Company: San Diego Gas & Electric Company (U902M)
Proceeding: 2019 General Rate Case
Application: A.17-10-007
Exhibit: SDG&E-09-R

REVISED

SDG&E

DRAFT DIRECT TESTIMONY OF DEANNA R. HAINES

(GAS ENGINEERING)

DECEMBER 2017

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

SDGE
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TABLE OF CONTENTS

I. INTRODUCTION 1
A. Summary of Gas Engineering Costs and Activities 1
B. SDG&E Gas System Overview 2
II. RISK ASSESSMENT MITIGATION PHASE AND SAFETY CULTURE 4
A. Risk Assessment Mitigation Phase (RAMP) 4
B. Safety Culture 4
III. CAPITAL 5
A. Land Rights (Budget Code 417) 6
1. Description 6
2. Forecast Method 6
3. Cost Drivers 7
B. Auxiliary Equipment (Budget Codes 419 and 439) 7
1. Description 7
2. Forecast Method 7
3. Cost Drivers 7
C. Capital Tools (Budget Code 436) 8
1. Description 8
2. Forecast Method 8
3. Cost Drivers 8
D. Supervision and Engineering Overheads (Budget Code 903) 8
1. Description 8
2. Forecast Method 9
3. Cost Drivers 9
IV. CONCLUSION 9
V. WITNESS QUALIFICATIONS 10

LIST OF ACRONYMS

SUMMARY

GAS ENGINEERING (In 2016 $)				
	2016 Adjusted-Recorded (000s)	Estimated 2017 (000s)	Estimated 2018 (000s)	Estimated 2019 (000s)
Total CAPITAL	**204**	**268**	**268**	**268**

The purpose of Gas Engineering is to establish and oversee the engineering aspects of the gas infrastructure for satisfying federal and state environmental and safety requirements, for implementing industry best practices, and for optimizing infrastructure and end-use equipment performance for both San Diego Gas and Electric (SDG&E) and Southern California Gas Company (SoCalGas). Gas Engineering supports all groups within both Utilities that need engineering support or guidance related to the gas infrastructure or end-use equipment including but not limited to the key operating groups such as Transmission, Distribution, Storage, and Customer Services. Gas Engineering provides engineering programs, training, guidance, policies, designs, and data analytics focused on providing safe, compliant, reliable, resilient and cost-effective energy infrastructure for both Utilities. Gas Engineering's activities are described in my SoCalGas testimony under the broad utility shared services categories:

- Director of Gas Engineering
- Measurement, Regulation and Control
- Engineering Design
- Engineering Analysis Center
- Gas Operations Research & Materials

In preparing my Test Year 2019 (TY 2019) forecast for this testimony, I reviewed historical spending levels and developed an assessment of future requirements. All my SDG&E forecasts for operating and maintenance (O&M) are embedded in my SoCalGas testimony and mostly rely upon a five-year average and, where necessary, incremental costs are applied. In this testimony, I am sponsoring four categories of capital forecast related to the following:

- Land Services & Right-of-Way
- Auxiliary Equipment
- Capital Tools
- Supervision and Engineering Overheads

In total, SDG&E requests the Commission adopt capital expenditures of $268,000 each year for the forecast years 2017, 2018, and 2019, respectively.

SAN DIEGO GAS AND ELECTRIC COMPANY
REVISED DIRECT TESTIMONY OF DEANNA R. HAINES
(GAS ENGINEERING)

I. INTRODUCTION

A. Summary of Gas Engineering Costs and Activities

My testimony supports the TY 2019 forecasts for the San Diego Gas and Electric (SDG&E) capital expenditures of $268,000 each year for the forecast years 2017, 2018, and 2019, respectively. Table DRH-1 summarizes my sponsored costs associated with the Gas Engineering area for SDG&E. All costs in this testimony are presented in 2016 dollars unless otherwise noted. In addition to this testimony, also refer to my workpapers, Exhibit SDG&E-09-CWP (capital) for additional information on the activities described herein.

