Application: A.25-02-XXX
Exhibit No.: SDG&E-02
Witnesses: E. Weim & T. Sera

Application of San Diego Gas & Electric Company (U 902 G) to Recover Costs Recorded in the Transmission Integrity Management Program Balancing Account from January 1, 2019 to December 31, 2023.	A.25-02-XXX

CHAPTER II

PREPARED DIRECT TESTIMONY OF

ELAINE WEIM AND TRAVIS T. SERA

(TECHNICAL – PROJECT EXECUTION AND MANAGEMENT)

ON BEHALF OF SAN DIEGO GAS & ELECTRIC COMPANY

BEFORE THE PUBLIC UTILITIES COMMISSION

OF THE STATE OF CALIFORNIA

February 27, 2025

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CHAPTER II

PREPARED DIRECT TESTIMONY OF ELAINE WEIM AND TRAVIS SERA

(Technical – Project Execution and Management)

I. PURPOSE AND OVERVIEW OF TESTIMONY

The purpose of our prepared direct testimony is to describe San Diego Gas & Electric Company's (SDG&E) execution of the "Assessment and Remediation" component of the Transmission Integrity Management Program (TIMP). This cost category comprises TIMP In-Line Inspection (ILI), External Corrosion Direct Assessment (ECDA), and Stress Corrosion Cracking Direct Assessment (SCCDA) projects which resulted in a total of $48 million in capital expenditures and $67 million in O&M expenses for the entire five-year TY 2019 GRC Cycle (2019-2023).

Our testimony and supporting workpapers will discuss the inspections completed during the TY 2019 GRC Cycle to enhance public safety, comply with regulations, minimize customer impacts, and maximize cost effectiveness.[1] The discussion will cover: (1) how SDG&E TIMP Assessment and Remediation activities are executed and managed; (2) how the regulatory changes initiated by the first part of the Gas Transmission Safety Rule[2] (GTSR Part 1) impacted the Assessment and Remediation component of the TIMP; and (3) how these changes impacted overall TIMP costs.

II. TIMP ASSESSMENTS AND REMEDIATION

As described in the Prepared Direct Testimony of Travis Sera (Chapter I), SDG&E's TIMP was designed to comply with the requirements of Title 49 of the Code of Federal Regulations (CFR) – specifically Part 192, Subpart O – Gas Transmission Pipeline Integrity Management, and later 49 CFR § 192.710 – and is comprised of activities such as threat identification, risk analysis, pipeline assessments, and other actions taken to minimize threat and

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1 Workpapers were only prepared for ILI projects costing at least $1 million and Direct Assessment projects that primarily incurred costs from January 1, 2019, to December 31, 2023 (Ex. SDG&E-02-WP).

2 Pipeline Safety: Safety of Gas Transmission Pipelines: MAOP Reconfirmation, Expansion of Assessment Requirements, and Other Related Amendments, 84 FR 52180, October 1, 2019.

integrity concerns in order to reduce the risk of pipeline failure. Assessment and Remediation is one of four cost components of the TIMP[3] and is focused on the pipeline assessments and remediation activities that are prescribed by 49 CFR §§ 192.710, 192.921,192.933, 192.937, and 192.939. The costs for the Assessments and Remediation activities component are summarized in Table EW TS-1.

Table EW TS-1
TIMP – Assessments and Remediation Costs; (2019-2023)

	TIMP – Assessments and Remediation Costs						
Direct + V&S Recorded ($000)	**2019**	**2020**	**2021**	**2022**	**2023**	**2024 Adj***	**Total**
O&M	6,806	8,201	9,294	9,686	31,770	1,090	66,847
Capital Expenditures	5,063	2,770	2,287	12,448	27,008	(1,090)	48,487

*2024 only includes adjustments for TIMP expenditures through December 31, 2023, as described in SDG&E AL 3257-G-A.

