Gas and Pipeline Industry Q&A Series

How do we perform risk assessments?

Regulations have been set up for both gas transmission and distribution pipelines. In transmission, organizations must build what they call an integrity management plan to determine the condition of the pipeline, and build a plan to ensure public safety. The plans are managed by the DOT. Risk assessment is a balancing of the threats against that pipeline where the consequence is a failure. Some of those threats would be things like the material, or the condition noted through direct assessment or in-line inspection, the pitting, cracking, denting, damage, and corrosion. We look at high-consequence areas along that pipeline, and pipeline class based on the number of people or buildings around the outside of that pipeline.

When we take a look at the distribution side of the pipeline, while many organizations have been self-regulating, there are indirect regulations. This year will be the first year that the distribution integrity management plan is required by gas utilities. That really is a form of risk assessment, but it comes from a different perspective. Risk assessments in transmission pipelines are essentially built on the decay of that system, on its mechanical failure. In the distribution pipeline, 60 or 70 percent of those distribution systems' damage or rupture occurs from third-party damage, where somebody has dug into the system. You can't actually use the same type of inspection tools that you do in transmission. Where the transmission pipeline operators are told specifically what they have to do, the distribution system operators are only required to understand their system and build a plan to improve its management.

From an electric perspective, safety is built into the design of the system and there are a number of safety measures that have been around for a long time regulated by the FERC. The transmission line operator has to make sure that the lines are always in service. When a line goes down it could well be a critical transmission line, and thus you could end up with a major area of outage. The risk really is not as much about injury to people, although that's important characteristic. The major risk is that a large percentage of the service area will be out of power and could be out of power for some period of time.

Thank you very much Bill, and for future inquests, Bill's e-mail address is bmeehan@esri.com.