

Application No: A.11-11-002  
Exhibit No.: SCG-01  
Date: December 2, 2011  
Witness: Richard Morrow

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In the Matter of the Application of San Diego Gas & )  
Electric Company (U 902 G) and Southern California )  
Gas Company (U 904 G) for Authority to Revise )  
Their Rates Effective January 1, 2013, in Their )  
Triennial Cost Allocation Proceeding. )  
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A.11-11-002  
(Filed November 1, 2011)

**CHAPTER 1**

**AMENDED DIRECT TESTIMONY OF**

**RICHARD MORROW**

**INTRODUCTION AND EXECUTIVE SUMMARY**

**IN SUPPORT OF PROPOSED NATURAL GAS PIPELINE SAFETY  
ENHANCEMENT PLAN FOR**

**SOUTHERN CALIFORNIA GAS COMPANY AND  
SAN DIEGO GAS & ELECTRIC COMPANY**

**BEFORE THE PUBLIC UTILITIES COMMISSION  
OF THE STATE OF CALIFORNIA**

**December 2, 2011**

1 I.

2 **INTRODUCTION AND EXECUTIVE SUMMARY**

3 In the aftermath of the September 9, 2010 pipeline rupture in San Bruno, the Commission  
4 opened this Rulemaking in “a forward-looking effort to establish a new model of natural gas  
5 pipeline safety regulation applicable to all California pipelines.”<sup>1</sup> In the Order Instituting this  
6 Rulemaking, the Commission expresses immense concern for those affected by the pipeline  
7 rupture, emphasizing that “the depth of this tragedy is the source of our resolve to take all actions  
8 necessary to ensure that it never happens again.”<sup>2</sup>

9 SoCalGas and SDG&E share the resolve of the Commission to take those actions  
10 necessary to avoid the recurrence of the San Bruno tragedy and fully support the Commission’s  
11 effort in this Rulemaking to implement forward-looking policies and procedures to enhance gas  
12 pipeline safety and reliability throughout California. Since September 9, our pipeline integrity  
13 engineers and supporting personnel have been focused on learning from that event, re-assessing  
14 our existing pipeline integrity program and the status of our system, and identifying ways that we  
15 might further enhance our own system. Eleven months later, and after completing our review of  
16 records in response to Safety Recommendations issued to Pacific Gas and Electric Company  
17 (PG&E) by the National Transportation Safety Board (NTSB), we remain confident in the  
18 integrity and safety of our system and are proud of the work performed by our employees,  
19 including our team of engineers and supporting field and operations staff. Safety is, and has  
20 always been, paramount at SoCalGas and SDG&E, and our safe operating history and culture are  
21 a clear reflection of that.

22 Although we remain confident in our existing transmission pipeline integrity program and  
23 are proud of our excellent safety record, in light of the events in San Bruno and the Commission’s  
24 directives in this Rulemaking, SoCalGas and SDG&E acknowledge that we can always do more

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<sup>1</sup> Order Instituting Rulemaking on the Commission’s Own Motion to Adopt New Safety and Reliability Regulations for Natural Gas Transmission and Distribution Pipelines and Related Ratemaking Mechanisms, issued February 24, 2011 (Order Instituting this Rulemaking), p. 1.

<sup>2</sup> *Id.*

1 and we can always improve. Indeed, an emphasis on continuous improvement is an essential part  
2 of our company culture.

3 In the Chapters that follow, SoCalGas and SDG&E propose a comprehensive Pipeline  
4 Safety Enhancement Plan that identifies several opportunities for increasing confidence in, and  
5 further enhancing the integrity of, our transmission pipeline system. The Pipeline Safety  
6 Enhancement Plan is founded upon four overarching objectives.

7 First, as has been our practice, SoCalGas and SDG&E strive to fully comply with the  
8 directives of the Commission. Accordingly, the Pipeline Safety Enhancement Plan ties closely to  
9 the requirements set forth in D.11-06-017 and sets forth a proposed process for meeting the  
10 Commission's directives. SoCalGas and SDG&E strive to be proactive and innovative in our  
11 approach to pipeline safety and reliability. Therefore, our proposed plan also offers proposals to  
12 enhance our system beyond the measures strictly required under D.11-06-017, and includes  
13 alternatives that can be adopted by the Commission to reduce costs for our customers.

