Company: San Diego Gas & Electric Company (U 902 M)
Proceeding: 2024 General Rate Case
Application: A.22-05-_____
Exhibit: SDG&E-08

PREPARED DIRECT TESTIMONY OF

NORM G. KOHLS

(PIPELINE SAFETY ENHANCEMENT PLAN)

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

May 2022

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SUMMARY

Summary of Requests

- Authorize recovery of $239 million in Capital and $1.2 million in O&M associated with after-the-fact SDG&E reasonableness review projects that represent approximately 15 miles of transmission pipeline and six bundle valve projects and associated miscellaneous costs. SDG&E estimates the ending balance as of December 31, 2023, associated with the assets being reviewed in this TY 2024 GRC to be $52.1 million under-collected.

PREPARED DIRECT TESTIMONY OF
NORM G. KOHLS
(PIPELINE SAFETY ENHANCEMENT PLAN (PSEP))

I. INTRODUCTION

A. Summary of PSEP Costs and Activities

This testimony includes reasonableness review costs associated with completed PSEP Phase 1A, valve enhancement bundle projects, and other miscellaneous costs that were incurred from August 2014 to July 2019. Table NK-1 summarizes the sponsored costs. There are no forecasted costs associated with PSEP in this testimony. Costs associated with the implementation of PSEP Phase 2B will not be forecasted in this testimony chapter and will instead be encompassed within the newly proposed Integrated Safety Enhancement Plan (ISEP) as discussed in the Gas Integrity Management Programs testimony of Amy Kitson and Travis Sera (Ex. SDG&E-09).

The PSEP program, mandated by the Commission in D.14-06-007, has been governed by the four following objectives since its inception: (1) enhancing public safety, (2) complying with Commission directives, (3) minimizing customer impacts, and (4) maximizing the cost effectiveness of safety investments. These objectives are consistent with SDG&E's overall commitment to creating a sustainable future by, amongst other things, enhancing its natural gas pipelines and investing in innovative technologies to ensure the reliable operation of the region's infrastructure. The prudent implementation of PSEP has positioned SDG&E to serve its customers safely and reliably and in a manner consistent with SDG&E's sustainability objectives as outlined in the Sustainability Policy testimony of Estela De Llanos (Ex. SDG&E-02).

Table NK-1
SDG&E
Summary of PSEP Reasonableness Review Costs
(Fully Loaded – $000s)

Testimony Area	Capital	O&M	Total
PSEP Reasonableness Review Projects	238,775	1,085	239,860
Miscellaneous Costs	401	128	529
Total	**239,176**	**1,213**	**240,389**

B. Support To and From Other Witnesses

This testimony also references the testimony and workpapers of several other witnesses, either in support of their testimony or as referential support for mine. Those witnesses are Amy Kitson and Travis Sera (Ex. SDG&E-09, Gas Integrity Management Programs) and Jason Kupfersmid (Ex. SDG&E-43, Regulatory Accounts).

C. Organization of Testimony

This testimony is organized as follows:

- Introduction (Section I);
- Risk Assessment Mitigation Phase Integration (Section II);
- PSEP Overview (Section III);
- Sustainability, Climate Policy, And Safety Culture (Section IV);
- PSEP Reasonableness Review (Section V);
- Conclusion (Section VI);
- Witness Qualifications (Section VII).

II. RISK ASSESSMENT MITIGATION PHASE INTEGRATION

SDG&E included a forecast in the 2021 RAMP filing for PSEP Phase 2B projects that were anticipated at that time to be included in SDG&E's Test Year 2024 GRC request. However, SDG&E is no longer forecasting these costs due to the integration of PSEP into the ISEP as discussed in Section III.C.4. below.

III. PSEP OVERVIEW

The primary objectives of PSEP are to: (1) enhance public safety, (2) comply with Commission directives, (3) minimize customer impacts, and (4) maximize the cost effectiveness of safety investments. As directed by the Commission, the SoCalGas and SDG&E (the "Companies") PSEP includes an approved risk-based prioritization methodology that prioritizes pipelines located in more populated areas ahead of pipelines located in less populated areas and further prioritizes pipelines operated at higher stress levels above those operated at lower stress levels. To implement this prioritization process, the PSEP is divided into two initial Phases, Phase 1 and Phase 2, and these two phases are subdivided into two parts, Phases 1A and 1B, and

Phases 2A and 2B.[1] The scopes of these phases are described in greater detail in the following subsections.

A. Procedural History and Regulatory Framework

On September 9, 2010, a 30-inch diameter natural gas transmission pipeline ruptured and caught fire in the city of San Bruno, California. In response, on February 25, 2011, the Commission initiated Rulemaking (R.)11-02-019, creating "a forward-looking effort to establish a new model of natural gas pipeline safety regulation applicable to all California pipelines."[2] In a subsequent decision, D.11-06-017, the Commission found that "all natural gas transmission pipelines in service in California must be brought into compliance with modern standards for safety.... Historic exemptions must come to an end with an orderly and cost-conscious implementation plan…."[3] To achieve this objective, the Commission ordered "all California natural gas transmission pipeline operators to prepare Implementation Plans to either pressure test or replace all segments of natural gas pipelines which were not pressure tested or lack sufficient details related to performance of any such test."[4]

These plans were required to "provide for testing or replacing all such pipeline as soon as practicable"[5] and were further required to comply with several specific directives by the Commission, including:

- "The analytical nucleus of the Implementation Plan will be a list of all transmission segments that have not been previously pressure tested, with prioritized designation for replacement or pressure testing;"[6]

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1 In addition to these Phases, PSEP projects may also incorporate "incidental" mileage which includes pipe segments that are not required to be addressed as part of PSEP, but are included where it is determined that doing so improves cost and program efficiency, addresses implementation constraints, and/or facilitates continuity of testing.

2 R.11-02-019 at 1.

3 D.11-06-017 at 18.

4 *Id.* at 19.

5 *Id*. at 19.

6 *Id.* at 20.

- "The Implementation Plan should start with pipeline segments located in Class 3 and Class 4 locations and Class 1 and Class 2 high consequence areas, with pipeline segments in other locations given lower priority for pressure testing;"[7]
- "The Implementation Plan must set forth the criteria on which pipeline segments were identified for replacement instead of pressure testing;"[8]
- "Replacements should be prioritized and the prioritization criteria explained;"[9] and
- "The Implementation Plan must also address retrofitting pipeline to allow for in-line inspection tools and, where appropriate, automated or remote controlled shut off valves."[10]

On August 26, 2011, all California transmission pipeline operators, including SDG&E, filed proposed plans to implement the Commission's directives. SoCalGas and SDG&E's proposed plan, the PSEP, included a Decision Tree to 1) guide whether specific pipeline segments should be pressure tested, replaced, or abandoned; 2) provide a list of pipelines for which the Companies had not yet located pressure test records; 3) set a prioritization process to address pipelines in more populated areas ahead of pipelines in less populated areas; 4) provide a valve enhancement plan and a technology plan; and 5) provide preliminary cost forecasts. Line 1600 was included in the list of pipelines to be addressed under PSEP.

In June 2014, the Commission approved SDG&E and SoCalGas's proposed PSEP, but did not pre-approve the costs to implement the plan. Specifically, the Commission "adopt[ed] the concepts embodied in the Decision Tree," "adopt[ed] the intended scope of work as

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7 *Id.* at 20.

8 *Id.* at 20.

9 *Id.* at 20.

