Application: A.25-08-XXX
Exhibit No.: SCG-01
Witness: T. Sera

Application of Southern California Gas Company (U 904 G) to Recover Costs Recorded in the Distribution Integrity Management Program Balancing Account from January 1, 2019 to December 31, 2023.	A.25-08-XXX

CHAPTER I

PREPARED DIRECT TESTIMONY OF

TRAVIS T. SERA

ON BEHALF OF SOUTHERN CALIFORNIA GAS COMPANY

(DIMP POLICY, REGULATIONS, AND IMPLEMENTATION)

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

August 15, 2025

TABLE OF CONTENTS

CHAPTER I
PREPARED DIRECT TESTIMONY OF
TRAVIS T. SERA
(DIMP POLICY, REGULATIONS, AND IMPLEMENTATION)

I. PURPOSE OF TESTIMONY

The purpose of my prepared direct testimony is to describe Southern California Gas Company's (SoCalGas) program development and implementation activities undertaken to execute the Distribution Integrity Management Program (DIMP) and to describe the activities associated with the DIMP during Test Year (TY) 2019 General Rate Case (GRC) cycle, with an emphasis on the increase of risk mitigation activities resulting in more expenditures by SoCalGas. This application seeks to recover the under-collected revenue requirement in the DIMP Balancing Account (DIMPBA) of $59.1 million, which is associated with expenditures that are above 35% of authorized TY 2019 GRC cycle's operations and maintenance (O&M) and capital expenditures from February 1, 2023 through December 31, 2023.[1]

The increase in risk mitigation activities included the acceleration and enhancement of the following activities:

- Vintage Integrity Plastic Plan (VIPP) and Bare Steel Replacement Plan (BSRP): SoCalGas accelerated and enhanced activities throughout the TY 2019 GRC cycle to reduce overall risk and enhance safety by increasing miles of non-state-of-the-art (NSOTA) pipelines replaced under the VIPP and BSRP. Targeted segments for replacement under the VIPP and BSRP were determined by the Distribution Risk Evaluation and Management System (DREAMS) risk prioritization tool.
- Program Management: As SoCalGas accelerated replacement activities under the VIPP and BSRP, associated program management activities scaled accordingly. This included increased staffing, enhanced training, and additional supervisory resources necessary to support the accelerated pace of NSOTA pipeline replacements. Additionally, SoCalGas's investment in advancing risk analytics capabilities – specifically the enhancement of its DREAMS risk prioritization tool from a relative model to a quantitative model – contributed to an increase in program management expenses.

[1] In seeking this recovery, this application presents DIMP activities completed between January 1, 2019 through December 31, 2023 to provide background and a comprehensive showing of the reasonableness of DIMP expenditures for the TY 2019 GRC program years (2019-2023).

The accelerated pace of work and enhanced activities exceeded what was forecasted in the TY 2019 GRC, contributing to the under-collection. The justification for the acceleration and enhancement of work is further detailed later in my testimony.

II. OVERVIEW OF TESTIMONY

As part of my testimony, I will first describe the DIMP objective and development, including the development of DIMP Programs/Projects and Activities to Address Risk (PAAR) and how DIMP was developed as a result of Pipeline and Hazardous Materials Safety Administration (PHMSA) regulations and enhanced in response to manufacturer warnings, further guidance from regulatory agencies, and actual Aldyl-A failures nationwide. I will explain the background of the TY 2019 GRC and the authorized post-test year mechanism as it pertains to the DIMPBA, and present the DIMP cost categories. Lastly, I will discuss the DIMP program cost drivers, including how the increased risk mitigation activities contributed to the under-collection. The technical project execution and program management level detail will be addressed in the Prepared Direct Testimony of Mark Forster and Shaena Walker, Execution of Programs/Projects and Activities to Address Risk (Chapter II), and the supporting workpapers.[2]

The testimonies and workpapers in this Application will show that SoCalGas demonstrated a commitment to enhancing distribution pipeline safety and system integrity; the SoCalGas DIMP was implemented with a prospective, long-term objective to enhance the overall safety, integrity, and reliability of the gas system; activities were accelerated or enhanced to meet regulatory requirements to maintain system integrity and reliability; and costs were reasonably incurred at the time they were incurred and should be approved for recovery.

III. DIMP IMPLEMENTATION

A. DIMP Background and Objective

In response to the Pipeline Integrity, Protection, Enforcement and Safety Act of 2006, PHMSA established the requirements for the DIMP (49 CFR §192, Subpart P) under which operators are mandated to identify and reduce pipeline integrity risks on distribution pipelines to

[2] Workpapers were developed in support of the following Programs/Projects and Activities to Address Risk (PAARs): Vintage Integrity Plastic Plan (VIPP), Bare Steel Replacement Program (BSRP), Distribution Riser Inspection Project (DRIP), Gas Infrastructure Protection Project (GIPP), and Sewer Lateral Inspection Project (SLIP).

enhance pipeline safety.[3] SoCalGas developed its DIMP to meet these requirements as well as incorporate industry standards and best practices to promote safety and reliability.

The DIMP is a comprehensive, data-driven program that continually integrates system risk evaluation with risk reduction measures. The objective of the DIMP is to mitigate safety-related risks with a forward-looking risk-informed approach. SoCalGas's DIMP accomplishes this objective through performing safety activities prescribed by 49 CFR §192 Subparts A-N, as well as risk management activities, processes, and procedures that provide for additional monitoring, assessment, or proactive remediation to promote pipeline integrity.[4] Updates to the DIMP may include lessons learned from operating and industry experience, conclusions drawn from the distribution integrity management process, or the incorporation of new or additional tools and techniques as they become available.

