

San Diego Gas & Electric

Natural Gas Leakage Abatement Report

In partial fulfillment of

Rulemaking (R.) 15-01-008 to Adopt Rules and Procedures Governing
Commission Regulated Natural Gas Pipelines and Facilities to Reduce Natural Gas
Leaks Consistent with Senate Bill 1371, Leno.

And in Response to Data Request San Diego Gas & Electric R15-01-008 2020
Annual Report

By: San Diego Gas & Electric

Date: 06/15/20

SDG&E
Attachment Q1

| Mandatory Best Practice | Title | Emission Source | Question 1: A summary of changes to utility leak and emission management practices from January 1st, 2019 to December 31st, 2019 |
|--------------------------------|--|---|--|
| 1 | 2018-2020 Compliance Plan Implementation | All | SDG&E is continuing to implement its 2018-2020 Leak Abatement Compliance Plan. |
| 3-7 | Policies Regarding Blowdown Reduction | Blowdown from high pressure Transmission, Distribution, and Storage Pipelines | In 2019, SDG&E published a policy requiring pressure reduction to the lowest operationally feasible level in order to minimize methane emissions before non-emergency venting of high-pressure facilities. SDG&E also published the Blowdown Emission Reduction Plan Form and updated the Blowdown Reporting Form to properly track blowdown reduction methods and efficacy. |
| 9 | Recordkeeping | All | In 2019, SDG&E continued developing a centralized database to incorporate Leak Abatement Program records to enable automation of reporting. System plan, architecture and requirements were completed in 2019. This project continues through 2020. |
| 11 | Methane Emissions Minimization Policies Training | All | In 2019, SDG&E completed development of a training module that provides employees with an overview of greenhouse gases, how they impact the environment, and how employees can help reduce methane emissions. This module was finalized in 2019 and will be a mandatory training requirement for all SDG&E employees in 2020. SDG&E also updated internal training materials for operational trainings to reflect policy updates regarding implementations of the 26 Mandatory Best Practices. |
| 12 | Knowledge Continuity Training Programs | All | SDG&E will be incorporating the training program developed to meet the requirements of Best Practice 11 into new employee training bundles, so all new employees are trained on the importance of minimizing methane emissions. |
| 15 | Gas Distribution Leak Surveys | Distribution Pipelines | In 2019, SDG&E continued to transition state-of-the-art plastic pipe and high performing protected steel pipe from a five-year leak survey interval to a three-year interval, implemented in 2020. This transition included hiring and training incremental |

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| | | | employees, purchasing tools, vehicles, and instrumentation, coordinating facility requirements, and updating compliance systems. |
| 16 | Increased Survey on Vintage Steel | Vintage Steel Pipe | In 2019, SDG&E prepared to transition vintage steel pipe from a five-year leak survey interval to annual, and for implementation in January 2020. This transition included hiring and training incremental employees, purchasing tools, vehicles, and instrumentation, coordinating facility requirements, and updating compliance systems. |
| 16 | Distribution Integrity Management Program Replacement of Vintage Plastic Pipe | Underground Distribution Pipe | SDG&E has a GRC-funded Vintage Integrity Plastic Plan (VI PP) that focuses on the replacement of poor performing early vintage plastic for all pre-1986 plastic pipe. In 2019, SDG&E replaced 46 miles of early vintage plastic pipe. Using the leak rate per mile per year for these categories of materials, these replacements are estimated to provide an annual emissions reduction of 43 MCF. |
| 16 | Leverage eGIS to Prioritize Non-State-of-the-Art Pipeline Replacement Programs | Distribution Pipelines | SDG&E leveraged eGIS to enhance prioritization and optimization of non-state-of-the-art pipeline replacement programs by identifying leak clusters. Leveraging eGIS to more efficiently address the portions of the system with the highest leak rates increases the effectiveness of modernization programs and supports greater emission reductions. |
| 16 | Perform Annual Survey on Pre-1986 Aldyl-A Mains and Associated Services | Distribution Pipelines | SDG&E continued performing annual leak surveys on pre-1986 Aldyl-A mains and associated services, compared with the previous 5-year leak survey cycles. The estimated emissions reduction achieved in 2019 associated with this effort was 2,269 MCF. |
| 17 | Enhanced Methane Detection | Underground Pipelines | In 2019, SDG&E acquired a mobile gas speciation vehicle and hired one (1) technician to perform mobile gas speciation analyses. This incremental effort is expected to be operational in 2020. |
| 18 | Stationary Methane Detector Pilot | Above Ground High Pressure | In 2019, SDG&E, in partnership with SoCalGas, purchased and installed stationary methane sensors for high pressure regulator stations to determine emission reduction capabilities and cost-effectiveness of these systems. SDG&E is evaluating the systems in |