TIMP assessments are planned and executed using a four-step process that is implemented and managed by a multidisciplinary inter-organizational team composed of engineers, project managers, technical advisors, project specialists, and other employees with varying degrees of responsibility reporting to two primary organizations: Southern California Gas Company's (SoCalGas) High Pressure Integrity Assessments (HPIA) team and SDG&E's Pipeline Integrity (PI-Ex) team (collectively, Project Team). The four-step assessment process includes: (1) Pre-Assessment; (2) Inspection; (3) Direct Examination; and (4) Post-Assessment.

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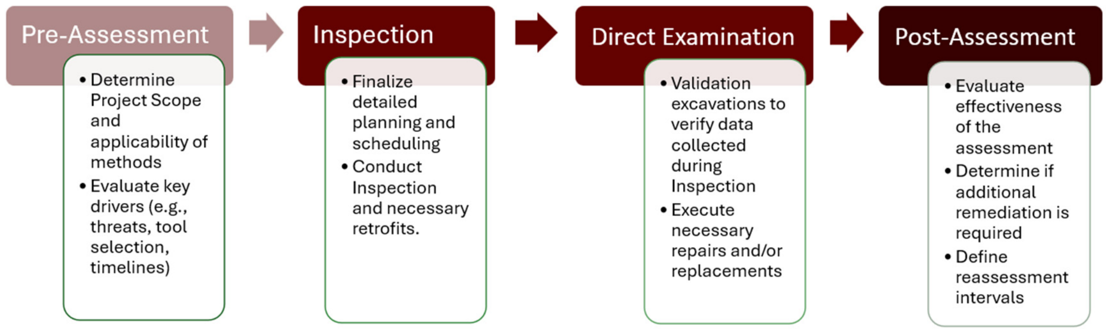
[3] The four components of TIMP, as discussed in the Prepared Direct Testimony of Travis T. Sera (Chapter I), consists of: (1) Assessments and Remediations; (2) Preventative and Mitigative Measures; (3) Data and Geographic Information Systems; and (4) Program Management and Support/Risk and Threat.

Figure EW TS-1: Four-Step Assessment Process



A. Pre-Assessment

The first step of the four-step assessment process is Pre-Assessment. During Pre-Assessment, the Project Team evaluates pipeline operational data and previous assessment results to determine project scope and the applicability of methods for each covered segment as prescribed in 49 CFR §§ 192.921 and 192.937. During this step, HPIA and PI-Ex collaboratively evaluate key drivers for the assessment project, such as: threats on the pipeline to be assessed, tool selection for inspection, and compliance timelines. Simultaneously, PI-Ex collaborates with various stakeholders throughout SDG&E to minimize operational disruption to the overall pipeline system and maximize cost efficiencies where possible.

SDG&E may apply one or more of the following methods to complete an assessment for the threats identified on each covered segment: in-line inspection (ILI), pressure testing, spike hydrostatic pressure testing, excavation and in situ direct examination, guided wave ultrasonic testing (GWUT), and direct assessments to address external corrosion (ECDA), internal corrosion (ICDA), or stress corrosion cracking (SCCDA). Assessment method selection is dependent on specific threats identified on a pipeline segment and typically will not change throughout the project lifecycle. However, when new information is obtained during an active project – particularly changes to threat identification, the Project Team must re-evaluate whether a change in scope is warranted (e.g. change or addition of assessment method). If it is determined that a change or additional assessment method is required, any new or additional assessment method must be completed within the same compliance scope timeframe, as further discussed in Section III.

SDG&E categorizes and plans assessments as follows:

- Baseline assessments: when a newly covered segment has not previously been assessed;
- First-time assessments: when a different assessment method is employed but the covered segment was previously assessed by another method; or
- Reassessments: when an assessment is performed in accordance with 49 CFR §§ 192.710 or 192.939.

