Interstate Natural Gas Association of America
20 F Street, N.W, Suite 450, Washington, D.C. 20001
phone: 202.216.5900 **www.ingaa.org**

Response to NTSB Recommendation: Historical and Future Development of Advanced In-line Inspection (ILI) Platforms for Natural Gas Transmission Pipelines

INGAA members recognize that while pipeline safety has improved consistently, much more must be done to meet our goal of zero incidents. No issue is more important than improving pipeline safety and restoring public confidence. Achieving that depends on advancing Integrity Management Programs (IMPs), particularly assessment processes.

The vast majority of the 300,000 miles of natural gas transmission pipelines are below ground and not amenable to direct visual inspection unless excavated. Since consensus inspection standards were first employed in the 1930s, operators have significantly advanced their diagnostic tools. Our focus has been strengthening inspection technology, and preventing threats to the integrity of the pipeline system.

INGAA has made commitments to extend more broadly the learning and successes of integrity management applied in High Consequence Areas (HCAs) in the years ahead. The specific commitments are:

- INGAA members will complete an initial assessment using Integrity Management (IM) principles on pipelines that cover 90 percent of the population living along INGAA members' pipelines by December 31, 2012. It will then consistently and comprehensively apply IM principles to those lines by 2020.
- Apply IM principles to pipelines covering 100 percent of the population living along INGAA member pipelines by 2030.

INGAA's members recognize that improving technology is critical to achieving our commitments. Improvement is viewed in two contexts:

- Making more of the system conducive to ILI (access, improving platforms).
- Improving the capability of tools to identify and characterize pipe (improving sensors).

ILI is our most predictive and preferred tool for determining fitness for service. Therefore, INGAA members have invested heavily in making their systems piggable.

ILI Tools: History and Progress

Since their development in 1965, ILI tools have revolutionized pipeline inspections. The initial tools used magnetic flux technology that could only identify metal loss in the bottom quarter of the pipe up to 30 miles.

By 1970, ILI tools could read the entire pipe circumference, and rapid improvement began in the 1980s and continues to present. ILI developments have dramatically increased data acquisition and accuracy, measurement capability, range, speed and types and sizes of pipelines.

ILI technology was initially limited to metal loss detection. Improvements in technology from 1980 to 2000 include added sensors that addressed dents; mechanical damage detection capabilities; crack identification; and new types of sensors that improved resolution of metal loss and dents.

In the early 2000s two ILI providers advanced the application of electromagnetically coupled acoustic technology. Today that technology is being applied to identify and characterize stress corrosion cracking. Currently, ILI providers have begun to combine technologies into single "combo" tools to enable detection of a variety of anomalies in one run.

In the mid-1980s there were five ILI providers. Today there are over 30 ILI vendors developing technology to meet industry demands. Revolutionizing research is costly, particularly bringing technology to market.

Future Focus

Despite the technological developments, ILI still has limited capability to detect very small cracks, pinholes, and narrow seam corrosion. These will be the focus of work in the next three to five years. Industry will work to expand the size and functionality of robotic platforms to improve inspection of lines with multiple bends and tight configurations and inspect pipelines with low flow. Manufacturers, vendors and operators continue to work together to achieve these improvements.

Conclusion

While more needs to be done, we should not lose sight of the significant progress that has been and continues to be made. INGAA members remain committed to identifying innovations that will promote safety through the most effective construction, operating, maintenance and inspection methods. They will implement a research & development plan to identify solutions to technology gaps by summer of 2012. INGAA members' ultimate goal is simple: Keep pipelines as safe as possible while dependably transporting natural gas with zero safety incidents.