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| | | Facilities | laboratory and field settings, and anticipates results from data analyses in 2020 to inform a decision on system-wide implementation feasibility. |
| 18 | Synergies with Pipeline Safety Enhancement Plan (PSEP) Technology Plan | Distribution and Transmission Pipeline Leaks | <ul style="list-style-type: none"> • SDG&E requested funding in the Test Year (TY) 2019 GRC application to install approximately 2,100 methane sensors that link to the Advanced Meter network across both SDG&E and SoCalGas. These sensors support providing early warning of leaks to schools, hospitals, or hard to evacuate facilities (e.g., nursing homes). SDG&E installed fifteen sensors as a pilot to integrate with the network, back office systems, and associated processes. In 2019, SDG&E worked on project plan development, refining site selection criteria, and remote methane sensor system design enhancements. • SDG&E requested in the TY 2019 GRC to begin installing fiber optic cables along the route of high-pressure pipelines that can sense leaks and potential encroachments near the pipeline. In 2019, SDG&E performed training and evaluation of design and configurations at a fiber optic line installed at a training facility. To further this effort, SDG&E changed its procedures to require any Transmission pipeline projects 12” or greater in diameter for a mile or longer to install a fiber optic sensing line. SDG&E is currently installing 45 miles that is expected to be completed in 2024. |
| 19 | Above Ground Leak Survey | Above Ground Facilities | In 2019, SDG&E purchased Remote Methane Leak Detectors (RMLDs) to perform instrumented above ground survey on high pressure M&R facilities. |
| 20b | Electronically Track Verified Gas Leaks | Transmission and Distribution Pipelines | <p>SDG&E worked on developing an IT system to replace existing leak survey processes involving paper maps with a mobile application. Deployment is expected to begin in 2021. Once fully integrated with eGIS and work management systems, this enhancement should:</p> <ul style="list-style-type: none"> • Provide electronic maps in the field and collect Breadcrumb data along survey path; • Improve geographic evaluation and tracking of leaks with auto population of GIS coordinates for leak location; • Track when pipeline assets have been leak-surveyed/patrolled and capture all leak indications; |