The purpose of Gas Engineering is to establish and oversee the engineering aspects of the gas infrastructure for satisfying federal and state environmental and safety requirements, for implementing industry best practices, and for optimizing infrastructure and end-use equipment performance for both SDG&E and SoCalGas. Gas Engineering supports all groups within both Utilities that need engineering support or guidance related to the gas infrastructure or end-use equipment including but not limited to the key operating groups such as Transmission, Distribution, Storage, and Customer Services. Gas Engineering provides engineering programs, training, guidance, policies, designs, and data analytics focused on providing safe, compliant, reliable, resilient and cost-effective energy infrastructure for both Utilities. Gas Engineering's activities are described in my SoCalGas testimony (Exhibit SCG-09) under the broad utility shared services categories:

- Director of Gas Engineering
- Measurement, Regulation and Controls
- Engineering Design
- Engineering Analysis Center
- Gas Operations Research & Materials

TABLE DRH-1
San Diego Gas & Electric Company
Capital Expenditures - Summary of Costs

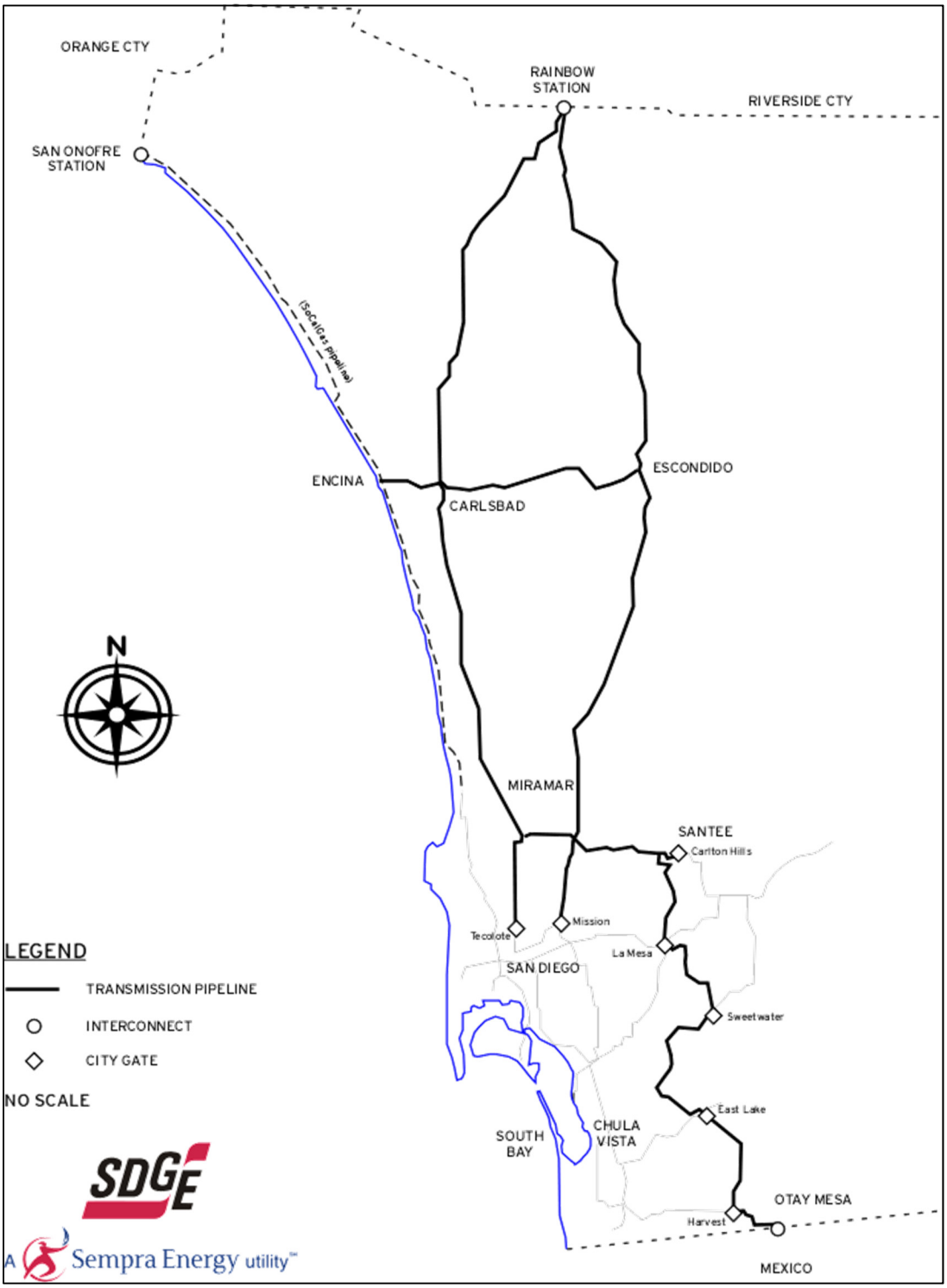
GAS ENGINEERING (In 2016 $)				
	2016 Adjusted-Recorded (000s)	Estimated 2017 (000s)	Estimated 2018 (000s)	Estimated 2019 (000s)
Total CAPITAL	**204**	**268**	**268**	**268**