SoCalGas service territory covers 20,000 square miles and approximately five (5) million service meters within diverse geographical terrain and climate (coastal, mountains, deserts, agricultural, urban). Its size and location of operations has a direct and significant bearing on overall costs to comply with federal DIMP requirements.[5]

B. DIMP Development Approach

This section describes the approach taken to develop SoCalGas's DIMP and the DIMP PAARs. Distribution integrity is a risk management approach rooted in the understanding of the

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[3] H.R. 5782, 109th Congress (2005-2006): Pipeline Inspection, Protection, Enforcement, and Safety Act of 2006, *available at:* https://www.congress.gov/bill/109th-congress/house-bill/5782. *See also* Pipeline and Hazardous Materials Safety Administration (PHMSA), *Gas Distribution Integrity Management Program: FAQs* (October 26, 2015) at Section B: General DIMP Questions, No. B.1.1: Why did PHMSA mandate integrity management requirements for distribution pipeline systems?, *available at:* https://www.phmsa.dot.gov/pipeline/gas-distribution-integrity-management/gas-distribution-integrity-management-faqs ("Instead of imposing additional prescriptive requirements for integrity management, PHMSA concluded that a requirement for operator-specific programs to manage pipeline system integrity would be more effective given the diversity in distribution systems and the threats to which they may be exposed.").

[4] A.17-10-008, Direct Testimony of Maria T. Martinez on behalf of SoCalGas (Exhibit (Ex.) SCG-14) at MTM-10, *available at:* https://www.socalgas.com/regulatory/documents/a-17-10-008/SCG-14%20Martinez%20Prepared%20Direct%20Testimony.pdf.

[5] *Id.* at MTM-4.

gas distribution system and risk analytics focused on improving pipeline safety. This approach is established through the following elements of DIMP identified in 49 CFR § 192, Subpart P:[6]

1. System Knowledge
2. Threat Identification
3. Evaluate and Rank Risk
4. Identify and Implement Measures to Address Risk
5. Measure Performance, Monitor Results, and Evaluate Effectiveness
6. Periodic Evaluation and Improvement
7. Report Results

1. System Knowledge

System knowledge is developed through the collection and analysis of reasonably available information, including but not limited to system design, materials, construction methods, pipeline conditions, past and present operations and maintenance, local environmental factors, and failure data such as leak history. Data collection for SoCalGas's over 100,000 miles of distribution mains and services is an extensive process that is continually enhanced through targeted research and updates to data collection tools and procedures. A comprehensive knowledge of the system is of fundamental importance to the success of SoCalGas's DIMP and is focused on those characteristics which are needed to assess threats, evaluate risks to the system, and to identify risk reduction measures.

2. Threat Identification

Pursuant to the federal pipeline safety regulations, specifically 49 CFR §192.1007(b), SoCalGas has implemented a robust and systematic process for identifying threats to the integrity of its natural gas distribution system. This process is conducted annually and serves as a cornerstone of SoCalGas's DIMP.

[6] Under 49 CFR §192, Subpart P, operators of gas distribution pipelines are required to: collect information about distribution pipelines; identify additional information needed and provide a plan for gaining that information over time; identify and assess applicable threats to its distribution system; evaluate and rank risks to the distribution system; determine and implement measures designed to reduce the risks from failure of its gas distribution pipeline and evaluate the effectiveness of those measures; develop and implement a process for periodic review and refinement of the program; and report findings to regulators.

As required by the regulation, SoCalGas evaluates the following set of threat categories on an annual basis:

- Corrosion, including both internal and atmospheric corrosion;
- Natural Forces, such as seismic activity, landslides, and flooding;
- Excavation Damage, resulting from third-party or company activities;
- Other Outside Force Damage, including vehicular and vandalism;
- Material or Welds, which may arise from manufacturing or construction;
- Equipment Failure, including malfunctioning valves or regulators;
- Incorrect Operation, encompassing human error or procedural lapses; and
- Other Causes, which may include emerging or unforeseen risks.

The Threat Identification process enables SoCalGas to comprehensively assess for existing and potential threats to the integrity of its natural gas distribution system. It is foundational in developing an understanding of the threats that SoCalGas evaluates in subsequent DIMP processes. For instance, Threat Identification results are necessary for the third element of the DIMP (Evaluate and Rank Risk), as well as the fifth element of DIMP (Measure Performance, Monitor Results, and Evaluate Effectiveness).

3. Evaluate and Rank Risk

Evaluation of risk is predicated on the results from Threat Identification and the requirement in 49 CFR §192.1007(c) to determine the relative importance of each threat, ranking each threat relative to the others. This process provides the basis for prioritized action for those threats posing higher risk to the system. Additionally, this process informs more detailed risk evaluations that consider such information as specific locations and particular types when evaluating the threats, as required by 49 CFR §192.1007(c).

4. Identify and Implement Measures to Address Risk

Utilizing system knowledge and the evaluation and ranking of risk, new PAARs may be identified in the case where it is determined they are needed to address risk on the distribution system. When appropriate, new PAARs are designed, approved, documented, and added to the DIMP to reduce the risks from failure, as required by 49 CFR §192.1007(c).

5. Measure Performance, Monitor Results, and Evaluate Effectiveness

The effectiveness of the DIMP PAARs is monitored through measures required to be collected in accordance with 49 CFR § 192.1007(e). The six measures are as follows:

1. Number of hazardous leaks either eliminated or repaired, categorized by cause.
2. Total number of leaks either eliminated or repaired, categorized by cause.
3. Number of excavation damages.
4. Number of excavation tickets.
5. Number of hazardous leaks either eliminated or repaired, categorized by material.
6. Any additional measures the operator determines are needed to evaluate the effectiveness of the operator's Integrity Management program in controlling each identified threat.

6. Periodic Evaluation and Improvement

The DIMP threats and risks are evaluated at a frequency not exceeding once every five (5) years in accordance with 49 CFR § 192 Subpart P. This is conducted through threat specific analysis and considers the significance of threat location and other factors.

7. Report Results

DIMP reports the four measures listed in 49 CFR § 192.1007(e)(i) through (iv) as part of the Gas Distribution annual report required by 49 CFR § 191.11.

As intended by PHMSA through the Pipeline Safety: Integrity Management Program for Gas Distribution Pipelines Final Rule (74 FR 63906),[7] DIMP plans developed by natural gas operators are tailored to reflect the differences in and among distribution pipelines. The PAARs developed in accordance with 49 CFR § 192.1007(d) are not intended to replace the safety activities prescribed by 49 CFR § 192 Subparts A-N but, rather, are risk control measures that will provide additional risk mitigation beyond those core regulatory requirements on the unique characteristics and circumstances that exist in the SoCalGas Distribution system.[8]

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[7] PHMSA Pipeline Safety: Integrity Management Program for Gas Distribution Pipelines Final Rule, (December 4, 2009), *available at:* https://www.govinfo.gov/content/pkg/FR-2009-12-04/pdf/E9-28467.pdf.