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| | | | <ul style="list-style-type: none"> • Improve recordkeeping of survey activities; • Reduce paperwork and data entry labor; and • Reduce data entry errors and missed records. |
| 22 | Pipe Fitting Specifications | Threaded Fittings | In 2019, SDG&E began performing an evaluation of quality control processes to reduce emissions through threaded fittings, based on findings from a 2018 research project on the quality of threaded fittings. This work continues in 2020. |
| 23 | Reduce Venting During Blowdowns and Improve Data Collection | High Pressure Transmission and Distribution Pipelines | <ul style="list-style-type: none"> • SDG&E Transmission Pipelines routinely require maintenance to support system integrity and safety. In these situations, gas often must be evacuated from pipelines. As a best practice, SDG&E lowers the pipeline pressure where feasible to reduce the potential volume of methane emissions. In 2019, SDG&E avoided 485 MCF of methane emissions by reducing line pressure prior to blowdowns. • In 2019, SDG&E continued implementing a methane capture system which compresses pipeline gas into a compressed natural gas tube trailer and then re-introduced the gas into the pipeline. SDG&E estimates this further reduced methane emissions by an additional 57 MCF. |
| 24-26 | Excavation Damage Prevention | Distribution and Transmission Pipeline Damages | <ul style="list-style-type: none"> • SDG&E continues to conduct damage prevention programs that address the nine damage prevention elements found within the Protecting Our Infrastructure of Pipelines and Enhancing Safety Act, 49 U.S.C. § 60134(b). • Reduction of damages supports public safety, system integrity, and emission reductions. • SDG&E continues to promote other damage prevention measures such as protection of gas facilities from outside force damage, monitoring of third-party excavation activities near high pressure lines, and proactive monitoring of Company facilities. • In 2019, SDG&E invested nearly \$100,000 in additional research, outreach and safe digging mailers to promote safe excavation practices contacting 811 before digging. • SDG&E is a member of the EPA Methane Challenge Program and implements the Excavation Damages Best Management Practice. • SDG&E has increased 811 calls while decreasing damages since the inception of the Leak Abatement Program as shown in the following table: |

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|--------------------------|--------------------------------------|-----------------|--|-------------------------|---------|--|--|--|--|--|------|------|------|------|------|--------------------------|---------|---------|---------|---------|---------|--------------------|-----|-----|-----|-----|-----|--------------------------|------|------|------|------|------|
| | | | <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="6" style="text-align: center;">SDG&E Damage Prevention</th> </tr> <tr> <th></th> <th style="text-align: center;">2015</th> <th style="text-align: center;">2016</th> <th style="text-align: center;">2017</th> <th style="text-align: center;">2018</th> <th style="text-align: center;">2019</th> </tr> </thead> <tbody> <tr> <td>Distribution 811 Tickets</td> <td style="text-align: right;">115,491</td> <td style="text-align: right;">123,709</td> <td style="text-align: right;">135,460</td> <td style="text-align: right;">133,304</td> <td style="text-align: right;">148,350</td> </tr> <tr> <td>Excavation Damages</td> <td style="text-align: right;">438</td> <td style="text-align: right;">450</td> <td style="text-align: right;">431</td> <td style="text-align: right;">415</td> <td style="text-align: right;">398</td> </tr> <tr> <td>Damages per 1000 tickets</td> <td style="text-align: right;">3.79</td> <td style="text-align: right;">3.64</td> <td style="text-align: right;">3.18</td> <td style="text-align: right;">3.11</td> <td style="text-align: right;">2.68</td> </tr> </tbody> </table> | SDG&E Damage Prevention | | | | | | | 2015 | 2016 | 2017 | 2018 | 2019 | Distribution 811 Tickets | 115,491 | 123,709 | 135,460 | 133,304 | 148,350 | Excavation Damages | 438 | 450 | 431 | 415 | 398 | Damages per 1000 tickets | 3.79 | 3.64 | 3.18 | 3.11 | 2.68 |
| SDG&E Damage Prevention | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
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| 25 | Dig Ins and Company Standby Monitors | Buried Pipe | In 2019, SDG&E completed the development and piloted implementation of an algorithm that allows prioritization of USA tickets to identify high risks excavation projects and perform proactive intervention. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 26 | Dig Ins and Repeat Offenders | Buried Pipe | In 2019, SDG&E completed developing the project scope and system requirements for implementing system improvements so that damage data may be better analyzed and aggregated for reporting. SDG&E also began initial work in developing improved mobile forms for gathering and submitting data into the system to improve record keeping. This work is expected to be completed in 2021. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| N/A | Refinement of Emission Factors | Various | SDG&E is participating in and conducting studies to revise emission factors for various facility types. This work is being done in collaboration with California Air Resources Board (CARB) and the California Public Utilities Commission (CPUC). SDG&E is planning to share proposals on the refinement of Emission Factors in the upcoming 2021 Winter Workshop. | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |