Southern Star Launches New Compliance Initiative

By Benjamin Hoak

At 6:11 p.m. on September 9, 2010, the neighborhood of San Bruno, California was rocked by a massive explosion resulting from the rupture of a 30-inch natural gas pipeline owned by Pacific Gas and Electric. The explosion produced a crater about 72 feet long by 26 feet wide. The section of pipe that ruptured measured 28 feet long, weighed 3,000 pounds and was found 100 feet to the south of the crater.

By the time emergency responders and PG&E employees contained the inferno, 38 homes were destroyed and 70 homes were damaged. Eight people were killed, dozens were injured and lives were forever changed.

During their investigation into the incident, the National Transportation and Safety Board (NTSB) determined the rupture was caused by a weld defect that would have been visible even when the pipe was installed in 1956. They also found the pipe was fabricated at an undetermined facility to no known specifications. An inadequate pipeline integrity management program – including a lack of relevant records – allowed the defect to remain undetected until the pipe ruptured 54 years later.

As a result of recommendations by the NTSB following the San Bruno incident, President Obama signed the Pipeline Safety, Regulatory Certainty, and Job Creation Act of 2011 into law on January 3, 2012. The Act requires the Pipeline and Hazardous Materials Safety Administration (PHMSA) to direct gas transmission pipeline companies to provide verification of their lines' Maximum Allowable Operating Pressure (MAOP). Records for pipelines in Class 3 and 4 locations and in High Consequence Areas (HCAs) must be verified by March 15, 2013; verification of records for Class 1 and 2 pipelines will follow.*

So what does this mean for Southern Star?

To verify MAOP, companies must produce records with the original information used to make the MAOP calculations. PHMSA specifies that these pipeline records must be traceable, verifiable and complete. Traceable records can be clearly linked to original information about a pipeline segment or facility, such as pipe mill records. Verifiable records are confirmed by complementary documents such as contract

specifications or pressure tests. Complete records have been finalized by a signature, date or other marking. A complete pressure testing record, for example, would identify the pipe segment, who conducted the test, the duration of the test, results of the test, etc.

Southern Star's nearly 6,000 miles of transmission pipeline include 15,885 pipe segments. With 50-60 points of information for each segment (such as diameter, wall thickness and seam type), verifying the MAOP for the entire system requires combing through 800,000 pieces of data ranging from the 1920s, when Southern Star pipes were first fabricated and installed, until today. Remember that the company has changed names and headquarters multiple times with records on paper, microfilm and in electronic form, and you begin to get a sense of just how monumental a task this is.

Once records are gathered, they will be scanned and stored electronically for future access. "It's like an engineering study," said David Sinclair, Manager of Pipeline Compliance. "What we have to do is look at this information and analyze it."

Southern Star must also report whatever gaps exist in MAOP verification. Pipelines built before 1970, where record gaps are more likely, have always been allowed to operate without retroactively applying new requirements or pressure tests (the "grandfather clause"). After San Bruno, the NTSB recommended that PHMSA do away with this clause and require all lines to be pressure-tested; PHMSA will make that decision subsequent to the results of the 2013 annual reports.

If all this sounds like a lot of work, well, it is. That's why Southern Star, through Tony Huff and Associates (the Owensboro engineering firm working on the new Employee Excellence Center), is hiring six temporary employees specifically for this project.

In February, Joe Corley began working with in-house GIS personnel to develop specific procedures for how to go about the verification process, including where to look for the records and how to organize and store them. Kimber Matson joined the effort in June, and the remaining four workers started near the end of August. The group will work out of Southern Star's headquarters in Owensboro, where records are stored. Field records are in the process of being systematically brought to headquarters by the Records and Information Management (RIM) department.

Class 3 and 4 lines and the HCA lines comprise only about 13 percent of Southern Star's system. Those records are due by next March; once they are complete, work will begin on the remaining 87 percent of the system. Sinclair anticipates the project will wrap up in late 2014 or early 2015.

Southern Star's efforts in this area are relatively modest. Larger companies, such as PG&E, have hired dozens of employees and rented out entire floors of offices devoted to the task.

To modify a famous quote, eternal vigilance is the price of safety. While MAOP verification will require much time and expense by the natural gas industry, the results will only increase industry safety.

"This is absolutely consistent and aligned with the goal of 'Forever Zero' and Southern Star's overall commitment to protect its employees, the environment, and the public, not to mention being compliant," said Rob Carlton, VP and Chief Compliance Officer.

The project also fits neatly into Southern Star's recent focus on improving RIM practices. "Keeping accurate records can help prevent incidents like the one in San Bruno by giving the company a complete and transparent picture of the characteristics of its pipe," said Todd Johnson, Manager of Records and Information Management. "This allows us to proactively respond to any potential integrity issues."

To support best practices, Johnson said Southern Star has purchased software called OpenText to serve as an Enterprise Content Management System. OpenText will integrate with current company systems to support and enhance the RIM process, including the ability to comply with records requirements.

"It's like wearing your seatbelt," Johnson said of records management. "You need the right tools, a moment of your time, and the willingness to put up with a little bit of restriction in the interests of self-preservation and better safety for all."

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*The US Department of Transportation (DOT) uses the term "Location Class" to define levels of population density along a pipeline:

- Class 1 refers to any location within 220 yards of the pipeline that contains 10 or fewer dwellings.
- Class 2 refers to any location within 220 yards of the pipeline that contains more than 10 and fewer than 46 dwellings.
- Class 3 refers to any location within 220 yards of the pipeline that contains 46 or more dwellings, or an area where the pipeline lies within 100 yards of a building or a small, well-defined outside area (such as playgrounds, recreational areas, outdoor theater, or places of assembly) that is occupied for a specified number of days per year.
- Class 4 refers to any location within 220 yards of the pipeline where buildings with four or more stories

above ground are prevalent.
- “High Consequence Areas” are defined using a variable distance from the pipeline that contains 20 or more buildings intended for human occupancy, or specific sites where 20 or more people gather such as beaches, playgrounds, hospitals and recreational facilities.