B. SDG&E Gas System Overview

SDG&E receives gas from SoCalGas at the San Diego/Riverside County border at Rainbow, California and through various points of a pipeline that runs along the San Diego County coastline. SDG&E may also receive gas through an interconnect point at Otay Mesa with the Transportadora de Gas Natural de Baja California (TGN) pipeline in Mexico.

SDG&E's Gas Distribution and Transmission operating units collectively operate approximately 225 miles of transmission pipeline and approximately 15,000 miles of mains and service lines.

Figure DRH-1
San Diego Gas & Electric Company
Gas Transmission System



Gas Transmission also operates two compressor stations: The Rainbow compressor station, near Rainbow, California, and the Moreno compressor station, which is situated in Riverside County approximately 35 miles north of the Rainbow compressor station. Gas received into SDG&E's transmission pipelines is delivered to the company's distribution pipelines and non-core customers. Collectively, these components allow SDG&E to deliver natural gas from receipt point to customer reliably and safely.

II. RISK ASSESSMENT MITIGATION PHASE AND SAFETY CULTURE

A. Risk Assessment Mitigation Phase (RAMP)

Gas Engineering works to support SDG&E's enterprise risk management approach by identifying engineering-related risk issues that become part of the risk registry. The process Gas Engineering uses is consistent with other utilities and agencies, and the Securities and Exchange Commission[1] (SEC) guidance issued in 2010 that required that publicly traded companies "consider climate change and its consequences." Gas Engineering operating practices at SDG&E are coordinated through Gas Engineering at SoCalGas, where risk mitigation strategies are formed. To that end, my SoCalGas Shared Services testimony (Ex. SCG-09) discusses specific risk mitigations, such as those addressing Records Management and Climate Change Adaptation.[2]

B. Safety Culture

As a general matter, Gas Engineering supports SDG&E's safety culture by developing policies and standards; complying with applicable laws, regulations, and internal policies; designing and building a system that is resilient and supports the safe and reliable delivery of gas; communicating with stakeholders on engineering-related issues that impact safety; and using data and analytics to help make informed decisions related to infrastructure safety management. Gas Engineering enhances the safety culture by providing this support to gas operations for both Utilities.

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[1] *See* Securities and Exchange Commission, *Commission Guidance Regarding Disclosure Related to Climate Change*, 17 CFR Parts 211, 231, and 241 (February 8, 2010), *available at*: https://www.sec.gov/rules/interp/2010/33-9106.pdf.

[2] Please refer to the Risk Management testimony chapters of Diana Day and Jamie York (Exhibit SCG-02/SDG&E-02, Chapters 1 and 3, respectively) for more details regarding the SoCalGas RAMP Report.

More specifically, for example, Gas Engineering supports SDG&E's safety culture and its objective of a safe, resilient and reliable system by supporting major projects. Major projects can include the Pipeline Safety Enhancement Plan (PSEP), large transmission and distribution projects, as well as compressor station upgrades.

Gas Engineering utilizes data and analytics to evaluate the gas system to recommend capital expenditures associated with system improvements. These improvements are driven by the objective to create a safe, resilient and reliable gas system. This data analysis process requires asset, data, document, and analytical systems to capture, monitor, and model asset health. These systems can be used to help prevent and predict likelihood and consequence of an asset failure. The outcome of this analysis is the identification of asset risks and the design and implementation of mitigation efforts.

