

Pipeline Integrity Management Plan

Pipeline integrity management is a process for assessing and mitigating pipeline risks in an effort to reduce both the likelihood and consequences of incidents.

The Pipeline Safety Improvement Act of 2002 is a federally mandated legislation that addresses risk analysis and integrity management programs for pipeline operators. It also directs the U.S. Department of Transportation (DOT) to adopt regulations relating to integrity management. DOT finalized these regulations December 17, 2004. Natural gas transmission pipeline operators were then required to begin conducting assessment by June 17, 2004, have a management program in place by December 17, 2004, and to complete baseline assessments of pipe in high consequence areas by 2012. Elizabethtown Gas has implemented an integrity management program for pipelines in the company's high consequence areas according to the DOT regulations. It is a systematic and comprehensive process designed to provide information to effectively allocate resources for the appropriate prevention, detection and mitigation activities. The program builds on the existing foundation of pipeline safety regulations covering design, construction, testing, operation and maintenance that has been in place for many years.

These are the basic steps in the integrity management process.

- **High consequence area (HCA) identification** – Locations along the Pipeline System that meet the criteria for High Consequence Areas are identified. Generally, these are high population density areas or difficult to evacuate facilities, such as hospitals, prisons or schools, and locations where people congregate, such as churches, office buildings, or playgrounds.
- **Threat identification and risk assessment** – Information about the pipeline segments are evaluated to identify the threats of concerns to the pipe and to assess risk.
- **Risk Analysis** – a systematic process in which potential hazards from facility operation are identified, and the likelihood and consequences of potential adverse events are estimated. Each pipeline segment is given a numerical score based on the estimated risk.
- **Regulatory Requirements** – The 107th Congress approved bill H.R. 3607 known as the "Pipeline Safety Improvement Act of 2002" on December 17, 2002. Upon becoming a law, it became Public Law 107-355 which can be found in its entirety at www.gpoaccess.gov/plaws. The Pipeline Safety Improvement Act of 2002 introduces several new requirements for Pipeline Operators including those specifically addressing Pipeline Integrity Management. Section 14 of the Act titled "Risk Analysis and Integrity Management Programs for Gas Pipelines" mandates several new pipeline integrity related requirements.

Among these requirements are the following:

8/31/04	An Operator must report to OPS indicating the company has begun its preliminary assessments. Thereafter, an Operator must submit a full reporting to OPS of the four overall performance measures using semi-annual reports submitted within two months of June 30 and December 31 each year in accordance with §192.945. Elizabethtown Gas is in compliance.
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12/17/04	<p>An Operator of a covered pipeline segment must develop and follow a written integrity management program that contains all the elements described in §192.911 and that addresses the risks on each covered transmission pipeline segment.</p> <p>The initial integrity management program must consist, at a minimum, of a framework that describes for each of the 16 elements identified in §192.911:</p> <ul style="list-style-type: none"> • The process for implementing each program element • How relevant decisions will be made and by whom • A schedule for completing the work to implement each program element • How the information gained from experience will be continuously incorporated into the program. <p>This framework will evolve into a more detailed and comprehensive program. Elizabethtown Gas is in compliance.</p>
12/17/04	<p>Complete the initial HCA identification of the pipeline system. Elizabethtown Gas is in compliance.</p> <p>See FAQ 14 on the OPS IMP Web site which indicates that all High Consequence Areas (HCAs) must be identified as part of this initial framework completion.</p>
02/28/05	<p>An Operator must submit its first full reporting to OPS of the four overall performance measures. Elizabethtown Gas is in compliance.</p> <p>Note: Hereafter, Operator must submit semi-annual reports within two months of June 30 and December 31 each year.</p>
12/17/06	<p>An Operator's ability to use a prorated building count to determine High Consequence Areas expires per §192.903. Elizabethtown Gas did not prorate.</p>
12/17/07	<p>An Operator must assess at least 50% of the covered segments beginning with the highest risk segments. An Operator must prioritize all the covered segments for the Baseline Assessment in accordance with §192.917(c) and paragraph §192.921(b). Elizabethtown Gas has a plan in place to comply with this mandate and the company is on track to meet it.</p>
12/17/09	<p>An Operator must re-assess a covered segment on which a prior assessment is credited as the Baseline Assessment under §192.921(e) Elizabethtown Gas is not using any prior assessment.</p>
12/17/2012	<p>An Operator must complete the Baseline Assessment of all covered segments. Elizabethtown Gas has a plan in place to comply with this mandate and the company is on track to meet it.</p>

- **Baseline assessment plan** – A schedule for performing pipe integrity assessments over the 10-year baseline period is developed. Risk assessment results are used to prioritize the projects. The worst 50% must be assessed by December 17, 2007 and the other 50% by December 17, 2012. The method of integrity assessment is also selected for each segment and becomes part of the plan along with the schedule. More than one method may be required depending on the threats identified.
- **Integrity assessment** – The pipe segments are assessed according to the schedule and methods identified in the Baseline Assessment Plan. There are three primary assessment methods:
 - 1) Inline inspection – an inspection tool, often called a “smart pig,” is run through the pipeline to evaluate the pipe's condition.
 - 2) Pressure test – the pipe is pressured to at least one and one half its normal operating limit to test the strength of the pipe. Water is usually used to pressure the pipe during the test.
 - 3) Direct Assessment – a structured, multi-step evaluation is conducted to identify potential problem areas.