Company: San Diego Gas & Electric Company (U 902 M)
Proceeding: 2028 General Rate Case
Application: A.26-06-___
Exhibit: SDGE-05

PREPARED DIRECT TESTIMONY OF GINA OROZCO

(GAS TRANSMISSION)

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

June 2026

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APPENDICES

SUMMARY

GAS TRANSMISSION (In 2025 $)			
Categories of Management	**2025 Adjusted -Recorded ($000)**	**TY 2028 Est. ($000)**	**Change ($000)**
Total Non-Shared Services	6,605	6,511	(94)
Total Shared Services (Incurred)	-	-	-
Total O&M	6,605	6,511	(94)

GAS TRANSMISSION (In 2025 $)							
Categories of Management	**2025 Adjusted-Recorded (000s)**	**Est. 2026 ($000)**	**Est. 2027 ($000)**	**Est. 2028 ($000)**	**Est. 2029 ($000)**	**Est. 2030 ($000)**	**Est. 2031 ($000)**
Total Capital	**11,951**	**12,847**	**12,847**	**18,345**	**12,847**	**12,847**	**12,847**

Summary of Requests

- San Diego Gas & Electric Company (SDG&E or the Company) respectfully requests that the California Public Utilities Commissions (CPUC or Commission) adopt its Test Year (TY) 2028 General Rate Case (GRC) forecast for Gas Transmission (GT) operations and maintenance (O&M) and capital expenditures.
- For TY 2028, SDG&E requests approval of $6,511,000 for GT O&M expenses (in 2025 dollars). SDG&E further requests that the Commission adopt its GT capital expenditures as reflected in Appendix C.
- The activities described in my testimony are consistent with applicable laws, codes, and standards established by local, state, and federal authorities. My testimony highlights the activities of the GT organization that operate and maintain the transmission pipeline system and compressor station; how those activities support the Commission's objectives of safety, reliability, affordability, and operational efficiency; and where incremental changes are driven by regulatory compliance, risk mitigation, safety, or system enhancements.
- **Safety & Regulatory Compliance:** The requested funding supports mandatory compliance with requirements established by the Pipeline and Hazardous Materials Safety Administration (PHMSA), CPUC General Order (GO) 112-F,

California Air Resources Board (CARB), and other applicable federal and state authorities across transmission operations. Key safety and compliance activities include:

- ***Transmission Pipeline System Safety & Integrity:*** These activities involve GT pipeline, regulation, and instrumentation operations and maintenance activities to meet federal and state safety standards (49 Code of Federal Regulations (CFR) Part 192 and CPUC GO 112-F). These activities include leak surveys, leak repairs, inspections, patrols, damage prevention programs, system upgrades, and methane monitoring.
- ***Cathodic Protection (CP):*** These activities involve O&M activities that mitigate external corrosion risks to transmission pipelines, protecting employees, the public, the environment, and the long-term integrity of the pipeline system.

- **Reliability and Resilience:** The requested funding also includes labor and non-labor funding to support aging infrastructure, emergency response capabilities, and critical facility upgrades. Key activities with anticipated incremental costs during this GRC period include:
  - ***Compressor Station Operations:*** These activities involve inspections, compliance-required emission control equipment maintenance, system monitoring, emergency response capability, and modernization of aging engines and auxiliary equipment to maintain gas system pressures and support system-wide reliability.
  - ***Right-of-Way (ROW) and Vegetation Management:*** These increased O&M activities address managing encroachment, fire risk, land movement, and site access in rural land and expanding urban areas. These efforts also support permitting and environmental compliance requirements.
- **Operational Modernization & Workforce Readiness:** Requests tied to modernization efforts that support the GT system's ability to keep pace with emerging risks, new monitoring technologies, and digital integration. Key activities include:

- Deployment of new technologies including Optical Pipeline Monitoring (OPM) and High Consequence Area (HCA) methane monitors;
- **Workforce** training and staffing to support system monitoring, and new technology capabilities; and
- **Funding** for specialized tools including Supervisory Control and Data Acquisition (SCADA) upgrades and software needed to maintain compliance, modernized operations, system safety, and system reliability.

- **Environmental Stewardship & Emissions Reduction:** The request supports compliance with CARB Leak Detection and Repair (LDAR) requirements and Environmental Protection Agency (EPA) Subpart W greenhouse gas reporting obligations. Activities include quarterly LDAR surveys, leak repairs, ambient and wellhead monitoring, extensive emissions data management, and annual reporting. These efforts advance California's emissions reduction goals while supporting continued regulatory compliance for transmission operations.

PREPARED DIRECT TESTIMONY OF GINA OROZCO
(GAS TRANSMISSION)

I. INTRODUCTION

A. Summary of Gas Transmission Costs and Activities

My testimony supports the Test Year (TY) 2028 forecasts for non-shared operations and maintenance (O&M) costs and for capital costs associated with SDG&E's Gas Transmission (GT) system. Table GO-1 summarizes my sponsored costs.

Certain forecasted activities and estimated costs were presented previously in SDG&E's 2025 RAMP Application 25-05-010/013 (consolidated) filed on May 15, 2025. Those activities and any changes since the RAMP filing are detailed in Section VI.

TABLE GO-1
Test Year 2028 Summary of Total Costs

GAS TRANSMISSION (In 2025 $)			
Categories of Management	**2025 Adjusted -Recorded (000s)**	**TY 2028 Est. (000s)**	**Change (000s)**
Total Non-Shared Services	6,605	6,511	(94)
Total Shared Services (Incurred)	-	-	-
Total O&M	**6,605**	**6,511**	**(94)**

GAS TRANSMISSION (In 2025 $)							
Categories of Management	**2025 Adjusted-Recorded (000s)**	**Est. 2026 ($000)**	**Est. 2027 ($000)**	**Est. 2028 ($000)**	**Est. 2029 ($000)**	**Est. 2030 ($000)**	**Est. 2031 ($000)**
Total Capital	**11,951**	**12,847**	**12,847**	**18,345**	**12,847**	**12,847**	**12,847**

1. Purpose and Scope of Testimony

The purpose of my testimony is to demonstrate the reasonableness of SDG&E's capital and O&M expense forecasts necessary to construct, operate, and maintain the GT systems. The forecast outlined in this testimony aligns with SDG&E's overarching commitment to the core principles of delivering safe, reliable, and affordable energy.

Core operational activities supported by this forecast include pipeline patrols and leak surveys; locate-and-mark and standby oversight; inspection, testing, calibration, and maintenance

of valves, measurement and regulation (M&R) equipment; compressor station operations and emissions monitoring; and cathodic protection (CP) and corrosion mitigation and environmental monitoring and reporting. These activities are foundational to safe operations and reliable gas service.

All costs in this testimony are shown in 2025 dollars, unless otherwise noted. In addition to this testimony, please also refer to my workpapers (Exhibit (Ex.) SDGE-05-WP (O&M) and Ex. SDGE-05-CWP (Capital)) for additional information about the activities described herein.

2. Overview of the Gas Transmission System

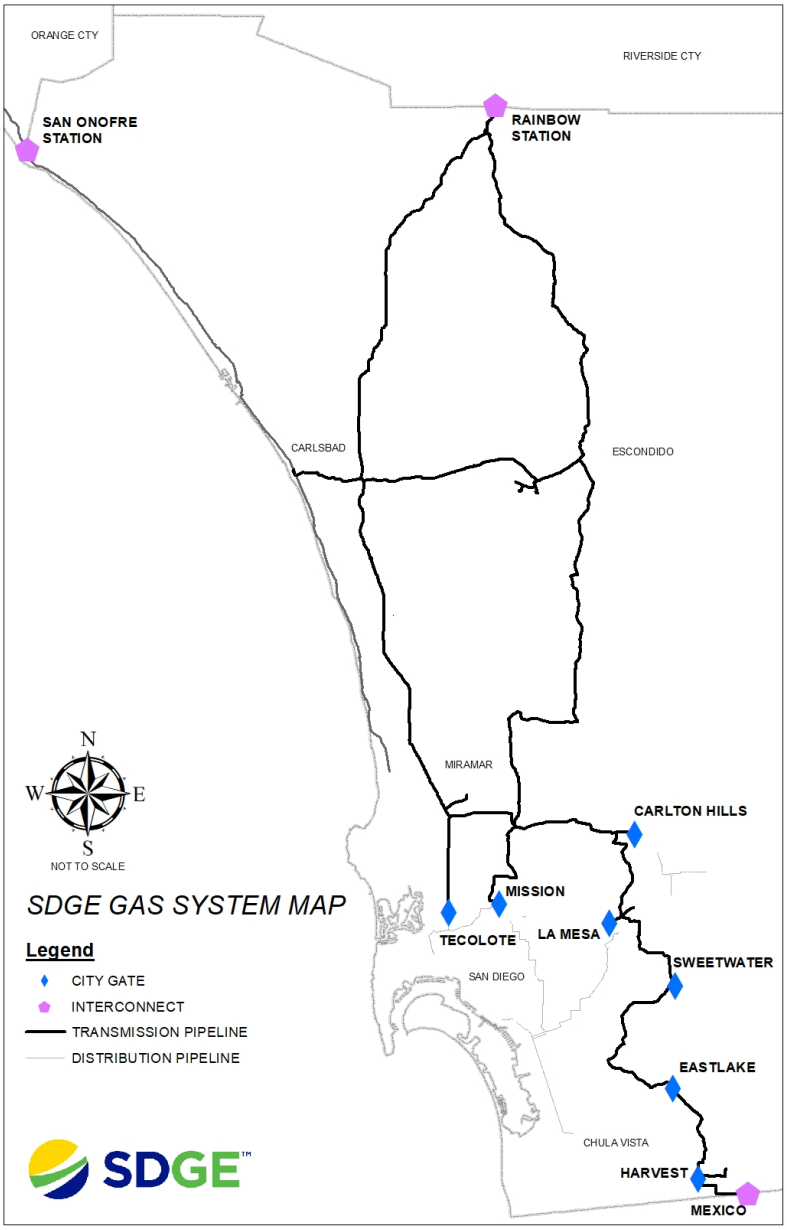
SDG&E owns and operates an integrated natural gas system comprised of medium-pressure and high-pressure distribution pipelines, as well as transmission pipelines. These assets support energy reliability for approximately 905,000 customers within SDG&E's service territory. This system also includes approximately 217 miles of U.S. Department of Transportation (DOT)-defined transmission pipeline that serve as the primary backbone for transporting natural gas to downstream distribution facilities and large end-use customers.

The GT system receives natural gas from both intrastate and interstate sources, including the Rainbow interconnection, coastal receipt points, and the Otay Mesa interconnection with the Transportadora de Gas Natural pipeline in Mexico. All gas entering the system is analyzed and measured to verify compliance with quality specifications.

Furthermore, to maintain system pressures and operational flexibility, SDG&E owns and operates one active compressor station, the Moreno Compressor Station, with a maximum output of approximately 16,585 horsepower. This station is equipped with compressor engines, filtration, cooling, and power systems.

Collectively, SDG&E GT assets form a complex, interconnected system that supports safe, reliable and efficient natural gas delivery across SDG&E's service territory. Figure GO-1 below provides an overview of the SDG&E GT system.

FIGURE GO-1
SDG&E Gas Transmission System Map



3. Regulatory Framework and Compliance Obligations

SDG&E's GT system operates within a comprehensive state and federal regulatory framework[1] that establishes mandatory safety, integrity management, environmental, and reporting requirements.

The transmission pipeline and compressor station operations comply with PHMSA regulations,[2] CPUC GO 112-F, the CARB Oil and Gas Methane Regulation (Oil & Gas Rule),[3] and Transportation Security Administration (TSA)[4] critical infrastructure expectations. GT operations personnel perform equipment inspections, emissions monitoring, and event-driven assessments, repairs, system updates and maintain 24/7 emergency readiness.

Environmental compliance is another major component of system operations. SDG&E conducts methane Leak Detection and Repair (LDAR) activities pursuant to the CARB Oil & Gas Rule and performs greenhouse-gas (GHG) measurement and reporting pursuant to EPA Subpart W[5] and CARB's Mandatory Greenhouse Gas Reporting Regulation (MRR). These regulations require routine inspection, monitoring, repair documentation, and annual reporting of emissions data.

The forecasts presented in my testimony reflect the resources required to comply with these obligations and to manage risk within a highly regulated, high-consequence operating environment.

4. Forecast Methodology

The GT O&M forecast predominantly uses Base Year (BY) 2025, with targeted incremental adjustments reflecting identifiable changes in workload increases, staffing

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[1] Regulatory bodies include: Pipeline and Hazardous Materials Safety Administration (PHMSA), CPUC General Order (GO) 112-F, and California Air Resources Board (CARB).

[2] TSA/PHMSA, 49 CFR § 100-199 (Chapter I: Pipeline and Hazardous Materials Safety Administration, Department of Transportation), *available at:* https://www.ecfr.gov/current/title-49/subtitle-B/chapter-I.

[3] CARB/Oil and Gas Methane Regulation, Cal. Code Reg., Title 17, §§ 95665–95677 (Subarticle 13: Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities).

[4] TSA, *Pipeline Security Guidelines* (April 2021) at § 5 (Criticality), *available at:* https://www.tsa.gov/travel/frequently-asked-questions/pipeline-security-guidelines.

[5] U.S. Environmental Protection Agency (EPA), 40 CFR § 98.230-98.238 (Subpart W: Petroleum and Natural Gas Systems), *available at:* https://www.ecfr.gov/current/title-40/chapter-I/subchapter-C/part-98/subpart-W.

adjustments, expanded monitoring, training, improved forecasting tools, system modernization efforts, and compliance-driven requirements. The base year approach provides a reasonable representation of steady-state operating conditions under current regulatory requirements. Incremental adjustments are limited to activities supported by documented safety, compliance, operational, and workload drivers.

Capital forecasts primarily utilize a five-year average methodology (2021–2025), with adjustments to remove atypical historical costs, and incorporate unique activities expected during the forecast period. This methodology reflects long-term investment patterns while accounting for modernization initiatives, reliability needs, asset-condition considerations, and regulatory requirements.

Accordingly, the projected O&M and capital expenditures are prudent, necessary, and fully justified. Subsequent sections provide detailed explanations of the drivers, methodologies, and incremental changes associated with each forecast component.

5. Key Operational and Compliance Drivers

Primary upward adjustments in this area are driven by incremental safety and compliance activities, evolving regulatory requirements, asset aging, and expanded monitoring capabilities.

Targeted incremental activities include:

- Enhanced Right-of-Way (ROW) maintenance to address encroachment, land movement, vegetation overgrowth, and personnel access concerns;
- O&M of the growing inventory of automated and remote-controlled valves;
- Enhanced methane reduction activities in compliance with state and federal regulations;
- Enhanced personnel training; and
- Repair or replacement of pipeline and compressor equipment and systems to address aging infrastructure, comply with environmental regulation requirements, improve safety, mitigate system risks, or expand system capacity.

B. Organization of Testimony

My testimony is organized as follows:

- **Introduction:** Provides an overview of this testimony and operations under GT that support safety, reliability, compliance, and affordability;

- **Affordability & Efficiency:** Discusses how the GT organization applies integrated planning and innovation to deliver projects and programs efficiently and affordably;
- **Non-shared O&M Cost:** Identifies activities, forecasted costs, and drivers of operations for GT, where the forecasted costs belong exclusively to SDG&E;
- **Capital Costs:** Identifies capital investment activities, planned capital forecasts and the drivers that necessitate these investments for the GT system, where the forecasted costs belong exclusively to SDG&E;
- **RAMP Integration:** Identifies activities that align with SDG&E's RAMP filing and explains how risk mitigation strategies are incorporated into this GRC request;
- **Conclusion:** Summarizes the testimony and reinforces the importance of these programs in meeting safety, reliability, and policy objectives while maintaining affordability; and
- Witness Qualifications that set forth my qualifications as a witness.