10 *Id.* at 21

summarized by the Decision Tree," and "adopt[ed] the Phase 1[11] analytical approach for Safety Enhancement … as embodied in the Decision Tree … and related descriptive testimony."[12]

Because SDG&E and SoCalGas's PSEP cost estimates were preliminary in nature, rather than pre-approve cost recovery based on those preliminary cost forecasts the Commission adopted a process for reviewing PSEP implementation costs after-the-fact prior to authorizing recovery of PSEP implementation costs in rates.[13] The Commission further determined that specific categories of PSEP implementation costs would not be recovered in rates (*i.e.*, should be "disallowed"). Specifically, the Commission decided that the following costs may not be recovered in rates:

- Costs associated with pressure testing pipeline segments installed after January 1, 1956 where pressure test records are not available to provide the minimum information demonstrating compliance with the then-applicable industry or regulatory strength testing and record keeping requirements. In cases where the pipe segment is replaced, an amount equal to the average cost of pressure testing is disallowed;
- Remaining undepreciated book value for test and replacement projects addressing post-1955 pipe without sufficient records of a pressure test;
- Costs associated with searching for records of pipeline testing; and
- PSEP Executive Incentive Compensation.[14]

To enable the after-the-fact review of PSEP costs, D.14-06-007 required SoCalGas and SDG&E to establish certain additional balancing accounts (i.e., SECCBAs and SEEBAs, as defined in Section V.B) to record PSEP expenditures.[15] Additionally, to recover PSEP costs, SoCalGas and SDG&E were ordered to "file an application with testimony and work papers to

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[11] Phase 1 generally refers to the testing or replacement of in-scope transmission pipelines in more populated areas or the replacement of those installed prior to 1946 that cannot accommodate in-line inspection tools. A more detailed discussion of the phases of PSEP is presented further below.

[12] D.14-06-007 at 2, 22, and 59 (Ordering Paragraph (OP) 1).

[13] *Id.* at 59 (OP 2).

[14] *Id.* at 33-36, 39, and 56-58.

[15] *Id.* at 60 (OP 4).

demonstrate the reasonableness of the costs incurred which would justify rate recovery."[16] In December 2014, SoCalGas and SDG&E filed an application requesting the Commission find reasonable the costs incurred to implement PSEP projects, as well as the associated revenue requirement, recorded in the Pipeline Safety and Reliability Memorandum Accounts before June 12, 2014. The Commission found that SoCalGas and SDG&E's actions and expenses were reasonable and consistent with the reasonable manager standard, with one exception related to insurance coverage, and granted the application.[17]

The first of the two reasonableness review applications, A.16-09-005, was filed in September 2016 and included three SDG&E pipeline projects and miscellaneous costs totaling approximately $15M. Excluding about $31K in post-1955 disallowances acknowledged in the filing, all SDG&E project costs presented in the application were ultimately deemed to be reasonably incurred. The second of SDG&E's standalone reasonableness reviews was filed in November 2018 (A.18-11-010), comprising four pipeline projects and four bundled valve projects, and miscellaneous costs totaling approximately $130M. The Commission's final decision in this proceeding deemed more than 99% of the total costs presented for SDG&E to be reasonable after accounting for disallowances.

B. Commission Directive to Transition PSEP into the GRC

In A.15-06-013 (Application of SoCalGas and SDG&E to Proceed with Phase 2 of their Pipeline Safety and Enhancement Plan and Establish Memorandum Accounts to Record Phase 2 Costs), the assigned Administrative Law Judge issued a ruling requesting the parties meet and confer to develop a procedural plan focused on bringing PSEP work within the GRC regulatory process and to develop a comprehensive plan to address PSEP costs expected to be incurred prior to the next GRC test year.[18] In resolving SoCalGas and SDG&E's application, D.16-08-003 provided for two additional standalone applications for after-the-fact review of the costs incurred to complete Phase 1A projects and one forecast application for authorization to recover

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[16] *Id.* at 39.

[17] *See* D.16-12-063, granting A.14-12-016. The decision declined to authorize recovery of costs for PSEP-specific insurance (without prejudice) after determining that SoCalGas and SDG&E did not make a sufficient factual showing in the Application to support the reasonableness of those costs. *Id.*, at 50.

[18] Administrative Law Judge's ruling directing parties to meet and confer and setting prehearing conference. July 24, 2015.

the costs of Phase 2 projects. All Phase 1A projects completed after the filing of the two reasonableness reviews, as well as remaining forecasted projects not included in the forecast application, were to be submitted for approval in the Test Year 2019 and subsequent GRCs.[19]

As mentioned above, SDG&E projects were filed for cost recovery in the 2016 and 2018 Reasonableness Reviews. The 2017 Forecast Application and 2019 GRC did not include any SDG&E PSEP projects, primarily because no Phase 2A mileage exists within the scope of SDG&E's PSEP and the remaining Phase 1B mileage is associated with the Line 1600 Test or Replacement Plan, which to date has been addressed outside of the GRC.

C. PSEP Scopes

1. Phase 1A

Phase 1A encompasses pipelines located in Class 3 and 4 locations and Class 1 and 2 locations in high consequence areas (HCAs) that do not have sufficient documentation of a pressure test to at least 1.25 times the MAOP.[20] SDG&E completed all currently identified Phase 1A mileage in 2019, totaling approximately 23 miles. Phase 2 of the Pipeline Safety and Reliability Project, also known as Line 1600 (A.15-09-013), includes Phase 1A mileage; however, because of the unique characteristics of Line 1600 and complexity of the project, PSEP Phase 1A and Phase 2A mileage on the line to date has been addressed through A.15-09-013 and has therefore not been included in a GRC filing.[21] Construction of this project is ongoing and the associated costs are anticipated to be presented for after-the-fact review and recovery in the 2028 GRC.

In accordance with D.14-06-007, as amended by D.16-08-003, SDG&E will request cost recovery for any future Phase 1A projects during the implementation of PSEP consistent with the previously established regulatory framework by the Commission and described above.

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[19] D.16-08-003 at 16 (OP 5).

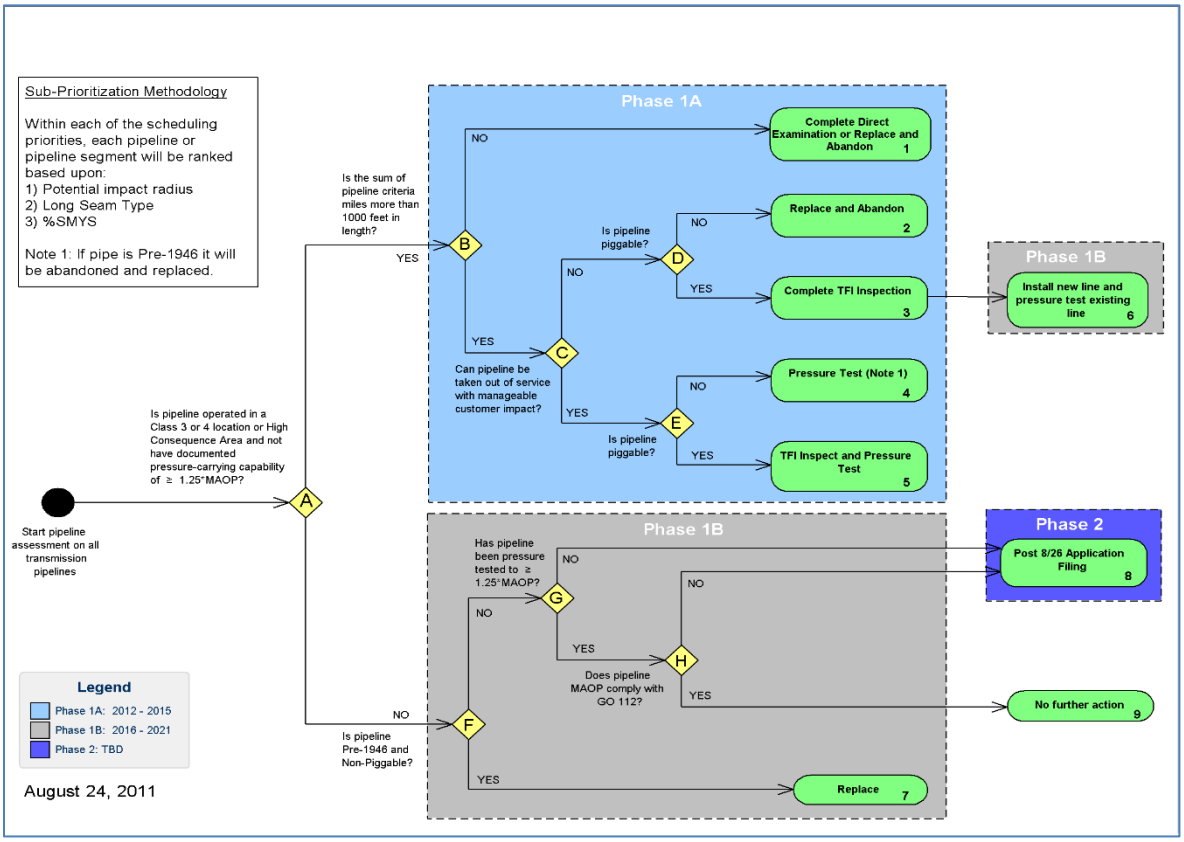
[20] Class Locations as defined in Part 192.5 of Title 49 of the Code of Federal Regulations.

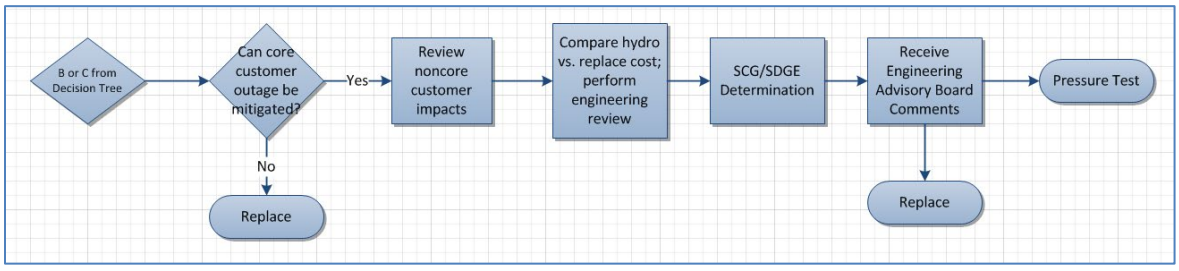
[21] D.14-06-007 gave SoCalGas and SDG&E the authority to file for pre-approval of specific projects. For tracking and reporting purposes, SDG&E has considered the mileage associated with this project to be Phase 1B.

a. Phase 1 Decision Tree

In addressing pipelines set to be tested or replaced through SDG&E's PSEP, a foundational decision is whether to pressure test or replace a particular pipeline segment. SDG&E's Commission-approved Phase 1 Decision Tree methodology guides the pressure test-versus-replace decision-making process and is illustrated below:

Figure NK-1: SDG&E PSEP Phase 1 Decision Tree Matrix[22]





[22] D.14-06-007 at 22, 59 (OP 1) approved the Decision Tree proposed in SoCalGas and SDG&E's Amended Pipeline Safety Enhancement Plan A.11-11-002/R.11-02-019 at 19.

The Phase 1 Decision Tree depicts a step-by-step analysis of pipeline segments to allocate the segments into the following categories: (1) pipeline segments that are 1,000 feet or less in length; (2) pipeline segments greater than 1,000 feet in length that can be removed from service for pressure testing; and (3) pipeline segments greater than 1,000 feet in length that cannot be removed from service for pressure testing without significantly impacting customers. These pipeline categories are then further analyzed to determine other factors that may impact whether to pressure test or replace the segment. The additional analysis is based on certain principles used to guide the test-versus- replace decision: (1) SDG&E will not interrupt service to core customers in order to pressure test a pipeline; (2) SDG&E will work with customers to determine if an extended outage is possible; (3) SDG&E will, where necessary, temporarily interrupt noncore customers, as provided for in their tariffs; (4) SDG&E will work with noncore customers to, where possible, plan service interruptions during scheduled maintenance, down time, or off-peak seasons; and (5) SDG&E will consider cost and engineering factors along with the improvement of the pipeline asset. It is important to note that there can be deviations from the Decision Tree because there is no industry-wide standard that definitively controls whether to test or replace a segment in all instances. Because SDG&E will exercise its engineering expertise and knowledge of its pipelines they are in the best position to make the final determination on a project-by-project basis.

a. Segments Less Than 1,000 Feet

Generally, SDG&E plans to replace pipeline segments that are less than 1,000 feet in length. As embodied in the approved Decision Tree, SDG&E anticipates replacing and abandoning these short segments because it is usually more cost effective to replace them. SDG&E may, however, engage in further review during the early planning stage to determine the most appropriate action consistent with Commission and State mandates. Costs and other engineering and constructability factors are considered depending on the situation of each unique pipeline segment. An important additional consideration is that installing new pipe, manufactured to modern standards, further enhances the safety and reliability of the pipeline system.

b. Segments Greater than 1,000 Feet

Per the Decision Tree, pipeline segments greater than 1,000 feet are further segregated based on whether the pipeline can be taken out of service. Pipeline segments that are greater

than 1,000 feet in length that can be removed from service for pressure testing are generally pressure tested (unless the segment was installed prior to 1946 and is unpiggable, or other factors indicate replacement should occur). Pipeline segments that are greater than 1,000 feet in length that cannot be removed from service per the Decision Tree are replaced. Ultimately, the pressure test-or-replace decision is determined to achieve the PSEP objectives to enhance public safety, minimize customer and community impacts, and maximize the cost-effectiveness of safety investments for the benefit of customers.

2. Phase 1B

The scope of Phase 1B, as outlined in SDG&E's PSEP, is to replace non-piggable pipelines installed prior to 1946 with new pipe constructed using state-of-the-art methods and up to modern standards, including current pressure test standards.[23] There is no remaining pre-1946 non-piggable pipe within the SDG&E service territory that falls within the scope of PSEP.

3. Phase 2A

As previously mentioned, PSEP Phase 1 entails pressure testing or replacing transmission pipelines in Class 3 and 4 locations and Class 1 and 2 locations in HCAs that do not have sufficient documentation of a pressure test to at least 1.25 MAOP and replacing non-piggable pipe installed prior to 1946. Whereas Phases 1A and 1B address pipelines located in more populated areas and pre-1946 non-piggable pipe, Phase 2A addresses the remaining transmission pipelines that do not have sufficient documentation of a pressure test to at least 1.25 MAOP and are located in Class 1 and 2 non-HCAs. Some sections of Line 1600 notwithstanding, there is no pipe within the SDG&E service territory that falls within the scope of Phase 2A.

4. Phase 2B

Phase 2B pipelines are those that have documentation of a pressure test that predates the adoption of federal pressure testing regulations—Part 192, Subpart J of Title 49 of the Code of Federal Regulations (CFR)—on November 12, 1970. For further information regarding PSEP Phase 2B, please refer to the joint Gas Integrity Management Programs testimony of Amy Kitson and Travis Sera (Ex. SDG&E-09). In their testimony, Phase 2B is proposed to be merged into the Integrated Safety Enhancement Plan (ISEP).

[23] As mentioned above, SDG&E considers the mileage associated with the Line 1600 project as Phase 1B.

5. Valve Enhancement Plan

In D.11-06-017, the Commission also directed pipeline operators to address the installation of "automated or remote controlled shut-off valves" in their proposed implementation plans.[24] In response to this directive, SoCalGas and SDG&E submitted a Valve Enhancement Plan as part of their PSEP in A.11-11-002. The Valve Enhancement Plan works in concert with PSEP's pipeline testing and replacement plan to enhance system safety by augmenting existing valve infrastructure to accelerate SoCalGas and SDG&E's ability to identify, isolate and contain escaping gas in the event of a pipeline rupture.

As discussed above, SDG&E submitted valve enhancement projects for review in its 2016 Reasonableness Review and 2018 Reasonableness Review.[25] As of the submittal of this application, all identified SDG&E valve enhancement plan projects have been completed.

D. Accelerated and Incidental Mileage

As discussed in Section III.A. above, the Commission directed the utilities to develop plans that "provide for testing or replacing all [segments of natural gas pipelines which were not pressure tested or lack sufficient details related to performance of any such test] as soon as practicable,"[26] while also "[o]btaining the greatest amount of safety value, i.e., reducing safety risk, for ratepayer expenditures."[27] The inclusion of accelerated and incidental miles, defined below, is driven by efforts to achieve these goals while also adhering to the objective of minimizing customer impacts.