While much of SDG&E's TIMP assessment projects were ECDA reassessments for this filing, there was an increase in first-time ILI assessments during the TY 2019 GRC cycle due in part to new regulatory requirements resulting in changes to threat identification. For ILI, first-time assessments can be similar in nature to baseline assessments because a pipeline may require alterations (or retrofits) to accommodate the use of a newly applied ILI tool, as described herein in Section II.B.1.a.

B. Inspection

The second step of the four-step assessment process is Inspection. During Inspection, PI-Ex finalizes detailed planning and scheduling, oversees vendors and construction contractors, manages project costs, and documents inspection activities. Inspection requires a high level of involvement by all stakeholders in order to comply with regulatory timelines and requirements. Depending on the scope for each project, activities can range widely from strategically sequencing the inspections, consulting with various internal and external stakeholders to obtain appropriate approvals, and at times, preparing the pipeline for inspection by means of temporary or permanent retrofits.

During the TY 2019 GRC cycle, SDG&E used ILI, ECDA, and SCCDA to comply with federal regulations.

1. ILI

The ILI assessment method utilizes specialized inspection tools, such as "smart tools" or "smart pigs," that travel inside a pipeline to collect information. ILI tools come in various types and sizes with different measurement capabilities, enabling SDG&E to internally inspect pipelines for an array of potential threats and safety conditions. The tools traverse pipelines using different methods of travel (e.g., free-swimming, robotic, tethered) and each method of travel has advantages and disadvantages that are considered at the time of tool selection. In addition, depending on the tool(s) selected, certain factors can add scope and corresponding cost to an assessment project.

a) Retrofits in Preparation for ILI

In order to enable the safe passage of an ILI tool (i.e., make a pipeline piggable), some pipeline segments require retrofitting. Pipeline features that may inhibit a tool include elbows, unbarred tees, valves, or other features. Each retrofit location can vary depending on the inspection method and retrofits can range from installing rated fittings to more substantial modifications such as the removal and replacement of non-piggable features.

b) ILI Facilities and Assemblies

Free-swimming ILIs require launcher and receiver assemblies where the tool(s) can be inserted and extracted from the pipeline. SDG&E has various facilities with permanent launcher and receiver assemblies[4], which provide long-term benefits to TIMP projects due to reassessment requirements that necessitate repeated future inspections at these same locations.[5] On the other hand, for pipeline segments in areas that cannot accommodate permanent launcher or receiver assemblies, SDG&E must construct temporary assemblies every inspection cycle. This is a labor-intensive effort that requires transporting, fabricating, hydrotesting and installing launcher and receiver barrels, filter separators and associated piping at the ends of a segment.

Robotic ILIs, unlike free-swimming tools, require a permanent pressure control fitting (PCF) at one or multiple locations that function as launching and receiving points for the inspection tool. Additionally, robotic ILIs require permanent fittings for charging locations approximately every 2,000 feet due to tool battery life. These permanent installations require

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4 Refers to launcher and receiver barrels that are permanently installed within SDG&E facilities.

5 49 CFR §192.710 requires reassessment intervals of a maximum of ten years for assessments outside of HCAs and 49 CFR §192.937 requires reassessment intervals of a maximum of seven years for pipeline segments in HCAs.

site planning, permitting, and excavations which will help facilitate future inspections that are necessary due to reassessment requirements.

Although tethered ILIs utilize similar detection technologies as those used for free-swimming and robotic ILIs, they differ in traversing the pipeline by using a temporary tethered cable and pulley system. This requires temporary assemblies including a spool piece adapter that provides a connection for a tethered cable and facilitates the launching and receiving of the inspection tool into and from the pipeline.

c) Number of ILI Runs

Inspection using the ILI method usually involves more than one tool "run," which is the process wherein a tool enters, traverses, and exits a pipeline. At the start of an ILI project, a series of cleaning tools are propelled through a pipeline to clear it of debris. Next, a gauge plate tool is propelled through the pipeline to identify any features that may damage the ILI tool. Lastly, the ILI smart tool is inserted into the pipeline to collect data.

Some ILI projects, however, require an increased number of tool runs for a variety of reasons. Pipelines with significant debris can require several cleaning runs and even tool recalibration or rebuild on-site, which results in increased costs for company labor, contracted workforce, and other active agreements.[6] The selection of ILI tools is dependent on the potential threats that need to be assessed. In many cases, multiple types of ILI tools are required to collect the data needed to complete the assessment project. If the data collected is not of acceptable quality, the run is considered unsuccessful and a re-run of the tool(s) must take place. If a re-run is necessary, the Project Team evaluates whether additional runs can be incorporated into the current schedule, or if the additional run(s) require rescheduling of tools and other resources.

Each run requires active monitoring of the tool within the SDG&E gas pipeline system including on-site tracking of the tool as it navigates the pipeline. Extensive collaboration is required across multiple internal departments and external resources during this process to manage the pipeline system's continued safety and reliability during the operation.

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[6] Other active agreements refers to external stakeholders that may be involved with a TIMP project (e.g., municipal encroachment permits, right-of-way agreements, additional natural gas to maintain reliability).

The length of the assessment segment and the number of runs necessary to execute the assessment has a direct impact on the labor and resources needed for the ILI project.

2. ECDA

The ECDA method is described in ANSI/NACE SP0502-2010 as "a structured process that is intended to improve safety by assessing and reducing the impact of external corrosion on pipeline integrity." The ECDA method requires the use of multiple cathodic protection (CP) survey methods – referred to as indirect inspections – to identify locations on the pipeline where external corrosion may be occurring, as well as potential locations of mechanical damage. The data obtained through the indirect inspections are evaluated to select locations for direct examination.

SDG&E uses ECDA for pipelines that cannot accommodate an ILI tool where external corrosion and mechanical damage are the only identified threats on pipeline segments. Planning activities include extensive coordination with various stakeholders, both internal and external, as well as acquisition of approved permits, entry rights, and traffic control plans as required by the governing agencies. A contracted workforce executes multiple indirect inspections. These inspections are performed by walking the pipeline route while recording measurements at regular intervals. The primary indirect inspections that SDG&E uses during an ECDA indirect inspection are close-interval survey (CIS), direct current voltage gradient (DCVG) survey, and Alternating Current Voltage Gradient (ACVG). Some of these indirect inspections require soil contact to measure pipe-to-soil potential and necessitates drilling of 1/2" holes every 10 feet, where asphalt or concrete cover is present over the pipeline. In most cases, surveys must be performed in sequence where each survey is completed for the entire extent of the assessment before the next survey takes place. These activities are labor intensive due to their required proximity to the pipeline. The length of the pipeline segment is also a factor on the timeframe needed to complete the inspection. Upon completing the ECDA scope, HPIA confirms all segments requiring inspection have been surveyed and that the data collected is of acceptable quality.

3. SCCDA

The SCCDA method is described in ANSI/NACE SP0204-2008 as "a structured process that is intended to assist pipeline companies in assessing the extent of stress corrosion cracking (SCC) on a section of buried pipeline and thus improve safety by reducing the impact of SCC." SDG&E uses SCCDA in concert with either an ECDA or an ILI when use of a crack detection tool capable of assessing the SCC threat is not feasible. Similar to ECDA, SCCDA includes the use of indirect inspection and measurements of soil resistivity. The indirect inspection, soil resistivity and/or ILI data obtained is then integrated with pipeline operational history and environmental factors (such as locations of water crossings or slopes) to identify locations for direct examination.

C. Direct Examination

The third step of the four-step assessment process is Direct Examination. During Direct Examination, the pipeline is excavated to complete visual and non-destructive examination to verify Inspection results and necessary repairs and/or replacements are completed.

1. Excavation Scoping and Planning

To validate the data obtained during Inspection, the Project Team selects locations where pipeline conditions are exposed and evaluated. Each Direct Examination location requires extensive coordination with stakeholders, review of the pipeline system for potential impacts, detailed scope and contingency planning, and permitting for excavations. Once locations are selected and planned for excavation, PI-Ex provides oversight of the contracted workforce that facilitates non-destructive examinations, environmental monitoring, and construction activities at each location.

