

Application No: A.15-06-
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Date: June 17, 2015
Witness: Rick Phillips

Application of Southern California Gas Company (U 904 G) and San Diego Gas & Electric Company (U 902 G) to Proceed With Phase 2 of Their Pipeline Safety Enhancement Plan and Establish Memorandum Accounts to Record Phase 2 Costs.

Application 15-06-____
(Filed June 17, 2015)

CHAPTER 1
PREPARED DIRECT TESTIMONY OF
RICK PHILLIPS
PHASE 2
PIPELINE SAFETY ENHANCEMENT PLAN

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

June 17, 2015

TABLE OF CONTENTS

	<u>Page</u>
I. INTRODUCTION.....	1
II. SCOPE.....	2
III. PHASE 2 PROCESS.....	4
A. Phase 2 Decision Tree.....	5
B. Scope of Detailed Project Estimate Process.....	5
1. Planning and Engineering Design.....	5
2. Development of the Project Cost Estimate.....	6
IV. DESCRIPTION OF RESOURCES REQUIRED TO DEVELOP DETAILED PROJECT COST ESTIMATES.....	6
A. Elements of Project Costs.....	7
1. Core Estimate Team.....	7
2. Support Resources.....	9
B. Overview of Process for Development of Estimates.....	11
V. THE IMPORTANCE OF A SEAMLESS TRANSITION BETWEEN PHASE 1 AND PHASE 2.....	12
A. Potential Loss of Skilled Labor.....	12
B. Increased Material Costs.....	12
VI. SCHEDULE.....	13
VII. CONCLUSION.....	13
VIII. WITNESS QUALIFICATIONS.....	14

1 The approach outlined here supports the objectives outlined in the SoCalGas and SDG&E
2 PSEP filed in R.11-02-019 and transferred to Application (A.)11-11-002 by complying with the
3 key elements set forth in D.11-06-017, namely continuing to act in an expeditious manner to test
4 or replace all pipeline segments that do not have sufficient documentation of pressure testing to at
5 least 1.25 times the Maximum Allowable Operating Pressure (MAOP).

6 This approach will allow SoCalGas and SDG&E to continue to maximize the cost
7 effectiveness of PSEP by having a seamless transition between Phase 1 and Phase 2. While the
8 team being assembled to develop the detailed project cost estimates for Phase 2 will work
9 continuously until all Phase 2 estimates are complete, SoCalGas and SDG&E plan to bundle
10 projects into two or three applications to be filed on a rolling basis so the integrity of Phase 2 pipe
11 can be confirmed without delay and to enable skilled resources to remain on the PSEP team. The
12 bundled approach will also allow for the opportunity to refresh the estimates prior to each filing to
13 reflect current construction and material costs and to incorporate lessons learned.

14 Although the majority of Phase 2 work will be in rural areas and the overall customer
15 impact is anticipated to be less than in Phase 1, SoCalGas and SDG&E will continue to conduct
16 planning and engineering design work for Phase 2 in a manner that strives to minimize customer
17 impact and maintain natural gas supply to customers.

18 **II. SCOPE**

19 The pipeline-related scope of Phase 1, as outlined in SoCalGas and SDG&E's PSEP, is to
20 pressure test or replace transmission pipelines in Class 3 and 4 locations and Class 1 and 2
21 locations in high consequence areas that do not have sufficient documentation of a pressure test to
22 at least 1.25 times MAOP and the replacement of non-piggable pipe in rural areas installed prior to
23 1946.

1 Whereas Phase 1 addresses pipelines located primarily in urban areas and pre-1946 non-
2 piggable pipe, Phase 2 will address the remaining transmission pipelines that do not have
3 sufficient documentation of a pressure test to at least 1.25 times MAOP and are located in Class 1
4 and 2 non-High Consequence areas.³ There are currently approximately 660 miles of pipe in
5 Phase 2 that do not have sufficient documentation of a post-construction pressure test to at least
6 1.25 times MAOP. In this Application, SoCalGas and SDG&E seek authorization to move
7 forward with the planning and engineering design work for Phase 2 to develop detailed cost
8 estimates for this mileage and track and record the costs of the planning and engineering design
9 work in memorandum accounts for subsequent review by the Commission. SoCalGas and
10 SDG&E propose to file subsequent applications (two or three total over a multi-year period) to
11 request authority to recover individual project costs based on the detailed cost estimates. These
12 subsequent applications will request up-front recovery of the project cost estimates as well as a
13 balancing account mechanism to true-up the actual costs associated with these projects.