Accelerated miles are miles that would otherwise be addressed in a later phase of PSEP (*e.g.* Phase 1B, 2A or 2B) under the approved prioritization process, but are advanced to Phase 1A to realize operating and cost efficiencies.

Incidental miles are pipeline miles that do not fall within the scope of the Commission's directives in D.11-06-017 or California Public Utilities Code section 958, but are addressed as part of a PSEP project where their inclusion is determined to improve cost and program

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[24] D.11-06-017 at 21, 30 (Conclusion of Law Paragraph 9), and 32 (OP 8).

[25] SoCalGas is also submitting 66 valve enhancement projects for reasonableness review in this GRC.

[26] D.11-06-017 at 19.

[27] D.11-06-017 at 22.

efficiency, address constructability, or facilitate continuity of testing.[28] As of December 31, 2021, approximately 2.9 miles of incidental mileage had been addressed in completed PSEP projects (not including Line 1600). Both incidental and accelerated miles are included to minimize customer impacts, in response to operational constraints, or because of the cost and operational efficiencies gained by incorporating them into the project scope rather than circumventing them.[29]

IV. SUSTAINABILITY AND SAFETY CULTURE

Sustainability, safety and reliability are the cornerstones of SDG&E's core business operations and are central to SDGG&E's GRC presentation. As discussed in the Sustainability Policy testimony of Estela de Llanos (Ex. SDG&E-02), SDG&E is committed to not only deliver clean, safe, and reliable electric and natural gas service, but to do so in a manner that supports California's climate policy, adaptation, and mitigation efforts. In support of the legal and regulatory framework set by the state, SDG&E has set a goal to reach Net Zero greenhouse gas (GHG) emissions by 2045, and adopted a Sustainability Strategy to facilitate the integration of GHG emission reduction strategies into SDG&E's day-to-day operations and long-term planning, and published an economy-wide GHG Study that recommends a diverse approach for California leveraging clean electricity, clean fuels, and carbon removal to achieve the 2045 goals through the lens of reliability, affordability, and equity. The Sustainability Strategy serves as SDG&E's guide to enable a more just and equitable energy future in SDG&E's service territory and beyond. As a "living" strategy, SDG&E will continue to update the goals and objectives as technologies, policies, and stakeholder preferences change. In this GRC, SDG&E focuses on three major categories that underpin the Sustainability Strategy: mitigating climate change, adapting to climate change, and transforming the grid to be the reliable and resilient catalyst for clean energy. The PSEP projects that are included in this testimony, which are being presented for reasonableness review, have been completed in alignment with SDGE's Sustainability

[28] An additional benefit of addressing incidental mileage is to further confirm the integrity of the pipeline.

[29] Incidental and accelerated miles may be included in a pressure test or replacement project but are significantly more likely to be addressed in connection with a pressure test project because of the efficiencies realized by pressure testing longer segments of pipeline.

Strategy (particularly climate change mitigation) and overarching cornerstones related to safety and reliability.

As discussed in the testimony of Estela de Llanos (Ex. SDG&E-02), as part of its Sustainability Strategy, SDG&E is committed to reducing emissions from natural gas infrastructure, which can release heat trapping methane that accelerates climate change, in addition to negatively impacting the safety and reliability of our customers. As stated in Sempra Energy's 2019 and 2020 Corporate Sustainability Report, SDG&E, along with SoCalGas and iEnova, aims to reduce fugitive emissions from the natural gas transmission and distribution system by 40% from their 2015 baseline by 2030. The PSEP program has contributed to this goal through pressure-testing existing pipe or installing new, state-of-the-art pipelines. These activities enhance the Companies' ability to reduce fugitive emissions associated with the day-to-day operation of these pipelines and help mitigate the risk of an in-service pipeline rupture and associated emissions resulting from such an event. The installation of remote shut off valves (RSVs) which detect drops in gas pressure (an indication of a leak or rupture), remotely isolating that section of the pipeline and thus avoiding leakage or release of fugitive emissions into the atmosphere, provides another example of the ways in which PSEP has contributed to ongoing emissions reduction efforts while also enhancing the safety of the system. Finally, PSEP has also contributed emissions reductions through the use of gas capture technology during construction activities, which has been employed extensively in recent years to reduce the burden of vented gas. Together, these activities supplement SDG&E's emissions reduction goals without being a stated goal of the PSEP program.[30]

The safety benefits of PSEP are well-established, as SoCalGas and SDG&E were responding to a Commission directive to improve public safety when the program's objectives were initially developed. The Pipeline and Hazardous Materials Safety Administration's (PHMSA) promulgation of the Gas Transmission Safety Rule Part 1 at the federal level further complements the actions SoCalGas and SDG&E have taken with PSEP to comply with the Commission's directives and enhance public safety.[31] The hydrotesting and replacement of

[30] SDG&E's emissions reduction program systematically surveys for leaks as a part of its compliance with the R.15-01-008 proceeding.

[31] Also known as the Safety of Gas Transmission Pipelines: Maximum Allowable Operating Pressure Reconfirmation, Expansion of Assessment Requirements, and Other Related Amendments final rule.

SDG&E pipelines, consistent with the Commission's goal to bring all California in-service natural gas transmission pipelines "into compliance with modern standards for safety," as well as the enhancement of valve infrastructure, yields a safer system that will benefit ratepayers for many years to come.[32] This enhanced system, which has been safely operated by SDG&E across its history, provides the pipeline infrastructure needed to reliably deliver both natural gas and other renewable fuels such as hydrogen and biogas as the energy transformation unfolds in California.[33]

V. PSEP REASONABLENESS REVIEW

A. Introduction

The purpose of this section of this testimony is to present for reasonableness review the activities associated with the projects completed primarily between August 2014 and July 2019, representing work on approximately 15 miles of transmission pipeline and nine valves and associated miscellaneous costs. This testimony describes the prudent oversight, project execution, and proactive cost management measures taken by SDG&E in the continuing implementation of SDG&E's PSEP.

First, I will explain how, through prudent execution of the seven pipeline and six bundled valve projects, SDG&E complied with the directives in D.11-06-017 and subsequent Commission decisions, as well as California Public Utilities Code Sections 957 and 958.

Second, I will describe how:

- The PSEP organizational framework promotes prudent program and project oversight;
- The prudent execution of PSEP projects mitigates obstacles to maximize efficiencies and complete construction as soon as practicable; and
- SDG&E prudently manages PSEP costs for the benefit of customers.

Finally, this testimony demonstrates the prudence with which SDG&E continues to execute its PSEP and the reasonableness of the costs presented for recovery. Our actions have

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[32] D.11-06-017 at 18.

[33] As stated in SDG&E's Decarbonization Roadmap for California, available at https://www.sdge.com/sites/default/files/documents/path_to_net_zero.pdf?nid=21961, at p. 15, "while overall throughput in the natural gas pipeline system is projected to decrease 65% by 2045, it is projected that almost half of the gas remaining in the pipeline will be comprised of hydrogen and renewable natural gas, resulting in lower emissions."

enhanced safety, complied with Commission and statutory directives, minimized impacts to customers and communities, and avoided and reduced costs for the benefit of customers. SDG&E acted as a reasonable manager of PSEP by carefully considering information that was known at the time decisions were made, and exercised experienced and professional judgment in decision-making, and therefore should be granted full recovery of the revenue requirements requested in the Regulatory Accounts testimony of Mr. Kupfersmid (Ex. SDG&E-43) and the Present and Proposed Gas Transportation Revenues & Rates testimony of Mr. Chaudhury (Ex. SDG&E-47).

B. Reasonableness Review Projects

SDG&E prudently executed seven PSEP pipeline and six valve bundle projects. Presented in this Application is the reasonableness of the $239 million in capital expenditures and $1.1 million in O&M expenditures incurred in executing the projects, and the reasonableness of $0.5 million in expenditures for other associated miscellaneous costs incurred to execute PSEP. SDG&E estimates the ending balance as of December 31, 2023, associated with these assets being reviewed to be $52.1 million under-collected. As discussed in the testimony of Jason Kupfersmid (Ex. SDG&E-43), this amount reflects the 50% interim rate recovery subject to refund approved by the Commission in D.16-08-003. As part of this testimony, and as authorized by D.14-06-007, I will explain the project cost components, application of the Commission-approved Decision Tree for PSEP pipeline projects, the calculation of disallowed project costs, and provide a reconciliation of the "as filed" mileage as compared to the actual mileage.