[8] 49 CFR § 192, Docket No. PHMSA–RSPA–2004–19854, RIN 2137–AE15, Pipeline Safety: Integrity Management Program for Gas Distribution Pipelines, 73 Fed. Reg. 36015 (June 25, 2008) (Background), *available at:* https://www.govinfo.gov/content/pkg/FR-2008-06-25/pdf/08-1387.pdf.

C. PAARS: Identification and Implementation

SoCalGas's DIMP activities require collaboration between multiple organizations within the company to accomplish the established objectives of the federal regulations. The Integrity Management team is responsible for administering the annual processes in the SoCalGas DIMP Plan, supporting the approach identified in Section B: DIMP Development Approach, and complying with the requirements identified in 49 CFR § 192, Subpart P.[9] This section describes the identification and implementation of the DIMP PAARs.

PAARs are implemented through different approaches depending on the threat being addressed and may vary in the type and number of risk-reducing activities. PAARs are necessary when the risk assessment processes identify risk mitigations needed to reduce risk. For example, a PAAR may be an enhancement to an existing facility, the removal of an asset, or a combination of the two. The creation or modification of a PAAR is based on the evaluation of potential risk-reducing activities and the resources necessary for each. Since implementing the DIMP, SoCalGas has created several PAARs to identify and reduce pipeline integrity risks for distribution lines in accordance with 49 CFR § 192, Subpart P.

The five primary PAARs identified by DIMP are:

- Vintage Integrity Plastic Plan (VIPP) and Bare Steel Replacement Plan (BSRP): VIPP and BSRP address NSOTA pipeline segments. Specifically, VIPP addresses the threat of failure on pre-1986 Aldyl-A polyethylene plastic pipe and BSRP addresses the threat of corrosion on non-cathodically protected steel pipe.
- Distribution Riser Inspection Project (DRIP): DRIP addresses the threat of corrosion on anodeless risers, which are components found on service lines.
- Gas Infrastructure Protection Project (GIPP): GIPP addresses potential third-party vehicular damage to above-ground distribution facilities.
- Sewer Lateral Inspection Project (SLIP): SLIP addresses the construction threat resulting from trenchless installation methods of gas pipelines.

[9] 49 CFR § 192.1005.

IV. GENERAL RATE CASE, POST TEST YEAR MECHANISM, AND COST CATEGORIES

A. GRC and DIMPBA Background

SoCalGas's DIMPBA, a two-way interest-bearing balancing account, was authorized through the TY 2012 GRC decision, D.13-05-010, and has been subsequently reauthorized in connection with SoCalGas's TY 2016 and TY 2019 GRC cycle decisions (D.16-06-054 and D.19-09-051, respectively), remaining effective for the five-year GRC cycle ending December 31, 2023.[10,11] As established and in accordance with SoCalGas's tariffs, the DIMPBA records the difference between authorized and actual DIMP-related revenue requirement during each respective GRC cycle. Any over- or under-collected balance at the end of each year within the GRC cycle is to be carried over to the following year.[12] Pursuant to D.19-09-051, SoCalGas is authorized to submit a Tier 3 advice letter to seek recovery of any DIMP under-collections of revenue requirement when actual expenditures exceed the total authorized O&M and capital expenditures by up to 35% for the entire TY 2019 GRC cycle.[13] For any under-collections of revenue requirement as a result of actual expenditures greater than 35% of the total authorized O&M and capital expenditures, SoCalGas is authorized to seek recovery through a separate application.[14]

B. Post-Test Year Mechanism

D.19-09-051 authorized a post-test year mechanism for SoCalGas where authorized capital expenditures are imputed in the post-test years (PTYs) based on a seven-year average of historical and forecasted capital expenditures rather than project specific forecasts which further

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[10] D.16-06-054 at 327; D.19-09-051 at 777. D.21-05-003 Ordering Paragraph (OP) 2 authorized SoCalGas to continue implementing the post-test year mechanism adopted in D.19-09-051 for attrition years 2022 and 2023. A DIMPBA was authorized for the four-year cycle of SoCalGas's TY 2024 GRC through D.24-12-074.

[11] The settlements adopted in D.08-07-046 established a previous iteration of the DIMPBA for costs associated with PHMSA's emerging DIMP regulations during the 2008–2011 GRC cycle.

[12] SoCalGas DIMPBA effective for the TY 2019 GRC is available at: https://tariffsprd.socalgas.com/view/historical/?utilId=SCG&bookId=GAS&tarfKey=485&tarfYear=2020

[13] D.19-09-051 at 694-695, 774 (Conclusion of Law (COL) 104); A.17-10-008, Ex. SCG-42 (Yu) at RQY-15, RQY-B-1, *available at:* https://www.socalgas.com/regulatory/documents/a-17-10-008/SCG-42%20Yu%20Prepared%20Direct%20Testimony.pdf.

[14] D.19-09-051 at 694-695, 774 (COL 104); A.17-10-008, Ex. SCG-42 (Yu) at RQY-15, RQY-B-1.

resulted in DIMPBA under-collection. The seven-year average of historical and forecasted capital expenditures included a historical period (2013-2019) with lower spending while DIMP was maturing from a development to steady state. The calculation of authorized capital expenditures in the PTYs resulted in a significant drop from the test-year to the post-test years (see table TTS-1 below) and did not support the activity level that was required to be executed during this GRC cycle. The 2019 TY authorized capital was $181,040,000. The first post-test year (2020) authorized amount dropped to $69,606,000. Additional details on the calculation of DIMP authorized expenditures associated with the TY 2019 GRC are provided in the Prepared Direct Testimony of Rae Marie Yu (Chapter III).