Finally, Gas Engineering promotes continuous improvements by facilitating Process Hazard Analysis (PHA) where appropriate to ensure designs of equipment are safe. Further, Gas Engineering promotes quality assurance and quality control policies to ensure the gas infrastructure is built to appropriate gas industry standards and best practices. Gas Engineering performs root cause analysis of incidents and makes recommendations for process, policy or equipment changes.

III. CAPITAL

The driving philosophy behind this capital expenditure plan is to provide safe, resilient and reliable delivery of natural gas to customers at reasonable cost. These investments also enhance the efficiency and responsiveness of our gas operations and maintain compliance with applicable regulatory and environmental regulations. The capital described in this chapter of my testimony covers capital expenditures estimated for SDG&E's operations and Engineering capital investments related to land rights, auxiliary equipment, capital tools, and the supervision and engineering capital pool of overheads. Table DRH-2 describes the different budget codes with the total capital forecasts for 2017, 2018, and 2019.

TABLE DRH-2
San Diego Gas & Electric Company
Capital Expenditures Costs

GAS ENGINEERING (In 2016 $)				
Categories of Management	**2016 Adjusted-Recorded**	**Estimated 2017 (000s)**	**Estimated 2018 (000s)**	**Estimated 2019 (000s)**
A. LAND RIGHTS	69	113	113	113
B. AUXILIARY EQUIPMENT	18	28	28	28
C. CAPITAL TOOLS	117	54	54	54
D. SUPERVISION & ENGINEERING OVERHEADS	0	73	73	73
Total	**204**	**268**	**268**	**268**

A. Land Rights (Budget Code 417)

1. Description

This Budget Code provides for purchase or renewal easements and the acquisition of rights-of-way or other land rights for the purpose of installing and maintaining high pressure pipelines. SDG&E's forecast for Land Rights for 2017, 2018, and 2019 is $113,000 each year as reflected in Table DRH-2 above.

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

2. Forecast Method

The forecast method used is the five-year average of recorded costs for nonlabor and zero-based for labor costs in this Budget Code. The five-year average represents the expected

nonlabor capital expenditures, while labor costs are zero for the forecast years with a zero-based method.

3. Cost Drivers

The underlying cost drivers for this capital budget category relate to real estate market conditions, typically driven by supply and demand, and by the overall economic conditions at the time of purchase or re-negotiation.

B. Auxiliary Equipment (Budget Codes 419 and 439)

1. Description

These Budget Codes provide for purchase of auxiliary equipment to support compressor stations. SDG&E's forecast for this category for 2017, 2018, and 2019 is $28,000 per year as reflected in Table DRH-2 above. This category's forecast includes new installations or upgrades of aging telemetry systems which link with and provide information to SoCalGas' centralized Gas Control Supervisory Control and Data Acquisition (SCADA) computer system.

2. Forecast Method

This category consists of two blanket budgets: Budget Codes 419 and 439. Blanket budgets frequently consist of many like-kind or related items and often specific assets are not identified long in advance.

For Budget Code 419, the base-year methodology was used for both labor and nonlabor, as this budget does not have historical costs prior to 2015.

For Budget Code 439, the base-year methodology was used for labor and the 5-year average was used for nonlabor. Budget Code 439 has not had any labor expenses since 2013.

3. Cost Drivers

The underlying cost drivers for this capital project relate to equipment type and complexity, operating location, availability of qualified contractors, and workload. Thus, bids vary, depending on contractor workloads and associated lead times.

C. Capital Tools (Budget Code 436)

1. Description

This Budget Code provides for the costs of acquiring and replacing high-value tools routinely used by operations personnel. The forecast for Capital Tools for 2017, 2018, and 2019 is $54,000 per year, as reflected in Table DRH-2 above.

Required capital tools can include Volt/Amp Meters, Global Positioning System receivers, leak detection equipment, gauges, wrenches, tapping and stopping equipment. Purchases are generally to replace old, worn or damaged tools used in the field. Such tools are routinely used by personnel installing and maintaining equipment and assets.

