

INGAA Members Commitment for Expanding Integrity Management Principles Beyond High Consequence Areas (HCAs)

*INGAA members believe the definition of HCAs appropriately captures the goal of integrity management: to protect people on a risk-prioritized basis. INGAA and its members long have embraced this goal and continue to pursue it vigorously. Going forward, INGAA’s members are committed to protecting more people by extending integrity management principles progressively, across the entire interstate natural gas transmission pipeline system. By extending integrity management principles, INGAA’s members reaffirm their overarching goal of **zero** pipeline incidents.*

How do INGAA’s members define integrity management principles?

Integrity management principles refer to a set of processes used to ensure system integrity and support the goal of zero pipeline incidents. The processes utilize many of the components of ASME/ANSI B31.8S and are applied in a progressive manner. The processes, and the management systems that support them, can include the following:

Core Processes

- Data Gathering and Integration
- Threat Assessment
- Risk Assessment
- Integrity Assessment Planning/Execution
- Response to Integrity Assessment Findings
- Preventative and Mitigation Measure Selection

Management System Elements

- Quality Control and Assurance
- Management of Change
- Performance Plan
- Communication
- Incident Investigation
- Recordkeeping

INGAA members are committed to improving their present management systems by broadening the application of quality control and assurance, broadening communication on lessons learned and continually evaluating the effectiveness of the core integrity management processes.

INGAA also proposes to broaden the application of performance measurement consistent with its commitment to transparency. It will add measures that not only show progress in reducing incidents and their impact on people and property, but also demonstrate progress in completion of the work related to INGAA’s commitments. By periodically evaluating the effectiveness of the processes and the supporting elements, INGAA will find opportunities to improve processes and enhance data and information sharing.

What is the INGAA commitment to expand integrity management beyond HCA?

INGAA members have voluntarily committed to expand integrity management principles across their entire pipeline system. This expansion is in addition to the pipeline safety regulatory requirements, including the reassessment of pipelines located within HCAs under Subpart O. Rather than a redefinition of HCAs, these commitments propose the following population-based framework to expand the application of integrity management principles to natural gas transmission pipelines.

INGAA’s proposal is divided into stages:

- Phase I – INGAA members will complete an initial assessment using some degree of integrity management on pipelines that cover 90% of the population living along INGAA members’ pipelines by December 31, 2012. For INGAA members, this represents roughly 64% of pipeline mileage including the 4% of pipelines that are in HCAs.
- Phase II – INGAA members will then consistently and comprehensively apply integrity management based upon the consensus standard ASME/ANSI B31.8S to pipelines covering 90% of the population living along INGAA members’ pipelines by 2020.
- Phase III – INGAA members will apply integrity management principles to pipelines covering 100% of the population living along INGAA member pipelines by 2030. This stage would cover roughly 16% of pipeline mileage, bringing the total coverage by 2030 to approximately 80% of pipeline mileage.
- Phase IV – INGAA members will apply integrity management principles to the remaining 20% of pipeline mileage where no population resides beyond 2030.

By Mileage (of approx. 200,000 miles)

2012	Required by Federal Regulations	4% HCA	96% PHMSA Pipeline Safety Regulations	
	INGAA Commitment	4% HCA	60% Initial IM Assessment	36% PHMSA Pipeline Safety Regulations
Future	By 2020	4% HCA	60% Comprehensive ASME/ANSI B31.8S	36% PHMSA Pipeline Safety Regulations
	By 2030	4% HCA	60% Comprehensive ASME/ANSI B31.8S	16% Covered by IM Principles 20% PHMSA Pipeline Safety Regulations

By Population (Estimated 4.3 million Affected People)

2012	Required by Federal Regulations	64% HCA (PHMSA Regulations - Subpart O)		36% PHMSA Pipeline Safety Regulations
	INGAA Commitment	64% HCA (PHMSA Regulations - Subpart O)		26% Initial IM Assessment 10% PHMSA Safety Regs
Future	By 2020	64% HCA (PHMSA Regulations - Subpart O)		26% Comprehensive ASME/ANSI B31.8S 10% PHMSA Safety Regs
	By 2030	64% HCA (PHMSA Regulations - Subpart O)		26% Comprehensive ASME/ANSI B31.8S 10% Covered by IM Principles

Why does INGAA propose dates of 2020 and 2030 and why integrity management principles in Phase III and IV?

It has taken INGAA's members ten years to complete the system baseline under PHMSA's integrity management program, and it will take significant time and resources to address the challenging commitments INGAA members have made. Time is required to develop new technologies and cover the additional 10% of the population between 2020 and 2030 as these portions of INGAA members' system are not readily piggable. Additional time is required for the remaining pipeline mileage after 2030.

In addition to these new commitments, INGAA members still must continue to address HCAs and improve the way integrity management is applied for HCAs in the coming years. Members also will be ensuring application of the ASME/ANSI B31.8S standard to the majority of the system as noted in Phase II. As also noted above, integrity management principles are continuously evolving and improving. The experience gained and the processes developed will enable operators to take on the remaining population in a staged manner. As new and proven technology becomes available with industry R&D work, and as consensus standards adapt to these new technology and processes, INGAA commitments will be reviewed and revised accordingly.

Who is the population living along the pipeline and how is it determined?

