0

Note: Totals may include rounding differences.

Beginning of Workpaper Group
034680 - PIPELINE INTEGRITY FOR GAS TRANSMISSION

San Diego Gas & Electric Company
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Capital Workpapers

Area: TIMP & DIMP
 Witness: Maria T. Martinez
 Budget Code: 03468.0
 Category: A. TIMP
 Category-Sub: 1. PIPELINE INTEGRITY FOR GAS TRANSMISSION
 Workpaper Group: 034680 - PIPELINE INTEGRITY FOR GAS TRANSMISSION

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	36	730	1,529	1,234	513	395	395
Non-Labor	Zero-Based	0	88	12,105	29,963	22,273	4,667	3,601	3,601
NSE	Zero-Based	0	0	0	0	0	0	0	0
	Total	0	124	12,835	31,492	23,507	5,180	3,996	3,996
FTE	Zero-Based	0.0	0.4	7.9	17.4	13.2	6.0	5.0	5.0

Business Purpose:

On December 17, 2002 the Pipeline Safety Improvement Act of 2002 (PSIA 2002) was signed into law, and subsequently 49 C.F.R. Part 192 Subpart O was published. The final rule was effective January 14, 2004. Under this rule, operators of gas transmission pipelines are required to identify the threats to their pipelines, analyze the risk posed by these threats, assess the physical condition of their pipelines and take actions to address applicable threats and integrity concerns before pipeline incidents can occur.

This project addresses the regulatory requirements set forth by the implementation of PSIA 2002. All DOT transmission pipeline work generated to address these regulatory requirements will be captured in Budget Category (BC) 3468.

Physical Description:

See supplemental workpapers for details.

Project Justification:

See supplemental workpapers for details.

Note: Totals may include rounding differences.

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

Area: TIMP & DIMP
Witness: Maria T. Martinez
Budget Code: 03468.0
Category: A. TIMP
Category-Sub: 1. PIPELINE INTEGRITY FOR GAS TRANSMISSION
Workpaper Group: 034680 - PIPELINE INTEGRITY FOR GAS TRANSMISSION

Forecast Methodology:

Labor - Zero-Based

See supplemental workpapers for details.

Non-Labor - Zero-Based

See supplemental workpapers for details.

NSE - Zero-Based

There is no Non Standard Escalation items in this BC

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Capital Workpapers

Area: TIMP & DIMP
 Witness: Maria T. Martinez
 Budget Code: 03468.0
 Category: A. TIMP
 Category-Sub: 1. PIPELINE INTEGRITY FOR GAS TRANSMISSION
 Workpaper Group: 034680 - PIPELINE INTEGRITY FOR GAS TRANSMISSION

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	786	395	395	-273	0	0	513	395	395
Non-Labor	Zero-Based	7,161	3,601	3,601	-2,494	0	0	4,667	3,601	3,601
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		7,947	3,996	3,996	-2,767	0	0	5,180	3,996	3,996
FTE	Zero-Based	10.0	5.0	5.0	-4.0	0.0	0.0	6.0	5.0	5.0

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>
2014	-273	-2,494	0	-2,767	-4.0	TPDLB2014022612
FORECASTED ADJUSTED 02/26						
2014 Total	-273	-2,494	0	-2,767	-4.0	
2015	0	0	0	0	0.0	TPDLB2014022612
FORECAST ADJUSTED 02/26						
2015 Total	0	0	0	0	0.0	
2016 Total	0	0	0	0	0.0	

Note: Totals may include rounding differences.

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

Area: TIMP & DIMP
Witness: Maria T. Martinez
Budget Code: 03468.0
Category: A. TIMP
Category-Sub: 1. PIPELINE INTEGRITY FOR GAS TRANSMISSION
Workpaper Group: 034680 - PIPELINE INTEGRITY FOR GAS TRANSMISSION

Determination of Adjusted-Recorded:

	2009 (\$000)	2010 (\$000)	2011 (\$000)	2012 (\$000)	2013 (\$000)
Recorded (Nominal \$)*					
Labor	0	27	591	1,340	1,065
Non-Labor	0	75	11,252	30,059	22,273
NSE	0	0	0	0	0
Total	0	101	11,843	31,398	23,338
FTE	0.0	0.3	6.8	15.0	11.1
Adjustments (Nominal \$)**					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	0	27	591	1,340	1,065
Non-Labor	0	75	11,252	30,059	22,273
NSE	0	0	0	0	0
Total	0	101	11,843	31,398	23,338
FTE	0.0	0.3	6.8	15.0	11.1
Vacation & Sick (Nominal \$)					
Labor	0	4	87	194	169
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	4	87	194	169
FTE	0.0	0.1	1.1	2.4	2.0
Escalation to 2013\$					
Labor	0	5	51	-5	0
Non-Labor	0	13	853	-96	0
NSE	0	0	0	0	0
Total	0	19	905	-101	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2013\$)					
Labor	0	36	730	1,529	1,234
Non-Labor	0	88	12,105	29,963	22,273
NSE	0	0	0	0	0
Total	0	124	12,835	31,492	23,507
FTE	0.0	0.4	7.9	17.4	13.1

* 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
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Capital Workpapers

Area: TIMP & DIMP
 Witness: Maria T. Martinez
 Budget Code: 03468.0
 Category: A. TIMP
 Category-Sub: 1. PIPELINE INTEGRITY FOR GAS TRANSMISSION
 Workpaper Group: 034680 - PIPELINE INTEGRITY FOR GAS TRANSMISSION

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
Total	0	0	0	0	0
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
2009 Total	0	0	0	0	0.0	
2010 Total	0	0	0	0	0.0	
2011 Total	0	0	0	0	0.0	
2012 Total	0	0	0	0	0.0	
2013 Total	0	0	0	0	0.0	

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 034680**

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

Area: TIMP & DIMP
 Witness: Maria T. Martinez
 Budget Code: 03468.0
 Category: A. TIMP
 Category-Sub: 1. PIPELINE INTEGRITY FOR GAS TRANSMISSION
 Workpaper Group: 034680 - PIPELINE INTEGRITY FOR GAS TRANSMISSION
 Workpaper Detail: 034680.001 - Various TIMP projects BC 034680 - 2014
 In-Service Date: Not Applicable
 Description:

Forecast In 2013 \$(000)				
Years	2014	2015	2016	
Labor	513	395	395	
Non-Labor	4,667	3,601	3,601	
NSE	0	0	0	
Total	5,180	3,996	3,996	
FTE	6.0	5.0	5.0	

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 034680

**SDG&E ILI Capital
Workpaper BC 3468**

Business Purpose

On December 17, 2002 the Pipeline Safety Improvement Act of 2002 (PSIA 2002) was signed into law, and subsequently 49 C.F.R. Part 192 Subpart O was published. The final rule was effective January 14, 2004. Under this rule, operators of gas transmission pipelines are required to identify the threats to their pipelines, analyze the risk posed by these threats, assess the physical condition of their pipelines and take actions to address applicable threats and integrity concerns before pipeline incidents can occur.

This project addresses the regulatory requirements set forth by the implementation of PSIA 2002. All DOT transmission pipeline work generated to address these regulatory requirements will be captured in Budget Category (BC) 3468.

Physical Description

The assessment of this pipeline will be completed using In-Line Inspection (ILI) tools. The ILI tools will traverse internally along the route of the pipeline to collect information that will be used to complete the assessment of the pipeline. The tools are inserted into the pipelines by installing a temporary or permanent launcher and receiver typically installed near the time of inspection.

Following the completion of the inspection excavations to validate or remediate the inspection findings will be needed. When possible, multiple pipelines may be combined into a single run, and conversely, a single pipeline may require multiple launcher and receiver points.

Project Justification

All DOT Transmission Pipeline Integrity assessments are in response to the Federal Pipeline Safety Improvement Act of 2002 and are required to comply with the subsequent rule making. Capital repairs and replacements are constructed in accordance with 49 C.F.R. Part 192, ASME B31.8, and other codes and standards as appropriate. Assessments need to be completed on continual basis using In-Line Inspection (ILI) tools, Pressure Testing or Direct Assessment to address the identified threats on each pipeline. The assessment of transmission pipelines located in High Consequence Area (HCA) requires an assessment to be completed at a minimum every 7 years. 49 C.F.R § 192.939 establishes the requirements for determining the reassessment interval for covered pipelines but goes on to stipulate “ *the maximum reassessment interval by an allowable reassessment method is seven years*”.