The costs in this chapter provide the basis for determining the revenue requirements recorded in SDG&E's Safety Enhancement Capital Cost Balancing Accounts (SECCBAs), the Safety Enhancement Expense Balancing Accounts (SEEBAs), and the Line 1600 Records Audit Memorandum Account (L1600RAMA). As demonstrated in this testimony and workpapers, these PSEP costs were reasonably incurred, and the associated revenue requirements are justified for rate recovery.

To facilitate the review process and ease of reference, detailed information for each project is included in the supporting project workpapers. The information contained in this testimony is designed to provide a summary of the projects and associated costs.

1. Project Cost Components

The costs presented in this testimony are those incurred through December 2020. The revenue requirement associated with these costs is described in the Regulatory Accounts testimony of Jason Kupfersmid (Ex. SDG&E-43). The project costs include costs incurred in direct support of individual hydrotest, replacement, or abandonment projects as well as project support costs not directly tied to a specific project and incurred to support overall implementation of PSEP and indirect costs. Project costs may include both capital and O&M expenditures, depending on the project. For example, the majority of work associated with pressure testing is considered O&M. As part of the normal pressure testing process, however, a section of the existing pipeline is removed to accommodate the temporary test heads that are used to conduct the pressure test. After the line is tested and the temporary test heads are removed, a new section of pipe is installed to "tie-in" the just-tested segment to the pipeline on either end of the segment. The tie-in pipe is new pipe and is capitalized in accordance with SDG&E's accounting policy. Similarly, replacement projects are typically treated as capital. However, there can be O&M costs associated with a replacement or abandonment project executed on a distribution line if the replaced segment is 40 feet or less in length.[34]

2. Summary of Project Costs

a. Pipeline Replacement Projects

Table NK-2
Replacement Projects
Summary of Capital and O&M Costs (in $000s)

Project	Capital	O&M	Total
49-1 Replacement Project	64,340	-	64,340
49-17 East Replacement Project	72,364	-	72,364
49-17 West Replacement Project	37,512	-	37,512
49-32-L Replacement Project	8,297	-	8,297
La Mesa Gate Station Replacement Project	5,560	-	5,560
Total	**188,073**	**-**	**188,073**

[34] This is in accordance with SDG&E's accounting policy.

b. Combination Replacement & Pressure Test Projects

Table NK-3
Combination of Replacement and Pressure Test Projects
Summary of Capital and O&M Costs (in $000s)

Project	Capital	O&M	Total
49-16 Replacement and Hydrotest Project	37,057	1,085	38,141
Total	**37,057**	**1,085**	**38,141**

c. Abandonment Projects

Table NK-4
Abandonment Projects
Summary of Capital and O&M Costs (in $000s)

Project	Capital	O&M	Total
Line 49-28 Abandonment Project	2,379	-	2,379
Total	**2,379**	**-**	**2,379**

d. Valve Projects

Table NK-5
Valve and Valve Bundle Projects
Summary of Capital and O&M Costs (in $000s)

Project	Capital	O&M	Total
49-11 Valve Enhancement Project	2,145	-	2,145
49-16 Valve Enhancement Project	2,291	-	2,291
49-18 Mission Valley Valve Enhancement Project	867	-	867
49-23 Valve Enhancement Bundle	2,643	-	2,643
49-32 Valve Enhancement Project	2,497	-	2,497
1601 Valve Enhancement Project	823	-	823
Total	**11,266**	**-**	**11,266**

3. Miscellaneous Costs

SDG&E has also incurred various miscellaneous costs that were necessary to execute PSEP. Table NK-6 includes a summary of these costs:

Table NK-6
Summary of Miscellaneous Costs
(in $000s)

Cost Type	Capital	O&M	Total
Facilities Lease Credit[35]	-	(8)	(8)
Post-Completion Adjustments	401	-	401
L1600 Records Audit	-	136	136
Total	**401**	**128**	**529**

a. Post Completion Construction Cost Adjustments

Post-completion cost adjustments in the amount of $401,075 associated with lines that were presented for review in A.16-09-005 are included for recovery in this section. Post-completion adjustments occur when invoices or accounting adjustments are processed after the filing of an application for an after-the-fact reasonableness review. Despite the best efforts of SDG&E to capture all items during the close-out process, post-completion adjustments occur that may result in increased or decreased costs. For the costs presented herein, the primary categories of post-completion adjustments are trailing charges including contractor invoices, accrual reversals, company labor, and journal entry adjustments.

b. L1600 Records Audit

As directed by D. 18-06-028, the commission required SDG&E to "file a Tier 1 Advice Letter requesting a memorandum account to record costs associated with the audit of the Line 1600 records."[36] Further, the Commission directed its Safety and Enforcement Division (SED) to select an independent auditor at SDG&E's expense and oversee an audit of Line 1600 records to help identify any inconsistencies withing Utilities' sources of safety data. SDG&E is seeking the recovery of the $136,000 associated with Line 1600 records audit to comply with the commission's directive.[37]

[35] This amount is a facilities' rental fee adjustment after the PSEP office closed in 2016.

[36] D. 18-06-028 at 129.

[37] D. 18-06-028 at 99.

4. Disallowed Costs

In D.14-06-007, the Commission approved SDG&E's proposed PSEP, with some limited exceptions. D.14-06-007 (as modified by D.15-12-020) ordered that certain specified costs discussed below would be disallowed from recovery in rates. Table NK-7 summarizes the disallowed costs as relevant to the projects presented for review in this section.

Table NK-7
Summary of Disallowed Costs (in $000s)

Disallowance Type	Total
Post-1955 PSEP Costs	3,472
Undepreciated Book Balances	-
Executive Incentive Compensation	-
Records Search	-
Total	3,472

5. PSEP Mileage Reconciliation

As required by D.14-06-007, a reconciliation of the "as filed" mileage with the actual mileage that was pressure tested, replaced or abandoned is included in Table NK-8 below for the projects presented in the reasonableness review.[38]

Table NK-8
Pipeline Projects Mileage Summary

Line	As Filed (Miles)	Included in this Filing	
		(Miles)	(Feet)
Supply Line 49-16 Replacement	9.590	1.099	5,805
Supply Line 49-17 East Replacement	5.812	5.244	27,690
Supply Line 49-17 West Replacement	5.812	1.671	8,826
Supply Line 49-32-L Replacement	N/A	0.203	1,071
Total	21.214	8.217	43,392

C. The PSEP Organizational Framework Promotes Prudent Program and Project Oversight

The scope of work completed under PSEP and for the projects in the reasonableness review is extensive, including in terms of the volume of projects, engineering and design complexity, and the time necessary to complete each project. When PSEP was initiated, an

[38] The "as filed" mileage is consistent with that contained in the workpapers included with the SoCalGas and SDG&E Amended PSEP Application filed in December of 2011.

organization was created to provide prudent oversight to manage this large and complex volume of work safely and cost effectively, incorporate continuous improvement, and manage a large pool of both company and contracted employees.[39] This organization oversees PSEP project execution, provides project and process controls during the project life cycle, allows SDG&E to assess each project's budget and schedule, and communicates PSEP progress to stakeholders.

The following is an overview of the primary ways the PSEP organization promotes prudent program and project oversight.

1. The Implementation of PSEP Is Subject to Prudent Governance by a Dedicated Program Management Office and Project Portfolio Team

PSEP is a large and complex program that requires appropriate governance and management to achieve its goal of cost effectively enhancing safety. The PSEP governance and management strategy must comply with applicable regulatory requirements, continuously improve the program, and establish proper controls and management across PSEP functional areas to verify that each component of a PSEP project, including design, material procurement, construction, and closeout, is performed correctly and consistently.