Table TTS-1
DIMP Expenditures (Authorized v. Actual, $000)

Authorized	O&M	Capital	Total
2019	$41,378	$181,040	$222,418
2020	42,471	69,606	112,076
2021	43,490	70,707	114,197
2022	44,332	71,541	115,873
2023	45,352	73,066	118,417
Subtotal	$217,023	$465,959	$682,981

Actual	O&M	Capital[15]	Total
2019	$42,948	$119,125	$162,072
2020	45,615	193,785	239,400
2021	44,986	212,708	257,694
2022	46,763	192,118	238,881
2023	49,276	169,568	218,844
Subtotal	$229,588	$887,304	$1,116,891

Over/(Under) Authorized $	$12,565	$421,343	$433,908
%	6%	90%	64%

Note: Subtotals may include rounding differences.

C. DIMP Cost Categories and Cost Summary

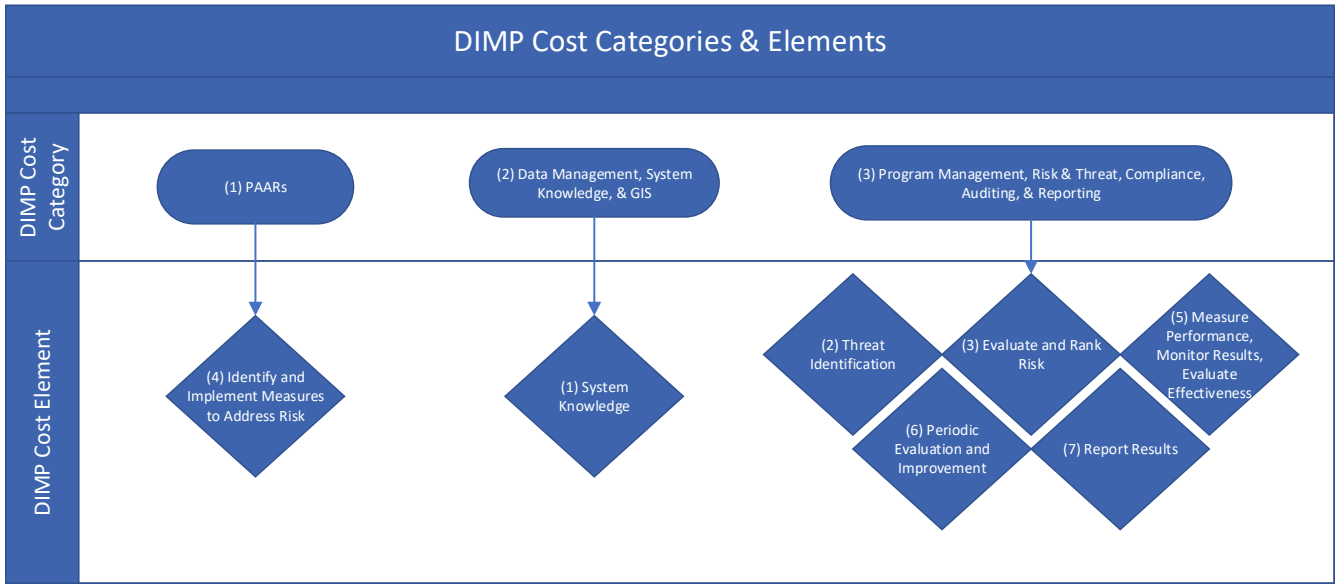
To facilitate the review process and ease of reference, the DIMP activities were characterized into three cost categories in Advice Letter 6224-G. These activities are inclusive of the elements required by 49 CFR § 192: (1) Programs/Projects and Activities to Address Risk

[15] These are total capital expenditures inclusive of CWIP.

(PAARs); (2) Data Management, System Knowledge and GIS; and (3) Program Management, Risk and Threat, Compliance, Auditing, and Reporting. These three cost categories are summarized in Figure TTS-1 below.

The seven elements identified in 49 CFR § 192, Subpart P fall into the three cost categories as follows:

FIGURE TTS-1



The cost drivers for DIMP in the TY 2019 GRC cycle were accelerated VIPP and BSRP PAARs and Expanded Program Management activities. The accelerated work is part of DIMP Cost Category (1) and corresponds to DIMP Element 4. Expanded Program Management activities is part of DIMP Cost Category (3) and corresponds to the DIMP Elements 2, 3, 5, 6, and 7.

The total DIMP costs are summarized in Table TTS-3.

TABLE TTS-3
DIMP – O&M and Capital Direct Expenditures (2019-2023)
by Category

Labor + Non-labor Recorded ($000)	2019	2020	2021	2022	2023	Total
O&M						
PAAR						
BSRP & VIPP	3,557	4,906	3,767	3,909	4,832	20,971
DRIP	13,949	13,593	13,781	14,362	15,595	71,280
GIPP	2,586	1,448	690	776	768	6,269
SLIP	10,156	10,967	12,721	13,970	13,100	60,914
Other PAAR	3,944	4,408	2,629	2,430	3,114	16,525
Data Management, System Knowledge and GIS	5,419	6,515	6,325	5,207	5,272	28,739
Program Management, Risk and Threat, Compliance, Auditing, and Reporting	3,335	3,777	5,073	6,108	6,596	24,889
O&M - Subtotal	42,948	45,615	44,986	46,763	49,276	229,588
Capital[16]						
PAAR						
BSRP	54,302	73,148	60,489	76,056	49,676	313,672
VIPP	50,138	99,698	134,153	92,320	95,574	471,883
GIPP	8,388	12,720	10,405	13,699	13,028	58,196
Other PAAR	1,265	3,414	3,384	5,369	6,746	20,175
Data Management, System Knowledge and GIS	5,032	4,805	4,277	4,674	4,544	23,376
Capital - Subtotal	119,125	193,785	212,708	192,118	169,568	887,304
Total O&M and Capital	162,072	239,400	257,694	238,881	218,844	1,116,891

Note: Subtotals may include rounding differences.