14 The approximately 660 Phase 2 miles addressed here do not include approximately 1,200
15 miles of pipelines that have documentation of a pressure test conducted prior to the adoption of
16 Part 192 of Title 49 of the Code of Federal Regulations on November 12, 1970. SoCalGas and
17 SDG&E will seek authorization to address these pipelines through a separate application. Based
18 on preliminary analysis of the approximately 660 miles⁴ of Phase 2 pipelines, it is anticipated that
19 approximately 600 of these miles will be pressure tested, and approximately 60 miles will be
20 replaced. This preliminary analysis will be validated as part of the planning and engineering
21 design process in order to develop detailed cost estimates.

³ The Valve Enhancement Plan approved in D.14-06-007 is entirely in the Scope of Phase 1, and as such, is not included in Phase 2.

⁴ All of the 660 miles are in the SoCalGas service territory.

1 **III. PHASE 2 PROCESS**

2 D.14-06-007, which approved Phase 1 of the SoCalGas and SDG&E PSEP, indicated that
3 a request for Phase 2 should be made through a separate Application.⁵ SoCalGas and SDG&E
4 request authorization to begin with the planning and engineering design analysis necessary to
5 develop these detailed cost estimates. The goal of this undertaking is to develop project estimates
6 which will be presented in subsequent applications for recovery in rates.

7 Dividing the Phase 2 work into separate applications supports the Commission’s directive
8 to complete PSEP “as soon as practicable.”⁶ SoCalGas and SDG&E estimate that the volume of
9 Phase 1 construction work will begin to decrease in 2017. Therefore, it would be more efficient
10 from a programmatic standpoint to begin construction of Phase 2 lines in 2017 to maintain a
11 consistent level of resources familiar with PSEP. One of the lessons learned in Phase 1 was the
12 length of time required to establish a fully knowledgeable, well-integrated team encompassing all
13 subject matter areas of PSEP. A gap in time between Phase 1 and Phase 2 may recreate this
14 learning curve as resources leave PSEP due to lack of work. Therefore, in order to achieve
15 SoCalGas and SDG&E’s efficiency objectives, it is imperative to begin the planning and
16 engineering design work for Phase 2 as soon as practicable. The timeline presented here would
17 support beginning construction of Phase 2 in 2017 as Phase 1 ramps down.

18 This approach will also enhance transparency by providing the Commission and interested
19 parties with planning and engineering design information and cost estimates prior to the
20 commencement of construction.

21

⁵ D.14-06-007, pg. 17.

⁶ D.11-06-017; at pp. 19, 20, 29 (Conclusions of Law) and 31 (Ordering Paragraph 5).

1 **A. Phase 2 Decision Tree**

2 The process of determining if a Phase 2 pipe segment is to be pressure tested or replaced
3 will follow the same Decision Tree principles approved by the Commission in D.14-06-007.
4 Supporting documentation of the Decision Tree process for each project will be included as part of
5 the detailed cost estimates in subsequent applications.

6 As described earlier, preliminary analysis of the pipeline segments within the scope of
7 Phase 2 indicates that approximately 90% (600 miles) of the total Phase 2 mileage will likely be
8 pressure tested and approximately 10% (60 miles) will likely be replaced.

9 **B. Scope of Detailed Project Estimate Process**

10 SoCalGas and SDG&E will work with one of its third-party engineering support
11 contractors to develop the detailed project cost estimates. The work to be undertaken includes the
12 following key components:

13 **1. Planning and Engineering Design**

14 For the purposes of developing replacement estimates, the planning and engineering design
15 work is anticipated to include the assessment and confirmation of project parameters, site visits,
16 development of relocation routes, development of preliminary design for Geographic Information
17 Systems (GIS) alignment sheets showing required work area and pipeline location, identification
18 and design of any special crossings, environmental restrictions to work locations, seasonal
19 restrictions, identification of valve sites, identification of access roads as required, and
20 identification of workspaces including potential material staging areas.