2. Actions to Address Integrity Issues

As prescribed by 49 CFR § 192.933, SDG&E makes necessary repairs to address anomalous conditions discovered during assessments. Conditions are classified and addressed as follows: *immediate repair*, *scheduled*, or *monitored*. Immediate repair conditions[7] require

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[7] *See* Glossary (Appendix A of Ex. SDG&E-02-WP) for definition of immediate repair condition.

prompt response through a temporary pressure reduction or shutdown of the pipeline and/or performance of necessary repairs. Immediate repair conditions require action within expedited timeframes that often result in extended work hours from various stakeholders including internal departments, municipal city inspectors, contracted workforce, and construction personnel until the threats to the pipeline are resolved. Scheduled and monitored conditions are planned and managed following standard operating procedures consistent with 49 CFR Part 192, Subpart O.

A validation excavation can typically result in one or a combination of the following outcomes for repair:

- Recoat of the pipeline;
- Grinding or "soft pad repair" of the pipeline;
- Installation of a welded steel reinforcement sleeve or "band repair"; and/or
- Pipe replacement.

Additionally, some discoveries may prompt additional remediations after the initial validation digs, as determined during Post-Assessment.

D. Post-Assessment

The final step of the four-step assessment process is Post-Assessment. During Post-Assessment, HPIA utilizes data collected from the previous three steps (Pre-Assessment, Inspection, and Direct Examination) to evaluate effectiveness of assessment, determine if additional remediation is required,[8] provide feedback for continual programmatic improvement, and define reassessment intervals.

Additional remediation on a pipeline segment may entail expanded pipeline repairs (e.g., repair to seam dents or metal loss that did not meet immediate or other scheduled repair condition criteria) or preventive and mitigative measures including but not limited to permanent installation of pipeline monitoring devices, cathodic protection improvements or additional valving. For additional remediation efforts, the Project Team plans and executes new projects that are sequenced to consider system constraints, minimize customer impacts, and maximize cost and labor efficiencies. These projects also involve detailed engineering, material

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[8] 49 CFR § 192.935.

acquisition, oversight of contracted workforce, and at times, extended work hours to complete construction activities, which can increase TIMP Assessment and Remediation costs.

III. HOW REGULATORY CHANGES IMPACTED TIMP ASSESSMENTS AND REMEDIATION DURING THE TY 2019 GRC CYCLE

As described in the Prepared Direct Testimony of Travis Sera (Chapter I), the GTSR Part 1 – effective October 1, 2019 – enhanced pipeline safety regulations through several of updated or newly introduced sections of federal code. The regulatory changes included several sections that impacted SDG&E's TIMP assessment and remediation activities. In particular, the two primary sections that increased SDG&E's TY 2019 GRC cycle costs are:

- 49 CFR §192.917 (e)(3): Operators must have traceable, verifiable, and complete (TVC) record of a Subpart J pressure test to consider Manufacturing and Construction (M and C) threats on a pipeline segment stable.
- 49 CFR §192.917 (e)(6): If an operator finds evidence of cracks or crack-like defects on a covered segment, the operator must evaluate and remediate, as necessary, all pipeline segments (both covered and uncovered) with similar characteristics associated with the crack or crack-like defect.