14 Second, the proposed Pipeline Safety Enhancement Plan is designed to enhance public  
15 safety. While SoCalGas and SDG&E are confident in the safety and integrity of our system, we  
16 recognize that the pipeline rupture in San Bruno raises questions about the safety of natural gas  
17 pipelines in the State. As a result, the industry is re-evaluating existing regulations and protocols,  
18 and State and Federal regulators and legislators are considering elevated safety standards and  
19 more stringent regulations. We are monitoring these developments and intend to meet or exceed  
20 heightened industry standards and regulations as they evolve. Clearly, there are lessons to be  
21 learned, and we are following the NTSB's investigation into the San Bruno pipeline rupture  
22 closely and will incorporate those lessons into our practices as they come to light.

23 Third, the Pipeline Safety Enhancement Plan is designed to minimize customer impacts.  
24 We are proud of our long history of providing reliable service to our customers, and remain  
25 mindful of the fact that our customers depend on the reliability of our service, not only to heat  
26 their homes and fuel essential appliances, but also to maintain the reliable operation of  
27 California's electrical grid, the production of fuel and other commercial and industrial uses that  
28 support California's economy.

1 Fourth, the Pipeline Safety Enhancement Plan seeks to maximize the cost effectiveness of  
2 infrastructure investments for the benefit of our customers. Having been in the business of  
3 providing reliable natural gas service to our customers for over 100 years, we recognize the need  
4 to carefully invest in our system in a manner that complements previous investments in our  
5 system, avoids short-sighted or reactive actions that could result in unnecessary or duplicative  
6 expenditures, and enhances the long-term safety and reliability of our system.

7 We believe our proposed Pipeline Safety Enhancement Plan achieves all of these  
8 objectives and seek Commission approval to begin the work of executing the plan as soon as  
9 possible. Specifically, SoCalGas and SDG&E seek express Commission approval of the  
10 following key elements of our proposed Pipeline Safety Enhancement Plan:

- 11 1. Our proposed phasing approach and prioritization process for the pressure testing or  
12 replacement of transmission pipeline segments. As required by the Commission, our  
13 proposed phasing approach and prioritization process prioritize pipelines operating in  
14 populated areas ahead of pipeline segments in less populated areas.
- 15 2. Our proposed criteria for determining whether to pressure test or replace pipeline  
16 segments. This includes a proposal to use non-destructive examination methods, such  
17 as radiography, ultrasonic inspection, and magnetic particle testing, as an appropriate  
18 alternative to pressure testing or replacement for those pipeline segments less than  
19 1,000 feet in length.
- 20 3. The use of state-of-the-art in-line inspection tools, as part of our pressure testing and  
21 assessment process. Because we have already invested in an ambitious in-line  
22 inspection program as part of our existing pipeline integrity management program,  
23 many of the pipelines identified for testing or replacement are already retrofitted to  
24 allow for in-line inspection. We propose to perform additional in-line inspections to  
25 more thoroughly assess those pipelines as part of our testing and replacement process,  
26 and to analyze data obtained through this process to demonstrate that advanced in-line  
27 inspection technologies achieve the same standard of safety as pressure testing. If the  
28 Commission ultimately determines that the data we obtain through this process

1 demonstrates that advanced in-line inspection technologies provide the same standard  
2 of safety as pressure tests and authorizes the use of in-line inspections as an alternative  
3 to pressure testing, which could significantly reduce costs for our customers over the  
4 long term.

- 5 4. The continued use of our proposed interim safety measures. We have already  
6 implemented our safety enhancements measures, which include pressure reductions,  
7 more frequent (bi-monthly) ground patrols and leakage surveys, and in-line  
8 inspections. In addition, we continue to assess and monitor all transmission pipelines  
9 under our existing transmission pipeline integrity management program.
- 10 5. The enhancement of our valve infrastructure through the retrofit of existing valves,  
11 installation of additional remote control and automated shutoff valves, and installation  
12 of supporting equipment and system features on transmission pipelines greater than  
13 twelve inches in diameter. We propose to implement these valve system  
14 enhancements at intervals of eight miles or less (for an average of six miles) to  
15 enhance our ability to monitor our pipeline systems and reduce our response time in  
16 the event of an unanticipated pressure change.
- 17 6. The retrofitting of our transmission pipelines to include advanced fiber optic and  
18 methane detection technology. During the execution of our plan, hundreds of miles of  
19 pipeline will either be exposed for examination or testing, or will be replaced as part  
20 of this plan. This presents a unique opportunity to retrofit these pipelines with state-  
21 of-the art monitoring technology to enhance our ability to detect conditions in real-  
22 time that could ultimately place our pipelines at risk.
- 23 7. The design of an Enterprise Asset Management System that will integrate our  
24 historical and current transmission pipeline data and systems in order to further the  
25 Commission's goal of having all transmission pipeline documentation readily  
26 available.

27 The scope of work required to implement the Commission's directives is considerable.

28 Table I-1 below details the miles of transmission pipelines to be pressure tested, replaced, and in-

1 line inspected, as well as the number of valve enhancements under our proposed Pipeline Safety  
 2 Enhancement Plan during the years 2012 through 2015.