21 For the purposes of developing pressure test estimates, the planning and engineering
22 design work is anticipated to include the assessment and confirmation of project parameters, site
23 visits, review of feature studies and coordination with SoCalGas/SDG&E Gas Engineering and

1 Pipeline Integrity groups to identify repairs/cut-outs for anomalies and in-line inspection
2 compatibility, development of pipeline profile using ground elevation data, determination of
3 maximum and minimum allowable test and spike test pressures and corresponding segmentation
4 of the pipeline into test sections, development of preliminary design for each work site,
5 environmental restrictions to work locations, seasonal restrictions, and determination of additional
6 valve installations as required.

7 **2. Development of the Project Cost Estimate**

8 As part of the project scope definition process described above, a thorough identification of
9 each of the major project components related to cost will occur. Subject Matter Experts
10 representing key areas (*e.g.*, Construction, Materials, Land Services, and Environmental) will
11 support the project team to generate cost estimates for their respective areas of expertise. The
12 roles of these support resources are described below in Section IV.

13 **IV. DESCRIPTION OF RESOURCES REQUIRED TO DEVELOP DETAILED** 14 **PROJECT COST ESTIMATES**

15 The estimated cost associated with the development of detailed Phase 2 cost estimates is
16 approximately \$22.2 million, including applicable overhead loaders, escalation factors, and other
17 necessary costs to support the investment, as described in Chapter II (Austria). This estimate is
18 based on a detailed cost estimate for an engineering contractor to plan and design the first bundle
19 of two to three years of projects prorated for the remaining Phase 2 projects and includes the
20 required support resources described in this section. The estimate encompasses developing
21 detailed project cost estimates for the approximately 660 miles of pipelines described in Section II.

1 All costs incurred during the planning and engineering design effort will be tracked by
2 project in order to determine whether they are O&M (for pressure test projects) or Capital (for
3 replacement projects and the Capital component of pressure test projects)⁷.

4 **A. Elements of Project Costs**

5 **1. Core Estimate Team**

6 The Core Estimate Team will consist of four design teams that will be responsible for the
7 overall development of the detailed cost estimates. These teams will focus separately on pressure
8 test and replacement projects and will develop estimates based on a tentative project schedule.

9 The projected schedule will focus on projects to begin construction in 2017. SoCalGas and
10 SDG&E intend to have the first two to three years (2017-2019) of detailed project estimates
11 completed by year-end 2015 in order to file an application in the First Quarter of 2016 requesting
12 Commission approval of the cost estimates and associated recovery in rates.

13 The Estimate Teams will work closely with the PSEP teams currently in place to maintain
14 consistency with PSEP policies and procedures.

15 The individual positions that comprise the Core Estimate Team will include:

16 **a. Project Manager**

17 The Project Manager will be the primary point of contact for coordination between the
18 SoCalGas and SDG&E PSEP organization and the Core Estimate Team. This individual will
19 work closely with SoCalGas and SDG&E to monitor the schedule and ensure all deliverables are
20 met.

21

⁷ As part of the normal pressure test process, a section of the existing pipeline to be pressure tested is removed to accommodate temporary test heads which are used to conduct the test. After the line is tested and the temporary test heads removed, a new section of pipe is installed to “tie-in” the just tested segment. The tie-in segment is new pipe and is capitalized in accordance with SoCalGas and SDG&E’s accounting policies. Also, any pipe segments replaced due to necessary repairs resulting from the testing are also capitalized in accordance with SoCalGas and SDG&E’s accounting policies.

1 **b. Engineering Manager**

2 The Engineering Manager will provide guidance and oversight to the Core Estimate Team.

3 **c. Design Teams (Four)**

4 Four Design Teams will be established, consisting of a Design Engineer, Lead Designer,
5 and two design and scoping support personnel. A Design Manager will provide leadership to the
6 Design Team. The key job responsibilities of the Design Teams will be to perform the
7 engineering, design and planning work necessary to provide a scope of work with sufficient detail
8 to develop detailed cost estimates. The scope of work is intended to facilitate the estimation of all
9 identifiable cost components up to and including the completion of construction.