In addition, in 2021 PHMSA provided its interpretation to Pacific Gas & Electric Company (PG&E) that further explained the agency's expectations of compliance with 49 CFR §192.939 for newly activated threats.[9] This interpretation was confirmed by the CPUC. In instances where M and C threats were newly activated as per 49 CFR §192.917(e)(3), SDG&E was required to incorporate applicable inspection methods for these threats within the current reassessment cycle even if that cycle was ending in the same year GTSR Part 1 took effect. Similarly, in instances where cracking-related threats are present on pipeline segments similar to those requiring assessment during the 2019-2023 period, SDG&E had to incorporate these threats into its assessment plan before the applicable reassessment cycle ended. As a result,

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[9] Pipeline and Hazardous Materials Safety Administration, Gale, John A. Letter to Ms. Christine Cowsert VP, Gas Asset Mgmt. & System Operations Pacific Gas and Electric Company (June 23, 2021), available at: https://www.phmsa.dot.gov/sites/phmsa.dot.gov/files/docs/standards-rulemaking/pipeline/interpretations/75361/pacific-gas-and-electric-company-pi-21-0004-06-24-2021-part-192939.pdf.

SDG&E's project scopes changed and expanded from previous assessments that informed initial TY 2019 GRC forecasting. The newly enhanced regulations and requirements resulted in:

- Increased number of inspections due to the expansion of threats, which included new ILI assessments needing expeditious retrofitting or replacement.
- Increased engineering complexity, data analysis, and excavations due to the increase and changes in inspections.
- Increased number of actions taken to address anomalous conditions due, in part, to the increased number of inspections and excavations.

A. Increase in First-Time ILI Assessments

SDG&E has historically evaluated pipeline integrity through ECDA. At the time of the TY 2019 GRC filing, SDG&E had primarily used ECDA on TIMP pipeline segments due to system reliability and the piggability of its pipelines. Following the new requirements of GTSR Part 1, SDG&E implemented a change in the assessment methods for various pipelines within its service territory in order to assess for newly activated M and C threats. The incorporation of new ILI assessment projects resulted in higher actual costs primarily due to: (1) pipeline retrofitting and new tools; (2) increased assessment findings and validation excavations; and (3) increased repairs.

Additionally, based on PHMSA's interpretation, assessment of these newly active threats for projects with reassessments due through 2023 had to occur before each project was due.[10] Since the GTSR Part 1 took effect in July of 2020, reassessment projects due in the latter years of the TY 2019 GRC cycle were subjected to a compressed timeframe to complete inspections that were newly required. The expedited nature of the retrofitting and assessment work that is described throughout our testimony also resulted in much higher costs than those previously forecasted.

For example, during the TY 2019 GRC cycle, SDG&E determined that for three pipeline segments the most appropriate assessment method to evaluate the newly activated M and C threats on pipeline segments was ILI. As a result, SDG&E had to retrofit pipeline segments to make them piggable. Since these projects included new first-time assessments, additional data

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[10] *Id.*; 49 CFR §192.939.

analysis and verification were required. These projects also required retrofits that were not previously forecasted. Due to the compliance-driven expedited timelines of these projects, PI-Ex hired incremental contracted workforce to support the new activities. In addition, inspecting SDG&E pipeline segments using ILI required new system analysis and contingency planning that had not been implemented for ECDA projects. For example, free-swimming ILI tools have the potential to impact gas availability across the SDG&E service territory because they require pressure differentials to allow tool passage through the pipeline. In order to maintain system reliability, in some instances, HPIA and PI-Ex incorporated the use of robotic ILI tools that are self-propelled and remotely controlled in order to mitigate gas handling impacts associated with management of pressure differentials. The use of these tools also increased the costs associated with TIMP projects since robotic ILI technology is generally more expensive than traditional free-swimming ILI tools and necessitates specific retrofits on pipelines, typically at two-thousand-foot intervals, to facilitate battery recharging.

In general, costs for permanent and temporary assemblies include detailed engineering design drawings, municipal permitting, acquisition of pipe material and fittings required for site specific assemblies, and fabrication and strength testing of all assemblies prior to the ILI. These costs were not forecasted at the time of the TY 2019 GRC since assessments were expected to be completed using ECDA. However, the addition of these assemblies helps facilitate the current inspection and future inspections that are required based on the recurring inspection intervals established in accordance with 49 CFR §192.939.

