

Company: San Diego Gas and Electric Company (U 904 G)
Proceeding: 2028 General Rate Case
Application: A.26-06-015
Exhibit: SDGE-06.1-WP-S

REDACTED

**SUPPLEMENTAL WORKPAPERS TO
PREPARED DIRECT TESTIMONY
OF DEVIN K. ZORNIZER
(GAS MAJOR PROJECTS)**

ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

REVISED

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

VOLUME 5 OF 6

SEPTEMBER 2026



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SDG&E PSEP Phase 1A Reasonableness Review Pipeline Project Workpaper

Final Report for Supply Line 49-17 Phase 1A Replacement Project

I. SUPPLY LINE 49-17 PHASE 1A REPLACEMENT PROJECT

A. Background and Summary

Supply Line 49-17 is a Department of Transportation (DOT) defined transmission¹ line with a predominantly [REDACTED] diameter that runs approximately 13.176 miles in the City of San Diego, near residential and commercial areas. The pipeline is routed across Class 3 and 4 locations. This report describes the activities associated with Supply Line 49-17 Phase 1A Replacement Project which consists of the replacement of 0.004 miles of pipeline. The specific attributes of this Project are detailed in Table 1 below. The total loaded cost of the Project is \$1,400,612.

¹ As defined in 49 C.F.R. § 192.3 (2024).

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Table 1: General Project Information

Project Name	Supply Line 49-17 Phase 1A Replacement		
Project Type	Replacement		
PSEP Phase	1A		
Length	22 feet		
Location	City of San Diego		
Class			
MAOP			
Pipe Grade			
Wall Thickness			
Pipe Vintage			
Construction Start	11/12/2024		
Construction Finish	12/16/2024		
Original Pipe Diameter			
Original Nominal Diameter			
New Diameter			
Original SMYS ²			
New SMYS			
Project Costs (\$)	Capital	O&M	Total
Loaded Project Costs	1,400,612	-	1,400,612
Disallowed Costs	-	-	-

² Highest percentage of Specified Minimum Yield Strength (SMYS) of Category 4 Criteria pipe.

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B. Maps and Images

Figure 1: Satellite Image of Supply Line 49-17 Phase 1A Replacement Project



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Figure 2: Overview Map of Supply Line 49-17 Phase 1A Replacement Project



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II. ENGINEERING, DESIGN, AND PLANNING

A. Project Scope

Table 2: Mileage Information

	Criteria	Accelerated	Incidental	Total ³
Final Mileage	0.003 mi.	0 mi.	0.001 mi.	0.004 mi.
	18 ft.	0 ft.	4 ft.	22 ft.

Prior to initiating execution of the Project in 2024, SDG&E reviewed existing pipeline records to validate the scope of the Project. During the Engineering, Design, and Planning phase, SDG&E further refined the scope. This progression of the project scope is summarized as follows:

1. 2011 PSEP Filing: SDG&E did not identify Supply Line 49-17 Phase 1A Replacement Project in the 2011 PSEP filing.
2. Scope Validation: Through scope validation activities, during design before initiating execution of the Project, SDG&E successfully verified the scope of the Project as 18 feet of Category 4 Criteria pipe.
3. Engineering, Design, and Constructability:
 - a. As part of an internal material verification program, the Project required coupon samples from both sides of the preexisting pipeline to be replaced, adding Incidental mileage to the Project.
 - b. The Project required the installation of a new [REDACTED] pressure control fitting (PCF).
4. Final Project Scope: The final project scope consists of a 22 foot replacement that includes 18 feet of Phase 1A pipe and four feet of Incidental pipe.

³ Values may not add to total due to rounding.

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B. Decision Tree Review

SDG&E performed a review of the Supply Line 49-17 and confirmed the project design should commence as a Replacement Project.