The PMO develops standards and procedures that allow activities to be executed in a consistent manner across projects. Through the management and facilitation of the stage gate process, the PMO ensures that the standards and procedures are adhered to, that PSEP projects are consistently executed, and that deviations from standard processes are authorized and documented. A Project Portfolio Team collaborates, coordinates, and provides functional guidance on project design and construction to cost effectively meet or exceed compliance requirements, follows, as appropriate, industry best practices, and identifies and incorporates process improvements.

2. The Stage Gate Review Process Promotes Efficient PSEP Project Oversight and Execution

The Stage Gate Review Process sequences and schedules PSEP project workflow deliverables at the project level. The workflow deliverables are completed at each stage of the

[39] In 2019, a Construction organization was created which includes all of the PSEP elements described in this section which were previously contained in a dedicated PSEP organization.

project. The Stage Gate Review Process originally consisted of seven stages,[40] with specific objectives for each stage and an evaluation at the end of each stage to verify that objectives have been met before proceeding to the next stage.[41] The following is a brief description of each of the seven stages.

- Stage 1 (Project Initiation): Project team initiates a Work Order Authorization (WOA) to track initial costs and validates the initial scope.
- Stage 2 (Test or Replace Analysis): SDG&E analyzes data to determine whether a pipeline should be addressed through testing or replacement.
- Stage 3 (Begin Detailed Planning): Project execution plan is finalized, baseline schedules and funding estimates are developed, and project funding is obtained.
- Stage 4 (Detailed Design/Procurement): Project team finalizes design and construction documents, secures necessary permits and completes procurement activities.
- Stage 5 (Construction): Project team monitors scope, cost, and schedule and construction contractors are mobilized.
- Stage 6 (Place into Service): Commissioning and operating activities are performed to achieve completion certification for the project.
- Stage 7 (Closeout): Project team finalizes project closeout activities.

3. Test Versus-Replace Analysis Supports Prudent Selection of the Execution Option that Will Provide the Most Benefit to Customers

In Stage 2 of the Stage Gate Review Process, SDG&E conducts a test or replace analysis using the Decision Tree.[42,43] In undertaking this analysis, SDG&E applies engineering judgment to determine a final execution scope to provide both short and long-term customer benefits.

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[40] The seven-stage Stage Gate Review Process was implemented by the PSEP organization beginning in the First Quarter of 2013. It has since been reduced to five stages that still encompass all the deliverables of the seven stages, by combining Stages 1 and 2 and Stages 6 and 7. All of the projects in this Application were completed following the seven-stage Stage Gate Review Process.

[41] Evaluations are gate reviews or completion check lists. Certain stages are condensed or combined for valve and small pipeline projects.

[42] The PSEP Decision Tree was approved by the Commission in D.14-06-007.

[43] Similarly, a detailed process is used to determine the scope of work of projects under the Valve Enhancement Plan.

In addition to evaluating options for testing or replacement of the required segments, the project teams also review pipeline information for potential accelerated or incidental mileage that could be included within the scope to avoid future costs and operational impacts that would otherwise be incurred if SDG&E were required to return later to undertake a separate project on the same line. Included in the analysis is an evaluation of potential customer impacts and a preliminary assessment of the costs to provide alternate means of service during the time that each section would be out of service for construction. SDG&E applies sound engineering judgment to weigh many factors – in addition to identifying a least-cost option – when determining the final scope of a project.

4. The PSEP Project Review Process Prudently Includes Collaboration with Relevant Stakeholders

To achieve the goal of minimizing impacts to customers and communities, it is important to assess how various PSEP project options and approaches may impact SDG&E's transmission system and the customers and communities served. An integral part of the analysis that results in prudent decision making is the collaboration by PSEP project teams with other knowledgeable groups within SDG&E (*e.g.*, Region Operations, Gas Engineering, Gas Transmission Planning, Gas Control, Commercial Industrial Services, Regional Public Affairs, etc.) to route, design, and schedule pipeline and valve work to minimize costs and accommodate capacity impacts or restrictions. For example, these groups provide information to guide project-specific decisions including: (1) the feasibility of shut-ins and alternate feeds to regulator stations or customers; (2) customer and community impacts; (3) planned projects to coordinate with PSEP; and (4) environmental requirements, rights-of-way, and permitting needs. This information is used to help determine the scope and constructability of the project.

5. PSEP Projects Are Integrated with Other Company Projects to Achieve Efficiencies and/or Minimize Customer and Community Impacts

Consistent with the overarching objectives of PSEP to maximize the cost effectiveness of safety investments and minimize customer and community impacts, SDG&E coordinates the execution of PSEP projects with other projects planned throughout their service territories. For example, if an Operating District has plans to do work on the same or an adjacent pipeline, SDG&E coordinates, as feasible, the PSEP project team's scope and schedule with the Operating District's scope and schedule to maximize efficiencies and minimize customer and community

impacts. Effort is also taken to integrate, whenever possible, a PSEP project with a planned Operating District project that is scheduled for the same line.

As mentioned above, a PSEP project may standardize the pipe diameter of a project to facilitate piggability, which may result in an upsizing or downsizing of the pipe diameter. Under such circumstances, where the standardization is to facilitate constructability of a PSEP project and/or the piggability of the pipeline, such costs are allocated to the PSEP project. On occasion, SDG&E identifies circumstances where it would be beneficial to upsize or downsize the pipe diameter to address system capacity requirements or future planned construction projects. In these cases, SDG&E will modify the project design as part of the PSEP project to address the system capacity requirement or future planned construction project to achieve efficiencies. To reduce overall costs, the PSEP Organization plans and executes the project and the Operating District funds the portion of the costs attributable to the upgraded materials and additional effort required for the upgrade. For projects included in this filing, there were no projects that required co-funding with the Operating District.

6. PSEP Projects Are Designed and Constructed in Adherence to SDG&E Gas Standards to Achieve Compliance with State and Federal Laws and Regulations, Promote Safety, and Attain Operational Efficiency

PSEP adheres to SDG&E Gas Standards, applicable laws and regulations to prudently implement compliant safety enhancement work. SDG&E Gas Standards comprise the policies and procedures that govern the design, construction, operations, and maintenance of the transmission and distribution systems. Thus, in executing each project, the Gas Standards and other internal standards and practices govern the design analysis,[44] materials purchased,[45] and

[44] PSEP design standards and practices address materials to be used and proper design in accordance with GO 112-F and applicable federal laws and regulations. PSEP design standards and practices enable: (1) the development of specific engineering requirements for materials used in PSEP projects; (2) preparation of designs that comply with applicable laws, permits, SDG&E's gas standards, and industry standards; (3) utilization of applicable engineering and design standards developed for PSEP; (4) consistent design and material requirements for the various engineering design firms contracted to assist with design development; and (5) the development of a project-specific design basis for each PSEP project.

[45] Once the PSEP project has been scoped, designed, and approved, materials are ordered that comply with SDG&E's Materials Specifications for Gas Operations (MSPs).

construction practices.[46] The Gas Standards have dual objectives: to drive compliance with applicable laws and regulations and to promote safety and operational efficiency.

In addition to SDG&E's own internal oversight efforts, SED has closely interacted with SDG&E in the successful execution of PSEP projects. As ordered by D.14-06-007,[47] SED provides oversight on various aspects of PSEP implementation, with emphasis on construction activities and recordkeeping. SED personnel routinely are onsite at PSEP construction projects and monitor compliance with applicable regulations.

D. Prudent Execution of PSEP Projects Mitigates Obstacles to Maximize Efficiencies and Complete Construction as Soon as Practicable

Pipeline and valve projects are complex and require thoughtful orchestration. Many internal and external factors must align to begin construction. SDG&E's execution and management teams balance competing risks when authorizing a project team to mobilize for construction. Many of the factors that determine when SDG&E can begin construction are not in the direct control of SDG&E. Most can be anticipated and planned for to a certain degree, and those that cannot are addressed as they occur.