B. Increase in First-Time SCCDA

During the TY 2019 GRC cycle, SDG&E enhanced its threat evaluation processes to determine the susceptibility of TIMP segments to SCC. Pipelines previously assessed using ECDA now became subject to additional assessment methods, such as SCCDA and/or ILI. For five projects, SDG&E incorporated SCCDA to assess pipeline segments to comply with federal regulations. One of the projects also required ILI.

In some cases, SDG&E was able to incorporate SCCDA in the early steps of project development, allowing Project Teams to prepare for all assessment activities during initial planning efforts. In other cases, SCCDA incorporation occurred during later steps of project development. Incorporating SCCDA to projects that were “in-flight” significantly expanded workload and increased costs due to the need for multiple iterations of Pre-Assessment, Inspection, and Direct Examination activities on the same segment.

C. Increase in Assessment Excavations

With the use of new assessment methods, the volume of assessment findings as compared to previous ECDAs increased substantially. Whereas the extent of pipe evaluated during an ECDA is limited due to the more manual processes involved and whereas assessment findings are limited to external corrosion, an ILI assessment spans greater lengths of pipe and can pick up exponentially more data on pipeline segments to be reviewed and evaluated by integrity engineers. The increase in data resulted in: an increase in labor to analyze the data, and the amount of findings that require validation. In order to confirm assessment data, SDG&E needed to excavate additional segments of the pipeline than before for validation.

As an example, an ECDA reassessment completed on a pipeline during the TY 2019 GRC cycle resulted in three excavations. Due to the new regulations and the clarification from PHMSA[11], the pipeline also required assessment for M and SCC threats through SCCDA and ILI, totaling two first-time assessments in addition to the ECDA reassessment that was completed as originally planned. The first-time assessments resulted in an additional six excavations for SCCDA and five excavations for ILI, which brought the total excavation count for this pipeline from 3 to 14 locations.

D. Increase in Actions to Address Integrity Issues

With both the increase in available data and validation excavations, the number of repairs and/or replacements increased as well.

To further elaborate on the current example, all three of the excavations resulting from the ECDA required repairs. Additionally, all 11 excavations resulting from the SCCDA and ILI required repairs. There was also a notable increase in repairs requiring permanent installations (e.g., pipe bands or replacements). In addition to the increase in repair activities, the excavations also identified ten immediate repair conditions that significantly impacted project timelines and costs.

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[11] *Id.*; 49 CFR § 192.917(e)(3) and 49 CFR § 192.917(e)(6).

Beyond the standard activities and costs of addressing pipeline conditions (e.g., labor and materials), the urgency of an immediate repair condition requires consecutive 24-hour work schedules and impacts resource allocation, schedule, and scope changes that further increase costs for the project (e.g., additional labor, overtime, expedited permitting and traffic control, and new mobilization contracts). For this one project alone, the level of planning, execution, and construction activities required to complete a total of three assessments with 14 excavations that included ten immediate repairs were unprecedented and unanticipated for SDG&E. With these accelerated activities for immediate repair conditions on this project, other ongoing and scheduled projects within the TIMP were impacted due to changes in scheduling and resourcing resulting in increased costs for those projects as well.

This example is just one of the various TIMP assessments completed that experienced expanded scope as a result of SDG&E's continuing efforts to comply with federal regulations and better assess for newly activated M, C and SCC threats.

IV. OTHER TIMP COST DRIVERS

While SDG&E forecasts projects based on prior experience, actual pipeline and construction conditions may vary due to new threats, new scopes of work, and other factors and unforeseeable circumstances, which significantly impact the actual costs of a TIMP project. Some examples of unforeseeable circumstances that SDG&E experienced during the TY 2019 GRC cycle include:

- Unanticipated pipeline conditions: anomalies that, upon excavation and exposure, required more expeditious or extensive action than anticipated based on data analysis. In addition, projects encountered anomalies that required extended excavations in order to conduct repairs;
- System reliability: potential or actual system constraints due to seasonal weather, unanticipated outages, other conflicting project schedules, etc. that necessitated rescheduling of TIMP projects which resulted in additional costs (e.g., multiple mobilization or demobilization efforts, extension and/or renewal of municipal agreements and contracts);
- Unknown substructures: excavation of pipeline may expose unknown or unmarked substructures (e.g., other utility pipeline, foreign substructures) resulting in

coordination efforts with impacted municipalities and other key stakeholders for additional excavation locations, permitting for 24 hours, and/or extended workdays along with coordination;

- Challenges with permitting and temporary land right acquisition: franchised rights-of-way (e.g., city and county streets) required permits from municipal agencies where work was being executed. Depending on the project location, state and federal agencies (e.g., land rights, Military), public or private transit organizations (e.g., Metrolink, Amtrak, San Diego Metropolitan Transit System) required additional permits or agreements to complete work;
- Access to private land: projects with work executed on or near private land involved collaboration with owners, resulting in additional costs;
- Environmental requirements and challenges: various projects required multiple environmental releases and/or jurisdictional agreements (e.g., water, wildlife, cultural) that presented unique challenges, impacted schedules, and involved extensive restoration; and
- Unfavorable soil conditions: soil types vary vastly across the SDG&E service territory. For example, SDG&E encountered boulders, cobblestone, sandy, and/or marshy soil conditions. These conditions were highly unfavorable for excavating and required modifications to project plans, including special equipment and different construction processes for project completion.

Due to the unpredictability of TIMP projects, SDG&E develops contingency plans to prepare for possible circumstances and has implemented best practices for cost efficiency while prioritizing timely execution due to safety drivers:

- Identifying potential cost avoidance opportunities during project scope validation to minimize the amount of future direct examinations and assessments;
- Scheduling TIMP projects to maximize efficiency and productivity through other ongoing SDG&E work (e.g., selecting excavation locations that fall within or near the scope of another project team, identifying future replacements that could address TIMP needs), decreasing the need for multiple mobilization/demobilization efforts, or leveraging one-day rates for a single truck when multiple locations require paving;

- Reusing temporary equipment built on a previous project (e.g., adaptor spool piece for robotic ILI tools); and
- Using short-term agreements further enhances construction contractor efficiencies.

SDG&E continues to apply program governance and management best practices to achieve its goal of cost-effectively managing pipeline integrity and enhancing safety.

V. CONCLUSION

As discussed in our testimony and in Chapter I, regulatory changes that could not be forecasted in the TY 2019 GRC application have impacted the scope of TIMP projects undertaken during the TY 2019 GRC cycle. New assessment methods, increasingly complex engineering analysis, and the resulting increase in validation and remediation activities to comply with new federal requirements impacted actual TIMP costs. Further, the TIMP is complex and as projects progress, changes due to engineering analysis and actual pipeline conditions are common and result in cost variability.

This concludes our prepared direct testimony.

VI. WITNESS QUALIFICATIONS

My name is Elaine Weim. I am employed by San Diego Gas & Electric Company as the Manager of Pipeline Integrity. My business address is 4949 Greencraig Lane, San Diego, California, 92123.

I graduated from California State University Northridge in 2008 with a Master of Education degree in Educational Administration and earlier in 2005 with a Bachelor of Arts degree in Liberal Studies.

My employment with Southern California Gas Company began in 2010 with the title of Technical Specialist in Gas Engineering. Since that initial assignment, I have held numerous positions with increasing levels of responsibility including Project Manager for Gas Engineering and Gas Transmission Construction Team Lead for Gas Engineering & System Integrity. In July 2023, I transitioned into my current position of Pipeline Integrity Manager for Gas Operations at San Diego Gas & Electric (SDG&E). My responsibilities include overseeing the PI-Ex teams who manage the planning, execution, and reconciliation of TIMP field activities discussed in this prepared direct testimony.

I have not previously testified before the Commission.