3  
 4 **Table I-1**  
 5 **Summary of Transmission Miles and Valves to be Enhanced**  
 6 **During the Years 2012 through 2015**  
 7

<b>SoCalGas</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>Total</b>
Pipeline Replacement (miles)	25	73	74	74	246
Pressure Testing (miles)	73	96	96	96	361
In-Line Inspection (miles)	133	178	178	178	667
Valve Retrofit/Installation (valves)	30	40	51	52	173
<b>SDG&amp;E</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>	<b>2015</b>	<b>Total</b>
Pipeline Replacement (miles)	5	14	15	15	49
Pressure Testing (miles)	<1	<1	<1	<1	1
In-Line Inspection (miles)	-	-	54	-	54
Valve Retrofit/Installation (valves)	7	7	8	8	30

8  
 9 The projected costs of implementing our proposed Pipeline Safety Enhancement Plan are  
 10 also projected to be significant. Table I-2 below provides a summary of the projected direct costs  
 11 to be incurred by SoCalGas and SDG&E during the years 2011 through 2015.

12  
 13 **Table I-2**  
 14 **Summary of Projected Direct Costs of Implementing the Proposed Pipeline Safety**  
 15 **Enhancement Plan During the Years 2011 through 2015**  
 16 **(In Millions of 2011 Dollars)**  
 17

	<b>2011</b>	<b>2012-2015</b>		<b>Total</b>
	<b>O&amp;M</b>	<b>Capital</b>	<b>O&amp;M</b>	
<b>SoCalGas</b>	6	1,183	255	1,444
<b>SDG&amp;E</b>	1	229	7	237
<b>Total</b>	7	1,412	262	1,681

18 We seek Commission authorization to recover the costs of implementing the Pipeline  
 19 Safety Enhancement Plan from our customers as follows:

- 20 1. Authorize the recovery of costs incurred to date, and to be incurred up to the time the  
 21 Commission issues a decision approving our proposed plan, for the review of  
 22 transmission pipeline records and for implementation of our interim safety

1 enhancement measures. To date, we have incurred costs of approximately \$3 million  
2 and forecast that we will spend a total of about \$7 million by year-end.

- 3 2. Approve direct Capital forecasts for implementation of the Pipeline Safety  
4 Enhancement Plan during the time period of 2012 through 2015 of approximately  
5 \$1.2 billion for SoCalGas and \$229 million for SDG&E, and direct Operation and  
6 Maintenance (O&M) forecasts for implementation of the Pipeline Safety Enhancement  
7 Plan during the time period of 2012 through 2015 of approximately \$255 million for  
8 SoCalGas and \$7 million for SDG&E.
- 9 3. Approve the revenue requirements resulting from our Capital and O&M forecasts for  
10 the years 2011 through 2015.
- 11 4. Authorize us to include a request to approve the Capital and O&M forecasts and  
12 resulting revenue requirements for subsequent years of our Pipeline Safety  
13 Enhancement Plan in our respective General Rate Cases or other appropriate  
14 proceedings, as needed.
- 15 5. Approve our proposal to track the costs of implementing our Pipeline Safety  
16 Enhancement Plan separately from other pipeline system costs and to allocate those  
17 costs to our customers using the Equal Percent of Authorized Margin (EPAM)  
18 method.
- 19 6. Approve our request to identify the costs of implementing our Pipeline Safety  
20 Enhancement Plan as a separate item, a "PSEP Surcharge," on our customers' bills.
- 21 7. Approve our proposal to submit an annual status report to the Commission by  
22 March 31 of each year, beginning in 2013 that includes (a) information on work  
23 completed during the previous year; (b) work planned for the upcoming year; (c)  
24 discussion of progress made; and (d) confirmation of the Commission's approved  
25 annual budget for the Pipeline Safety Enhancement Plan.

26 Whether the Commission adopts the Pipeline Safety Enhancement Plan as proposed, or  
27 with modifications, SoCalGas and SDG&E intend to execute the plan approved by the  
28 Commission as expeditiously as possible.

1 In the Chapters to follow, we provide a more detailed description of our proposed Pipeline  
2 Safety Enhancement Plan. In Chapter II, we provide an overview to our approach to developing  
3 the proposed Pipeline Safety Enhancement Plan and explain how our proposed plan satisfies the  
4 directives of the Commission while also meeting our objectives to enhance public safety,  
5 minimize customer impacts and maximize cost effectiveness. We discuss the overall costs  
6 associated with implementation of the proposed plan and offer a proposed approach to  
7 appropriately allocating those costs to our customers. We also describe our proposed timeline  
8 and phased approach to implementing the plan and offer suggestions for how the Commission  
9 might help expedite the implementation process.