Forecast Methodology

The cost to assess a pipeline is forecast using the following four components:

1. Retrofit of the pipeline and capital replacement
2. Installation of launcher and receiver facilities
3. In-Line Inspection
4. Excavations & remediation

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Capital Workpapers

The retrofit and installation of launcher and receiver is a capitalized cost while the in-line inspection and excavation and minor repairs (components 3 and 4 above) are expense.

To forecast the cost of this assessment project, the methodology is using the average cost of ILI per site and minor repairs. The methodology for capital costs is to use the average cost of installing a launcher/receiver facilities and average cost for retrofit/repairs.

Capital Component:

The cost to complete this component is based upon the average cost incurred during 2013 for the retrofit, installation launch/receiver materials of a typical project including radiography and equipment expenses and capital replacements. The resulting total average cost for capital is \$1,062,415 per site. For the project denoted with an asterisk below additional costs are expected for retrofit and replacement based on similar projects.

O&M Component:

The cost to complete this component is based upon the average cost incurred during 2013 for data collection, ILI inspection and excavations required for validation and minor repairs. The resulting total average cost for O&M is \$1,008,791 per ILI run.

Distribution of Labor /Non Labor:

The majority of work required to accomplish in projects is contractor work and materials which is pooled into the non-labor category. Labor to be based on 2013 actual cost and inflated each year by labor factor of 3.5%.

Based upon the methodology described above, the projected costs for capital are:

		<u>2014</u>	<u>2015</u>	<u>2016</u>
1	BC 3468 Labor	\$313,379	\$208,347	\$314,647
2	NonLabor	\$2,873,866	\$1,916,483	\$2,872,598
3	Total	<u>\$3,187,245</u>	<u>\$2,124,830</u>	<u>\$3,187,245</u>

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Task	Avg Cost
Avg Cst per ILI Site	\$1,062,415

Year 2014				
BC 3468	Pipeline	Launch (start)	Receive (end)	Miles
1	1600	Lake Hodges	Mission Gate Station	19.89
2	1601	Escondido	Carlsbad	13.37
3	3010	Carlsbad	Santee	0
			ILI Sites: 3	\$3,187,245
			Carryover into 2015	\$0
			Subtotal BC 3468 Capital 2014	\$3,187,245
			add'l charge for Retrofit/Repair	\$0
			2013 Carryover into 2014	\$0
			Total BC 3468 Capital 2014	\$3,187,245
			Labor	\$313,379
			Non-Labor	\$2,873,866

Year 2015				
1	Pipeline	Launch (start)	Receive (end)	Miles
	3011	Governor Drive Nursey	Cross-Tie East Hwy 163	4.19
			ILI Sites: 1	\$1,062,415
			Carryover into 2016	\$0
			Subtotal BC 3468 Capital 2015	\$1,062,415
			add'l charge for Retrofit/Repair	\$1,062,415
			2014 Carryover into 2015	\$0
			Total BC 3468 Capital 2015	\$2,124,830
			Labor	\$208,347
			Non-Labor	\$1,916,483

Year 2016				
1	Pipeline	Launch (start)	Receive (end)	Miles
1	3600	Harvest Rd Sta	Santee Sta	29.86
2	49-21	D Ave	4th St	0.1
3	49-23	All O&M	All O&M	0.1
4	2010	Camp Elliot Sta	Carlton Hills Terminal Reg Sta	7.50
			ILI Sites: 3	\$3,187,245
			Carryover into 2016	\$0
			Subtotal BC 3468 Capital 2016	\$3,187,245
			add'l charge for Retrofit/Repair	\$0
			2015 Carryover into 2016	\$0
			Total BC 3468 Capital 2016	\$3,187,245
			Labor	\$314,647
			Non-Labor	\$2,872,598

SDGE Capital Workpaper BC 3468

Preventative and Mitigative

Business Purpose

The Pipeline Integrity Program Plan has requirements to evaluate data and pipeline threats to determine if additional Preventive and Mitigation (P&M) measures are required to reduce risk or address specific issues or threats. Requirements for identifying and completing P&M measures and actions is spelled out in CFR 42 part 192.935. As a result of the information and evaluations completed during our Baseline Assessment period several P&M projects have been identified and prioritized in order to address issues on transmission pipelines.