D. Advice Letter 6224-G and Resolution G-3610

On November 17, 2023, SoCalGas submitted Advice Letter 6224-G requesting authority to recover its DIMPBA under-collected balance of $81.4 million as of January 31, 2023. The requested balance represents the cumulative incremental revenue requirement associated with reasonably incurred DIMP expenditures in excess of authorized TY 2019 GRC cycle O&M and

[16] These are total capital expenditures inclusive of CWIP.

capital expenditures by 33%. On July 29, 2025, the Commission issued Resolution G-3610, which approved SoCalGas's request to recover the under-collection recorded in its DIMPBA for the period of January 1, 2019 to January 31, 2023. Resolution G-3610 found that "the examined expenses and expenditures were appropriately recorded and reasonably incurred."[17] Commission staff found that SoCalGas began increasing replacement activity for the VIPP and BSRP using its DREAMS risk prioritization tool, which followed risk reduction and safety enhancement guidelines pursuant to 49 CFR § 192, Subpart P.[18] This resulted in higher levels of replacement mileage and program activities than originally forecasted for the TY 2019 GRC cycle.[19] When factored together with project scoping changes that arose during the planning and construction process to address unforeseen circumstances (*e.g.*, local permitting delays, work hour restrictions, and undocumented substructures beneath street surfaces), these drivers increased SoCalGas's actual expenditures above forecast.[20] Furthermore, in its approval, the Commission trued up the DIMPBA balance authorized for recovery to $107.8 million, to account for ongoing capital revenue requirement and interest associated with the O&M capital projects included in Advice Letter 6224-G and authorized revenue collected for the DIMP through June 30, 2025.[21]

V. DIMP COST DRIVERS AND MANAGEMENT MEASURES

A. Accelerated and Expanded VIPP and BSRP Work

A primary cost driver for DIMP under-collection is the increased level of replacement for the two largest PAARs, the VIPP and BSRP. Under these PAARs, pipelines are identified and prioritized for replacement using the DREAMS risk prioritization tool. This proactive replacement work is incremental to distribution pipeline replacements performed as part of maintenance and inspection activities to address immediate pipeline conditions. Activities for both programs are measured in units of miles of pipelines removed. In the TY 2019 GRC, SoCalGas planned to replace 107 miles in 2019 and committed to continuing to increase the

[17] Res. G-3610 at 8 (Finding and Conclusion 7).

[18] *Id*. at 5.

[19] *Id*.

[20] *Id.* at 5-6.

[21] *Id*. at 9 (OP 2).

level of replacement over the GRC cycle while monitoring performance to evaluate the benefits and reduction of risk.[22]

Below are the forecasted and actual replacement miles for each of the programs:

TABLE TTS-4
VIPP and BSRP Milage – Forecasted v. Actuals

	GRC Forecasted	Actuals				
	2019	**2019**	**2020**	**2021**	**2022**	**2023**
VIPP Mileage	78	46	82	97	109	106
BSRP Mileage	29	28	33	43	47	49
Combined Mileage	107	74	115	140	156	155

The increased level of replacements for VIPP and BSRP were driven by risk reduction efforts to remediate the threats of NSOTA pipe, which refers to pre-1986 plastic (Aldyl-A) and non-cathodically protected bare steel pipe.

1. VIPP and BSRP Background

a) Manufacturer Warnings and PHMSA Advisories on NSOTA Pipe Risk

(1) Aldyl-A Pipe

The risk associated with Aldyl-A pipe has long been recognized by federal regulators and the manufacturer of Aldyl-A. SoCalGas has monitored and responded, where appropriate, to manufacturer warnings and PHMSA safety advisories accordingly. The timeline of bulletins and warnings from both the manufacturer, DuPont, and PHMSA is detailed below:

1982 and 1986 – DuPont issues letters that Aldyl-A is exhibiting brittle-like cracking and has a low ductile inner wall.

1998 – The National Transportation Safety Board (NTSB) issues a report on the danger of "Brittle-Like Cracking In Plastic Pipe for Gas Service."

1999 - 2007 – PHMSA starts issuing advisory bulletins notifying operators of the higher risk of plastic pipelines.

Table TTS-5 provides more details on the four PHMSA bulletins from 1999-2007.

[22] A.17-10-008, Ex. SCG-14 (Martinez) at MTM-25–MTM-26.

TABLE TTS-5: PHMSA Advisory Bulletins About Plastic Pipe

Bulletin	Date	
ADB-99-01	March 11th, 1999	Potential Failure Due to Brittle-Like Cracking Certain Polyethylene Plastic Pipe Manufactured by Century Utility Products Inc.
ADB-99-02	March 11th, 1999	Potential Failures Due to Brittle-Like Cracking of Older Plastic Pipe in Natural Gas Distribution Systems.
ADB-02-07	November 26th, 2002	Notification of the Susceptibility to Premature Brittle-like Cracking of Older Plastic Pipe.
ADB-07-01	September 6th, 2007	Updated Notification of the Susceptibility of Older Plastic Pipes to Premature Brittle-Like Cracking.

The 2007 Advisory Bulletin ADB-07-01 issued by PHMSA states that, "the number and similarity of plastic pipe accident and non-accident failures indicate past standards used to rate the long-term strength of plastic pipe may have overrated the strength and resistance to brittle-like cracking for much of the plastic pipe manufactured and used for gas service from the 1960s through the early 1980s."[23] The brittle-like cracking characteristic could cause a leak on early vintage plastic pipelines to grow and release additional natural gas, increasing the risk of natural gas gathering and igniting.[24] While PHMSA advisories indicated that the hazard associated with Aldyl-A pipe was recognized for pipe installed from the 1960s through 1981, the resin formulation was produced through 1983, which means affected Aldyl-A may have been installed by SoCalGas as late as 1985.[25] As such, SoCalGas conservatively determined that all Aldyl-A pipe installed between 1969 to 1985 is susceptible to brittle-like cracking and is referred to as NSOTA.

Additionally, the CPUC published a report in 2014 highlighting the need for operators to replace at rates that sufficiently mitigate the risks associated with early vintage Aldyl-A. The report emphasized that failure rates on non-LDIW (low ductile inner wall) pre-1983 Aldyl-A pipe will begin to rise in coming decades. The slow crack growth on these pipes can cause

[23] Docket No. PHMSA-2004-19856, Pipeline Safety: Updated Notification of the Susceptibility Premature Brittle-Like Cracking of Older Plastic Pipe, 72 Fed. Reg. 51301 (Sept. 6, 2007), *available at:* https://www.govinfo.gov/content/pkg/FR-2007-09-06/pdf/07-4309.pdf.