2. Forecast Method

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

3. Cost Drivers

The underlying cost drivers for this capital cost relate to the specialized nature of tools utilized in the operation and maintenance of gas facilities and the relatively few suppliers of high quality tools and measuring systems.

D. Supervision and Engineering Overheads (Budget Code 903)

1. Description

This Budget Code provides a pool for Supervision and Engineering charges that will be reassigned to the various budget categories on a direct cost basis. The forecast for Supervision and Engineering Pool for 2017, 2018, and 2019 is $73,000 per year as reflected in Table DRH-2 above.

This Budget Code continues an established accounting procedure for making charges for certain overheads, on a direct cost basis, to specific budget categories.

2. Forecast Method

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

3. Cost Drivers

The underlying cost drivers for this capital project relate to the cost of labor assigned to the planning and engineering of capital projects and the increasing complexity of such projects.

IV. CONCLUSION

The SDG&E capital forecast relies principally on five-year averages. In those few cases where a five-year average was not employed, another appropriate methodology was used, such as a base-year projection, because the historical average was not a sufficient basis to reflect the requirements demanding more work and resources.

As a result, SDG&E requests the Commission adopt capital expenditure forecasts of $268,000 each year for years 2017, 2018, and 2019.

In summary, these forecasts reflect sound judgment and represent the impact from higher regulatory expectations to continuously enhance the safety of the SDG&E natural gas system and provide safe, resilient and reliable natural gas service at reasonable cost. The Commission should adopt the forecasted expenditures discussed in this testimony because they are prudent and reasonable.

This concludes my prepared direct testimony.

V. WITNESS QUALIFICATIONS

My name is Deanna R. Haines. My business address is 555 W. Fifth St., Los Angeles, California, 90013. My current position is Director of Gas Engineering under the Gas Engineering and Major Projects organization at the Southern California Gas Company (SoCalGas). The Gas Engineering organization provides gas engineering oversight and support to both SoCalGas and SDG&E. I joined SoCalGas in 1988 and have been in my current position since December 2013. Before that date, I was the Director of Environmental Services.
I have a Bachelor of Science Degree in Chemical Engineering from University of Southern California and a Master's Degree in Business Administration from University of Redlands. I have previously testified before the Commission.

LIST OF ACRONYMS

ACRONYM	DEFINITION
O&M	Operations and Maintenance
PHA	Process Hazard Analysis
PSEP	Pipeline Safety Enhancement Plan
RAMP	Risk Assessment Mitigation Phase
SCADA	Supervisory Control and Data Acquisition
SDG&E	San Diego Gas and Electric Company
SEC	Securities and Exchange Commission
SoCalGas	Southern California Gas Company
TGN	Transportadora de Gas Natural de Baja California
TY	Test Year

SDG&E 2019 GRC Testimony Revision Log – December 2017

Exhibit	Witness	Page	Line	Revision Detail
SDG&E-09	*Deanna R. Haines*	*DRH-6 to DRH-7*	*20-21, 1-2*	*Replaced "*The forecast method used is the five-year average of recorded costs in this budget code. The five-year average is both fair and conservative, and it best represents the capital expenditures projected in this category.*" with "*The forecast method used is the five-year average of recorded costs for nonlabor and zero-based for labor costs in this Budget Code. The five-year average represents the expected nonlabor capital expenditures, while labor costs are zero for the forecast years with a zero-based method.*"*
SDG&E-09	*Deanna R. Haines*	*DRH-7*	*15-21*	*Replaced* "The forecast method is the base-year of recorded costs in this budget code. Blanket work orders are generally requested when no specific projects have been identified for budget codes. A five-year average or other methodology was not selected because these budget codes do not have historical expenditures prior to 2015." *with* "This category consists of two blanket budgets: Budget Codes 419 and 439. Blanket budgets frequently consist of many like-kind or related items and often specific assets are not identified long in advance. For Budget Code 419, the base-year methodology was used for both labor and nonlabor, as this budget does not have historical costs prior to 2015. For Budget Code 439, the base-year methodology was used for labor and the 5-year average was used for nonlabor. Budget Code 439 has not had any labor expenses since 2013."