During the PHMSA development of Subpart O of 49 CFR Part 192, a model was developed based on engineering calculations and validated by decades of actual incident data that predicts the safety of individuals that could be immediately affected by a worst-case failure of a natural gas transmission pipeline. This calculation, defined as the Potential Impact Radius (PIR) in the federal regulations, determines the area adjacent to a pipeline that a person would have to evacuate quickly to avoid injury from heat radiation. It is a conservative calculation because it assumes instant ignition from a complete failure of the pipe, maximum heat radiation and no protective structures. This calculation is applied to identify locations where people live within the PIR along the pipeline. Persons who reside, work or frequent a structure during defined events (i.e. an "identified site") are considered part of the "affected population" and are included in the INGAA commitment.

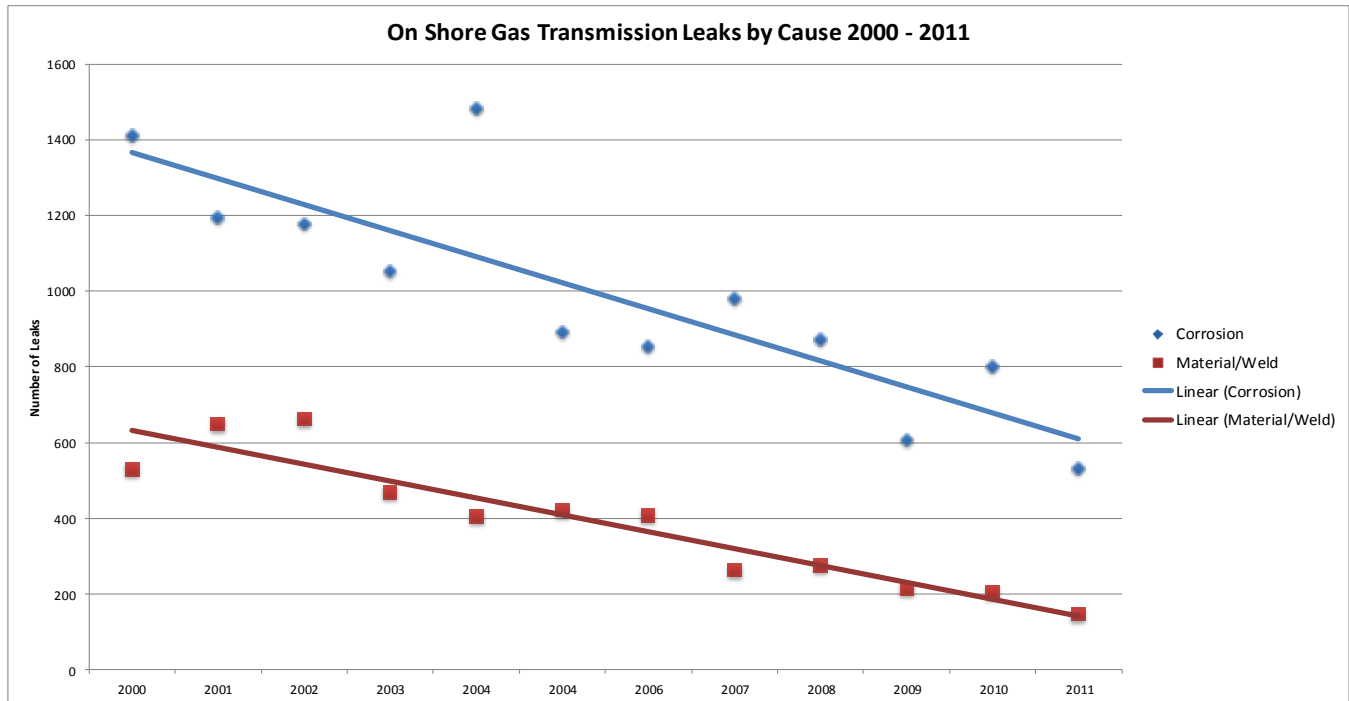
Today, all INGAA members have adopted the PIR methodology to determine if there is affected population around the pipeline, and they believe it reflects accurately the goal of integrity management: protecting people on a risk-prioritized basis.

Why not change the definition of HCAs as PHMSA asked in the 2011 Gas ANPRM?

PHMSA asked for comment on modifying the definition of an HCA in the August 24, 2011, Gas ANPRM. While it might seem reasonable to modify the definition, such a change would require additional analysis and possibly additional data collection that take away from resources needed to apply the core integrity processes identified above. Resources spent to collect and analyze additional data related to structures, population and identified sites as well as changes in computational algorithms to calculate the extent of HCAs expends resources that are immaterial when the coverage is extended to the affected population. The INGAA plan simply extends integrity management to more and more of the system prioritized to provide greater protection to people. It is a more effective way to achieve the goal of zero incidents.

How do we know this is working?

By extending integrity management, operators have been able to reduce the number of leaks attributable to corrosion and material/weld defects. The extension to cover additional population is expected to continue the declining trend shown in the following graph. Extending integrity management principles moves us toward the goal of zero by reducing the probability of both leaks and ruptures, as the technology and tools instrumental in preventing corrosion and material/weld defect leaks are often similar to those that prevent ruptures.



Data from PHMSA

Conclusion

In pursuit of the goal of zero pipeline incidents, INGAA members have committed to expand and apply integrity management principles beyond HCAs. Through continued use of the methodology adopted by PHMSA in 2004 to determine the affected population, INGAA and its members will progress toward the goal of covering 100% of the population nearby our pipelines by 2030.

The above information highlights some of the detailed comments [INGAA provided in its January 20, 2012 response](#) to the PHMSA ANPRM in Docket No. PHMSA-2011-0023. For questions or further information please contact Terry Boss (tboss@ingaa.org) or Scott Currier (scurrier@ingaa.org).