Physical Description

The majority of P&M projects involve the further evaluation of pipeline coating and cathodic protection (CP) systems, and the installation of additional CP current sources, monitoring tools, and pipeline coating remediation. The projects include electrical line surveys to identify and prioritize locations for mitigation and the installation of additional CP rectifiers, pipeline surface recoating, pipe inspection digs, and CP monitoring probe and test sites.

Project Justification

As required under CFR regulations (part 192.935) and our Pipeline Integrity Management Plan P&M projects to address threats such as external corrosion, etc. have been identified and scheduled.

Forecast Methodology

P&M project costs are estimated based on our history and experience with survey and repair projects over several years. Typical costs for these type projects are \$200/ft. for pipeline coating remediation, \$150K per rectifier, \$30K-\$50K per pipeline inspection digs, \$35k-per mile for above ground survey inspections. All P&M capital work is contained in either Budget Code 312.

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Task	Average cost	
Line Survey	\$35,000	Per mile
Coating Remediation	\$200,000	Per foot
Rectifiers	\$15,000	Each

2014				
Line number	Line Survey	Coating Remediation	Rectifiers	Total Cost
Various	\$842,755	\$500,000	\$650,000	\$1,992,755
Total				\$1,992,755
(10%) Labor				\$199,300
(90%) Non-Labor				\$1,793,455

2015				
Line number	Line Survey	Coating Remediation	Rectifiers	Total Cost
Various	\$771,170	\$450,000	\$650,000	\$1,871,170
Total				\$1,871,170
(10%) Labor				\$187,100
(90%) Non-Labor				\$1,684,070

2016				
Line number	Line Survey	Coating Remediation	Rectifiers	Total Cost
Various	\$258,755	\$350,000	\$200,000	\$808,755
Total				\$808,755
(10%) Labor				\$80,800
(90%) Non-Labor				\$727,955

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Capital Workpapers

Area: TIMP & DIMP
Witness: Maria T. Martinez
Category: B. DIMP
Workpaper: 095460

Summary for Category: B. DIMP

	In 2013\$ (000)			
	Adjusted-Recorded	Adjusted-Forecast		
	2013	2014	2015	2016
Labor	498	387	404	404
Non-Labor	1,710	2,390	2,390	19,815
NSE	0	0	0	0
Total	2,208	2,777	2,794	20,219
FTE	7.4	5.0	5.0	5.0

095460 Distribution Integrity Mgmt Program

Labor	498	387	404	404
Non-Labor	1,710	2,390	2,390	19,815
NSE	0	0	0	0
Total	2,208	2,777	2,794	20,219
FTE	7.4	5.0	5.0	5.0

Note: Totals may include rounding differences.

**Beginning of Workpaper Group
095460 - Distribution Integrity Mgmt Program**

San Diego Gas & Electric Company
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Capital Workpapers

Area: TIMP & DIMP
 Witness: Maria T. Martinez
 Budget Code: 09546.0
 Category: B. DIMP
 Category-Sub: 1. Distribution Integrity Mgmt Program
 Workpaper Group: 095460 - Distribution Integrity Mgmt Program

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	0	320	498	387	404	404
Non-Labor	Zero-Based	0	0	557	1,090	1,710	2,390	2,390	19,815
NSE	Zero-Based	0	0	0	0	0	0	0	0
Total		0	0	557	1,410	2,208	2,777	2,794	20,219
FTE	Zero-Based	0.0	0.0	0.0	4.9	7.4	5.0	5.0	5.0

Business Purpose:

PHMSA published a final rule that amended the federal pipeline safety regulations to require operators of gas distribution pipelines to develop and implement a pipeline integrity management program by August 2, 2011. On December 4, 2009, the Distribution Integrity Management Program (DIMP) rule was posted as: Pipeline Safety: Final Rule, 74 Fed. Reg. 63,906-63,936 (codified 49 C.F.R. 192). PHMSA's purpose for DIMP is to enhance pipeline safety by having operators identify and reduce pipeline integrity risks specifically for distribution pipelines. As noted by PHMSA, DIMP requires activities beyond those required by traditional regulation. SoCalGas therefore has created individualized DIMP activities such as the Distribution Risk Evaluation and Monitoring System (DREAMS) that are above and beyond its core regulatory requirements. It has also created another individualized DIMP activity called Gas Infrastructure Protection Program (GIPP).