10 In Chapter III, we provide an overview of our natural gas transmission system. We  
11 believe it is important to begin our discussion of the Pipeline Safety Enhancement Plan with a  
12 description of the unique attributes of our natural gas pipeline infrastructure, so that our Pipeline  
13 Safety Enhancement Plan can be evaluated within the context of that system.

14 In Chapter IV, we set forth a plan to test or replace pipeline segments that do not have  
15 sufficient documentation of a pressure test to meet the standards set forth by the Commission in  
16 D.11-06-017. In addition, we request authorization to abandon any non-piggable<sup>3</sup> pipeline  
17 segments that were installed prior to 1946. This testing or replacement plan is designed to  
18 prioritize pipeline segments located in populated areas, and is divided into three categories  
19 according to an assessment of the demonstrated margin of safety, the characteristics and  
20 piggability of the pipeline segments, and the completeness of the documentation available and  
21 pressure test thresholds experienced to validate system confidence. Second, our Pipeline Safety  
22 Enhancement Plan incorporates interim safety enhancement measures that we have already  
23 implemented to provide even greater confidence in the integrity of our system.

24 In Chapter V, we propose a Valve Enhancement Plan to augment SoCalGas and  
25 SDG&E's existing automatic shutoff valves and remote control valves, for the purpose of  
26 minimizing the time required to stop the flow of gas in the event of a pipeline rupture.

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<sup>3</sup> Piggable pipelines are pipelines that have already been retrofitted to accommodate in-line inspection tools under our existing in-line inspection program. Our use of in-line inspection tools is described in greater detail in Chapter IV.



1 In Chapter VI, we offer a forward-looking proposal to invest in technologies to further  
2 enhance the safety of our system by augmenting our ability to assess the conditions of our  
3 transmission pipelines in real-time. Specifically, we seek authorization to invest in fiber optic  
4 right-of-way monitors and methane detection monitors. These monitors can provide rapid  
5 notification of potential activity near transmission pipelines and of pipeline failures, thus  
6 decreasing the time required to identify, investigate and prevent the effects of such events.  
7 Although not expressly required under D.11-06-017, we believe these proactive and innovative  
8 technology investments can further enhance the safety of our pipeline system and therefore offer  
9 these proposals for the Commission’s consideration.

10 In Chapter VII, we seek authorization to invest in the development of an Enterprise Asset  
11 Management System to integrate operational data so that such data can be made “readily  
12 available.”<sup>4</sup> This proposed Enterprise Asset Management System will integrate operations data  
13 from several sources including maintenance and inspection systems, geographical information  
14 systems, purchasing systems and historic records.

15 In Chapter VIII, we describe our plan for executing the Pipeline Safety Enhancement  
16 Plan, including a description of how we will manage the numerous projects to be executed as part  
17 of the plan, how we will maintain material and construction quality assurance, how we select and  
18 approve contractors, and how we maintain supplier diversity.

19 In Chapter IX, we describe the estimated costs of executing the Pipeline Safety  
20 Enhancement Plan. The estimated investment required to implement the Pipeline Safety  
21 Enhancement Plan is approximately \$1.5 billion in direct costs for SoCalGas and \$240 million in  
22 direct costs for SDG&E during the next four years. We believe these investments are prudent in  
23 light of recent events and evolving industry standards, and seek Commission authorization to  
24 make these investments on behalf of our customers.

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<sup>4</sup> D.11-06-017, pp. 19-20 (“At the completion of the implementation period, all California natural gas transmission pipeline segments must be (1) pressure tested, (2) have traceable, verifiable, and complete records readily available, and (3) where warranted, be capable of accommodating in-line inspection devices.”)

1           Finally, in Chapter X we provide a ratemaking proposal for recovery of the costs of  
2           executing the Pipeline Safety Enhancement Plan. We ask that the Commission issue a decision  
3           approving this plan and authorizing us to recover costs already incurred, and the estimated costs  
4           of implementing the proposed Pipeline Safety Enhancement Plan from now until we have a  
5           decision in our respective 2016 General Rate Cases, wherein we will propose to recover the costs  
6           for implementing our plan during that rate cycle. We suggest that these costs be identified in a  
7           monthly “PSEP Surcharge” on our customers’ bills, so that the objectives and costs of these  
8           investments will be transparent to our customers. In addition, we propose to file annual reports  
9           with the Commission, beginning on March 31, 2013, to provide updates regarding the status of  
10          our implementation of the proposed Pipeline Safety Enhancement Plan.

11