Segments of less than 1,000 feet are identified for replacement under the approved PSEP Decision Tree because, for short segments of pipe, the logistical costs associated with pressure testing (for example, permitting, construction, water handling, and service disruptions for a non-looped system) can approach or exceed the cost of replacement. In such circumstances, replacement affords a more cost-effective approach to achieving compliance with D.11-06-017 while providing equal safety enhancement benefits. Moreover, installation of the new segment can usually be performed while the existing service is maintained to customers, thereby avoiding service disruptions that may otherwise occur during pressure testing.

As a result of this review, SDG&E identified replacement as the more prudent option. Key considerations that support SDG&E's determination to replace this segment include:

1. Shut-In Analysis: The Project Team completed a Request for Engineering Review (RER) analysis evaluating multiple scenarios to complete the pipeline replacement. It was determined that isolation of the pipeline could be obtained using an existing mainline valve in combination with a distant existing PCF or a newly installed PCF closer to the project vicinity. Either isolation method could be completed without system impacts.
2. Customer Impacts: No identified impacts.
3. Community Impacts: The Project Team identified one home adjacent to the construction site, as well as several commercial businesses in the area, however it was determined the Project would not cause direct impacts to these locations.
4. Permit Conditions: The Project Team anticipated requiring excavation permits from the City of San Diego for potholing and replacement activities.
5. Piggability: Piggable.

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6. Pipe Vintage: [REDACTED].
7. Existing Pipe Attributes: No identified issues.
8. Long Seam Type: [REDACTED]
9. Long Seam Repair History: No identified issues.
10. Condition of Coating: Suspected coal tar wrap.
11. History of Leaks: No identified issues.
12. Other Identified Risks: The Project Team was informed that, as part of an internal material verification program, it would be required to collect coupon samples from both ends of the preexisting pipeline identified for replacement.

C. Engineering, Design, and Planning Factors

SDG&E reviewed pipeline drawings and other information, contacted internal planning groups, communicated with external stakeholders, conducted survey activities, including reviewing public records and potholing of the area to confirm the presence of underground utilities and substructures, and completed a pre-design site walk. Key factors that influenced the engineering, design, and the preparation of the preliminary cost estimate of the Project are as follows:

1. Shut-In Analysis: The Project Team completed a Request for Engineering Review (RER) analysis and concluded the replacement required isolation of the pipeline. Two isolation options were evaluated and it was determined isolation using an existing mainline valve and a newly installed PCF in the project vicinity was most feasible. This isolation method could be completed without system impacts.
2. Customer Impact: Per the RER, no identified customer impacts.
3. Community Impact:
 - a. The Project Team notified nearby residents and businesses of construction activities and schedules.
 - b. The Project Team communicated directly with nearby residents and commercial building tenants regarding project scope and timelines.

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4. Diameter Changes: The Project did not change the diameter of the pipeline at this location.
5. Schedule Coordination: No identified issues.
6. Known Substructures: Potholing at the Project location impacted placement for the installation of a [REDACTED] PCF required for isolation purposes.
7. Permit Conditions: The Project Team obtained the following permits and approvals:
 - a. Potholing Permit from the City of San Diego, that included the following requirements:
 - i. Traffic Control Plan (TCP) with temporary no parking signs and coordination with the transit department.
 - ii. Street and Sidewalk Blockage Form with measures in place for lane closures, street closure, sidewalk closure, parking lane impacts, detour, trenching, and flaggers to direct traffic.
 - iii. Water Pollution Control Plan.
 - b. Right of Way Permit from the City of San Diego to excavate the replacement location as well as the PCF installation location. This permit included the following approvals:
 - i. Street and Sidewalk Blockage Form with lane closure, sidewalk closure, trenching, parking lane impacts, and flaggers to direct traffic.
 - ii. Construction Noise Permit for construction activities executed during nighttime hours.
8. Land Use: The Project Team obtained a temporary Entry Permit from a private landowner to access and utilize nearby private property as a laydown area.
9. Environmental:
 - a. The Project was initially exempt from an Environmental Release and due process primarily due to the scope and location of the Project.
 - b. As a condition of the City of San Diego Potholing Permit, the Project Team implemented a Minor Water Pollution Control Plan that incorporated the use of

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Required Standard Construction Stormwater Best Management Practices specific to the project scope.

