



**Public Utilities Commission  
STATE OF CALIFORNIA**

**Citation Date:** June 1, 2017

**Citation #:** D.16-09-055 G.17-05-001

**Operator ID#:** 18536

**SED Investigation Report – 1/31/2017**

**January 2017 Southwest Gas Corporation Distribution Integrity Management Program**

**Audit Finding - Notice of Violation**

**SWG did not correctly rank/prioritize the risks posed to its pipeline as required by  
Title 49 CFR, Part 192 Section 192.1007(c)**

***Utility:*** Southwest Gas Corporation (SWG)

***Utility Operating Unit:*** Distribution Integrity Pipeline Management Program

***Subject of Report:*** Audit Finding – SWG miss-applied GTPC guidelines and/or B31.8S to comply with the requirement of Title 49 Code of Federal Regulations (CFR), Part 192 Section 192.1007(c)

***Audit Title:*** General Order 112-F gas Distribution Integrity Management Program

***Date of Audit:*** October 4 through 7, 2016 and December 5 through 8, 2016

***SED Investigator:*** Mahmoud (Steve) Intably

***Summary:***

- 1. Title 49 CFR, Part 192 Section 192.1007 What are the required elements of an integrity management plan?**

§192.1007 (c) Evaluate and rank risk states:

*"Evaluate and rank risk. An operator must evaluate the risks associated with its distribution pipeline. In this evaluation, the operator must determine the relative importance of each threat and estimate and rank the risks posed to its pipeline. This evaluation must consider each applicable current and potential threat, the likelihood of failure associated with each threat, and the potential consequences of such a failure. An operator may subdivide its pipeline into regions with similar characteristics (e.g., contiguous areas within a distribution pipeline consisting of mains, services and other appurtenances; areas with common materials or environmental factors), and for which similar actions likely would be effective in reducing risk."*

The SWG's Distribution Pipeline Integrity (DPI) matrix is used in the assessment of the risk to its distribution pipelines. SWG referenced the GPTC guidance for the development of the DPI matrix, the definition of risk provided by SWG contradicts the

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definition provided in the PHMSA's DIMP Enforcement Guidance published on January 29, 2014.

According to SWG's assessment procedure for the DPI application, a point value is assigned to each risk category for each segment. And then, the points from each risk category are summed up, and the total risk scores are used in assessing the risk associated with the pipelines. SED reviewed the risk categories in the DPI matrix and determined that the risk categories can be classified into three groups. Eighteen of the categories in the DPI matrix were related to probability, six to consequence and one to mitigation. The DPI matrix defines the risk as the sum of the point values in these twenty-five categories.

SED is concerned that the summation of the risk categories does not accurately identify the segments with the greatest risk. In fact, the method that is currently used by SWG could possibly result in a different prioritization than the method listed in the PHMSA Enforcement Guidance (i.e., Risk = Probability X Consequence). Let's consider two hypothetical segments with the following scores for likelihood and consequence:

Segment	Likelihood	Consequence	SWG Method (Likelihood + Consequence)	PHMSA Method (Likelihood x Consequence)
1	50	50	100	2,500
2	10	90	100	900

The example above shows that while the two segments show the same risk scores using SWG's method, PHMSA's method indicates that segment 1 would have a higher risk than segment 2.

Given SWG's unique definition of risk, SED is concerned that the risk model does not necessarily address the segments with the highest risk.

Therefore, SWG is in violation of General Order (G.O.) 112-F, Reference Title 49 CFR, Part 192 §192.1007(c).

### Finding:

The Safety and Enforcement Division (SED) of the California Public Utilities Commission conducted a G.O. 112-F, Gas Distribution Pipeline Integrity Management Program inspection of Southwest Gas Corporation's (SWG) gas distribution system from October 4 through 7, 2016 and December 5 through 8, 2016. The inspection included a review of the gas Distribution Integrity Management Program (DIMP), procedures and Operator Qualification records pursuant to G.O. 112-F, Reference Title 49 CFR, Parts 191 and 192 for the period of 2014 through 2015. In addition, SED

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conducted field inspections of pipeline facilities that included field observation of randomly selected individuals performing covered tasks in Victorville District in San Bernardino County.

On January 31, 2017, SWG was notified of SED's findings that consisted of four probable violations and five recommendations. SED disagreed with SWG's responses in the three of the four probable violations. However, SED will recommend an enforcement action against one of the three probable violations at this time. SWG failed to apply the appropriate risk formula listed in the PHMSA's Enforcement Guidance (i.e., Risk = Probability X Consequence). The incorrect application of the risk formula will not accurately identify the segments with the greatest risk, therefore, SWG is in violation of G.O. 112-F Reference, Title 49 CFR, Part 192 §192.1007(c). This violation is considered to have public safety implications due to incorrect application of pipeline segment risk ranking and prioritization.

### **Conclusion:**

It is required that SWG review and revise its gas Distribution Integrity Management Program (DIMP) to be in compliance with GO 112-F. SWG's failure to apply the appropriate risk formula listed in the PHMSA's Enforcement Guidance (i.e., Risk = Probability X Consequence) resulted in misapplication of pipeline risk ranking and prioritization in determining the appropriate and timely preventative and mitigative measures.