10 The typical engineering and design scope for pressure test and replacement projects
11 include the following:

- 12 • Assessment and validation of project extents/parameters;
 - 13 • Physical visit to job site to gain familiarity with the area;
 - 14 • Development of preliminary design for each work site;
 - 15 • Development of pipeline profile using GIS ground elevation data;
 - 16 • Based on the maximum and minimum allowable test and spike test pressures,
17 develop segmentation of the pipeline into test sections as required in order to
18 achieve the required test pressures;
 - 19 • Identification of any special pipeline crossings for replacement projects (*e.g.*,
20 waterways, freeways, etc.); and
 - 21 • Development of preliminary design for each section.
- 22

1 **2. Support Resources**

2 In addition to the engineering personnel described above, the following support resources
3 are required to provide key input based on their subject matter expertise into the cost estimation
4 process.

5 **a. Environmental Support**

6 Environmental Support personnel will provide the following to the Estimate Team:

- 7 • Detailed analysis of the recommended project routing for environmental
8 construction impacts and to provide a cost estimate of environmental components
9 associated with the project routing;
- 10 • Identification and development of costs associated with securing required
11 environmental permits;
- 12 • Collaborate with Estimate Team to determine the appropriate number of water
13 tanks and locations as required and development of associated cost estimates,
14 including water treatment;
- 15 • Identification of water sources and associated acquisition and transportation costs;
16 and
- 17 • Development of cost estimates for required environmental construction monitoring,
18 sampling/laboratory analysis, abatement, and hazardous material management and
19 disposal.

20 **b. Land Services Support**

21 Land Services Support personnel will provide the following to the Estimate Team:

- 1 • Coordination and identification in conjunction with the Project Team of all
- 2 potential laydown/staging yards required for the individual projects and subsequent
- 3 communication with land owners to determine availability;
- 4 • Development of costs for laydown yards, temporary construction easements, grants
- 5 of easement, appraisals, title reports and/or other consultant services required;
- 6 • Coordination of ingress and egress from each construction site; and
- 7 • Support to determine applicable municipal permits and associated costs.

8 **c. PSEP Project Execution Support**

9 PSEP Project Execution Support personnel will provide the following to the Estimate

10 Team:

- 11 • Identification of taps and laterals within pipeline pressure test or replacement
- 12 segments, including how to mitigate customer impacts;
- 13 • Development of pipeline features to be cut out prior to a pressure test (*e.g.*, pipeline
- 14 anomalies, non-piggable features);
- 15 • Identification of any valve additions;
- 16 • Analysis of any seismic issues;
- 17 • Review and approval of scope of work packages; and
- 18 • Review and approval of project-specific pressure test procedures.

19 **d. PSEP Construction Support**

20 PSEP Construction Support personnel will provide the following to the Estimate Team:

- 21 • Collaboration in the field investigation process,
- 22 • Assessment of constructability, and
- 23 • Development of construction cost estimate.

1 e. **PSEP Compressed Natural Gas/Liquefied Natural Gas**
2 **(CNG/LNG) Support**

3 PSEP CNG/LNG Support personnel will perform analyses on impacted customer natural
4 gas loads and develop cost estimates of providing CNG/LNG service to keep customers on line
5 during construction.

6 f. **PSEP Supply Management Support**

7 PSEP Supply Management Support personnel will provide material and logistics cost
8 estimates based on the bills of material developed by the Estimate Team.

9 g. **PSEP Cost Estimating Support**

10 PSEP Cost Estimating Support personnel will review and approve the estimating template
11 to be used by the Estimate Team, add other direct costs not addressed by the Cost Estimate Team,
12 add applicable Company overheads and PSEP General Management and Administration (GMA)
13 cost factors to be included in the detailed project estimates, and perform a quality check of
14 completed cost estimates.

15 **B. Overview of Process for Development of Estimates**

16 At the completion of preliminary routing of the project, the Design Teams will work
17 closely with the subject matter support resources described above to initiate their respective
18 analyses. Each support resource will ultimately be responsible for defining and quantifying its
19 scope of work and producing a detailed cost estimate with supporting documentation.