For example, restrictions on when construction can begin must be determined and adhered to. Cities may have moratoriums during heavy traffic periods or their own renovation work; PSEP may need to work in concert with a large customer's planned outage or low usage period; Gas Control may have restrictions on when the pipeline can be taken out of service; or the system may have seasonal pressure requirements. Permits, land rights, and materials must be acquired. Availability of construction contractors, inspectors, specialty equipment, construction oversight personnel, and regional operations personnel must be considered. As a result, it is not uncommon for project teams to be engaged in last-minute efforts to acquire a permit or land rights or material, or to reschedule the construction start date due to the planned construction

[46] Construction is subject to extensive standards, practices, and guidelines. SDG&E has implemented comprehensive standards that address, among other areas, excavation, coating application and inspection, welding, welding inspection, trenching, cover, and pressure testing. Prior to starting work, as a part of the agreement with the contractor, contractors are provided an index of standards, practices, guidelines, and requirements, and, as applicable, contractors are provided updates.

[47] D.14-06-007 at 29 ("Specific to SDG&E and SoCalGas's Safety Enhancement we delegate to Safety Div. the specific authority to directly observe and inspect the testing, maintenance and construction, and all other technical aspects of Safety Enhancement to ensure public safety both during the immediate maintenance or construction activity and to ensure that the pipeline system and related equipment will be able to operate safely and efficiently for their service lives.")

crew being delayed from completing another project, or to sectionalize a project so that a portion of the work can be initiated.

Other factors can influence construction timing and scheduling, such as seasonal limitations during winter or summer conditions that may restrict when a line can be taken out of service. Also, although customer and capacity impacts are vetted during Stage 3 (Detailed Planning) of the Seven Stage Review Process described above, unanticipated system or customer issues may be encountered that could delay a project. For example, if a project as planned requires a pipeline segment to be taken out of service for a period of time, and a different pipeline previously assumed to be available to serve customers is taken out of service, a project may be delayed or a previously unplanned provision of an alternate supply (CNG/LNG) to serve customers may be required. Alternatively, when most but not all obstacles have been addressed, the project team may decide to sectionalize the project and delay construction for only a portion of the project in order execute the majority of the project as soon as practicable.

The following are examples of some of the obstacles common when executing major pipeline projects such as PSEP:

1. Permitting and Temporary Land Right Acquisition

With respect to utility construction projects, and more specifically, pipeline projects, there is a significant difference between projects that are completely or mostly performed on private land ("behind the fence") and those that are "linear projects" (*i.e.*, located in public rights-of-way). In the latter, since SDG&E does not own the land, various permits and rights must be obtained for construction to occur. PSEP pipeline and valve projects are primarily linear projects located in franchised rights-of-way (*i.e.*, streets) but are also located on private and federal land. These varying locations result in the need to acquire numerous permits and conduct negotiations with private landowners.

Further, while some projects, such as those located within existing SDG&E facilities, do not require extensive permitting, others, depending on the location, may require multiple additional permits ranging from those required by environmental agencies (*e.g.*, water, wildlife, cultural, etc.) to those required by agencies with impacted land rights, such as Caltrans. These permits/agreements have long lead times and can restrict projects to certain schedules. At a minimum, PSEP projects require a permit from the municipal agency where the replacement or hydrotest is being executed before a project can commence construction. Although SDG&E

factors in anticipated permit processing time based on experience in the project planning process, unanticipated delays beyond the length of time anticipated to acquire a permit can and do occur. Further, projects located in private land require permission from the owner and temporary acquisition of land rights for construction to proceed.

2. Material Availability

Given the unprecedented level of pipeline work, not only at SDG&E but at other California utilities, material availability has been an issue that has impacted cost and schedule. SDG&E has purchased, when appropriate, bulk quantities of commonly used pipe fittings and pipe to have adequate material available for projects. Bulk purchases result in better pricing as opposed to purchasing material on a project-specific basis. However, there are certain materials that are not purchased "off the shelf" and must be made-to-order or modified to fit conditions. Examples are valves with extensions, vaults to house equipment underground, and instrument cabinets. Manufacturing delays occur due to capacity limitations caused by increased demand for pipeline material at a regional and national level. To determine whether ordered materials meet company specifications, most items require inspection. When items do not meet specifications, they need to be modified or new items need to be acquired. This may result in extra time that may delay the start of construction.

3. Unforeseen Factors Encountered During Construction

Despite due diligence in the planning and engineering design phase, unforeseen factors encountered during construction may increase the complexity of projects and cause projects to take longer than planned. Some unknown conditions can only be identified after construction begins and the pipe is exposed, such as actual pipe condition, unknown substructures or unfavorable soil conditions. This is particularly true for older developed areas, such as the dense urban locations of many PSEP Phase 1 pipelines, because requirements for substructure recordation were not as stringent historically as they are today. Additionally, governmental records (originally in paper form) may have been lost over the years. Unidentified substructures usually require pipeline routing changes. Unanticipated soil changes (*i.e.*, loose sandy soil rather than more cohesive soil) may require a change in excavation or shoring methods. Finally, coordination with other utilities can sometimes delay project schedules.

4. Proactive Community Outreach Efforts to Minimize Community and Customer Impacts

Phase 1A projects are located in more densely populated areas. As such, proactive community outreach efforts—to inform customers, elected officials, and government entities about PSEP projects taking place in their communities—are an integral part of SDG&E prudent execution of PSEP to minimize community and customer impacts, manage costs, and implement PSEP as soon as practicable. Numerous meetings have been held with elected officials and municipal agencies to provide advance notice and ongoing updates regarding PSEP projects. Additionally, SDG&E established a PSEP webpage, which provides information about construction activities and project status to give customers and stakeholders easier access to information.

The Community Outreach team works closely with external stakeholders early in the planning stages to identify and help remove potential obstacles and roadblocks that could affect PSEP project execution and maintain a positive customer experience by mitigating the effects of construction with targeted communications and efforts to fully inform external stakeholders prior to PSEP construction activity. Additionally, Community Outreach maintains good relationships with external stakeholders including community-based organizations, Home Owners' Associations, Chambers of Commerce, Associations, and local media to reach sensitive communities and customers.

These various outreach efforts were instrumental in avoiding project delays and, in some instances, resulted in less onerous permitting conditions being imposed on PSEP projects, which helped minimize costs and benefited customers.

E. SDG&E Prudently Manages PSEP Costs for the Benefit of Customers

As previously explained, the scope of PSEP work that is planned for and executed is extensive, complex, and costly. The PSEP project teams look for the following ways to avoid costs and exercise diligence: (1) scope validation efforts have identified cost avoidance opportunities; (2) sequencing PSEP projects to maximize efficiency and productivity: (3) through prudent procurement, SDG&E achieves reasonable and market-based costs for the benefit of customers; and (4) the Performance Partnership Program further enhances construction contractor cost-effectiveness. SDG&E has put in place controls and measures to manage costs and maximize customer value and execute projects cost effectively.

1. Scope Validation Efforts Have Identified Cost Avoidance Opportunities

A key first step in project execution is the scope validation efforts conducted in Stage 1 (Project Initiation). SDG&E does not proceed with PSEP projects without first performing due diligence to verify the project scope through diligent scope validation activities. From the initial phase of a PSEP project, the PSEP management team identifies the potential for cost avoidance when studying the proposed project. To do this, data from the initial PSEP application and internal databases are reviewed by the project team to validate project mileage. Through this scope validation step, mileage reduction may be accomplished through the critical assessment of records, reduction in MAOP, or abandonment of lines that were no longer required from an overall gas operating system perspective.[48]

2. Sequencing PSEP Projects to Maximize Efficiency and Productivity

SDG&E strategically schedules construction projects to keep company and contractor workforces fully productive, thereby maximizing the cost-effectiveness of the PSEP workforce. Construction start dates are tentatively slated months in advance to maintain a steady flow of work to the construction teams. The various functional groups that support execution of a project are consulted prior to these dates being proposed. The expected construction completion dates of projects are monitored closely so that new projects can start soon afterwards.