[24] A.17-10-008, Ex. SCG-14 (Martinez) at MTM-25.

[25] PHMSA, *Comments on Hazard Analysis and Mitigation Report Aldyl A Polyethylene Gas Pipelines* (August 11, 2014) at 6, *available at:* https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/docs/technical-resources/pipeline/gas-distribution-integrity-management/66036/socalgassdgecommentstoaldylareport081114.pdf.

"fail[ures] much more abruptly and rapidly than underground leaks on steel distribution pipes."[26] The CPUC report emphasized that leaks on these pipes are more likely to be serious much more quickly than pin-hole leaks that develop over a number of years on steel pipes. The abrupt failure nature of this type of pipe means that leaks can develop undetected and migrate underground into structures and cause explosions.[27]

The CPUC deferred the mitigation of this hazard and the scope and pace of any replacement program to operators' judgement[28] but noted due to the brittle-like cracking characteristic and propensity for sudden failure that has been attributed to early vintage Aldyl-A pipe, "planned replacement rates may not be sufficient to mitigate risk nor can more frequent leak surveys."[29]

(2) Bare Steel Pipe

PHMSA has recognized that much of the nation's pipeline infrastructure is aging and that "older pipeline facilities that are constructed of obsolete materials (*e.g.*, cast iron, copper, bare steel, and certain kinds of welded pipe) may have degraded over time, and some have been exposed to additional threats, such as excavation damage."[30] Due to these conditions, PHMSA included bare steel pipe in a Call to Action issued in 2011 for pipeline operators "to accelerate the repair, rehabilitation, and replacement of the high-risk pipeline infrastructure."[31] Corrosion

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[26] CPUC, *Hazard Analysis and Mitigation Report: Aldyl A Polyethylene Gas Pipelines* (June 11, 2014) at 29, *available at:* https://www.cpuc.ca.gov/-/media/cpuc-website/divisions/safety-policy-division/reports/ra-doc-10-aldyla.pdf.

[27] *Id.* at 29.

[28] *Id.* at 32.

[29] *Id.* at 29.

[30] *See* PHMSA, *U.S. Department of Transportation Call to Action To Improve the Safety of the Nation's Energy Pipeline System* (November 2011), *available at:* https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/docs/Action%20Plan%20Executive%20Version%201%20NOV%2011.pdf.

[31] PHMSA, *Pipeline Materials*, *available at:* https://www.phmsa.dot.gov/technical-resources/pipeline/pipeline-materials ("However, the degrading nature of iron alloys, the age of the pipelines, and pipe joints design have greatly increased the risk involved with continued use of such pipelines. Steel has been used extensively since the 1950s. Uncoated steel pipelines are known as bare steel pipelines and while many of these pipelines have been taken out of service, some of these pipelines are still operating today. The age and lack of protective coating typically makes bare steel pipelines of higher risk as compared to some other pipelines. Plastic pipelines for gas distribution

control remains a critical focus in PHMSA's regulatory considerations and to prevent the harmful effects of corrosion, 49 CFR § 192 emphasizes the critical need for strong anti-corrosion measures on steel pipelines.[32] At the time of the 2011 Call to Action, PHMSA noted that some existing regulations lacked specificity, such as defining what constitutes "prompt remediation."[33] These gaps in framework further justified the need for proactive replacement of bare steel pipelines. More recently, PHMSA, in a 2023 Notice of Proposed Rulemaking (NPRM) (RIN 2137-AF53 – Safety of Gas Distribution Pipeline and Other Pipeline Safety), identified "…bare-steel were among those materials identified as posing the highest risk."[34] The lack of protective coating makes steel a high-risk family of pipe and has been identified by DOT and PHMSA as a family of pipe that should be evaluated for an accelerated replacement program.[35] PHMSA also stated, "accelerating leak detection, repair, rehabilitation, or replacement efforts also delivers the desired integrity and safety benefits more expeditiously, lowering maintenance requirements associated with the aging pipe that is being replaced."[36]

b) Examples of NSOTA Pipe Related Incidents

VIPP and BSRP are programs designed and implemented to mitigate the risk of serious incidents associated with NSOTA pipe that, as described in the previous section of my testimony, have been specifically highlighted by regulatory bodies as causes for increased concern and action. These incidents are not speculative. There have been numerous failures

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became prevalent in the early 1970s. In 2011, following major natural gas pipeline incidents, DOT and PHMSA issued a Call to Action to accelerate the repair, rehabilitation, and replacement of the highest-risk pipeline infrastructure. Among other factors, pipeline age and material are significant risk indicators. Pipelines constructed of cast and wrought iron, as well as bare steel, are among those that pose the highest-risk."); *see also* PHMSA, *Call to Action, available at:* https://www.phmsa.dot.gov/safe-transportation-energy-products/call-action.

[32] Regulations.Gov, Pipeline Safety: Gas Transmission Pipelines – Advance Notice of Proposed Rulemaking, *available at:* https://www.regulations.gov/document/PHMSA-2011-0023-0001.

[33] *Id.*

[34] 49 CFR §§ 191-192, 198; Docket No. PHMSA-2021-0046, Pipeline Safety: Safety of Gas Distribution Pipelines and Other Pipeline Safety Initiatives, 88 Fed. Reg. 61746, 61751 (Sept. 7, 2023), *available at:* https://www.govinfo.gov/content/pkg/FR-2023-09-07/pdf/2023-18585.pdf.

[35] A.17-10-008, Ex. SCG-14 (Martinez) at MTM-26.

[36] 49 CFR § 191-192, 198; Docket No. PHMSA-2021-0046, Pipeline Safety: Safety of Gas Distribution Pipelines and Other Pipeline Safety Initiatives, 88 Fed. Reg. 61746, 61752 (Sept. 7, 2023), *available at:* https://www.govinfo.gov/content/pkg/FR-2023-09-07/pdf/2023-18585.pdf.

experienced in California and across the nation that have underscored the safety risks of aging NSOTA plastic pipe. For example:

- Over 15 Aldyl-A failures have occurred in California alone, resulting in 15 ignitions, 9 explosions, and 6 injuries. Of these incidents, SoCalGas has experienced eight, with one catastrophic incident occurring as recently as 2018.
- On March 24, 2023 in Pennsylvania, a leak from a retired 1982 Aldyl-A service tee caused an explosion and fire that resulted in 7 deaths and 10 injuries.[37]
- On November 6, 2024 in Utah, an explosion associated with a subsurface gas leak from a 1976 Aldyl-A gas main destroyed a home and fatally injured a 15-yr old boy.[38] Images TTS-1 and TTS-2 below, pulled from sources including the NTSB's incident report, depict the extent of damage and the aftermath of the explosion.