C. Support To and From Other Witnesses

My testimony relies on and provides foundational operational support to several other SDG&E witness areas. The relationships summarized below reflect areas where GT activities depend on forecasts, policies, or methodologies sponsored by other witnesses, as well as areas where my testimony provides operational, cost, or system insights that support their testimony.

1. Risk-Based Decision-Making Framework (RDF) Integration (Ex. SCG-02B/SDGE-02B)

This witness area provides the enterprise risk framework and the methodology used to translate RAMP activities into GRC requests. My testimony incorporates these policies in its RAMP mitigation tables and in the explanation of incremental activities tied to safety, reliability, compliance, and climate risks. My testimony depends on this witness area for RAMP methodology, risk definitions, and compliance treatment of risk mitigations.

This witness area also identifies long-term climate hazards (*e.g.,* wildfire, heat, landslide, and flooding) and adaptation priorities for the GT system. My GT forecasts include activities, such as installation, replacement, and enhancement of transmission assets, that align with Climate Adaptation Vulnerability Assessment (CAVA) hazard assessments. My testimony relies

on CAVA for hazard identification, and CAVA relies on GT operations for practical implementation and cost forecasting.

2. Gas Engineering & System Integrity (GESI) (Ex. SDGE-03)

The GESI witness area sponsors overarching integrity management methodologies, risk assessments, and engineering standards used across transmission pipelines. It also describes the proactive Geohazard Management Program (GMP) that identifies and assesses potential risk to gas infrastructure from geohazards. My testimony depends on GESI for risk ranking, program design, and technical standards. GESI depends on my chapter for O&M and execution of capital workloads.

3. Sustainability and Environmental (Ex. SDGE-17)

This witness area sponsors interpretation of environmental and emissions regulations, including CARB Oil & Gas Rule LDAR and EPA's Subpart W reporting. The GT testimony includes field labor, monitoring, repair, and data activities needed to comply with these rules at SDG&E's compressor station. My witness area relies on the Sustainability and Environmental witness area for regulatory interpretation and compliance frameworks, and Sustainability and Environmental relies on my witness area for execution and resource needs.

4. Operations Support (Ex. SDGE-16)

This witness area sponsors costs for vehicles and facility upgrades. My testimony relies on this witness area for the capital and O&M associated with vehicles used for patrol, leak surveys, pipeline system maintenance, and compressor operations. My testimony identifies the operational need, and Operations Support determines cost and lifecycle planning.

5. Gas Distribution (GD) (Ex. SDGE-04)

This witness area's testimony and my testimony reference common mitigation measures presented in the 2025 RAMP Report. Specifically, both testimonies reference risk control C002 (Damage Prevention Activities – Gas), as defined in the 2025 RAMP Report (Chapter SDG&E-Risk-1 Excavation Damage).

6. Gas Major Projects (Ex. SDGE-06)

This witness area sponsors the Moreno Compressor Modernization project that interfaces with GT operations. My testimony provides operational context and integration requirements, and Gas Major Projects provides capital cost detail and construction execution.

II. AFFORDABILITY & EFFICIENCY

GT enhances affordability and efficiency through optimized system operations, preventative programs, disciplined project governance, targeted infrastructure investments, and modernization of asset management systems as described below. Collectively, these practices promote prudent resource utilization, reduce lifecycle costs, and support the provision of safe, reliable, and affordable service for customers.

Operational Efficiencies and Preventative Programs: GT achieves operational efficiencies through standardized, regulation-aligned work practices conducted in compliance with 49 CFR Part 192[6] and CPUC GO 112-F.[7] Pipeline patrols, leak surveys, damage prevention activities, valve maintenance, and odorization are examples of activities proactively performed to prevent failures. Compressor station inspections and emissions control activities similarly comply with PHMSA, CARB, EPA and TSA requirements, helping to minimize unplanned outages and costly emergency repairs.

Preventive programs such as CP reduce long-term costs by mitigating corrosion-related leaks and pipeline failures. Efficiency is further supported through technology enhancements that improve real-time asset visibility, optimize field dispatches, and strengthen compliance with PHMSA regulations.

Project Delivery and Governance: GT projects are delivered by the GT operations teams with governance support from SDG&E's Gas Operations Project Management Office (PMO). The PMO administers standardized project delivery and governance processes that promote disciplined scoping, planning, execution, and lessons learned review. This framework enables early, informed decision-making and reduces the risk of redesigns, change orders, and construction phase uncertainties that can drive cost variability.

GT projects are implemented under the Project Delivery Model (PDM), maintained by the PMO. The PDM includes a structured Stage Gate Review Process that sequences deliverables and promotes consistent scoping, planning, and execution. Stage-specific deliverables support adherence to standards, appropriate authorization of scope and funding, and

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[6] 49 CFR § 192 (Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards), *available at:* https://www.ecfr.gov/current/title-49/part-192.

[7] CPUC, GO 112 F (Design, Construction, Testing, Maintenance, and Operation of Utility Gas Gathering, Transmission, and Distribution Piping System), *available at:* https://docs.cpuc.ca.gov/SearchRes.aspx?docformat=ALL&DocID=163327660.

disciplined oversight in support of financial prudence. Each stage includes a leadership review to confirm objectives and assess cost, schedule, and risk before proceeding. It also incorporates structured collaboration with multiple organizations across SDG&E and SoCalGas. These cross-functional reviews identify scope and schedule synergies, minimize operational, customer, and community impacts, and support prudent decision-making throughout the project lifecycle. When projects occur in the same geographic area, teams coordinate activities to reduce redundant mobilizations, limit disruptions, and share resources where feasible.

III. NON-SHARED O&M COSTS

"Non-Shared Services" are activities that are performed by a utility for the benefit of its system and its customers. Table GO-2 summarizes the total non-shared O&M forecast by cost categories.

O&M activities are routinely performed on the GT system in response to federal and state regulatory agency codes and standards,[8] customer expectations, system conditions, and to sustain safe and reliable operation of the system. This work includes leak surveys, leak repairs, patrols, valve inspections and repairs, corrosion control, damage prevention, compressor station operations, equipment inspections and repairs, emissions control, safety related inspections, and ROW maintenance. In addition, there is a variety of supporting activities necessary to complete this field O&M work. Examples of support work include system status monitoring, compliance documentation, engineering, planning, permitting, class location evaluations, emissions documentation, regulatory reporting, governance and leadership. Investment in these activities supports SDG&E's commitment to mitigate risks associated with hazards to public and employee safety, infrastructure integrity, system reliability, and affordability.

The level of funding requested in this testimony is consistent with continuing compliance with pipeline safety regulations and the continued safe and reliable operation of SDG&E's GT system.

In preparing projections for the TY 2028 forecast, SDG&E GT reviewed historical spending levels, including units of work, and developed an assessment of future needs and associated risks. This analysis entailed a review of the historical 2021 through 2025 spending

[8] *See, e.g.,* Transportation of Natural and Other Gas by Pipeline: Minimum Federal Safety Standards, 49 CFR § 192; Cal. Gov't Code § 4216, et seq.; GO 112-F; GO 58-A; CARB; EPA; API.

and consideration of the underlying cost drivers. Depending on future expectations for the underlying cost drivers, a primary forecast methodology was selected. Based on this analysis, the selected baseline forecast method is BY 2025. In addition, incremental work above historical spending levels was identified to maintain the safe and reliable operation of the GT system and supporting work processes. An analytical calculation was then performed to determine the funding of these new or more extensive work elements. The overall result is a forecast that has its foundation based on the historical representation, to which incremental expenses have been added.

In summary, GT requests the Commission adopt a TY 2028 forecast of O&M expenses for non-shared services of $6,511,000 as summarized in Table GO-2.

TABLE GO-2
Non-Shared O&M Summary of Costs

GAS TRANSMISSION (In 2025 $)			
Categories of Management	**2025 Adjusted - Recorded (000s)**	**TY 2028 Est. (000s)**	**Change (000s)**
A. GT Pipeline & Instrumentation Operations	1,969	2,352	383
B. Compressor Station Operations	3,539	3,717	178
C. Gas Transmission Operations	240	241	1
D. Environmental Regulations	857	201	(656)
Total Non-Shared Services	**6,605**	**6,511**	**(94)**

The Commission should find this forecast reasonable and fully justified in that: (1) the activities support continued delivery of safe and reliable service; (2) activities are consistent with local, state, and federal regulations; (3) activities respond to operations, maintenance, and construction needs; (4) the forecast amounts are reasonable in light of historical spending and anticipated work; (5) the activities support SDG&E's commitment to mitigate risks associated with hazards to public and employee safety, infrastructure integrity, and system reliability; and (6) system operations have been optimized to enhance affordability and efficiency.

A. GT Pipeline & Instrumentation Operations (1GT000.000)

TABLE GO-3
Non-Shared O&M – GT Pipeline & Instrumentation Operations

GAS TRANSMISSION (In 2025 $)			
A. GT Pipeline & Instrumentation Operations	**2025 Adjusted-Recorded (000s)**	**TY 2028 Est. (000s)**	**Change (000s)**
1. GT Pipeline & Instrumentation Operations	1,969	2,352	383

1. Description of Costs and Underlying Activities

These costs cover labor and non-labor expenses for the GT Pipeline and Instrumentation Operations team that supports the safe, reliable, and efficient operation of the GT pipeline system and its associated facilities. GT conducts routine maintenance activities, performs system inspections, and provides rapid emergency response during events such as earthquakes, wildfires, excavation damage, and other abnormal operating conditions that impact system stability or performance.

An underlying cost driver across all GT Pipeline and Instrumentation Operations activities is the aging profile of the transmission asset base. As transmission pipelines, valves, actuators, measurement stations, and associated instrumentation continue to age, additional patrol, inspection, repair, and monitoring activities are required to maintain safe operation in accordance with 49 CFR Part 192, Subpart M (Maintenance). In addition, federal PHMSA rules and CPUC requirements drive the modernization of pipeline valves, actuators, communications equipment, and other instrumentation. This equipment requires more frequent inspections, extended troubleshooting efforts, increased callouts, and expanded system data management.

GT Pipeline and Instrumentation Operations also manage gas quality standards to maintain system functionality and protect downstream customers. The organization supports environmental and regulatory compliance activities for both aboveground and underground infrastructure, including requirements related to air quality, hazardous materials, groundwater protection, stormwater control, and waste management. Compliance with environmental regulations involves managing air emissions, hazardous materials, waste disposal, stormwater controls, and groundwater protection. Compliance may also require obtaining permits or authorizations from local, state, and federal agencies (*e.g.*, Certified Unified Program Agencies

(CUPA) and air quality management districts). California's environmental requirements apply to both aboveground and underground pipeline facilities and are layered on top of federal PHMSA operational standards. GT Pipeline and Instrumentation Operations actively track changes to federal, state, and local regulations and adjust operational practices as needed. These ongoing efforts support SDG&E's environmental commitments and contribute to the State of California's greenhouse gas reduction objectives.

Core activities for GT Pipeline and Instrumentation Operations include:

Damage Prevention Activities – Gas: Damage Prevention Activities for GT pipelines include locate-and-mark efforts that comply with California Government Code 4216, which requires operators to identify and mark underground facilities prior to excavation. This program is a key preventive measure against third-party excavation damage, a leading cause of pipeline incidents. Work includes locating and marking GT pipelines; direct job observations during excavation near SDG&E facilities; potholing and depth verification checks; marking electrical lines beyond the electric utility's power drop pole; and identifying telecommunications, SCADA, and fiber lines located within or near SDG&E assets. These activities help reduce excavation-related risks and support compliance with both state and federal damage prevention expectations (49 CFR § 192.614).

Pipeline Monitoring Technologies: Pipeline Monitoring Technologies include both Optical Pipeline Monitoring (OPM) and High Consequence Area (HCA) Methane Monitoring. OPM technology uses specialized fiber-optic sensing cables to detect abnormal operating conditions, such as leaks, ground subsidence, and third-party intrusion, across the transmission system. GT maintains OPM equipment, batteries, utility power, and other materials necessary for safe and reliable operation. This equipment is necessary for the safety and reliability of the transmission system.

Methane monitoring systems are strategically deployed near high-occupancy structures, areas with significant excavation challenges, and locations situated within approximately 220 yards of high-pressure, large-diameter transmission pipelines. These areas represent increased risk profiles and require additional protective measures consistent with federal integrity management principles.

Routine maintenance includes inspecting the physical installation, validating sensor functionality, confirming communication links, cleaning equipment, and performing any

necessary repairs or component replacements. These activities help maintain continuous detection capability, enhance situational awareness for pipeline operators, and contribute to the broader safety and reliability objectives of both PHMSA regulations and California oversight requirements.

The activities described above are essential for maintaining and enhancing the integrity, safety, and reliability of the GT pipeline system, collectively supporting one or more RAMP mitigations.

CP Maintenance: CP Maintenance activities mitigate external corrosion, a primary threat to pipeline integrity and safety. By applying a controlled electrical current, CP systems prevent steel corrosion in the underground environment, thereby extending asset life, reducing the risk of leaks or ruptures, and enhancing operational reliability, consistent with applicable federal regulations (49 CFR §§ 192.451–192.493). Implementing effective CP maintains safety, environmental health, and the long-term performance of critical infrastructure.

Two CP methods are employed to provide corrosion protection to underground steel pipelines:

- **Galvanic Anode CP:** This system employs sacrificial anodes made of more active metals, typically magnesium, that corrode preferentially, thereby preventing pipeline degradation. The anodes are buried near the pipeline and electrically connected, allowing protective current to flow without an external power source. This method is well-suited for small to medium pipelines in low-resistivity soils. This passive protection method supports pipeline integrity and extends asset life.
- **Impressed Current CP:** This is an advanced corrosion control system that protects underground steel pipelines by supplying a continuous direct current (DC) from an external power source. It uses inert anodes connected to a DC power supply (rectifier) to deliver protective current to the pipeline. This method is highly effective for large pipeline networks or areas with high soil resistivity. By actively maintaining the pipeline as the cathode, this CP system supports the pipeline's long-term integrity and minimizes corrosion-related failures.

CP activities support safe operation and compliance with 49 CFR Subpart I. Core tasks include:

- Annual Electrical Test Station (ETS) readings
- Bi-monthly current source inspections
- Annual rectifier maintenance
- Annual pipeline assessments (required at intervals ≤15 months)
- Rectifier inspections six times per year (required at intervals ≤2.5 months)

This work includes voltage and amperage checks, equipment calibration, cleaning, tightening connections, replacing tags, and troubleshooting deficiencies. Regular inspections maintain system integrity, extend pipeline life, and mitigate corrosion risks. Additional work includes replacing or upgrading CP components (bonds, test points, and insulators) and addressing anode depletion, which accelerates under drought or in high-resistivity soils. Anode life varies depending on soil type, weather conditions, pipeline length, and coating type.

