

IF-GU-540a.4. Description of efforts to manage the integrity of gas delivery infrastructure, including risks related to safety and emissions

1. The entity shall describe its efforts to manage the integrity of gas delivery infrastructure.

1.1. Gas delivery infrastructure includes, but is not limited to, transmission pipelines, distribution pipelines, storage facilities, compressor stations, metering and regulation stations, and liquid natural gas facilities.

Southwest Gas created and abides by an Operations Manual (OM) that specifies all aspects of scheduled maintenance and operation of its natural gas system, including leak survey and natural gas facility maintenance. The company has both a Distribution Integrity Management Program (DIMP) and Transmission Integrity Management Program (TRIMP). DIMP and TRIMP are written integrity management plans that comply with the U.S. Department of Transportation (USDOT) Pipeline and Hazardous Materials Safety Administration (PHMSA) requirements for operators of gas distribution and transmission pipelines.

1.2. Efforts may include, but are not limited to, those related to employee training, emergency preparedness, process safety, and asset integrity management.

Southwest Gas administers an Operator Qualification (OQ) plan for all approved contractors and company employees who perform work for the company on its pipeline facilities. Employees of Southwest Gas and contractor personnel must be qualified in each covered task they perform, including emergency preparedness.

Examples of efforts related to employee training and emergency preparedness include a robust mentorship program and scenario-based emergency response training including large-scale incident training.

The company created and follows a Pipeline Safety Management System (PSMS) to capture the PSMS development history at Southwest Gas, ensure the company's PSMS perpetuates beyond existing personnel for continual improvement, track enhancements identified through the "gap" analysis, capture roadmaps and key performance indicators (KPIs) to gauge improvement, and memorialize company efforts in meeting specific recommendations within the Ten Essential Elements of the American Petroleum Institute (API) Recommended Practice (RP) 1173 with the stated goal of zero incidents achieved through the support and enhancement of a strong safety culture.

1.3. Relevant information to provide includes, but is not limited to, the use of standards, industry best practices, benchmarking, and participation in third-party initiatives, which may include, but are not limited to:

1.3.1. The American Gas Association's (AGA) Peer Review Program

Southwest Gas is an active participant in the AGA Peer Review. As part of the AGA Peer Review Program, the company has sent over 20 management representatives to various AGA Peer Reviews of other utility companies.

1.3.2. American Petroleum Institute (API) Recommended Practices 1170 and 1171

Not applicable to Southwest Gas as the company does not currently own or operate any underground natural gas storage assets.

1.3.3. Natural Gas Industry Safety Programs, as outlined by the American Gas Association

Southwest Gas actively participates in state One Call (811) programs, Common Ground Alliance (CGA), and other local and regional excavation damage prevention agencies with the common goal of minimizing or eliminating damages to buried company facilities. Southwest Gas strongly promotes the principles endorsed by the CGA by developing and offering damage prevention training targeted to the appropriate audience.

1.3.4. The U.S. Environmental Protection Agency's (EPA) Natural Gas STAR Program

Southwest Gas has been a partner of EPA's Natural Gas STAR Program since 1997. In 2016, the company became an inaugural member of the EPA's new Methane Challenge Program. Both voluntary programs are designed to promote the implementation of cost-effective technologies and practices to reduce methane emissions from natural gas distribution and transmission systems.

2. The entity shall describe how it integrates a culture of safety and emergency preparedness throughout its project lifecycles, such as through training, oversight of workforce, rules and guidelines for communicating risks, and use of technology.

Safety is our number one priority at Southwest Gas. Our Pipeline Safety Management System and resultant safety culture encompass our core values of Safety, Quality and Excellence. Southwest Gas's safety culture has been integrated into daily operations through direct leadership support by establishing a strong tone from the top. Southwest Gas integrates a culture of safety and emergency preparedness throughout its project life cycle.

The company defines its project life cycle by key categories including design, construction, commissions/decommissioning, and on-going operations and maintenance work. The company life cycle processes integrate the use of the Plan, Do, Check, Act continuous improvement cycle. The company utilizes the development and integration of strong personnel with a robust pipeline safety program that focuses on safety through the use of training programs; robust internal and external quality assurance and quality control programs that serve to provide oversight on these activities; robust policies, procedures and practices including a "work stop" program which empowers all employees to stop work if a safety concern is identified; as well as the integration of technology throughout the project life cycle to enhance consistent and accurate field reporting and tracking of organizational metrics and trends.

3. The entity shall describe its approach to ensuring pipeline operators are qualified or supervised when performing a covered task, including ongoing reviews of operator qualifications, assurance that unqualified workers are properly supervised, and efforts to maintain a sufficient number of qualified pipeline operators, where:

3.1. Pipeline operators are defined as those people who engage in the transportation of gas, consistent with U.S. 49 CFR 192.3.

The Southwest Gas Operations Manual defines an operator as a person or company that engages in the transportation or distribution of gas. This definition, consistent with 49 CFR 192.3, is also carried out through the company's Operator Qualification manual and program.