3. Through Prudent Procurement, SDG&E Gas Achieves Reasonable and Market-Based Costs for the Benefit of Customers

SDG&E continues to minimize PSEP project execution costs through cost-avoidance efforts that focus on efficiencies identified in the engineering and design process through efficient procurement practices, coordination and scheduling effectiveness, and construction execution. To promote the reasonableness of these costs, PSEP relies heavily on proven supply management techniques and strategies to acquire materials and services. To provide safety enhancement to customers at reasonable and market-based costs, SDG&E uses established selection processes, create incentives for contractors, and impose cost controls. PSEP maintains guidelines for the preparation, solicitation, evaluation, award, and administration of contracts and

[48] Lines are only abandoned after a thorough review of the ability of adjoining lines to meet current and future load requirements and to verify there will be no customer impact or system constraints.

subcontracts that supply PSEP with qualified and best-value contractors, subcontractors, and vendors.

SDG&E's sourcing objective is to utilize competition to achieve market-based rates. As such, the majority of PSEP agreements entered into for materials and services have been either competitively bid or were set at market-based rates stemming from previous competitive solicitations. In other words, in addition to individual bidding events, as appropriate, PSEP agreements were executed leveraging terms and conditions and rates from existing agreements. This avoids administrative costs, uses previously negotiated rates, and furthers the goal of completing the work as soon as practicable.

Where possible, SDG&E acquires materials for PSEP projects by aggregating material needs from multiple projects and making periodic buys for larger quantities of materials. These efforts better enable SDG&E to obtain favorable pricing. Project-specific buys are also done to account for specific design parameters. Generally, project-specific buys are executed at each major design phase to address time constraints and reduce costs. For example, long lead-time items are identified early for sourcing. As appropriate, items may be transferred between projects to reduce last-minute buys and shipping costs. Regardless of the type of order, material bids are designed to obtain multiple quotes for the best pricing options, promote work with select firms for efficiency of process, and encourage the development of local resources and sourcing.

4. The Performance Partnership Program Further Enhances Construction Contractor Cost-Effectiveness

The Performance Partnership Program allows PSEP Construction Contractors to enter into competitive bidding for batches of projects as opposed to one at a time. A Performance Partner is a qualified alliance contractor that is willing to partner with SDG&E by using their unique experience and expertise to seek more efficient ways of executing projects and share in the cost savings. This provides numerous benefits for customers by providing competitive market prices, avoiding administrative costs for successive individual bids, engaging construction contractors in longer-term agreements for numerous projects (which lowers costs by hiring a sustained workforce with less downtime and allowing contractors to work with the same

internal engineering teams for a more collaborative effort),[49] and providing contractors an incentive to competitively bid for the work and agree to additional cost-control mechanisms (since the winning bidder is awarded more than just one project). Although SDG&E had implemented the Performance Partnership Program to execute PSEP, the PSEP organization retains the discretion to conduct competitive solicitations or to single-source work to acquire contractors for any PSEP project where it is determined that it may benefit customers to do so.[50]

Under the Performance Partnership Program, each project constructed by a Performance Partner is subject to a target price risk/reward mechanism. This mechanism is based on establishing a target price agreed to by SDG&E and the Performance Partner. The target price provides the Performance Partner with a cost incentive to efficiently perform the project because it stands to share both reduced and excess costs. The Performance Partner is not, however, entitled to any profits when costs exceed 20% of the target price. By virtue of this sharing mechanism, SDG&E realizes cost savings, for the benefit of ratepayers, that would not exist under traditional competitively bid contracts.

VI. CONCLUSION

SDG&E should be authorized to fully recover the costs presented in this Application excluding disallowances acknowledged in Section V.B.4. SDG&E has acted as a reasonable manager while incurring these costs in order to complete PSEP work in accordance with Commission mandates and State law. In so doing, SDG&E has executed PSEP consistent with our overarching objectives:

- Enhance public safety: PSEP projects have been completed consistent with applicable rules, regulations, laws, and SDG&E's internal policies and procedures.

[49] These efforts also mitigate the risk of insufficient trade labor and supervisory resources (leading to direct cost savings through efficient dispersal and logistics of regional work) and better enable construction personnel to provide valuable engineering and design recommendations.

[50] For example: (1) in order to diversify the assignment of work (instead of limiting it to four construction partners); (2) as a separate tool to validate costs incurred by the performance partners (providing yet another rate by which to compare Performance Partner performance); and (3) allow other construction contractors who were not selected as Performance Partners the opportunity to bid on projects, which helps sustain their viability in the SDG&E service territory.

- Comply with the Commission's directives: PSEP efforts have been consistent with Commission instructions to proceed "as soon as practicable" and have worked with SED in their oversight role.
- Minimize customer impacts: Projects were completed while maintaining service to core customers and with minimal planned outages for commercial and industrial customers.
- Maximize the cost-effectiveness of safety investment: SDG&E reasonably avoided costs, obtained market-based contractor and material rates, used the necessary amount of internal and external resources, and prudently designed, engineered, and executed PSEP projects.

The Commission should find that SDG&E has executed PSEP prudently and has implemented and executed PSEP consistent with the requirements of D.14-06-007. The costs presented for review and recovery in this Application are reasonable and the associated revenue requirements submitted for recovery should be recovered in rates.

This concludes my prepared Direct Testimony.

VII. WITNESS QUALIFICATIONS

My name is Norm G. Kohls. I am employed by San Diego Gas & Electric Company (SDG&E) as the Manager of the PSEP Line 1600 Project Portfolio. My business address is 4949 Greencraig Lane, San Diego, California 92123.

I joined SDG&E in 1992 as an Engineer and have worked in several diversified areas of the utility business with increasing leadership responsibility. While with SDG&E, I have held various positions in the functional areas of both Gas and Electric Operations and Engineering. These areas include Gas Transmission Major Projects, Gas System Planning, Gas Engineering, Gas Design, Gas Operations and Maintenance, Gas Mapping and Records, and Gas Geographic Information Systems. Other areas include Project Management, Construction Services, Electric Distribution System Capacity Planning, Electric System Reliability, Overhead to Underground Conversion Programs, New Business Extensions and Service Establishment, Distributed Generation Interconnections, Emergency Operations, Compliance as well as Asset Management and Information Management Support for Electric Distribution Operations. Prior to moving into my current position in September of 2018, I was the Manager of the Pipeline Safety & Reliability Project.

My current management responsibilities include the development of the scope, detailed design and engineering, construction planning, construction management, cost and schedule management, and close out of the 19 projects associated with the Line 1600 Test or Replacement Plan as well as project development and planning of future PSEP related work and cost recovery of previously completed PSEP work at SDG&E. I also support other administrative matters including preliminary planning of future Gas Transmission Safety Rule- related testing and replacement project work at SDG&E.

In 1988, I earned a Bachelor of Science Degree in Mechanical Engineering with a Minor in Economics from San Diego State University. In 1992, I earned my California State License as a Registered Professional Engineer in Mechanical Engineering. I have been a member of the American Society of Mechanical Engineers for approximately 30 years.I have over 34 years of engineering and management experience of which over 30 years are in the utility industry.

I have previously testified before the California Public Utilities Commission.

This concludes my prepared direct testimony.

APPENDIX A

GLOSSARY OF TERMS

APPENDIX A

Glossary of Terms

Acronym	Definition
CFR	Code of Federal Regulations
CNG	Compressed Natural Gas
CPUC	California Public Utilities Commission
GHG	Green House Gas
GRC	General Rate Case
ISEP	Integrated Safety Enhancement Plan
L1600RAMA	Line 1600 Records Audit Memorandum Account
LNG	Liquid Natural Gas
O&M	Operations & Maintenance
PHSMA	Pipeline and Hazardous Materials Safety Administration
PSEP	Pipeline Safety Enhancement Plan
RAMP	Risk Assessment Mitigation Phase
SDG&E	San Diego Gas & Electric Company
SECCBA	Safety Enhancement Capital Cost Balancing Accounts
SED	CPUC's Safety Enforcement Division
SEEBA	Safety Enhancement Expense Balancing Accounts
SoCalGas	Southern California Gas Company