IMAGE TTS-1: 2024 Explosion in South Jordan, Utah [39]

[37] NTSB, *UGI Corporation Natural Gas-Fueled Explosion and Fire, available at:* https://www.ntsb.gov/investigations/Pages/PLD23LR002.aspx.

[38] NTSB, *Enbridge Inc. Natural Gas-Fueled Home Explosion*, *available at:* https://www.ntsb.gov/investigations/Pages/PLD25FR001.aspx.

[39] ABC4, *Leak in 48-year-old gas main cause of South Jordan home explosion* (November 20, 2024), *available at:* https://www.abc4.com/news/wasatch-front/leak-in-48-year-old-gas-main-cause-of-south-jordan-home-explosion/.

IMAGE TTS-2: 2024 Explosion in South Jordan, Utah [40]

c) History of VIPP and BSRP in SoCalGas's GRCs

In the TY 2012 GRC, SoCalGas initiated the development of its DIMP to address federal mandates. As part of its DIMP, SoCalGas forecasted the need for funding to address integrity threats imposed by NSOTA pipe through application of a DREAMS risk prioritization tool.[41] At the time, SoCalGas had identified 17,000 miles of NSOTA pipe and proposed a replacement rate that would enable an aggressive approach to the risk mitigation as intended by the DIMP.[42] The CPUC reviewed SoCalGas's testimony regarding its forecast based on the work Subpart P required and authorized the funding amount for the DIMP-related Capital and O&M costs.[43] In

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40 NTSB, *Enbridge Inc. Natural Gas-Fueled Home Explosion*, *available at:* https://www.ntsb.gov/investigations/Pages/PLD25FR001.aspx.

41 A.10-12-006, Direct Testimony of Raymond K. Stanford on behalf of SoCalGas (Ex. SCG-05) at RKS-40, *available at:* https://www.socalgas.com/regulatory/documents/a-10-12-006/Testimony/Exh%20SCG-05%20R_Stanford_Gas_Engineering.pdf.

42 A.10-12-006, Ex. SCG-05 (Standford) at RKS-40, *available at:* https://www.socalgas.com/regulatory/documents/a-10-12-006/Testimony/Exh%20SCG-05%20R_Stanford_Gas_Engineering.pdf.

43 D.13-05-010 at 431, 436.

the TY 2016 GRC, SoCalGas further discussed the DREAMS risk prioritization tool and updated the total mileage of NSOTA pipe in the distribution system to approximately 20,000 miles.[44] SoCalGas leveraged the DREAMS risk prioritization tool to accelerate replacements on a targeted basis, prioritizing pre-1986 Aldyl-A and pre-1960 steel.[45] The CPUC found the DIMP Capital and O&M expenditures reasonable,[46] and approved the method by which SoCalGas identified and replaced pipelines, including plastic pipelines installed before 1986 made of Aldyl-A.[47] The CPUC affirmed that the DIMP DREAMS represented a proactive approach, but expressed that even with an increased pace of work (17 miles per year), the replacement of the 9,422 miles of Aldyl-A pipe in SoCalGas's system would take many years to complete.[48]

In the TY 2019 GRC, SoCalGas detailed a tiered approach to manage risks associated with the threat of pre-1986 Aldyl-A pipe. The first tier focused on increasing the leak survey frequency for 6,000 miles of pre-1986 Aldyl-A pipe that were not already monitored on a yearly cycle.[49] The second tier focused on the wholesale replacement of pre-1973 Aldyl-A pipe, which would be prioritized using the DREAMS risk prioritization tool.[50] The third and final tier focused on the replacement of remaining poor performing pre-1986 Aldyl-A as informed by the DREAMS risk prioritization tool.[51]

As stated in the TY 2019 GRC, SoCalGas anticipated continuing to increase the level of pipeline replacement over the subsequent 6 to 8 years under the VIPP and BSRP.[52] In D.19-09-051, the CPUC determined SoCalGas's proposed costs and replacement rate for the VIPP and BSRP in the TY 2019 GRC were reasonable.[53]

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44 A.14-11-004, Direct Testimony of Maria T. Martinez on behalf of SoCalGas (Ex. SCG-08) at MTM-16, *available at:* https://www.socalgas.com/regulatory/documents/a-14-11-004/SCG-08_M__Martinez.pdf.

45 A.14-11-004, Ex. SCG-08 (Martinez) at MTM-17.

46 D.16-06-054 at 254-256.

47 *Id.* at 96.

48 *Id.*

49 A.17-10-008, Ex. SCG-14 (Martinez) at MTM-25.

50 *Id.*

51 *Id.*

52 *Id.*

53 D.19-09-051 at 93.

In that same decision, the CPUC requested that SoCalGas to provide a long-term outlook and assessment of its replacement plan in the next GRC cycle, noting that "it appears that its [SoCalGas's] current replacement rate is not on pace with its original assessment."[54] In response to this directive, SoCalGas undertook a comprehensive review of SoCalGas's long term strategy, which led to the development of a quantitative risk analytic that would not only enhance risk prioritization but provide for a risk threshold that would establish a more defined pipeline inventory needing replacement. The introduction of a risk threshold further refined the replacement strategy for the TY 2024 GRC cycle to targeting replacement of pipelines that exceed a risk threshold. The development of this new strategy was developed throughout the TY 2019 GRC and was successfully implemented in 2024. The development of this strategy was reviewed over the course of the 2019 GRC with the CPUC's Safety and Enforcement Division (SED), a delegated authority by PHMSA to audit operators' DIMP plan. SED has been engaged in and oversees the ongoing execution of SoCalGas's pre-1986 Aldyl-A replacements under VIPP since its inception. SED's review of SoCalGas's VIPP and BSRP have contributed to refinements to risk prioritization, process improvements, and overall strategy.

2. VIPP and BSRP implementation in the TY 2019 GRC

At the time of the TY 2019 GRC and as a result of continuous improvements to its data collection and management processes, SoCalGas had identified a vast inventory of NSOTA pipe. Approximately 36,000 miles of pipe had been included in the overall scope of the BSRP and VIPP. The long history of warnings from DuPont and PHMSA, a series of pre-1986 Aldyl-A failures nationwide, the 2014 CPUC report, and SoCalGas's own analyses, emphasized the need to accelerate replacement rates for pre-1986 Aldyl-A and bare steel pipe to mitigate risk.

During the TY 2019 GRC cycle, SoCalGas's replacement activity represented a proactive effort to reduce risk based on its evolving analytics and to prevent incidents on SoCalGas's distribution system. SoCalGas's replacement rate, particularly that of pre-1986 Aldyl-A pipe, is consistent with the directives from PHMSA to implement programs that provide for "proactive management of the integrity of aging pipe infrastructure, [enhance] safety and reliability, [contribute] to cost savings over the longer term, and can be less disruptive to customers and

[54] *Id*. at 192.

communities than a reactive approach"[55] and is consistent with SoCalGas's DIMP risk assessment. SoCalGas leveraged the DREAMS risk prioritization tool which assigned relative risk scores to segments of NSOTA pipe based on factors affecting safe pipeline operations, including historical performance (leakage), pipe attributes, construction practices, and location relative to populated areas. At the start of the TY 2019 GRC, the DREAMS risk prioritization tool was used to target individual high-risk pipe segments based on their relative risk scores. SoCalGas continued to improve and refine risk analytics throughout the GRC cycle and in 2019 transitioned to a grid-based approach. The DREAMS risk prioritization tool was used in conjunction with a web-based portal that divided the map of SoCalGas's service territory into 1-mile by 1-mile grids. Each of the grids were assigned a risk score based on the normalized risk scores of its constituent pipe segments. SoCalGas utilized the web-based portal to plan replacement within high-risk grids in the natural gas distribution network. This methodology assisted Integrity Management in identifying high-risk areas within the service territory and prioritizing pipe replacement accordingly. The grid-based approach sought to support efficient execution, provide cost savings, optimize planning, design, and construction, and reduce safety risks.

SoCalGas has continued to assess safety risks associated with its pipeline infrastructure and the levels of replacement performed in the TY 2019 GRC cycle were the appropriate proactive approach PHMSA encouraged to counterbalance the impact posed by the risk from these NSOTA pipelines. SoCalGas has taken significant steps to enhance risk analytics over the past few years and recognizing the importance of effectively identifying pipelines that pose higher safety risks to the public, SoCalGas has developed new quantitative risk analytics. These analytics will be leveraged in the current TY 2024 GRC cycle to further enhance prioritization and will be continually improved upon.

B. Expanded Program Management Costs

Program Management O&M activities are to comply with 49 C.F.R. § 192, Subpart P – Gas Distribution Pipeline Integrity Management. These activities are primarily implemented and

[55] Docket No. PHMSA–2021–0046, Pipeline Safety: Safety of Gas Distribution Pipelines and Other Pipeline Safety Initiatives, 88 Fed. Reg. 61746, 61752, *available at:* https://www.govinfo.gov/content/pkg/FR-2023-09-07/pdf/2023-18585.pdf.

managed by the DIMP Governance team composed of engineers, project managers, construction managers, advisors, analysts, and other employees with varying degrees of responsibility.

SoCalGas experienced increased Program Management O&M activities over the TY 2019 GRC cycle. While there were increased levels of activity for SLIP, the increased Program Management O&M costs were primarily due to VIPP and BSRP data management and analysis, training of personnel to plan and manage individual replacement projects, additional supervision, and equipment to support these activities. These activities were directly influenced by the rate of replacement achieved throughout the 2019 TY GRC cycle. O&M costs for VIPP and BSRP support the necessary infrastructure and development activities to execute the projects. The additional costs are also attributed to the evolution to a quantitative risk analysis, which supported the risk strategy change to target pipelines that exceed a risk threshold.

VI. CONCLUSION

SoCalGas developed and implemented the DIMP in accordance with PHMSA regulations, as well as federal and state guidance (*i.e.*, safety advisories). Through this process, SoCalGas created PAARs to address threats and reduce risk. The increase in costs during the TY 2019 GRC cycle was primarily attributed to the two largest PAARs: VIPP and BSRP, for which there was an increase in activity level. The increased level of replacements for VIPP and BSRP were driven by risk reduction efforts, the warnings from the manufacturer, PHMSA advisory bulletins, a series of Aldyl-A failures nationwide, and the 2014 CPUC report. The under-collection requested in this Application for DIMP was reasonably incurred at the time it was incurred to support the activities that enhanced distribution pipeline safety and system integrity.

This concludes my prepared direct testimony.

VII. WITNESS QUALIFICATIONS

TRAVIS T. SERA

My name is Travis Sera. I am employed by SoCalGas as the current Director of Integrity Management for SoCalGas and SDG&E. My business address is 555 West Fifth Street, Los Angeles, California, 90013-1011.

I joined SoCalGas in 1995 and have held various positions of increasing responsibility within the Gas Engineering and System Integrity department. I left SoCalGas briefly, from 2003-2005, and during this time held the title of Senior Consulting Engineer for Structural Integrity Associates, an engineering consulting firm to the nuclear, petro-chemical, and pipeline industries.

I have been in my current position at SoCalGas since 2019. My responsibilities include oversight of the Transmission Integrity Management Program and the Distribution Integrity Management Program, in addition to the broad application of Integrity Management principles across various departments within SoCalGas and SDG&E. I have a Bachelor of Science degree in Materials Engineering from California Polytechnic State University – San Luis Obispo, I am a registered Professional Metallurgical Engineer in the State of California, and I hold a CP4 – Cathodic Protection Specialist certification from the National Association of Corrosion Engineers (NACE).

I have previously testified before the Commission.