Pipeline Maintenance: Pipeline maintenance activities follow federal requirements outlined in 49 CFR Part 192 Subpart M, establishing ongoing maintenance standards to enable the safe operation of GT pipelines. The operating base within SDG&E's service territory performs these operations across the transmission system, including daily operation of pipeline facilities, valves, appurtenances, and related infrastructure. Core activities include routine maintenance, corrective repairs, documentation, and operational monitoring needed to remain in compliance with PHMSA regulations and CPUC GO 112-F.

Maintenance activities encompass the day-to-day operation of pipeline facilities, valves, appurtenances, and associated infrastructure. This includes routine maintenance, corrective work, documentation, and operational monitoring necessary to enable safe operations and maintain compliance with PHMSA regulations and CPUC GO 112-F, as well as the requirements outlined in 49 CFR Part 192, Subpart M.

Covered pipeline segments, in particular, have specific pipeline maintenance requirements. For covered pipeline segments, SDG&E is required to maintain valves in an operable condition; confirm they are capable of remote or on-site operation under normal, abnormal, and emergency conditions; and support valve status and pressure monitoring to enable timely emergency response. A covered pipeline segment refers to those portions of SDG&E's

pipeline system subject to enhanced safety requirements under applicable federal and state pipeline safety regulations, including PHMSA regulations in 49 CFR Part 192 governing valve maintenance and integrity management. Maintenance activities for covered segments include periodic inspections, functional testing, and corrective actions to address inoperable or degraded equipment. These activities also include conducting operational drills and post-event reviews to validate response effectiveness and incorporate lessons learned into operating procedures and training programs.

Also included within this work category are the O&M of automated and remote-controlled valves on the transmission system. Automated control valves have been installed throughout the transmission system to enable prompt isolation of transmission pipelines during emergency situations. These valves serve as an important risk-mitigation measure for pipeline ruptures and are therefore critical to the safe operation and reliability of the transmission system. Automatic Shutoff Valves (ASVs) and Remote-Controlled Valves (RCVs) enhance system safety by augmenting existing valve infrastructure to improve SDG&E'S ability to promptly identify, isolate, and contain escaping gas in the event of a pipeline rupture. These activities are governed by 49 CFR § 192.636.

Leak surveys also have pipeline maintenance requirements. The requirements are governed by 49 CFR § 192.706-192.723 and CPUC GO 112-F, which define survey frequency based on class location and pipeline attributes. Surveys of Class 1-3 locations are conducted semiannually, and surveys of Class 4 locations and railroad crossings are performed quarterly. Operators use calibrated leak detection instruments on foot, in vehicles, or via aerial patrol for remote terrain, consistent with federal requirements for accessibility and survey reliability. Additional special-purpose surveys are required for situations such as instances before paving or street improvements, after significant operational events, during pressure uprates, or whenever unusual operating conditions or external factors justify increased survey frequency. Field reconnaissance and pipeline patrols are completed in identified moderate- to high-threat locations, as needed to support the Geohazard Management Program.[9]

[9] SoCalGas's Geohazard Management Program (GMP) is a proactive program that identifies and assesses potential risk to gas infrastructure from geohazards within the SoCalGas and SDG&E service territories. The evaluation process includes (among other activities) desktop analysis to determine areas of potential impact; field reconnaissance and site-specific advanced analysis if further data is

Additionally, odorization of natural gas is a pipeline maintenance activity to further support early leak detection and enhance public safety. SDG&E odorizes natural gas in accordance with 49 CFR § 192.625, which requires gas to contain a detectable odorant at a level recognizable by a person with a normal sense of smell at one-fifth of the lower explosive limit (LEL). This performance-based standard applies to all transmission pipelines where odorized gas is needed for safety. SDG&E works with approved odorant suppliers to maintain reliable inventory and delivery schedules consistent with PHMSA expectations for continuous odorant availability. Odorant injection equipment is routinely monitored and maintained in alignment with federal operational requirements. Odorant concentrations are verified through odor-intensity tests and odorometer readings at key monitoring locations across the transmission system. These practices support compliance with 49 CFR § 192.625 and reflect industry standards referenced in API 1104. Within California, odorization activities also follow CPUC GO 112-F, which incorporates federal requirements and mandates consistent odorization practices throughout the system. Ongoing testing, equipment calibration, and recordkeeping help maintain compliance and contribute to overall system safety and reliability.

Routine patrol activities also fall under pipeline maintenance. These activities are required under 49 CFR § 192.705 and CPUC GO 112-F to identify conditions that may affect safe operation, including construction activity, evidence of leaks, abnormal operating conditions, land movement, erosion, or security concerns. Patrol frequency varies by class location, as defined in PHMSA rules. Under § 192.5 (Class Locations) and § 192.611 (Class Location Change Requirements), transmission pipelines located in areas that have transitioned to higher population density, particularly Class 4 locations, require increased patrol, inspection, and leak survey frequencies. These reclassified segments require enhanced monitoring, documentation, and preventative measures, which increase operational workload and cost. Patrol activities include ROW inspections; installation and verification of high-pressure markers; inspection of bridges, spans, and overhead crossings; and documentation of potential threats or encroachments.

needed; assessing risk for site-specific locations and assets; and recommended mitigation or monitoring. As part of geohazard management, SoCalGas implemented updated design and construction parameters for new pipeline installations in areas identified as geohazard-prone. *See* the SoCalGas GESI Testimony (Ex. SCG-03) for more information about the GMP.

These activities support compliance by allowing early detection of hazards that could affect pipeline integrity.

Standby services and emergency response staffing are also critical because they support events, such as third-party excavation damage, wildfires, earthquakes, flooding, and other natural disasters affecting pipeline safety. PHMSA requires emergency plans and rapid response to emergencies under § 192.615 (Emergency Plans). California's oversight structure (CPUC and California Office of Emergency Services (CalOES) coordination requirements) further increases the scope of operational readiness needed for transmission's emergency response. Qualified personnel are required to monitor excavations within ten feet of a high-pressure transmission pipeline (above 60 psig). This oversight helps reduce the risk of immediate or delayed pipeline damage, ground movement, coating compromise, and integrity threats during third-party activities.

Leak surveys and patrolling activities are necessary to maintain or improve the pipeline system and extend the life of pipeline assets by allowing early detection of hazards that could affect pipeline integrity.

Measurement & Instrumentation – Maintenance: M&R facilities are inspected and maintained in accordance with 49 CFR Part 192 Subparts L and M, and CPUC GO 112-F, which set inspection intervals and performance requirements. Activities include inspection, maintenance, testing, and calibration of pressure-limiting stations, relief valves, control valves, valve actuators, valve controls, transmitters, producer stations, regulators, associated instrumentation, and large customer meter set assemblies (MSA). These components play a central role in maintaining pipeline pressures at or below the Maximum Allowable Operating Pressure (MAOP) as required by PHMSA. MSAs undergo routine maintenance to support metering accuracy and gas quality compliance.

a. Description of RAMP Mitigations

Within this cost category, there are non-shared O&M costs for risk controls C002 (Damage Prevention Activities – Gas), C010 (Pipeline Monitoring Technologies), C108 (Cathodic Protection Maintenance), C132 (Pipeline Maintenance), and C155 (Measurement & Instrumentation Maintenance) that were presented in the 2025 RAMP Report and are listed in Table GO-4. The activities described above support C002, C010, C108, C132, and C155, and

are essential for maintaining and enhancing the integrity, safety, and reliability of the GT pipeline system.

Activities that are compliance-related or mandated by the CPUC or other agencies are listed in bold, and Appendix B attached to this testimony provides the detailed compliance information regarding these mandates for each control.

TABLE GO-4
RAMP and GRC Risk Control/Mitigation Activities – O&M

GT Pipeline and Instrumentation Operations				
ID	**Control/Mitigation Name**	**2025 RAMP 2028 Estimate In 2024 $ (000s)**	**2028 GRC 2028 Forecast In 2025 $ (000s)**	**Change ($000s)**
C002	**Damage Prevention Activities – Gas**	455[10]	305	(150)
C010	Pipeline Monitoring Technologies	336	47	(289)
C108	**Cathodic Protection Maintenance**	135	118	(17)
C132	**Pipeline Maintenance**	933	1,340	407
C155	**Measurement & Instrumentation Maintenance**	364	541	177
	TOTAL	**2,222**	**2,351**	**129**

b. Description of Selection and Prioritization of RAMP Risk Mitigations

The RAMP risk mitigation efforts are associated with specific actions, such as programs, projects, processes, and utilization of technology and are designed to address a specific safety and/or reliability risk. The Company's selection and prioritization of these RAMP mitigation activities considered many factors when determining if these risk mitigation activities are an effective and worthwhile investment. The Enterprise Risk Management (ERM) process for

[10] The total RAMP O&M forecast for C002 is $7.811 million. The cost shown on the table represents the estimated RAMP O&M forecast allocated to this workpaper, proportional to the GRC O&M forecast, representing 6% of the total activity. The other portion of costs for C002 can be found in the Gas Distribution Testimony (Ex. SDGE-04).

identifying and assessing system risk is described in the RDF Integration testimony (Ex. SCG-02B/SDGE-02B).

Risk controls C002, C010, C108, C132, and C155 support risk reduction and strengthen the reliability and efficient operation of the GT pipeline system and its associated facilities. They also address external corrosion, internal corrosion, stress corrosion cracking, manufacturing defects, weather-related or external forces, incorrect operations, equipment failure, and incorrect or inadequate asset records. If not addressed, these drivers could lead to a risk event with potential consequences for customers. Eight potential risk drivers are addressed by these activities that protect against equipment failure and corrosion, and reduce the risk of serious injuries or fatalities, infrastructure damage, operational and reliability issues, or environmental impacts resulting from the failure of high-pressure gas pipeline. In prioritizing this proactive approach, SDG&E seeks to reduce the likelihood of future risk events, and avoid significantly higher operational, customer and recovery impacts associated with responding to realized incidents. These activities are completed in accordance with regulatory requirements, as further described in Section III.A.3.

2. Forecast Method

The forecast method for GT Pipeline and Instrumentation Operations is based on BY 2025, with incremental adjustments applied to account for anticipated cost pressures. These adjustments include incremental labor and non-labor costs necessary to sustain and enhance the transmission pipeline system as described in the section below. Although a review of the five-year historical average (2021–2025) results in a higher baseline for this work category, the BY 2025 method is appropriate as it reflects the most current full scope of activities that are non-discretionary and are driven by regulatory requirements and asset conditions. The activities in this work category do not have significant variability year-to-year and changes beyond the incremental requests to current operations are not anticipated at this time.

3. Cost Drivers

The primary cost drivers for the GT Pipeline and Instrumentation Operations cost category are grounded in obligations under 49 CFR Part 192 and further defined in CPUC GO 112-F, as described in Section III.A.1. In addition to costs captured in BY 2025, the following incremental costs are requested:

Pipeline Maintenance: Incremental funding of $200,000 over the base year for TY 2028 is requested for labor and non-labor costs to address the increased workload associated with increased ROW maintenance demands. This work reflects the growing maintenance requirements driven by development patterns, geographic challenges, and regulatory obligations.

Growth in residential, commercial, and industrial development across areas that were previously undeveloped has had a substantial impact on the scope and complexity of ROW maintenance. As development growth gets closer to transmission corridors, ROW activities must address vegetation growth, fire risk, and the likelihood of encroachments that can interfere with inspection access and operational activities. Patrol road upkeep requires repeated grading, erosion repair, and other maintenance efforts to maintain safe access for inspections, patrols, and emergency response. Furthermore, many ROW segments are located in steep, rugged, or environmentally sensitive terrain, and can only be accessed with specialized contractors, specialized equipment, and extended mobilization efforts. These areas often require additional planning, longer travel times, and higher contractor costs due to limited accessibility and the need to transport equipment capable of navigating difficult topography. Additionally, climate-related impacts have caused increased erosion and subsidence in these segments that necessitate maintenance beyond routine activities.

Pipeline Monitoring Technologies: Under Pipeline Monitoring Technologies, incremental OPM maintenance funding is requested to support increased fiber-optic monitoring across the GT system, including four new OPM Stations.

In addition, incremental funding is requested under Pipeline Monitoring Technologies for maintenance of additional methane monitoring equipment expected to be operational by 2028. Funding supports unplanned maintenance, alarm response, damage repair, supervision, and materials. 170 HCA Methane Monitoring sites are planned to be in service and require maintenance by TY 2028. The incremental funding required for this activity is $60,000 over the 2025 adjusted-recorded base for TY 2028.

CP Maintenance: In support of the activities outlined in Section III.A.1, incremental funding of $50,000 over BY 2025 for TY 2028 is to support AC interference monitoring and mitigation near high-voltage electric transmission lines. Steel pipelines near high-voltage AC electrical lines are susceptible to AC interference, which may increase the risk of pipeline corrosion and safety risks to personnel, the public, and the environment. In accordance with 49

CFR §192.473, new regulatory requirements that were made effective in 2023 expanded obligations for the identification, monitoring, and mitigation of AC interference on GT pipelines. These requirements have been programmatically developed by the Transmission Integrity Management Program (TIMP) teams and implemented by GT operations. While AC interference had previously been monitored and mitigated primarily from a safety perspective, the regulatory amendments establish defined thresholds[11] for AC current density that must be evaluated and mitigated to prevent corrosion-related integrity risks. Through implementation of these requirements, SDG&E will monitor and mitigate AC stray current to maintain the safety and integrity of its transmission pipeline system and support ongoing compliance with federal corrosion control standards. These measures address AC-induced corrosion and personnel safety hazards, necessitating the implementation of new equipment and procedures.

B. Compressor Station Operations (1GT001.000)

TABLE GO-5
Non-Shared O&M – Compressor Station Operations

GAS TRANSMISSION (In 2025 $)			
B. Compressor Station Operations	**2025 Adjusted-Recorded (000s)**	**TY 2028 Est. (000s)**	**Change (000s)**
1. Compressor Station Operations	3,539	3,717	178

1. Description of Costs and Underlying Activities

Compressor Station Operations costs include labor and non-labor expenses necessary to support the safe, reliable, and compliant operation of SDG&E's Moreno Compressor Station and its associated infrastructure. The Moreno Compressor Station is a critical component of SDG&E's natural GT system, because it provides essential pressure support, flow control, and operational flexibility required to reliably deliver natural gas throughout the service territory. As a key transmission hub, the station enables SDG&E to balance system pressures, accommodate seasonal and peak-day demand, and respond to changing system conditions, outages, or emergency events. Continuous and reliable operation of this facility is fundamental to

[11] These changes can be found in Section C of 49 CFR § 192.473 (External Corrosion Control: Interference Currents).

maintaining system integrity and compliance with applicable federal and state requirements, including 49 CFR Part 192 and CPUC GO 112-F.

A primary cost driver for Compressor Station Operations is aging infrastructure. The Moreno Compressor Station includes compressor engines, ancillary mechanical and electrical equipment, monitoring and control systems, odorization equipment, filtration vessels, cooling systems, and real-time telemetry and SCADA communications integrated with Gas Control. The station has been in service for several decades and requires ongoing maintenance and targeted upgrades to sustain long-term reliability, operational resilience, and compliance with evolving safety and emissions standards. Aging facilities increasingly require investment in ancillary systems, such as enhanced monitoring and diagnostics, auxiliary power and lubrication systems, gas detection and ventilation equipment, and upgraded communications and automation infrastructure. These investments reduce equipment failures, improve system controllability, and minimize unplanned outages.

To comply with federal, state, and local regulations, Gas Compression Operations implements formal operating procedures, preventive maintenance programs, monitoring activities, and documentation practices. Key compliance-driven activities include:

Regulatory Compliance: GT Operations must comply with multiple regulatory frameworks, including requirements under 49 CFR Part 192, the CARB Oil & Gas Rule, LDAR obligations, and state environmental statutes. Compliance activities cover air quality management, hazardous materials handling, groundwater protection, stormwater programs, wastewater process controls, and waste management for both aboveground and underground facilities.

Operational Procedures: Standardized operating, maintenance, and safety procedures are developed and implemented for new, modified, and legacy station equipment. These procedures address requirements under PHMSA's O&M rules, including inspections, testing intervals, operational checks, valve alignment, and response protocols. Procedure updates support consistent operations and reflect evolving regulatory expectations and system conditions.

Inspection and Maintenance Activities: Routine and event-driven inspections are required under PHMSA's maintenance regulations. These include scheduled inspections of compressor engines, pressure control components, cooling and lubrication systems, filtration vessels, sensors, electrical equipment, and control systems. Post-event inspections occur after

earthquakes, flooding events, wildfires, pipeline shut-ins, or other operational disturbances. These assessments identify potential equipment impacts, validate safe operating conditions, and reduce reliability risks.

Real-time telemetry, monitoring, and control systems are essential components of safe and reliable inspection and maintenance activities. These systems provide continuous visibility into pressure, flow, equipment status, alarms, and station performance, which enable operators to detect abnormal conditions early and take timely corrective action.

Advancements in sensor technology, automation, and communication networks are essential to inspection and maintenance activities. They require updates to legacy hardware and software to enable compatibility, cybersecurity resilience, and regulatory compliance. Over time, components such as pressure and temperature transmitters, PLCs, remote terminal units (RTUs), communication modules, and SCADA interfaces experience wear, obsolescence, or performance degradation. Regular replacement, reprogramming, and testing are necessary to maintain data quality, minimize communication failures, and allow the control systems to perform as intended during both normal operations and emergency events.

Upgrades and maintenance activities include:

- Calibration and replacement of field instrumentation to enable accurate pressure, flow, and temperature measurements that support operational decision making and regulatory reporting;
- Modernization of PLCs, RTUs, and SCADA components to maintain functional reliability, cybersecurity compliance, and integration with updated corporate and field networks;
- Periodic software and firmware updates to address vulnerabilities, enhance functionality, and maintain alignment with industry standards and vendor support;
- Testing and validation of alarm logic, interlocks, and automated shutdown sequences to support equipment response during abnormal conditions, reducing the likelihood of incidents or system upsets; and
- Upgrades to communication infrastructure, including radio, cellular, and fiber systems, to improve data transmission reliability, reduce latency, and maintain continuous situational awareness.

System Integrity Management: The compressor station supports system integrity by adjusting operating parameters (pressure, flow, and temperatures) and by addressing gas quality issues consistent with integrity management expectations under PHMSA's Subpart O. Station personnel coordinate with engineering teams and Gas Control to maintain stable system operation during seasonal demand swings, maintenance work, or pipeline outages.

Post-event assessments represent a core regulatory expectation. Following natural disasters, extreme weather, seismic activity, wildfires, flooding, power disruptions, or abnormal operating conditions, the compressor station must be evaluated for structural impacts, equipment damage, misalignments, control system abnormalities, and potential environmental or safety hazards. Timely assessment and corrective action help prevent degraded components from contributing to failures that could jeopardize public safety, system reliability, or regulatory compliance. Event response processes reduce operational risk, prevent equipment degradation, and help support uninterrupted gas delivery. These efforts strengthen safety performance, support regulatory compliance, and support safe and efficient operation under both normal and adverse conditions.

Emergency Preparedness: Preparedness activities support emergency response requirements under 49 CFR §192.615, promote continuous situational awareness, reduce operational risk, and strengthen system reliability. Strategically placing key personnel at the compressor station helps prevent prolonged outages, supports adherence to mandated emergency response standards, and enhances the utility's ability to safely and effectively operate critical facilities under both normal and adverse conditions.

The compressor station maintains 24-hour on-call staffing ready to respond to operational issues, alarms, equipment failures and unplanned outages, control system malfunctions, abnormal operating conditions and other issues that require immediate intervention. Faster response times reduce the likelihood of escalation, help maintain safe operating pressures, and prevent extended service disruptions. This capability is especially critical at the compressor station that serves as a major transmission hub, pressure-maintenance point, and single-contingency location, where delayed response could significantly impact system performance.

In addition, onsite personnel support regulatory requirements for emergency preparedness and operational readiness, including:

- Timely hazard recognition and mitigation, as required under emergency response and incident management expectations;
- Execution of emergency shutdown (ESD) protocols, pressure adjustments, and operational isolation when abnormal conditions arise;
- Immediate coordination with Gas Control, field operations, and emergency responders during events such as equipment failures, pipeline operational issues, seismic activity, or severe weather impacts; and
- Documenting and reporting activities that demonstrate compliance with CPUC and PHMSA timelines for incident notification, post-event assessments, and corrective action.

Security Requirements (TSA Critical Infrastructure): The Moreno Compressor Station is designated as a TSA Critical Infrastructure, requiring enhanced physical security measures. Increased on-site security presence helps deter vandalism, theft, unauthorized entry, and tampering, which are activities that could compromise compressor engines, control systems, power infrastructure, or telecommunications equipment. Strengthening security supports system safety, protects key operational assets, and safeguards employees and the public. It also supports continuity of operations for critical infrastructure subject to both federal and state oversight. Personnel assigned to this location play a key role in supporting physical security requirements by:

- Monitoring and supporting newly installed hardening measures, including upgraded fencing, access control points, and perimeter protections;
- Providing real-time situational awareness to detect and respond quickly to unauthorized activity or security anomalies; and
- Coordinating with Gas Control, Security Operations, and field responders to enable timely and effective response to potential threats.

a. Description of RAMP Mitigations

Within this cost category, there are non-shared O&M costs for risk control C142 (Compressor Station – Maintenance) that were presented in the 2025 RAMP Report and are listed in Table GO-6. The activities described above support C142.

Activities that are compliance-related or mandated by the CPUC or other agencies are listed in bold, and Appendix B attached to this testimony provides the detailed compliance information regarding these mandates for each control.

TABLE GO-6
RAMP and GRC Risk Control/Mitigation Activities – O&M

Compressor Station Operations				
ID	**Control/Mitigation Name**	**2025 RAMP 2028 Estimate In 2024 $ (000s)**	**2028 GRC 2028 Forecast In 2025 $ (000s)**	**Change ($000s)**
C142	**Compressor Station – Maintenance**	5,072	3,718	(1,354)

b. Description of Selection and Prioritization of RAMP Risk Mitigations

The RAMP risk mitigation efforts are associated with specific actions, such as programs, projects, processes, and utilization of technology and are designed to address a specific safety and/or reliability risk. The Company's selection and prioritization of these RAMP mitigation activities considered many factors when determining if these risk mitigation activities are an effective and worthwhile investment. The ERM process for identifying and assessing system risk is described in the RDF Integration testimony (Ex. SCG-02B/SDGE-02B).

C142 addresses stress corrosion cracking, manufacturing defects, construction and fabrication, and incorrect or inadequate records of Compressor Station assets. If not addressed, these drivers could lead to a risk event with potential consequences for customers, including serious injuries or fatalities, operational and reliability issues, or environmental impacts. In prioritizing this proactive approach, SDG&E seeks to reduce the likelihood of future risk events, and avoid significantly higher operational, customer, and recovery impacts associated with responding to realized incidents. These activities are completed in accordance with regulatory requirements, as further described in Section III.B.3.

C142 activities are required under 49 CFR Part 192 and CPUC GO 112-F and support the safe and reliable operation of SDG&E's active compressor station and its related infrastructure.

2. Forecast Method

The forecast method developed for Compressor Station Operations is based on BY 2025, with incremental adjustments to account for anticipated pressures. The incremental adjustments are associated with modernization initiatives and evolving emissions-reduction requirements. These incremental activities are described in the following section. Although a review of the five-year historical average (2021-2025) results in a higher baseline for this work category, the BY 2025 method is appropriate as it reflects the most current full scope of activities that are non-discretionary and are driven by regulatory requirements and asset conditions. The activities in this work category do not have significant variability year-to-year and changes beyond the incremental requests to current operations are not anticipated at this time.

3. Cost Drivers

The primary cost drivers for Compressor Station Operations are regulatory compliance, including 49 CFR Part 192, CPUC GO 112-F, CARB Oil & Gas requirements, and LDAR standards, which necessitate continuous monitoring, reporting, and operational adjustments. Environmental compliance activities related to air quality, hazardous materials, stormwater, and waste management further contribute to costs. Aging compressor station infrastructure is also a key cost driver, as many components have been in service for several decades and require increased maintenance, inspections, and modernization to sustain safe, reliable, and compliant operations.

In addition to costs captured in BY 2025, incremental funding of $158,000 over the base year is requested for operational support needs related to electric motors, variable-frequency drives, advanced control systems, and increased coordination with the electric utility. These activities are associated with ongoing modernization and emission reduction efforts at the Moreno Compressor Station. As the station advances toward long-term modernization, additional costs are associated with preparing for lower-emission compression technologies, including the future installation of electric-driven compressors (EDC) and the expanded use of emissions-control systems. This new equipment will require a new skill set and additional resources.

Additionally, expanded use of selective catalytic reduction (SCR) systems contributes to higher operating costs. These systems require ongoing urea procurement, handling, and storage, along with routine maintenance and system upkeep to maintain consistent emissions-control

performance. Together, compressor station modernization and emissions-reduction efforts account for the increase in forecasted costs in this category. These efforts reflect targeted investments to support future station performance, emissions reduction objectives, and long-term operational reliability. The Moreno Compressor Modernization project is discussed in the Gas Major Projects testimony (Ex. SDGE-06).

C. Gas Transmission Operations (1GT005.000)

TABLE GO-7
Non-Shared O&M – Gas Transmission Operations

GAS TRANSMISSION (In 2025 $)			
C. Gas Transmission Operations	**2025 Adjusted-Recorded (000s)**	**TY 2028 Est. (000s)**	**Change (000s)**
1. Gas Transmission Operations	240	241	1

1. Description of Costs and Underlying Activities

These costs cover labor and non-labor expenses for the GT Operations team that provides unified leadership, technical expertise, and program governance needed to support the safe, reliable, compliant, and financially responsible operation of the GT system. The organization brings together three major functional areas into a coordinated framework that promotes system integrity and regulatory compliance. These functional areas are technical services, operational oversight, and program management.

The organization's leadership structure consists of the manager and supporting administrative functions. It oversees and aligns technical, operational, and compliance-driven activities, which include close coordination with other cross-functional groups to promote seamless operational performance. These cross-functional groups include Integrity Management, System Integrity, Gas Major Projects, Gas Control, Gas Engineering, Compliance Assurance, and Emergency Services. Through this integrated leadership model, GT Operations maintains system integrity, reduces operational and compliance risks, and provides transparency and accountability across transmission activities.

GT Operations also incorporate program management and financial governance functions, which include centralized financial planning, budget development, scheduling, regulatory support, document control, and data management. By organizing project information, monitoring expenditures, prioritizing capital and O&M investments, and aligning resources and

schedules, the organization supports accurate forecasting and sound funding decisions. These functions provide clear project governance, maintain transparent and reliable reporting, and uphold compliance with regulatory and corporate requirements.

Within its technical responsibilities, GT Operations delivers specialized engineering, environmental, and administrative support that is essential for operating transmission assets safely and in accordance with regulatory standards. This support includes instrumentation and control system expertise, project implementation, permitting, environmental compliance, and the labor and non-labor resources required for complex project execution.

GT Operations team also supports the Class Location Changes. GT Technical Services conducts and coordinates specialized fieldwork, including strength testing, pressure validation, and assessments driven by class location changes. These activities verify that transmission assets perform within required safety margins and comply with federal integrity management rules. Class Location projects consist of strength-testing transmission pipeline segments that are operating out of class due to new developments that increase population density in the area surrounding the pipeline. This activity supports the safe operation of SDG&E's pipelines by confirming that pipe segments meet the standards prescribed by 49 CFR § 192.609 for new class locations. Workload has continued to increase due to development in previously undeveloped areas, as well as expanded interpretations of Class 4 locations, including multi-story buildings, which have increased the number of pipeline segments requiring evaluation and hydrotesting.

GT Operations also play a key role in emergency response. They provide engineering, mapping, planning, and coordination resources during fires, earthquakes, or pipeline damage to support timely restoration of service. Additional responsibilities include engineering reviews, utility plan checks, and compliance verification to reduce third-party damage risk, as well as upholding regulatory obligations.

2. Forecast Method

The forecast method developed for GT Operations is based on BY 2025. Organizational changes that were fully implemented in 2025 consolidated functions that were previously performed by other groups. Consequently, actuals from prior years do not fully reflect the level of effort necessary to support GT Operations. In addition, operational requirements are not expected to vary significantly over the forecast period. Accordingly, the base year methodology

is appropriate, as it reflects the most current portfolio scale and staffing levels necessary to support ongoing operational activities.

3. Cost Drivers

The GT Operations organization incurs costs primarily associated with the labor and specialized non-labor resources required to operate and maintain the transmission system safely, reliably, and in compliance with applicable requirements. Key cost drivers include skilled operational staffing, technical and programmatic support resources, emergency response readiness, pipeline testing and reassessment activities, and the cross-functional coordination necessary to support integrated transmission programs and effective financial governance. Forecasted costs reflect an appropriate and representative level of ongoing support and oversight based on expected operating conditions.

D. Environmental Regulations (1GT006.000)

TABLE GO-8
Non-Shared O&M – Environmental Regulations

GAS TRANSMISSION (In 2025 $)			
D. Environmental Regulations	**2025 Adjusted-Recorded (000s)**	**TY 2028 Est. (000s)**	**Change (000s)**
1. Environmental Regulations	857	201	(656)

1. Description of Costs and Underlying Activities

The labor and non-labor costs associated with Environmental Regulations relate to compliance activities to adhere to (1) the Greenhouse Gas Emission Standards for Crude Oil and Natural Gas Facilities (CARB Oil & Gas Rule), and (2) GHG reporting requirements under EPA Subpart W.

The CARB Oil & Gas Rule, **Title 17, California Code of Regulations (CCR), Division 3, Chapter 1, Subchapter 10, Article 4, Sub article 13:** This regulation is designed to identify and reduce methane emissions by requiring routine inspections, monitoring, and timely repair of leaks at transmission compressor stations. To comply with this regulation, SDG&E

incurs costs associated with quarterly methane leak surveys and repair activities, as required in Section 95669 of the CARB Oil & Gas Rule. [12]

Quarterly LDAR requirements increase labor needs because the Moreno Compressor Station spans a large footprint that requires multiple full-coverage leak surveys each year. These surveys must be performed by technicians trained to operate sensitive equipment, such as optical gas-imaging cameras and high-precision methane-detection devices. These activities involve deploying monitors, collecting and validating data, responding to anomalies, and documenting results, all of which increase field labor, contractor usage, equipment costs, and the administrative workload.

Each LDAR-identified leak increases resource demand. Repairs often require specialized parts, materials, and additional technician hours, particularly when equipment must be isolated, depressurized, disassembled, or taken out of service for repair. Follow-up validation and documentation create further administrative and compliance efforts. LDAR programs also generate large volumes of data that must be recorded, quality-checked, stored, and reported annually. These reporting tasks increase internal labor needs for compliance management, quality assurance, and data retention.