Physical Description:

The Distribution Risk Evaluation And Monitoring System (DREAMS) has been developed to address early vintage pipelines and manage their replacement. Using DREAMS, SDG&E will identify, evaluate, risk rank, and then implement the pipe replacement for both steel and plastic. The risk ranking algorithm is based on known segment information, reported pipe condition, segment specific leak history and known operating conditions contributing to the risk of failure and the location of the pipeline contributing to the consequence of a failure. The risk ranking will update as pipe age, condition, leak history and surrounding area changes. Recent incidents such as Sissonville, WV (NTSB# PAR-14-01), San Bruno, CA (NTSB#PAR-11-01) and Palm City, FL (PAB-13-01) in the gas industry support the need for a proactive approach in replacing early vintage pipelines installed or manufactured with non-state technology.

Vehicular damage is a threat and while the projected incident rate is low, the consequences can be high. This low-frequency, high-consequence event is the type of threat PHMSA intended to address when it developed DIMP regulations. To address vehicular damage to company facilities, SDG&E will identify, evaluate, recommend and then implement a damage prevention solution. SDG&E has developed a collection of mitigation measures to effectively address this threat. The collection of mitigation measures include, constructing barriers, relocating the facility or installing an Excess Flow Valve (EFV) to mitigate the threat.

Project Justification:

See supplemental workpapers for details.

Note: Totals may include rounding differences.

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

Area: TIMP & DIMP
Witness: Maria T. Martinez
Budget Code: 09546.0
Category: B. DIMP
Category-Sub: 1. Distribution Integrity Mgmt Program
Workpaper Group: 095460 - Distribution Integrity Mgmt Program

Forecast Methodology:

Labor - Zero-Based

See supplemental workpapers for details.

Non-Labor - Zero-Based

See supplemental workpapers for details.

NSE - Zero-Based

There is no Non Standard Escalation items in this BC

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

Area: TIMP & DIMP
 Witness: Maria T. Martinez
 Budget Code: 09546.0
 Category: B. DIMP
 Category-Sub: 1. Distribution Integrity Mgmt Program
 Workpaper Group: 095460 - Distribution Integrity Mgmt Program

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	387	404	404	0	0	0	387	404	404
Non-Labor	Zero-Based	2,390	2,390	2,390	0	0	17,425	2,390	2,390	19,815
NSE	Zero-Based	0	0	0	0	0	0	0	0	0
Total		2,777	2,794	2,794	0	0	17,425	2,777	2,794	20,219
FTE	Zero-Based	5.0	5.0	5.0	0.0	0.0	0.0	5.0	5.0	5.0

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>
2014 Total	0	0	0	0	0.0	
2015 Total	0	0	0	0	0.0	
2016	0	11,000	0	11,000	0.0	TP1JMY201407111
Revising forecast to include \$11M incremental increase. Will be doing about 17 Miles per year of non state of the art pipe replacement.	0	6,425	0	6,425	0.0	TPDLB2014051313
5/13 revised capital DIMP DREAMS from \$2.794M to \$9.1M per M.Martinez						
2016 Total	0	17,425	0	17,425	0.0	

Note: Totals may include rounding differences.

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

Area: TIMP & DIMP
Witness: Maria T. Martinez
Budget Code: 09546.0
Category: B. DIMP
Category-Sub: 1. Distribution Integrity Mgmt Program
Workpaper Group: 095460 - Distribution Integrity Mgmt Program

Determination of Adjusted-Recorded:

	2009 (\$000)	2010 (\$000)	2011 (\$000)	2012 (\$000)	2013 (\$000)
Recorded (Nominal \$)*					
Labor	0	0	0	281	430
Non-Labor	0	0	518	1,093	1,710
NSE	0	0	0	0	0
Total	0	0	518	1,374	2,140
FTE	0.0	0.0	0.0	4.2	6.3
Adjustments (Nominal \$)**					
Labor	0	0	0	0	0
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	0	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Nominal \$)					
Labor	0	0	0	281	430
Non-Labor	0	0	518	1,093	1,710
NSE	0	0	0	0	0
Total	0	0	518	1,374	2,140
FTE	0.0	0.0	0.0	4.2	6.3
Vacation & Sick (Nominal \$)					
Labor	0	0	0	41	68
Non-Labor	0	0	0	0	0
NSE	0	0	0	0	0
Total	0	0	0	41	68
FTE	0.0	0.0	0.0	0.7	1.1
Escalation to 2013\$					
Labor	0	0	0	-1	0
Non-Labor	0	0	39	-3	0
NSE	0	0	0	0	0
Total	0	0	39	-5	0
FTE	0.0	0.0	0.0	0.0	0.0
Recorded-Adjusted (Constant 2013\$)					
Labor	0	0	0	320	498
Non-Labor	0	0	557	1,090	1,710
NSE	0	0	0	0	0
Total	0	0	557	1,410	2,208
FTE	0.0	0.0	0.0	4.9	7.4

* 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: TIMP & DIMP
 Witness: Maria T. Martinez
 Budget Code: 09546.0
 Category: B. DIMP
 Category-Sub: 1. Distribution Integrity Mgmt Program
 Workpaper Group: 095460 - Distribution Integrity Mgmt Program

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
Total		0	0	0	0	0
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
2009 Total	0	0	0	0	0.0	
2010 Total	0	0	0	0	0.0	
2011 Total	0	0	0	0	0.0	
2012 Total	0	0	0	0	0.0	
2013 Total	0	0	0	0	0.0	

Note: Totals may include rounding differences.

**Beginning of Workpaper Sub Details for
Workpaper Group 095460**

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

Area: TIMP & DIMP
 Witness: Maria T. Martinez
 Budget Code: 09546.0
 Category: B. DIMP
 Category-Sub: 1. Distribution Integrity Mgmt Program
 Workpaper Group: 095460 - Distribution Integrity Mgmt Program
 Workpaper Detail: 095460.001 - Various DIMP projects BC 277 - 2014
 In-Service Date: Not Applicable
 Description:

Forecast In 2013 \$(000)				
	Years	<u>2014</u>	<u>2015</u>	<u>2016</u>
Labor		387	404	404
Non-Labor		2,390	2,390	19,815
NSE		0	0	0
	Total	<u>2,777</u>	<u>2,794</u>	<u>20,219</u>
FTE		5.0	5.0	5.0

Note: Totals may include rounding differences.

Supplemental Workpapers for Workpaper Group 095460

SDG&E Capital Workpaper BC 9546
Distribution Risk Evaluation and Monitoring System (DREAMS)
Gas Infrastructure Protection Program (GIPP)

Business Purpose

PHMSA published a final rule that amended the federal pipeline safety regulations to require operators of gas distribution pipelines to develop and implement a pipeline integrity management program by August 2, 2011. On December 4, 2009, the Distribution Integrity Management Program (DIMP) rule was posted as: Pipeline Safety: Final Rule, 74 Fed. Reg. 63,906-63,936 (codified 49 C.F.R. 192). PHMSA's purpose for DIMP is to enhance pipeline safety by having operators identify and reduce pipeline integrity risks specifically for distribution pipelines. As noted by PHMSA, DIMP requires activities beyond those required by traditional regulation. SoCalGas therefore has created individualized DIMP activities such as the Distribution Risk Evaluation and Monitoring System (DREAMS) that are above and beyond its core regulatory requirements. It has also created another individualized DIMP activity called Gas Infrastructure Protection Program (GIPP).

Physical Description and Justification

The Distribution Risk Evaluation And Monitoring System (DREAMS) has been developed to address early vintage pipelines and manage their replacement. Using DREAMS, SDG&E will identify, evaluate, risk rank, and then implement the pipe replacement for both steel and plastic. The risk ranking algorithm is based on known segment information, reported pipe condition, segment specific leak history and known operating conditions contributing to the risk of failure and the location of the pipeline contributing to the consequence of a failure. The risk ranking will update as pipe age, condition, leak history and surrounding area changes. Recent incidents such as Sissonville, WV (NTSB# PAR-14-01), San Bruno, CA (NTSB#PAR-11-01) and Palm City, FL (PAB-13-01)¹ in the gas industry support the need for a proactive approach in replacing early vintage pipelines installed or manufactured with non-state technology.

Vehicular damage is a threat and while the projected incident rate is low, the consequences can be high. This low-frequency, high-consequence event is the type of threat PHMSA intended to address when it developed DIMP regulations. To address vehicular damage to company facilities, SDG&E will identify, evaluate, recommend and then implement a damage prevention solution. SDG&E has developed a collection of mitigation measures to effectively address this threat. The collection of mitigation measures include, constructing barriers, relocating the facility or installing an Excess Flow Valve (EFV) to mitigate the threat.

¹ http://www.nts.gov/investigations/reports_pipeline.html

Forecast Methodology

SDG&E has 3,248 miles of non-state of the art pipe (unprotected steel and vintage plastic) in the system. The systematic replacement of these pipe segments are managed within the DREAMS application. The ratio for the length of plastic pipe with at least one leak to steel pipe with at least one leak is 34 to 1. The reason for such a high ratio is that the steel pipe population in the SDG&E system is under Cathodic Protection (CP) resulting in low instances of leaks on steel pipelines. The above mentioned ratio was used to determine the replacement ratios for steel and plastic.

The following assumptions were used in the forecast. Based on historical data, the average cost of replacement per foot for both steel and plastic is about \$225. There are 6 planners dedicated to the DREAMS replacement project. On average each planner can plan 1 job every 2 months. The result is 36 jobs per year for both plastic and steel. Each job has an average length of approximately 2,500 feet. Taking into the ratio for the length of plastic pipe with at least one leak to steel pipe with at least one leak, a manageable 10 year replacement forecast includes 165 miles for plastic and 5 miles for steel. This equates to an average yearly replacement of about 17 miles for steel and plastic at a cost of approximately \$20.219 million. A summary of the forecast is shown below.

Costs for GIPP projects are estimated based on historical costs incurred up to March 2014. Average costs were used for the various O&M tasks of Site Inspections, Non Standard Mitigation, and FSR Vault Mitigation.

<u>SDGE BC 9546</u>	<u>Total</u>	<u>Labor</u>	<u>Non-Labor</u>	
DREAMS	\$2,222,146	\$307,422	\$1,914,724	1
GIPP	\$555,276	\$80,000	\$475,276	2
Total 2014	\$2,777,422	\$387,422	\$2,390,000	3
DREAMS	\$2,238,763	\$324,000	\$1,914,763	4
GIPP	\$555,237	\$80,000	\$475,237	5
Total 2015	\$2,794,000	\$404,000	\$2,390,000	6
DREAMS	\$20,219,000	\$404,000	\$19,815,000	7
GIPP	\$0	\$0	\$0	8
Total 2016	\$20,219,000	\$404,000	\$19,815,000	9

San Diego Gas & Electric Company
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DREAMS Average Cost

	Task	Average Cost
1	Total Length (foot)	898,620
2	Total Length (Miles)	170
3	Jobs per year	36
4	Years to complete	10
5	Miles per year (starting in 2016)	17
6	Cost per foot (\$)	\$225
7	Total Cost (\$)	\$202,189,500

DREAMS Cost Per Year

		2014	2015	2016
8	Feet per year	9,876	9,950	89,862
9	Total Cost	\$2,222,146	\$2,238,763	\$20,219,000
10	Non-Labor	\$1,914,724	\$1,914,763	\$19,815,000
11	Labor	\$307,422	\$324,000	\$404,000

GIPP Average Cost

	Task	Avg Cost
12	Std Mitigation	\$744
13	Non Std Mitigation	\$34,944

GIPP Cost Per Year

		Standard Mitigation	Non Std Mitigations	Total NonLabor	Labor	Total Capital
14	Year 2014	263	8			
15		\$195,725	\$279,551	\$475,276	\$80,000	\$555,276
16	Year 2015	0	14			
17		\$0	\$475,237	\$475,237	\$80,000	\$555,237
18	Year 2016	0	0			
19		\$0	\$0	\$0	\$0	\$0