Southwest Gas also has an established Operator Qualification program that meets or exceeds the requirements of 49 CFR 192.800. The established program requires all company and contractor personnel to be trained and qualified on the covered tasks that they perform. The company also includes new construction into its OQ program. This requires all employees and contractors to be trained and qualified on the company's program and operating procedures. The plan also requires that employees and contractors are frequently validated in the field to ensure the covered task is performed in accordance with the O&M requirements. All new installations of pipelines are performed by company-approved construction contractors.

3.2. A pipeline operator is considered qualified to perform covered tasks when the individual has been evaluated, can perform the assigned covered task, and can recognize and react to abnormal operating conditions, consistent with the definition provided by U.S. 49 CFR 192.803.

The Southwest Gas Operator Qualification Plan details the requirements of all company and contractor qualifications. The plan covers the requirements of the initial and subsequent qualifications, the suspension process and the revocation process. The plan details the requirements of training and the evaluation of the person's knowledge, skills and abilities to perform the task. Southwest Gas developed and has implemented a general training module for all employees, both company and contractor, detailing the requirements of the 49 CFR Part 192.803 as a general knowledge training module. Recognition of Abnormal Operating Conditions (AOCs) are included in all covered task training modules and evaluations.

3.2.1. A covered task is defined, consistent with U.S. 49 CFR 192.801, as an activity, identified by the operator, that is performed on a pipeline facility, is an operations or maintenance task, is performed as a requirement of maintaining regulatory compliance, and affects the operation or integrity of a pipeline.

The Southwest Gas Operator Qualification Plan defines a covered task as an activity performed on a pipeline facility by company/contract personnel that is required under 49 CFR 192 and will affect the operation or integrity of the pipeline. This definition, consistent with 49 CFR 192.801, is also carried out through the company's Operator Qualification program.

4. The entity shall describe efforts to mitigate risks and promote emergency preparedness, such as coordinating with third parties (e.g., sewer line and buried power line developers), performing timely pipeline inspections, repairing aging infrastructure, and maintaining current pipeline operator certifications.

In an effort to promote emergency preparedness, Southwest Gas acts as a liaison and conducts emergency exercises with local emergency responders in each of its operating areas. This allows first responders to stay informed of company facilities and ensures proper procedures are carried out during emergencies. In addition, the company participates in the various pipeline safety programs such as One Call (811) Program, Common Ground Alliance (CGA), and other local and regional excavation damage prevention agencies with the common goal of minimizing damages to underground company facilities.

Southwest Gas implemented a Distribution Integrity Management Program (DIMP) consistent with the requirements of U.S. 49 CFR 192 Subpart P. The company's DIMP consists of accelerated leak survey programs, proactive pipe replacement programs, and infrastructure replacement mechanisms to monitor and manage aging infrastructure.

The company has also implemented a Transmission Integrity Management Program (TRIMP) consistent with the requirements of U.S. 49 CFR 192 Subpart O to identify and mitigate risks on the transmission pipeline system within high-consequence areas. The company's pipelines are subject to a rigorous pipeline safety inspection and enforcement program to ensure the safe operation of pipeline facilities.

Southwest Gas requires all company and contractor personnel to be trained and qualified on the covered tasks that they perform. When a company inspector is on the job site of a contractor, the inspector is required to check the qualifications of all contractor employees on the job site. If the required qualifications cannot be confirmed, the contractor employees are released from the job site. Internal pipeline operator certifications are monitored using a learning management system.

5. The entity shall describe its efforts to manage risks related to human health and safety, and emissions, including fugitive emissions and process emissions, that arise out of the integrity of gas delivery infrastructure.

5.1. Fugitive emissions are defined as natural gas (primarily methane) emissions resulting from leaks or other types of unintended or irregular releases.

Through the company's Distribution Integrity Management Program (DIMP), Southwest Gas conducts accelerated leak surveys and other actions such as repairing leaks on certain pipe types on an accelerated basis. The company also employs its Transmission Integrity Management Program (TRIMP) consistent with the requirements of U.S. 49 CFR 192 Subpart O to identify and mitigate risks on the transmission pipeline system within high-consequence areas. Patrolling and leak surveys meet or exceed state and federal code requirements. Furthermore, the company has no pipe larger than 24-inches in its system.

5.2. Process emissions are defined as natural gas emissions resulting from intentional releases.

Southwest Gas strives to minimize emissions resulting from intentional releases of natural gas through reductions in purging and other related processes. The company also participates in a specific leakage abatement program in its California territories and reports its annual emissions to the California Public Utilities Commission.

5.3. Disclosure shall include relevant strategies, plans, and/or targets related to reductions in fugitive emissions and process emissions, the entity's ability to measure such emissions, the activities and investments required to achieve the plans, and any risks or limiting factors that might affect achievement of the plans and/or targets.

The company has not identified targets related to fugitive and process emission reductions.

6. Disclosure may focus broadly on safety and emergency management systems, but shall specifically address operations in high consequence areas and the systems to avoid and manage emergencies, accidents, and incidents that could have catastrophic impacts on human health, the local community, and the environment.

Southwest Gas has implemented a Transmission Integrity Management Program (TRIMP) consistent with the requirements of U.S. 49 CFR 192 Subpart O to identify and mitigate risks on the transmission pipeline system within high-consequence areas.