Subpart W: This regulation refers to the federal GHG reporting requirements for petroleum and natural gas systems under EPA's GHG Reporting Program (GHGRP), while CARB's MRR establishes state reporting requirements. To comply with the federal reporting requirements, SDG&E incurs ongoing labor and non-labor costs to support all mandated compliance activities. These rules mandate detailed, quantifiable measurement of methane and other GHG emissions from transmission facilities. Unlike traditional emissions reporting, which often relies on emissions factors, Subpart W requires equipment-specific measurements and direct quantification to a level of precision that significantly increases workload and resource requirements. The federal regulations are codified in Title 40 CFR Part 98 Subpart W, while the state regulations are codified in Title 17 CCR, Division 3, Chapter 1, Subchapter 10, Article 2 Subarticle 5.

Subpart W measurement activities involve procedures that can only be performed by certified contractors or specialized vendors with equipment capable of collecting high-fidelity

[12] Cal. Code Reg., Title 17, § 95669 (Leak Detection and Repair).

emissions data. Field work often includes controlled measurement activities, gas sampling, vent-rate calculations, and equipment inspections that must be repeated annually or as operating conditions change.

Subpart W also imposes extensive documentation, verification, and reporting requirements. Internal teams must track, analyze, and validate field-collected data, maintain records of measurement methods, prepare documentation for audits, and submit annual reports that meet federal quality-control standards. These requirements add significant administrative labor for data management, engineering review, emissions-inventory development, and regulatory documentation.

2. Forecast Method

The forecast method for Environmental Regulations is based on BY 2025 with adjustments to support environmental regulation compliance. A review of historical costs indicates that, although application of a five-year historical average (2021–2025) results in a higher forecast, the use of BY 2025 is appropriate because it provides the most recent baseline reflecting the current full scope of environmental regulation-related activities, with adjustments to support the activities needed to comply with the CARB Oil & Gas Rule. Overall, the resulting forecast for 2028 represents a net and decrease relative to both the five-year historical average and BY 2025 levels, primarily due to reduced compliance activities associated with operational changes at the Moreno Compressor Station.

3. Cost Drivers

Compliance with the CARB Oil & Gas Rule and Subpart W requirements represents a substantial ongoing cost driver for the GT system. These requirements necessitate a combination of field activities, specialized equipment, contractor support, monitoring, and administrative oversight to comply with state and federal methane-reduction regulations.

The adjustments address the more stringent LDAR leak detection threshold, which has been reduced from 1,000 parts per million by volume (ppmv) to 500 ppmv. The lower leak detection threshold is expected to increase the number of detected leak indications, which will require additional investigation and repair, thereby increasing LDAR-related maintenance activities, staffing needs, and associated compliance costs. These adjustments are based on the U.S. EPA's December 2023 Emissions Guidelines and the anticipated adoption by CARB to amend the Oil and Methane Regulations.

Although these proposed requirements represent an increasing cost driver, the overall forecasted costs within this category are projected to decrease significantly due to operational changes at the Moreno Compressor Station that will reduce compliance activity levels. Specifically, required LDAR inspections within the station have been reduced from weekly to quarterly, resulting in lower field labor, contractor utilization, equipment deployment, and associated administrative support. In addition, the ESD system was converted from a gas-based system to an air-based system, which reduces a potential source of methane emissions. This change reduces the need for gas leak detection, corrective actions, and follow-up verification. Collectively, these changes reduce the overall compliance workload and drive a net decrease in environmental regulatory costs, while continuing to meet all applicable state and federal requirements.

Furthermore, SDG&E requests to transition the costs of the Environmental Regulations activities, presented in this section, into base business operations; and to no longer record these charges to the New Environmental Regulatory Balancing Account (NERBA) (Ex. SDGE-17).

IV. CAPITAL

Capital expenditures within SDG&E's GT organization are necessary to maintain system safety, reliability, and compliance with federal and state regulations, while maintaining affordability for ratepayers. These investments support a broad set of activities that sustain critical GT operations, address conditions identified through inspections and integrity assessments, and respond to external mandates and environmental conditions.

For GT operations, capital work includes the replacement of aging or deteriorated transmission pipeline segments; leak repair work; installation, upgrades, remediation of cathodic protection systems; and construction of new transmission pipeline additions. These investments also support climate and geohazard related mitigation projects including activities that address erosion, subsidence, slope movement, loss of cover, and construction practices necessary to comply with Senate Bill (SB) 1371 requirements.[13] Additional capital expenditures are required to maintain and upgrade the Moreno Compressor Station, M&R stations, and security systems at critical facilities to support safe pressure control, emissions and air quality compliance, effective system monitoring, and protection against unauthorized access.

[13] SB 1371 (Durazo, 2026), *available at:* https://legiscan.com/CA/text/SB1371/id/3417535.

The forecasts presented in this testimony rely primarily on a five-year methodology. This method provides a reasonable and well-supported basis for estimating capital requirements across the forecast period. Because these activities are essential to mitigating safety risks, maintaining the integrity of the GT system, and meeting mandatory regulatory obligations, the associated capital costs are reasonable and fully justified.

A key cost driver across GT capital projects is the need for specialized engineering, construction, and inspection expertise required to design, install, and place facilities into service in accordance with applicable safety and regulatory standards. Many projects require skilled labor trained in open-cut construction, precision welding, non-destructive examination, hydrostatic testing, inspection, and commissioning activities. The availability and cost of this specialized workforce are influenced by market conditions, regional labor rates, and competition for qualified contractors.

Material and equipment costs also materially influence overall project forecasts. GT projects require steel pipe, fittings, valves, coatings, instrumentation, and specialized construction equipment that must meet stringent engineering, performance, and safety specifications. Pricing for these materials is subject to market volatility driven by manufacturing capacity, raw material pricing, transportation costs, and supply-chain constraints. In addition, delays in procurement or material availability can extend project schedules, increase construction duration, and result in higher total project costs. Together, labor and material requirements reflect the technical complexity and safety-critical nature of GT infrastructure and are significant drivers of capital cost variability across the forecast period.

Table GO-9 summarizes the total capital forecasts for 2026–2031. The particular in-service date for the capital expenditures that underly these forecasts is provided in workpapers. Appendix C to this testimony provides a table that illustrates the capital expenditures that are estimated to have in-service dates between 2026 and TY 2028. Capital expenditures that are in-service between 2026-2028 will contribute to the TY 2028 revenue requirement request presented in the Summary of Earnings testimony (Ex. SDGE-32). Capital expenditures with in-service dates in the post-test years (*i.e.*, 2029-2031) are also included in Appendix C. The post-test year revenue requirement request is included in the Post-Test Year Ratemaking testimony (Ex. SDGE-33).

TABLE GO-9
Capital Expenditures Summary of Costs

GAS TRANSMISSION (In 2025 $)							
Categories of Management	**2025 Adjusted-Recorded (000s)**	**Est. 2026 ($000)**	**Est. 2027 ($000)**	**Est. 2028 ($000)**	**Est. 2029 ($000)**	**Est. 2030 ($000)**	**Est. 2031 ($000)**
A. Pipeline Replacements	438	4,113	4,113	4,110	4,113	4,113	4,113
B. Compressor Stations	2,090	3,898	3,898	9,409	3,898	3,898	3,898
C. Cathodic Protection	86	423	423	422	423	423	423
D. Measurement & Regulation Stations	8,817	3,244	3,244	3,237	3,244	3,244	3,244
E. Auxiliary Equipment	415	908	908	907	908	908	908
F. Capital Tools	105	261	261	260	261	261	261
Total Capital	**11,951**	**12,847**	**12,847**	**18,345**	**12,847**	**12,847**	**12,847**

A. Pipeline Replacements (004010.000)

TABLE GO-10
Capital Expenditures – Pipeline Replacements

GAS TRANSMISSION (In 2025 $)							
A. Pipeline Replacements	**2025 Adjusted-Recorded (000s)**	**Est. 2026 (000s)**	**Est. 2027 (000s)**	**Est. 2028 (000s)**	**Est. 2029 (000s)**	**Est. 2030 (000s)**	**Est. 2031 (000s)**
1. Pipeline Replacements	438	4,113	4,113	4,110	4,113	4,113	4,113

1. Description

The forecasted capital expenditures for Pipeline Replacements are required to support the safety and integrity of the transmission system by replacing natural GT pipeline segments that exhibit deteriorated conditions, are subject to or have been impacted external forces that compromise pipeline stability, or require modification to comply with applicable safety, reliability, and regulatory requirements, including expenditures necessary to repair identified

leaks. Additional detailed information supporting these expenditures is provided in my capital workpaper Ex. SDGE-05-CWP, WP #004010.

SDG&E operates transmission pipelines up to 36 inches in diameter across a wide geographic area, extending from the Pacific Coast in the West, to the Orange County line in the North, to the U.S.-Mexico border to the South. SDG&E's transmission system includes a range of pipeline assets that are routinely evaluated through patrols, leak surveys, in-line inspections, and external assessments. When corrosion, physical damage, or leakage is detected, personnel conduct detailed evaluations to determine whether repair or replacement is required to mitigate the risk and meet applicable safety requirements.

Projects within this cost category include pipeline replacements to address external damage, changes in class location due to new development, loss of soil cover due to erosion or agricultural activities, and geohazards such as slope movement, subsidence, or landslides that may increase risk or preclude continued operation in accordance with regulatory requirements.

Pipeline replacement and relocation may be required when a segment is impacted by municipal requirements, right-of-way constraints, weather-related impacts, or changes in class location. Class location changes must be addressed within a 24-month period to maintain compliance with federal pipeline safety regulations. These projects are driven by the need to reduce the potential for pipeline damage, maintain required access for inspection and maintenance, and uphold regulatory standards.

Shallow or exposed pipeline conditions can arise from erosion, land movement, watercourse migration, or agricultural activities. Projects addressing these issues typically include adding protective cover or installing concrete revetment mats. These measures reduce exposure-related risks such as corrosion, third-party interference, and further instability, thereby maintaining system safety and reliability.

The condition of transmission pipelines is routinely evaluated through patrols, leak surveys, in-line inspections, and external assessments. When leakage is detected, personnel conduct detailed evaluations to determine whether repair or replacement is required to mitigate risk and meet applicable safety requirements. Leak repair activities involve extensive planning, installation, construction, and closeout processes that are necessary to remediate leaks on transmission pipelines and associated appurtenances. Leak classification, required response timeframes, and associated repair activities are governed by CPUC GO 112-F.

Activities in this category must also comply with environmental compliance requirements related to leak mitigation, methane reduction, and gas capture under SB 1371. These projects often require additional fittings, temporary gas handling equipment, increased contractor support, and complex construction sequencing, to minimize emissions during replacement activities. These measures add material, labor, and engineering costs beyond the baseline construction scope.

a. Description of RAMP Mitigations

Within this cost category, there are non-shared capital costs for risk controls C113 (Leak Repair), C125 (Pipeline Relocation/Replacement), and C126 (Shallow/Exposed Pipe Remediations) that were presented in the 2025 RAMP Report and are listed in Table GO-11. The activities described above support C113, C125, and C126.

Activities that are compliance-related or mandated by the CPUC or other agencies are listed in bold, and Appendix B attached to this testimony provides the detailed compliance information regarding these mandates for each control.

TABLE GO-11
RAMP and GRC Risk Control/Mitigation Activities – Capital

Pipeline Replacements				
ID	**Control/Mitigation Name**	**2025 RAMP 2028-2031 In 2024 $ (000s)**	**2028 GRC 2028-2031 In 2025 $ (000s)**	**Change ($000s)**
C113	**Leak Repair**	4,032	824	(3,208)
C125	**Pipeline Relocation/ Replacement**	800	13,982	13,182
C126	**Shallow/Exposed Pipe Remediations**	8,920	1,644	(7,276)
	TOTAL	**13,748**	**16,450**	**2,702**

b. Description of Selection and Prioritization of RAMP Risk Mitigations

The RAMP risk mitigation efforts are associated with specific actions, such as programs, projects, processes, and utilization of technology and are designed to address a specific safety and/or reliability risk. The Company's selection and prioritization of these RAMP mitigation activities considered many factors when determining if these risk mitigation activities are an

effective and worthwhile investment. The ERM process for identifying and assessing system risk is described in the RDF Integration testimony (Ex. SCG-02B/SDGE-02B).

C113, C125, and C126 address manufacturing defects, construction and fabrication issues, weather-related or external forces, third-party damage, and incorrect or inadequate asset records, which are five of the potential drivers to the High-Pressure Gas System risk. If not addressed, these drivers could lead to a risk event with operational, reliability, and environmental potential consequences. In prioritizing this proactive approach, SDG&E seeks to reduce the likelihood of future risk events, and avoid significantly higher operational, customer, and recovery impacts associated with responding to realized incidents. These activities are completed in accordance with regulatory requirements, as described in Section IV.A.1.

2. Forecast Method

The Pipeline Replacement forecast is based on a five-year historical average of capital expenditures from 2021 through 2025. This methodology is appropriate because it reflects normal variations in workload driven by unplanned system conditions and regulatory repair requirements. Atypical expenditures associated with a large class-location relocation project in 2022 and 2023 were excluded to avoid skewing the forecast and to better represent expected baseline replacement activity during the GRC period. The resulting forecast addresses short-term anomalies and reflects sustained historical workload levels.

3. Cost Drivers

The primary cost driver for Pipeline Replacements is the need to address conditions that may impact the safety and reliability of the natural GT system. These conditions often require immediate or near-term action to maintain compliance with state and federal safety regulations. Additional underlying cost drivers within this category arise from several operational, environmental, and market-based factors that directly affect the scope, schedule, and cost of individual projects, such as pipeline location, contractor availability, environmental requirements, and costs for necessary material and equipment. Collectively, these cost drivers are necessary to comply with regulatory requirements and maintain the integrity of the pipeline system. The scope of work and nature of activities in this category are expected to remain consistent with the historical average.

B. Compressor Stations (004050.000)

TABLE GO-12
Capital Expenditures – Compressor Stations

GAS TRANSMISSION (In 2025 $)							
B. Compressor Stations	**2025 Adjusted-Recorded (000s)**	**Est. 2026 (000s)**	**Est. 2027 (000s)**	**Est. 2028 (000s)**	**Est. 2029 (000s)**	**Est. 2030 (000s)**	**Est. 2031 (000s)**
1. Compressor Stations	2,090	3,898	3,898	9,409	3,898	3,898	3,898

1. Description

The forecasted capital expenditures for Compressor Stations support ongoing capital activities, including installing, replacing, and refurbishing equipment required to maintain the safe and reliable operation of the transmission system. Additional details supporting this expenditure are provided in my capital workpaper. *See* Ex. SDGE-05-CWP, WP #004050.

SDG&E operates the Moreno Compressor Station, which is essential to maintaining GT system pressures and enabling the delivery of natural gas to high-volume industrial and electric generation customers and distribution systems that serve residential and commercial loads. The operational availability of the station is fundamental to supporting statewide energy reliability, maintaining system throughput, and meeting downstream demand during both routine operations and peak system conditions. Compressor station performance affects multiple internal functions, including gas control, system operations, and maintenance operations, making sustained capital investment critical.

Capital work at the Moreno Compressor Station is primarily driven by regulatory requirements and unplanned equipment outages. These regulations may require upgrades to engine controls, exhaust systems, or related mechanical components to comply with emissions limits, monitoring requirements, or reporting standards. Capital activities typically include planning, installation, construction, testing, and project closeout for upgrades such as pipeline segment replacements within station boundaries, valve replacements, control system enhancements, and refurbishment of auxiliary systems that support engine operation.

The existing Moreno Compressor Station has been in service for decades. The age of its underlying equipment contributes to an increasing need for capital investment to maintain reliability, reduce the risk of unplanned outages, and support continued regulatory compliance. Older facilities often require more extensive upgrades to foundational mechanical systems, including cooling systems, lube oil systems, fuel gas supply systems, and structural supports for rotating equipment. These upgrades are necessary to maintain safe operations and support the installation of control technologies required by environmental and safety regulations.

The compressor station relies on specialized, high-cost mechanical and electrical components, which represent another major cost driver. Equipment such as large horsepower compressor engines, turbines, transmitters, cooling systems, and electronic control systems require periodic replacement or refurbishment based on hours of operation, manufacturer recommendations, or performance deterioration. Many of these components must be custom-fabricated, procured from limited suppliers, or installed by technicians with highly specialized skill sets.

In addition, compressor station operations must meet regulatory expectations, including requirements for monitoring, emissions reporting, and technologies that support operating limits. Meeting these requirements may require modernizing instrumentation, replacing outdated PLCs, or installing updated safety shutdown and alarm systems. These activities are required to maintain reliable day-to-day station performance and comply with regulatory obligations.

Overall, the capital expenditures forecasted for Compressor Stations reflect the essential activities necessary to support safe and reliable compressor station operations, address age-related equipment degradation, comply with regulations, and maintain the operational performance of the transmission system.

a. Description of RAMP Mitigations

Within this cost category, there are non-shared capital costs for risk control C136 (Compressor Stations – Capital) that were presented in the 2025 RAMP Report and are listed in Table GO-13. The RAMP activities and costs identified for C136 are described in Section IV.B.1. All cost forecasts included in this workpaper are associated with C136 and are required to maintain and improve the compressor station system to support SDG&E's commitment to safety and regulatory compliance.

Activities that are compliance-related or mandated by the CPUC or other agencies are listed in bold, and Appendix B attached to this testimony provides the detailed compliance information regarding these mandates for each control.

TABLE GO-13
RAMP and GRC Risk Control/Mitigation Activities – Capital

Compressor Stations				
ID	**Control/Mitigation Name**	**2025 RAMP 2028-2031 In 2024 $ (000s)**	**2028 GRC 2028-2031 In 2025 $ (000s)**	**Change ($000s)**
C136	**Compressor Stations – Capital**	19,044	21,103	2,059

b. Description of Selection and Prioritization of RAMP Risk Mitigations

The RAMP risk mitigation efforts are associated with specific actions, such as programs, projects, processes, and utilization of technology and are designed to address a specific safety and/or reliability risk. The Company's selection and prioritization of these RAMP mitigation activities considered many factors when determining if these risk mitigation activities are an effective and worthwhile investment. The ERM process for identifying and assessing system risk is described in the RDF Integration testimony (Ex. SCG-02B/SDGE-02B).

C136 addresses stress corrosion cracking, manufacturing defects, construction and fabrication issues, and equipment failure, which are four of the potential drivers to the High-Pressure Gas System risk. If not addressed, these drivers could lead to a risk event with potential consequences for customers, including serious injuries or fatalities, operational and reliability issues, or environmental impacts. In prioritizing a proactive approach with these activities, SDG&E seeks to reduce the likelihood of future risk events, and avoid significantly higher operational, customer, and recovery impacts associated with responding to realized incidents. These activities are completed in accordance with regulatory requirements outlined in 49 CFR Part 192 Subpart M.

2. Forecast Method

The forecast for Compressor Station Operations is based on a five-year historical average of expenditures from 2021 through 2025, adjusted to reflect atypical conditions and known

out-of-cycle projects. Expenditures during 2021 and 2022 were temporarily elevated due to a large selective catalytic reduction (SCR) installation project. Accordingly, these outlier costs were excluded from the historical average to avoid overstating baseline operational spending. In addition, the forecast incorporates planned non-routine capital upgrades at the Moreno Compressor Station that are expected to be completed by 2028, which are not reflected in historical trends. The adjusted five-year average methodology is appropriate because it captures normal spending patterns, smooths year-to-year variability, and results in a representative estimate of expected costs over the GRC period while accounting for both atypical historical impacts and known future activities.

3. Cost Drivers

Collectively, the primary cost drivers for this category are the operational demands of maintaining reliable compressor station performance, compliance with air-quality and safety regulations, the market conditions affecting material and specialized contractor availability, and the need to address aging infrastructure. Ongoing capital investment is required to sustain safe and reliable operations, support system throughput, and enable continued compliance with applicable regulatory and environmental requirements.

Within the forecast period, 2028 reflects a temporary increase in spending driven by a defined set of planned capital upgrades at the compressor station. These projects, including modifications to the operations room, ESD system actuator upgrades, and fire and gas system enhancements address specific reliability, control, and safety needs. The alignment of these discrete upgrades results in a one-year spike in costs that is appropriately identified as an outlier, with spending otherwise aligned with historical levels required to support ongoing compressor station performance.

C. Cathodic Protection (004060.000)

TABLE GO-14
Capital Expenditures – Cathodic Protection

GAS TRANSMISSION (In 2025 $)							
C. Cathodic Protection	**2025 Adjusted-Recorded (000s)**	**Est. 2026 (000s)**	**Est. 2027 (000s)**	**Est. 2028 (000s)**	**Est. 2029 (000s)**	**Est. 2030 (000s)**	**Est. 2031 (000s)**
1. Cathodic Protection	86	423	423	422	423	423	423

1. Description

The forecasted capital expenditures for GT CP support the installation, replacement, and enhancement of CP systems, which are critical to maintaining the integrity of transmission pipelines and protecting them from external corrosion. CP is a corrosion control method that uses pipelines as the cathodic element in an electrochemical cell, preventing the metal loss that can occur when buried steel is exposed to corrosive soil environments. The equipment and activities funded through these capital expenditures are necessary not only to protect company assets but also to comply with federal and state pipeline safety regulations requiring effective corrosion control, including 49 CFR §192.463. Additional details supporting this expenditure are provided in my capital workpaper. *See* Ex. SDGE-05-CWP, WP #004060.

The forecasted capital expenditures for GT CP support the installation, replacement, and enhancement of CP systems, which are critical to maintaining the integrity of transmission pipelines and protecting them from external corrosion. CP is a corrosion control method that uses pipelines as the cathodic element in an electrochemical cell, preventing the metal loss that can occur when buried steel is exposed to corrosive soil environments. The equipment and activities funded through these capital expenditures are necessary not only to protect company assets but also to comply with federal and state pipeline safety regulations requiring effective corrosion control, including 49 CFR § 192.463.

GT CP work involves planning, engineering, installation, and project closeout for several types of corrosion mitigation infrastructure. A significant portion of the capital program involves installing or replacing rectifiers and deep well anode beds, which provide an impressed current required to maintain proper CP levels along transmission pipelines. These systems are

foundational for maintaining adequate pipe-to-soil potentials and for supporting long-term corrosion protection across wide geographic areas.

Another component of this program is the installation of remote power sources, enabling CP systems to operate in areas where access to traditional electrical infrastructure is limited or impractical. These installations provide greater location flexibility for CP equipment and support optimal placement of anode beds to enhance corrosion mitigation performance. Remote power installations are particularly useful in rural areas, environmentally sensitive locations, and regions with challenging terrain.

Pipeline recoats also form an essential part of the GT CP capital program. Although CP systems protect pipelines from corrosion, high-quality coating remains the primary defense against corrosive soil environments. When coating systems degrade due to age, soil stress, or construction disturbance, the burden on CP systems increases, potentially reducing their effectiveness. Replacing a deteriorated coating restores the pipeline's protective barrier, reduces the current required to maintain effective cathodic protection, and enhances the overall efficiency and reliability of the corrosion protection system.

In addition to physical installations, the forecast includes expenditures for AC mitigation systems. Transmission lines often share corridors with high-voltage electric transmission infrastructure, which can induce AC voltages on pipelines. Mitigations are required to address these conditions, which may accelerate corrosion or pose safety concerns during maintenance activities. Mitigation measures, such as gradient control mats or zinc ribbon grounding, are designed and installed to reduce these risks and maintain compliance with applicable standards.

Aging infrastructure also contributes to investment needs. Many CP system components installed decades ago are now reaching or have reached the end of their useful life. Deep well anode beds may require reconstruction, rectifiers may require replacement due to obsolescence or declining output, and older bonding or test point systems may no longer function reliably. As these systems age, the frequency and scale of required capital improvements increase, placing upward pressure on total program costs.

These CP activities are necessary to maintain or improve the CP system, reduce corrosion-related risks, and confirm compliance with regulatory requirements. The forecasted expenditures reflect the labor required for installation, maintenance, and testing, as well as the non-labor costs for equipment, materials, and technology essential to completing these projects.

a. Description of RAMP Mitigations

Within this cost category, there are non-shared capital costs for risk control C104 (Cathodic Protection – Capital) that were presented in the 2025 RAMP Report and are listed in Table GO-15. The RAMP activities and costs identified for C104 are described in Section IV.C.1. All cost forecasts included in this workpaper are associated with C104 and are required to support SDG&E's commitment to safety and regulatory compliance.

Activities that are compliance-related or mandated by the CPUC or other agencies are listed in bold, and Appendix B attached to this testimony provides the detailed compliance information regarding these mandates for each control.

TABLE GO-15
RAMP and GRC Risk Control/Mitigation Activities – Capital

Cathodic Protection				
ID	**Control/Mitigation Name**	**2025 RAMP 2028-2031 In 2024 $ (000s)**	**2028 GRC 2028-2031 In 2025 $ (000s)**	**Change ($000s)**
C104	**Cathodic Protection – Capital**	232	1,692	1,460

b. Description of Selection and Prioritization of RAMP Risk Mitigations

The RAMP risk mitigation efforts are associated with specific actions, such as programs, projects, processes, and utilization of technology and are designed to address a specific safety and/or reliability risk. The Company's selection and prioritization of these RAMP mitigation activities considered many factors when determining if these risk mitigation activities are an effective and worthwhile investment. The ERM process for identifying and assessing system risk is described in the RDF Integration testimony (Ex. SCG-02B/SDGE-02B).

C104 addresses external corrosion, internal corrosion, manufacturing defects, external forces, and equipment failure, which are five of the potential drivers to the High-Pressure Gas System risk. If not addressed, these drivers could lead to a risk event with potential consequences for customers, including serious injuries or fatalities, operational and reliability issues, or environmental impacts. The CP projects in this category maintain system safety and reliability by protecting against corrosion and reducing the likelihood of a potential leak or other

risk event. In prioritizing this proactive approach, SDG&E seeks to reduce the likelihood of future risk events, and avoid significantly higher operational, customer and recovery impacts associated with responding to realized incidents. These activities are completed in accordance with regulatory requirements outlined in 49 CFR Part 192 Subpart M.

2. Forecast Method

The forecast methodology for CP is based on a five-year historical average of expenditures from 2021 through 2025. Activities within this category vary year to year and are primarily driven by asset condition, operational needs, and regulatory requirements. Use of a five-year average is appropriate because it smooths short-term variability, while capturing the full range of activity levels observed over the historical period. As a result, this approach provides a reasonable and representative basis for estimating expected costs over the GRC period.

3. Cost Drivers

The primary cost drivers for the GT CP program include pipeline coating condition, CP system performance, regulatory compliance requirements, aging CP assets, construction complexity, contractor market constraints, AC interference mitigation, and permitting and environmental compliance obligations. The associated scope of work is described in Section IV.C.1.

D. Measurement & Regulation Stations (004080.000)

TABLE GO-16
Capital Expenditures – Measurement & Regulation Stations

GAS TRANSMISSION (In 2025 $)							
D. Measurement & Regulator Stations	**2025 Adjusted-Recorded (000s)**	**Est. 2026 (000s)**	**Est. 2027 (000s)**	**Est. 2028 (000s)**	**Est. 2029 (000s)**	**Est. 2030 (000s)**	**Est. 2031 (000s)**
1. Measurement & Regulation Stations	8,817	3,244	3,244	3,237	3,244	3,244	3,244

1. Description

The forecasts for M&R Stations support the installation and rebuilding of large MSAs for transmission-served customers, as well as pressure-limiting stations on the GT system. These facilities house equipment that regulates flow and controls pipeline pressures by using valves and pressure-limiting devices that can be operated either locally by personnel or remotely via the SCADA.

GT M&R Stations incorporate a wide range of specialized equipment necessary for precise measurement, pressure regulation, and system monitoring. These components include PLCs, pressure transmitters, uninterruptible power supply systems, temperature sensors, gas quality instrumentation, communication modules, and user interface technologies that support both automated and operator-driven system management. Collectively, these systems form the first line of defense against over-pressurization events by automatically adjusting or limiting pressure during abnormal conditions.

Capital activities within this category include the planning, engineering, installation, construction, and closeout associated with upgrading or replacing equipment at producer vessels, large meters, M&R stations, Company-owned facilities serving customer MSA, and control valve stations throughout the transmission system. Work also includes upgrades or replacements of local field measurement and control equipment connected to the Gas Operations SCADA system through remote communications. This includes gas meters that manage flow and quality on the transmission system and provide operating data to SCADA personnel, as well as regulating stations that control and limit gas pressure and flow within the system.

Many of these facilities contain equipment that has been in service for decades, and aging infrastructure continues to drive the need for enhanced capital investments. As components deteriorate or become obsolete, system reliability and functionality can be compromised, requiring the installation of modern replacement systems that incorporate newer technologies, improved sensing capabilities, and enhanced control logic.

These upgrades are necessary to maintain compliance with applicable safety, measurement accuracy, and operational standards, particularly as regulatory expectations evolve and system demands change. Enhanced control systems support more accurate gas flow monitoring, more precise pressure control, and improved integration with SCADA, which collectively improve overall system responsiveness and situational awareness. In addition,

modern communication and data management platforms enable more frequent monitoring, more detailed reporting, and faster detection of abnormal conditions, supporting both operational performance and regulatory compliance.

a. Description of RAMP Mitigations

Within this cost category, there are non-shared capital costs for risk control C151 (Measurement & Regulation Station – Capital) that were presented in the 2025 RAMP Report and are listed in Table GO-17. The RAMP activities and costs identified within this workpaper for C151 are described in Section IV.D.1. All cost forecasts included in this workpaper are associated with C151 and are required to support SDG&E's commitment to safety and regulatory compliance.

Activities that are compliance-related or mandated by the CPUC or other agencies are listed in bold, and Appendix B attached to this testimony provides the detailed compliance information regarding these mandates for each control.

TABLE GO-17
RAMP and GRC Risk Control/Mitigation Activities – Capital

Measurement and Regulation Stations				
ID	**Control/Mitigation Name**	**2025 RAMP 2028-2031 In 2024 $ (000s)**	**2028 GRC 2028-2031 In 2025 $ (000s)**	**Change ($000s)**
C151	**Measurement and Regulation Station – Capital**	10,744	12,969	2,225

b. Description of Selection and Prioritization of RAMP Risk Mitigations

The RAMP risk mitigation efforts are associated with specific actions, such as programs, projects, processes, and utilization of technology and are designed to address a specific safety and/or reliability risk. The Company's selection and prioritization of these RAMP mitigation activities considered many factors when determining if these risk mitigation activities are an effective and worthwhile investment. The ERM process for identifying and assessing system risk is described in the RDF Integration testimony (Ex. SCG-02B/SDGE-02B).

C151 projects address manufacturing defects, incorrect operations, and equipment failure at transmission M&R stations. If not addressed, these drivers could lead to a risk event with

potential consequences for customers, including serious injuries or fatalities, operational and reliability issues, or environmental impacts. In prioritizing a proactive approach with these projects, SDG&E seeks to reduce the likelihood of future risk events, and avoid significantly higher operational, customer and recovery impacts associated with responding to realized incidents. These activities are completed in accordance with regulatory requirements outlined in 49 CFR Part 192 Subpart M.

2. Forecast Method

The forecast method developed for M&R Stations is a five-year average based on historical data from 2021 through 2025. Activities in this category vary year by year and are primarily driven by asset conditions, operational needs, and regulatory requirements. Use of a five-year average is appropriate because it smooths short-term variability while capturing the full range of activity levels observed over the historical period. As a result, this approach provides a reasonable and representative basis for estimating expected costs over the GRC period.

3. Cost Drivers

The primary cost drivers for M&R Stations include aging station infrastructure, system reinforcement needs to support capacity and reliability, specialized labor and contractor availability, and material and technology costs associated with modern measurement, pressure-control, automation, and SCADA integration.

A significant cost driver is compliance with federal and state safety regulations, which require utility operators to maintain accurate measurement, pressure control, and overpressure protection equipment. To meet standards, M&R facilities must be upgraded to incorporate enhanced safety features, more reliable pressure-limiting technology, and improved monitoring systems that support safe operations and reduce risks to the public and employees. These compliance-driven upgrades often involve modernizing control systems, installing more advanced actuators and sensors, and improving the reliability and automation capabilities of pressure-regulating equipment.

E. Security & Auxiliary Equipment (004090.000)

TABLE GO-18
Capital Expenditures – Security & Auxiliary Equipment

GAS TRANSMISSION (In 2025 $)							
E. Auxiliary Equipment	**2025 Adjusted-Recorded (000s)**	**Est. 2026 (000s)**	**Est. 2027 (000s)**	**Est. 2028 (000s)**	**Est. 2029 (000s)**	**Est. 2030 (000s)**	**Est. 2031 (000s)**
1. Auxiliary Equipment	415	908	908	907	908	908	908

1. Description

The forecasts for Security and Auxiliary Equipment cover the cost of equipment and upgrades supporting GT system operations. This category also includes work associated with physical security enhancements and installation of equipment that enables real-time monitoring of land movement. Auxiliary equipment work involves planning, installing, and constructing security cameras, lighting, gates, locks, and equipment upgrades at transmission facilities. These equipment upgrades include pipe supports and analyzers. These activities require labor for installation, wiring, and system integration, while non-labor costs include the purchase of cameras, lighting fixtures, gates, locks, and structural components. These upgrades are necessary to strengthen security at pressure-limiting stations, valve stations, and compressor stations, which improve personnel safety and reduce the potential for system damage. Additional detailed information supporting this expenditure is provided in my capital workpaper. *See* Ex. SDGE-05-CWP, WP #004090.

Additional activities include installing and maintaining monitoring equipment to detect potential leaks and other system anomalies. Installation and testing of this equipment are included in the labor costs, while the sensors, supporting hardware, and software are included in the non-labor costs. Ongoing evaluation and testing of monitoring technologies to support future deployment also involve labor for technical assessments and non-labor costs for prototype equipment and analytical tools.

These investments are essential to enhance system reliability, improve safety, and maintain the integrity of the GT system. The forecasted expenditures reflected in the GT Security and Auxiliary Equipment workpaper represent prudent investments to deter intrusions,

delay unauthorized access, enhance detection and response capabilities, and maintain compliance with internal standards and industry expectations for critical infrastructure protection. Collectively, these investments support the safety of employees and the public, protect critical assets, and support the continued safe and reliable operation of the GT system.

2. Forecast Method

The forecast methodology for Security and Auxiliary Equipment is based on a five-year historical average of expenditures from 2021 through 2025. Activities within this cost element are primarily driven by regulatory requirements, evolving physical security risks, advancements in security technologies, and the specific operational needs of individual facilities, which result in year-to-year variability in workload and spending. Use of a five-year average is appropriate because it reflects historical spending patterns while smoothing the effects of variations in project timing, scope, and implementation, which provides a reasonable and representative basis for estimating expected costs over the GRC period.

3. Cost Drivers

The primary cost drivers for GT Security and Auxiliary Equipment include regulatory and industry security requirements, evolving physical security risks, advanced security technology needs, facility-specific site conditions, contractor and integrator availability, and replacement of aging or obsolete security assets. The associated scope of work is described in Section IV.E.1, and the cost forecast is consistent with the established forecast methodology.

F. Capital Tools (007060.000)

TABLE GO-19
Capital Expenditures – Capital Tools

GAS TRANSMISSION (In 2025 $)							
F. Capital Tools	**2025 Adjusted-Recorded (000s)**	**Est. 2026 (000s)**	**Est. 2027 (000s)**	**Est. 2028 (000s)**	**Est. 2029 (000s)**	**Est. 2030 (000s)**	**Est. 2031 (000s)**
1. Capital Tools	105	261	261	260	261	261	261

1. Description

The Capital Tools forecasts support the purchase and replacement of tools and equipment used by GT field personnel to inspect, maintain, and repair gas pipeline systems and appurtenances. Investments cover the cost of tools and equipment which are essential for safely and efficiently performing critical field activities. Costs recorded here reflect non-labor expenditures associated with acquiring these tools. Additional supporting details are provided in my capital workpaper. *See* Ex. SDGE-05-CWP, WP #007060.

2. Forecast Method

The forecast method developed for GT Capital Tools uses a five-year average based on historical data from 2021 through 2025. This approach is appropriate because capital tool requirements vary from year to year depending on condition-based replacements, and the introduction of new tools to support evolving field work. The historical 5-year spending pattern captures this variability and reflects the recurring, but non-uniform nature of capital tool needs.

3. Cost Drivers

The underlying cost drivers for GT Capital Tools relate to:

- **Tool Replacement:** Replacement of tools exposed to harsh field conditions, including shock, vibration, moisture, and dust, which accelerate wear and deterioration;
- **Safety and Reliability:** Continued need to equip employees with tools that meet safety standards and support reliable pipeline operations;
- **Environmental Exposure:** Tools used in rugged outdoor environments require durable materials and specialized designs, increasing procurement costs; and
- **Lifecycle Management:** Planned replacement of tools that have outlived their useful life to maintain compliance and operational readiness.

V. RISK ASSESSMENT MITIGATION PHASE (RAMP) INTEGRATION

A. GRC Risk Controls/Mitigations and Benefit Cost Ratios

As previously discussed, certain costs supported in this testimony are for Control/Mitigation activities described in SDG&E's May 15, 2025 RAMP[14] for activities

[14] A.25-05-010.

designed to reduce risk. Specifically, the controls and mitigations in this testimony were included in: SDG&E-Risk-1 (Excavation Damage) and SDG&E-Risk-2 (High Pressure Gas System). As further reference, a roadmap matching controls and mitigations to both the 2025 RAMP and the TY 2028 GRC testimony is appended to Ex. SCG-02B/SDGE-02B. Table GO-20 summarizes the Control/Mitigation BCRs based on the costs[15] in this testimony and estimated in the 2025 RAMP with the associated BCRs. Controls/Mitigations that are mandated by CPUC or other agencies are listed in bold in Table GO-20 and are listed in Appendix B, attached to this testimony, providing the details regarding the respective mandates for each Control/Mitigation. Appendix D provides a GRC workpaper breakdown for the RAMP controls and mitigations sponsored in this testimony.

TABLE GO-20
Comparison of RAMP and GRC Risk Control/Mitigation Benefit Cost Ratios

GAS TRANSMISSION							
		2025 RAMP Direct, in 2024 $ (000s) 2028-2031			2028 GRC Direct, in 2025 $ (000s) 2028-2031		
ID	**Control/Mitigation Name**	**BCR Societal**	**BCR Hybrid**	**BCR WACC**	**BCR Societal**	**BCR Hybrid**	**BCR WACC**
C002	**Damage Prevention Activities – Gas (HP)** [16]	6.17	6.60	6.21	3.56	3.70	3.58
C010	Pipeline Monitoring Technologies	1.09	0.80	0.67	4.82	3.04	2.58
C104	**Cathodic Protection – Capital**	141.55	151.67	141.75	21.60	22.75	21.60
C108	**Cathodic Protection – Maintenance**	21.47	23.01	21.50	26.35	27.80	26.39
C113	**Leak Repair**	2.21	2.36	2.21	12.23	12.86	12.23
C125	**Pipeline Relocation/ Replacement**	1.41	0.53	0.39	0.10	0.04	0.03
C126	**Shallow/Exposed Pipe Remediations**	0.35	0.08	0.05	2.24	0.50	0.33
C132	**Pipeline Maintenance**	24.34	25.93	24.35	20.35	21.40	20.38

[15] Post-test year forecasts can be found in the detailed workpapers Ex. SDGE-05-WP and Ex. SDGE-05-CWP.

[16] Common risk mitigation with Gas Distribution Testimony (Ex. SDGE-04).

GAS TRANSMISSION							
		2025 RAMP Direct, in 2024 $ (000s) 2028-2031			2028 GRC Direct, in 2025 $ (000s) 2028-2031		
C136	**Compressor Stations – Capital**	12.24	5.48	4.26	8.72	4.65	3.82
C142	**Compressor Station – Maintenance**	0.30	0.32	0.30	0.41	0.43	0.41
C151	**Measurement & Regulation Station Capital**	0.35	0.16	0.12	0.32	0.17	0.14
C155	**Measurement & Instrumentation – Maintenance**	1.11	1.19	1.11	1.02	1.07	1.02

B. Justification For Proposed Mitigations With BCRs <1

The RDF prescribes a methodology for calculation of BCRs under three discount rates as detailed in Table GO-20. Certain of these calculations result in a BCR that is less than one. SDG&E justifies the selection of these mitigations based on a thorough analysis of operational considerations. Details regarding the justification for each mitigation are provided in Table GO-21 and are compiled with all mitigations in the RDF Integration testimony (Ex. SCG-02B/SDGE-02B). A list of compliance drivers is attached to this testimony in Appendix B.

Table GO-21
Control/Mitigation Justification

ID	Control/Mitigation Name	Justification
C125	**Pipeline Relocation/ Replacement**	Pipeline replacements are required to address deteriorated conditions, external damage, geohazards, right-of-way constraints, and class location changes identified through inspections and assessments. These activities support compliance with 49 CFR Part 192 Subpart M. Despite a BCR below 1, these projects are necessary to reduce integrity risks, support safe operation, and meet mandatory regulatory obligations across the transmission system. Activities such as methane reduction and gas capture under SB 1371 are also required to ensure continued compliance with environmental and regulatory standards.
C126	**Shallow/Exposed Pipe Remediations**	Projects addressing shallow or exposed pipelines caused by erosion, land movement, hydrotechnical issues, or agricultural activities are required to reduce

ID	Control/Mitigation Name	Justification
		risks from corrosion, third-party damage, and instability through added cover or protective measures and maintain compliance with 49 CFR Part 192 Subpart M. Despite a BCR below 1, these activities are necessary to maintain system safety, reliability and to maintain compliance with federal regulations.
C142	**Compressor Station – Maintenance**	Despite a BCR below 1, these activities are necessary to meet mandatory regulatory and safety requirements (49 CFR Part 192 operational and maintenance requirements, §192.605 and §192.615 emergency planning, CPUC GO 112-F, and SCAQMD and other air quality regulations) and to address age-related equipment degradation. These projects are essential to maintaining safe and reliable compressor station operations, ensuring system pressure control, reducing unplanned outages, and supporting transmission system reliability under both normal and peak operating conditions.
C151	**Measurement & Regulation Station Capital**	Despite a BCR below 1, these activities are necessary to meet mandatory safety, measurement accuracy, and operational requirements (49 CFR Part 192 pressure control and overpressure protection requirements, PHMSA integrity and monitoring expectations, and CPUC GO 112-F). These projects address aging and obsolete infrastructure, support evolving regulatory expectations, and enable advanced monitoring, SCADA integration, and RNG interconnections, which are essential to maintaining system safety, reliability, and compliance across the transmission network.

C. Changes From 2025 RAMP Report

Since the timing of the filing of the 2025 RAMP Report in May 2025, some circumstances may have changed that impact the control/mitigation scope – including units, costs, and other factors that influence the forecast. In addition, updates may have occurred that affect the underlying assumptions used to calculate the BCRs, as described in the RDF Integration testimony (Ex. SCG-02B/SDGE-02B).

Key changes impacting the forecasts include:

Organization of RAMP and GRC: The 2025 RAMP Report is organized into risk chapters based on the types of risk events being mitigated, whereas the 2028 GRC is organized

by witness areas aligned with the Company's operational structure. As a result, individual RAMP mitigation costs may be allocated across multiple witness areas in the 2028 GRC. My testimony has one common risk mitigation with the GD witness area (Ex. SDGE-04).

Differences in Forecast Methodology: In addition to structural differences, the 2025 RAMP Report and 2028 GT GRC forecasts were developed using different forecasting methodologies, reflecting the distinct objectives of each filing.

The 2025 RAMP Report forecast was developed by using alternate forecasting methods. The 2028 GT GRC forecast reflects the current understanding of system conditions and program needs, allowing SDG&E to apply forecasting methods that are better aligned with current operational requirements.

For these reasons, the 2025 RAMP Report and 2028 GRC forecasts should be viewed as complementary rather than directly comparable. Variances between the two filings should therefore be interpreted in the context of these differing structures and methodologies.

D. Feedback from Safety Policy Division and Parties

The Commission's Safety Policy Division (SPD) issued their assessment report on October 10, 2025 regarding the Companies' 2025 RAMP Reports. Parties subsequently served opening and reply comments on November 17, 2025 and December 1, 2025 respectively. Appendix B, 2025 RAMP Report Stakeholder Recommendations and Companies' Response, in the RDF Integration testimony (Ex. SCG-02B/SDGE-02B) appends a summary of the feedback and recommendations received and the Companies' responses.

E. CAVA Integration

Pursuant to Commission decisions in the Climate Adaptation OIR (R.18-04-019), SDG&E performed a Climate Adaptation Vulnerability Assessment (CAVA) focused on years 2030, 2050, and 2070, with the aim of identifying asset and operational vulnerabilities to climate hazards across the SDG&E system. Some of the climate hazards that will have short- and long-term ramifications in the San Diego region include extreme temperatures, wildfire, inland flooding, coastal flooding and erosion, and landslides. Climate change is recognized as a factor that can drive, trigger, or exacerbate multiple RAMP risks. Implementing climate change adaptation measures and integrating climate vulnerability considerations into RAMP controls and mitigations can enhance system infrastructure longevity and reduce the severity of long-term negative climate impacts. The controls and mitigations described in further detail in this chapter,

as shown below, align with the goal of increasing SDG&E's physical and operational resilience to the increasing frequency and intensity of climate hazards.