- c. The Project Team completed typical abatement activities at all pipeline tie-in locations.

10. Reroute: The Project did not require a reroute of the pipeline.

11. Valves: A nearby mainline valve was identified and utilized for isolation purposes. No mainline valves were replaced or installed as part of this Project.

12. Coupons: The Project Team increased the length of pipeline cutout to obtain two coupon samples that were required for an internal material verification program.

D. Scope Changes

There were no notable scope changes during detailed design.

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III. CONSTRUCTION

A. Construction Contractor Selection

The Project Team prepared an initial cost estimate based on the preliminary design. Following completion of the engineering, design, and planning activities described above, SDG&E entered into a competitive bidding process to select a Construction Contractor. As indicated above, there were no notable changes in scope between the time when the Project Team prepared the preliminary cost estimate and when the competitive bidding process began. SDG&E awarded the construction contract to the bidder that best met the selection criteria for this project.

1. SDG&E's Preliminary Construction Cost Estimate: SDG&E's preliminary cost estimate for construction was \$828,240.
2. Construction Contractor's Bid: The Construction Contractor's cost estimate was [REDACTED], which was [REDACTED] than SDG&E's preliminary cost estimate for construction.

B. Construction Schedule

Table 3: Construction Timeline

Construction Start Date	11/12/2024
Construction Completion Date	12/16/2024
NOP Date	12/04/2024

C. Changes During Construction

SDG&E successfully mitigated conditions during construction in a manner that minimized potential impacts on project scope, cost, and schedule. As a result, these conditions did not result in any notable change orders.

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Figure 3: Work Area at Construction Start



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Figure 4: Work Area Restored After Tie-In



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Figure 5: PCF Installed for Isolation



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D. Commissioning and Site Restoration

Commissioning activities include restoration of the site, final inspection and placement of the pipeline back into service, transportation and disposal of hazardous material, and site demobilization. Closeout activities include development of final drawings, finalization of a reconciliation package, and updates to company recordkeeping systems to reflect the completed scope of work.

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IV. PROJECT COSTS

PROJECT COSTS

A. Cost Avoidance Actions

SDG&E exercised due diligence in the planning, design, and construction activities for this Project to minimize or avoid costs when prudent to do so. As discussed above, the Project Team conducted a site visit to identify and incorporate discernible site conditions into the engineering, design, and planning of the Project. Specific examples of cost avoidance actions taken on this project are:

1. Materials: The Project Team coordinated with a Line 1600 Replacement Project to complete combined hydrotests that included the pipeline installed for this Project. This coordination reduced overall project scope and costs.
2. Construction Execution: The Project Team incorporated construction efficiencies by selecting a Construction Contractor that was performing work on an adjacent SDG&E Project. This ultimately resulted in cost savings associated with optimized bid pricing options as well as necessary mobilization and demobilization efforts.

B. Cost Estimate

Based on the preliminary design, once the project scope was confirmed and engineering, design, and planning activities were underway, SDG&E prepared an estimate of the Direct Costs of the Project in the amount of \$1,597,253. The Project Team considered the conditions known at the time to prepare the preliminary Direct Cost estimate. This estimate reflects the projected Labor, Material, and Services costs anticipated to be incurred to execute the Project.

SDG&E estimated Indirect Costs of the Project based on the estimated Direct Costs and other project-related variables.

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C. Actual Direct and Indirect Costs

Actual Direct Costs reflect the Labor, Material, and Services costs incurred to execute the Project. Actual Indirect Costs reflect costs for incremental overhead loaders in accordance with Company overhead allocation policies. The total loaded cost of the Project is \$1,400,612.

Table 4: Estimated and Actual Direct Costs and Variances⁴

Direct Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Company Labor	154,286	121,915	(32,371)
Materials	82,975	85,653	2,678
Construction Contractor	828,240	419,443	(408,797)
Construction Management & Support	102,206	227,998	125,792
Environmental	41,563	31,112	(10,451)
Engineering & Design	161,609	143,001	(18,608)
Project Management & Services	199,873	140,901	(58,972)
ROW & Permits	26,501	23,436	(3,065)
GMA	-	-	-
Total Direct Costs	1,597,253	1,193,460	(403,793)

Table 5: Estimated and Actual Indirect Costs, Total Costs, and Variances⁵

Indirect Costs/Total Costs (\$)	Estimate	Actuals	Delta Over/(Under)
Overheads	111,229	192,299	81,070
AFUDC	23,877	12,626	(11,251)
Property Taxes	4,517	2,228	(2,289)
Total Indirect Costs	139,623	207,152	67,529
Total Direct Costs	1,597,253	1,193,460	(403,793)
Total Loaded Costs	1,736,876	1,400,612	(336,264)

⁴ Values may not add to total due to rounding.

⁵ Ibid.

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The Actual Full-Time Equivalents⁶ (FTEs) for this Project are 0.22.

D. Cost Impacts

Consistent with one of the overarching objectives of PSEP to maximize the cost effectiveness of safety enhancement investments, SDG&E effectively planned, designed, and completed construction activities for this project. Each pipeline project is unique in scope and inherently complex due to a variety of factors including terrain, environmental and permitting constraints, scope changes during detailed design, material cost fluctuations, regulatory changes, and more. These complexities can lead to variances between initial estimates and actual costs. Consistent with prudent management at the time, the Project Team successfully mitigated these variances whenever feasible through the implementation of effective project management practices, thorough planning, and continuous monitoring.

At the completion of the Supply Line 49-17 Phase 1A Replacement Project, Actual Direct Costs came within the AACE Class 3 Total Installed Cost (TIC) accuracy range, adhering to the standard industry practices defined by the Association for the Advancement of Cost Engineering (AACE) International. The Actual Direct Costs were less than the preliminary estimate by \$403,793. This variance can be attributed to several factors including: the estimate assumed installation of approximately 80 feet of new [REDACTED] pipe however the final project scope required only 22 feet of pipe to be installed; the estimate assumed a higher Construction Contractor price point however the Project Team ultimately selected a Construction Contractor that was performing work on an adjacent SDG&E project, resulting in lower actual costs; the Project initially anticipated conducting a hydrotest for

⁶ Full-time equivalents (FTEs) are included in GRC forecasts to provide context to requested amounts for company labor. FTEs are calculated by measuring the number of hours charged over a given time period. For example, one FTE is equal to 40 hours per week, or typically 2,080 hours per year. The calculation of FTEs includes overtime hours. Therefore, if one employee works 60 hours per week, he or she would be recorded as 1.5 FTEs.

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the pipe to be installed, however the pipe was tested in conjunction with another project's hydrotest, significantly reducing costs.

E. Disallowance

There was no disallowance for the Supply Line 49-17 Phase 1A Replacement Project as there were no post-1955 segments included in the Project without records that provide the minimum information to demonstrate compliance with then applicable industry standards or regulatory strength testing and recordkeeping requirements.

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V. CONCLUSION

SDG&E enhanced the safety of their integrated natural gas transmission system by prudently executing the Supply Line 49-17 Phase 1A Replacement Project. Through this Replacement Project, SDG&E successfully replaced 22 feet of pipeline in the City of San Diego.

SDG&E executed this project prudently through maintaining scope and actively working with internal stakeholders to execute the Project efficiently with minimal impacts.

SDG&E engaged in prudent cost avoidance efforts by conducting a combined hydrotest with another SDG&E Project.

End of Supply Line 49-17 Phase 1A Replacement Project Final Report