20 The Design Teams will also collaborate with the SoCalGas and SDG&E Cost Estimating
21 Team to ensure consistency with the current Phase 1 cost estimating process. The draft cost
22 estimate, which incorporates input received from the subject matter support resources and the
23 Design Team, will be reviewed by SoCalGas and SDG&E.

1 **V. THE IMPORTANCE OF A SEAMLESS TRANSITION BETWEEN PHASE 1**
2 **AND PHASE 2**

3 In order to meet the Commission’s directive for California natural gas pipeline operators to
4 implement their safety enhancement plans as soon as practicable, it is imperative that SoCalGas
5 and SDG&E obtain authorization to begin Phase 2 planning and engineering design work in 2015
6 as requested in this Application. A delay or gap between Phase 1 and 2 could potentially lead to
7 project inefficiencies, ultimately increasing overall implementation costs for customers. For
8 example:

9 **A. Potential Loss of Skilled Labor**

10 Currently, SoCalGas and SDG&E have a complimentary team of experienced internal and
11 third-party resources working on Phase 1 implementation. Beginning Phase 2 planning and
12 engineering design work in 2015 will enable projects to begin construction in 2017 as Phase 1
13 PSEP projects are completed. This continuous work stream will enable engineering, construction,
14 and support personnel to transition seamlessly from Phase 1 to Phase 2 without loss of the skill
15 and expertise obtained during Phase 1. A delay in the start of Phase 2 could result in key
16 resources leaving PSEP and, in all likelihood, these key resources would be unavailable at the start
17 of a delayed Phase 2. A continuous project work flow is expected to significantly reduce the risk
18 that PSEP will be required to hire new, less experienced personnel that will face a similar learning
19 curve as in Phase 1. This, in turn, is expected to reduce overall project life cycles and avoid costs
20 associated with training a new Phase 2 team.

21 **B. Increased Material Costs**

22 A delay in Phase 2 will also create the potential for increased material costs. Purchasing in
23 larger quantities generally results in better pricing. A seamless transition from Phase 1 to Phase 2
24 should allow for the combining of purchases for both phases.

1 **VI. SCHEDULE**

2 SoCalGas and SDG&E anticipate that Phase 2 construction will occur over a multi-year
3 period commencing in 2017. SoCalGas and SDG&E propose to file an application to seek
4 recovery of the detailed project cost estimates developed from the planning and engineering
5 design described herein for the first two to three years (2017-2019) of projects in early 2016.
6 Subsequent applications for the remainder of Phase 2 are likely to be filed in 2018 and 2020.
7 Filing multiple applications for project cost recovery allows for timely updates for material and
8 construction labor costs as well as an opportunity to incorporate lessons learned in the subsequent
9 filings.

10 Projects will be prioritized to accomplish a distribution of work throughout the SoCalGas
11 service territory to minimize operational impacts. Consideration will also be given to the
12 complexities anticipated in obtaining permits among the pipeline segments to be addressed in
13 Phase 2 to enable a consistent construction schedule throughout the multi-year period. For
14 example, to the extent possible, projects for which the permitting process is expected to be routine
15 will be scheduled earlier in Phase 2.

16 **VII. CONCLUSION**

17 SoCalGas and SDG&E believe the process outlined here is an efficient way to proceed
18 with Phase 2 projects in an expeditious and thorough manner and to provide more detailed
19 planning and cost information to the Commission, customers, and interested parties prior to
20 construction. Further, separating the submittal of detailed project cost estimates into two or three
21 applications is anticipated to enable SoCalGas and SDG&E to maintain the continuity and stability
22 of a skilled PSEP project management and construction workforce.

23 This concludes my Prepared Direct Testimony.

1 **VIII. WITNESS QUALIFICATIONS**

2 My name is Richard D. Phillips. I have been employed by SoCalGas since 1978. I have
3 held various positons in the Distribution, Transmission, Storage, Engineering, IT, Supply
4 Management and Customer Service functional areas. Additionally, I have been in the electric and
5 gas distribution functional organization at SDG&E.

6 My current positon is Senior Director, Pipeline Safety Enhancement Program.

7 I earned a Bachelor of Science degree in Engineering from the University of California,
8 Irvine, cum laude. I am a registered professional engineer in California.

9 I have previously testified before the Commission.
10