TABLE GO-22
RAMP Controls and Mitigations Aligned with Climate Hazards

Potential Climate Hazard(s)	Relevant ID	Relevant Control/Mitigation	Risk Chapter
Inland Flooding and Landslides	C010	Pipeline Monitoring Technologies	High Pressure Gas System
Inland Flooding and Landslides	C104	Cathodic Protection – Capital	
Inland Flooding and Landslides	C113	Leak Repair	
Inland Flooding and Landslides	C125	Pipeline Relocation/Replacement	
Inland Flooding and Landslides	C126	Shallow/Exposed Pipe Remediations	

VI. CONCLUSION

SDG&E respectfully requests that the Commission adopt the GT forecasts for TY 2028 O&M and for capital as reflected in Appendix C, as sponsored in this testimony. The record demonstrates that these forecasts are reasonable, necessary, and cost-effective, and that they are fully aligned with the Commission's core objectives of safety, reliability, affordability, and operational efficiency.

The forecasts reflect a disciplined and transparent forecasting methodology. O&M estimates are anchored in BY 2025 foundation, with targeted incremental adjustments to reflect identifiable changes in workload, regulatory requirements, asset conditions, and system complexity. Capital forecasts use historical-average methodologies and are supported by regulatory mandates and demonstrated system needs. Taken together, these approaches provide a prudent and well-supported estimate of the resources required to operate and maintain the GT system safely and reliably at the lowest reasonable cost.

The activities funded through these forecasts are essential to meeting SDG&E's safety and compliance obligations under applicable federal and state requirements, including PHMSA's 49 CFR Part 192, CPUC GO 112-F, CARB's MRR, as well as applicable federal and state GHG reporting programs. These mandates require continuous inspection, monitoring, maintenance,

integrity testing, and extensive documentation across the transmission system. This associated work is not discretionary; rather it is foundational to safe natural gas operations in Southern California.

The forecast further supports critical reliability and resilience functions across the GT system. Funded activities include compressor station inspection and maintenance, leak repairs, ROW management, pipe coating work, and system modernization initiatives. Targeted incremental investments associated with methane monitoring, vegetation management, damage prevention, operational technology monitoring, and pipeline class location impacts reflect evolving risk profiles and regulatory expectations. These prudent investments reduce the likelihood of system failures, outages, and environmental impacts, and help mitigate higher long-term costs.

Environmental compliance programs included in the forecasts, such as the CARB Oil & Gas Rule leak detection requirements and Subpart W GHG measurements, advance California's emissions-reduction objectives while keeping SDG&E's compressor station compliant with state and federal regulations.

Taken together, the GT forecast provides the resources necessary to perform the daily work that protects public and employee safety, maintains system reliability, fulfills regulatory obligations, and meets customer needs across the Company's service territory. The requested costs are proportional to these responsibilities and represent a reasonable and necessary investment to sustain safe and reliable service at the lowest reasonable cost. For these reasons, SDG&E respectfully requests Commission approval of the O&M and capital forecasts for TY 2028 and associated years.

Accordingly, SDG&E respectfully requests that the Commission approve the proposed TY 2028 O&M funding level of $6,511,000 and capital expenditure forecast as reflected in Appendix C.

This concludes my prepared direct testimony.

VII. WITNESS QUALIFICATIONS

My name is Gina Orozco. My business address is 555 West Fifth Street, Los Angeles, California, 90013. I am employed by SoCalGas as Vice President – Gas Transmission & Storage (GT&S) Operations, with responsibility for the SoCalGas GT&S systems and SDG&E's Moreno Compressor Station. I have been employed by SoCalGas since 1990. I have 36 years of experience in the utility industry. While at SoCalGas, I have held various staff and line positions in the functional areas of GT&S Operations, Gas Distribution Field Operations and Technical Services, Gas Engineering and System Integrity, Gas Operations Services, Gas System Operations, and Human Resources.

My present responsibilities include providing leadership to professionals responsible for scheduling, controlling, transporting, and storing gas energy to support safe and reliable delivery through the storage and transmission pipeline network. This encompasses the operation, maintenance, installation, and replacement of GT&S systems at SoCalGas and SDG&E's Moreno Compressor Station. Furthermore, I lead the GT&S PMO group, which supports project management standards and frameworks, establishes governance structures, and provides technical support for gas transmission and storage project management and construction activities. These responsibilities include procurement, process improvements to enhance efficiency, development and management of O&M and capital budgets, and Regulatory & Performance Management.

I earned a Bachelor of Science Degree in Electrical Engineering from California State University, Los Angeles, and an Executive Master of Business Administration from Claremont Graduate University.

I sponsor the TY 2028 GRC testimony for SDG&E's GT O&M expenses and capital spending plan.

I have previously testified before the Commission.

APPENDIX A
GLOSSARY OF TERM

APPENDIX A

Glossary of Terms

ACRONYM	DEFINITION
AC	Alternating Current
ASV	Automatic Shutoff Valve
BCR	Benefit Cost Ratio
BY	Base Year
CalOES	California Office of Emergency Services
CARB	California Air Resources Board
CAVA	Climate Adaptation Vulnerability Assessment
CCR	California Code of Regulations
CFR	Code of Federal Regulations
CP	Cathodic Protection
CPUC	California Public Utilities Commission
CUPA	Certified Unified Program Agencies
DC	Direct Current
DOT	United States Department of Transportation
EDC	Electric-Driven Compressor
EPA	Environmental Protection Agency
ESD	Emergency Shutdown
ETS	Electrical Test Station
GESI	Gas Engineering & System Integrity
GHG	Greenhouse Gas
GHGRP	Greenhouse Gas Reporting Program
GO	General Order
GRC	General Rate Case
GS	Gas Storage
GT	Gas Transmission
GT&S	Gas Transmission & Storage
HCA	High Consequence Area
HP	Horsepower
LDAR	Leak Detection and Repair
LEL	Lower Explosive Limit
MAOP	Maximum Allowable Operating Pressure
M&R	Measurement and Regulation
MRR	Mandatory Reporting Regulation
MSA	Meter Set Assembly
O&M	Operations and Maintenance

ACRONYM	DEFINITION
OPM	Optical Pipeline Monitoring
PHMSA	Pipeline Hazardous Materials Safety Administration
PMO	Program Management Office
psig	Pounds Per Square Inch Gauge
RAMP	Risk Assessment Mitigation Phase
RCV	Remote-Controlled Valve
ROW	Right of Way
RTU	Remote Terminal Unit
SCADA	Supervisory Control and Data Acquisition
SCR	Selective Catalytic Reduction
SoCalGas	Southern California Gas Company
SDG&E	San Diego Gas & Electric Company
SPD	Safety Policy Division
TIMP	Transmission Integrity Management Program
TSA	Transportation Security Administration
TY	Test Year

APPENDIX B
CONTROLS AND MITIGATIONS COMPLIANCE DRIVER ROADMAP

APPENDIX B

Controls and Mitigations Compliance Driver Roadmap

The table below indicates the compliance drivers that underpin Risk Controls/Mitigations identified in testimony.

Control/ Mitigation ID	Control/Mitigation Name	Compliance Driver
C002	Damage Prevention Activities – Gas	49 CFR Part 192, CPUC GO 112-F, California Gov Code 4216
C104	Cathodic Protection – Capital	49 CFR Part 192 Subpart I
C108	Cathodic Protection – Maintenance	49 CFR Part 192 Subpart I
C113	Leak Repair	49 CFR Part 192 Subpart M
C125	Pipeline Relocation/Replacement	49 CFR Part 192 Subpart M
C126	Shallow/Exposed Pipe Remediations	49 CFR Part 192 Subpart M
C132	Pipeline Maintenance	49 CFR Part 192 Subpart M
C136	Compressor Stations – Capital	49 CFR Part 192 Subpart M
C142	Compressor Station – Maintenance	49 CFR Part 192 Subpart M
C151	Measurement & Regulation Station Capital	49 CFR Part 192 Subpart M
C155	Measurement & Instrumentation – Maintenance	49 CFR Part 192 Subpart M

APPENDIX C
CAPITAL EXPENDITURES

San Diego Gas Electric Company
Capital Expenditures
(In Thousands of 2025 $)

Gas Transmission	2026	2027	2028	2029	2030	2031
Total Capital	**12,847**	**12,847**	**18,345**	**12,847**	**12,847**	**12,847**
2026 - 2028 Capital Request	12,847	12,847	18,345	-	-	-
Post-Test Year Capital Forecast	-	-	-	12,847	12,847	12,847

San Diego Gas Electric Company
Capital Expenditures
(In Thousands of 2025 $)

Gas Transmission
2026 - 2028 Capital Request

Category	Workpaper Sub	Workpaper Description	In-Service Date	2026	2027	2028
Pipeline Replacements	**004010.001**	Pipeline Replacements	Routine	4,113	4,113	4,110
Compressor Stations	**004050.001**	Compressor Stations	Routine	3,898	3,898	9,409
Cathodic Protection	**004060.001**	Cathodic Protection	Routine	423	423	422
Measurement & Regulation Stations	**004080.001**	Measurement & Regulation Stations	Routine	3,244	3,244	3,237
Auxiliary Equipment	**004090.001**	Security & Auxiliary Equipment	Routine	908	908	907
Capital Tools	**007060.001**	Capital Tools	Routine	261	261	260
Grand Total				**12,847**	**12,847**	**18,345**

San Diego Gas Electric Company
Capital Expenditures
(In Thousands of 2025 $)

Gas Transmission
Post-Test Year Capital Forecast

Category	Workpaper Sub	Workpaper Description	In-Service Date	2026	2027	2028	2029	2030	2031
Pipeline Replacements	**004010.001**	Pipeline Replacements	Routine	-	-	-	4,113	4,113	4,113
Compressor Stations	**004050.001**	Compressor Stations	Routine	-	-	-	3,898	3,898	3,898
Cathodic Protection	**004060.001**	Cathodic Protection	Routine	-	-	-	423	423	423
Measurement & Regulation Stations	**004080.001**	Measurement & Regulation Stations	Routine	-	-	-	3,244	3,244	3,244
Auxiliary Equipment	**004090.001**	Security & Auxiliary Equipment	Routine	-	-	-	908	908	908
Capital Tools	**007060.001**	Capital Tools	Routine	-	-	-	261	261	261
Grand Total				**-**	**-**	**-**	**12,847**	**12,847**	**12,847**

APPENDIX D
GRC-RAMP INTEGRATION

Area: GAS TRANSMISSION

Witness: Gina Orozco

GRC - RAMP Integration

GRC Workpaper	GRC Wkp Description	RAMP WKP	RAMP Wkp Description	RAMP Unit Measure	TOTAL (in 000s)							UNITS						
					2025	2026	2027	2028	2029	2030	2031	2025	2026	2027	2028	2029	2030	2031
004010.001	Pipeline Replacements	1CR02 C113	SDG&E-Risk-2 High Pressure Gas System Leak Repair	Miles of Pipe	22	206	206	206	206	206	206	185	185	185	185	185	185	185
004010.001	Pipeline Replacements	1CR02 C125	SDG&E-Risk-2 High Pressure Gas System Pipeline Relocation/Replacement	Miles of Pipe	373	3,496	3,496	3,494	3,496	3,496	3,496	185	185	185	185	185	185	185
004010.001	Pipeline Replacements	1CR02 C126	SDG&E-Risk-2 High Pressure Gas System Shallow/Exposed Pipe Remediations	Miles of Pipe	44	411	411	411	411	411	411	185	185	185	185	185	185	185
004050.001	Compressor Stations	1CR02 C136	SDG&E-Risk-2 High Pressure Gas System Compressor Stations - Capital	Installations	2,090	3,898	3,898	9,409	3,898	3,898	3,898	1	1	1	1	1	1	1
004060.001	Cathodic Protection	1CR02 C104	SDG&E-Risk-2 High Pressure Gas System Cathodic Protection - Capital	Miles of Pipe	86	423	423	423	423	423	423	185	185	185	185	185	185	185

Note: Totals may include rounding differences. Total amounts preceded by a double asterisk (**) are in millions ($MM). Unit values preceded by a single asterisk (*) are displayed in thousands (000s).

Area: GAS TRANSMISSION

Witness: Gina Orozco

GRC - RAMP Integration

GRC Workpaper	GRC Wkp Description	RAMP WKP	RAMP Wkp Description	RAMP Unit Measure	TOTAL (in 000s)							UNITS						
					2025	2026	2027	2028	2029	2030	2031	2025	2026	2027	2028	2029	2030	2031
004080.001	Measurement & Regulator Stations	1CR02 C151	SDG&E-Risk-2 High Pressure Gas System Measurement & Regulation Station Capital	Miles of Pipe	8,816	3,244	3,244	3,237	3,244	3,244	3,244	185	185	185	185	185	185	185

Note: Totals may include rounding differences. Total amounts preceded by a double asterisk (**) are in millions ($MM). Unit values preceded by a single asterisk (*) are displayed in thousands (000s).

Area: GAS TRANSMISSION

Witness: Gina Orozco

GRC - RAMP Integration

GRC Workpaper	GRC Wkp Description	RAMP WKP	RAMP Wkp Description	RAMP Unit Measure	TOTAL (in 000s)							UNITS						
					2025	2026	2027	2028	2029	2030	2031	2025	2026	2027	2028	2029	2030	2031
1GT000.000	Pipeline & Instrumentation Operations	1OR02 C002	SDG&E-Risk-2 High Pressure Gas System Damage Prevention Activities - Gas	Miles of Pipe	256	274	281	305	314	317	327	185	185	185	185	185	185	185
1GT000.000	Pipeline & Instrumentation Operations	1OR02 C010	SDG&E-Risk-2 High Pressure Gas System Pipeline Monitoring Technologies	Miles of Pipe	39	42	43	47	48	49	50	185	185	185	185	185	185	185
1GT000.000	Pipeline & Instrumentation Operations	1OR02 C108	SDG&E-Risk-2 High Pressure Gas System Cathodic Protection - Maintenance	Miles of Pipe	98	105	108	118	120	123	126	185	185	185	185	185	185	185
1GT000.000	Pipeline & Instrumentation Operations	1OR02 C132	SDG&E-Risk-2 High Pressure Gas System Pipeline Maintenance	Miles of Pipe	1,122	1,199	1,230	1,340	1,371	1,397	1,434	185	185	185	185	185	185	185
1GT000.000	Pipeline & Instrumentation Operations	1OR02 C155	SDG&E-Risk-2 High Pressure Gas System Measurement & Instrumentation Maintenance	Miles of Pipe	453	484	496	541	553	564	579	185	185	185	185	185	185	185

Note: Totals may include rounding differences. Total amounts preceded by a double asterisk (**) are in millions ($MM). Unit values preceded by a single asterisk (*) are displayed in thousands (000s).

Area: GAS TRANSMISSION

Witness: Gina Orozco

GRC - RAMP Integration

GRC Workpaper	GRC Wkp Description	RAMP WKP	RAMP Wkp Description	RAMP Unit Measure	TOTAL (in 000s)							UNITS						
					2025	2026	2027	2028	2029	2030	2031	2025	2026	2027	2028	2029	2030	2031
1GT001.000	Compressor Station Operations	1OR02 C142	SDG&E-Risk-2 High Pressure Gas System Compressor Station - Maintenance	Compressor Stations	3,540	3,664	3,718	3,718	3,772	3,825	3,825	1	1	1	1	1	1	1

Note: Totals may include rounding differences. Total amounts preceded by a double asterisk (**) are in millions ($MM). Unit values preceded by a single asterisk (*) are displayed in thousands (000s).