Safely Pivoting to Support a Net-Zero Future

Interstate Natural Gas Association of America

Safety is paramount, and it guides everything we do. Members of the Interstate Natural Gas Association of America (INGAA) have made great strides through our widely recognized safety initiative, the "Integrity Management—Continuous Improvement" (IMCI) program. IMCI provides a foundation for members to safely support the energy transition as we evolve to a net-zero greenhouse gas (GHG) emissions economy.

Now a decade after IMCI launched, we are reaffirming this commitment and making the appropriate updates to continue to safely support efforts toward net-zero GHG emissions. There will be continued focus on the integrity of the existing gas transmission system and its impact on personnel and public safety, as well as efforts to ensure reliability and resilience using next generation fuels. The integrity of our nation's natural gas systems will be fundamental to economic and environmental goals and ambitions.

IMCI will continue to guide our maintenance and improved reliability and resiliency efforts throughout the energy transition. These efforts will contribute to minimizing planned and unplanned natural gas releases across the industry and represent an opportunity for natural gas to provide certainty in the market.

Key Initiatives

INGAA's IMCI program is comprised of a series of initiatives to bolster our industry's safety efforts and continue working toward our goal of zero pipeline incidents. These include:

- **Regular Stakeholder Engagement:** INGAA members remain committed to regular and thoughtful engagement around the topic of safety with government officials, the public, and customers, such as utilities, shippers and end users.
- **Transportation and Storage of Renewable Natural Gas (RNG):** This initiative draws upon members' decades of experience with transporting RNG and the variety of work being undertaken to ensure safe transportation and storage of larger quantities of RNG. INGAA and its members will continue to stay at the forefront of research around the safe transportation and storage of RNG and collaborate with government officials, the public and customers.
- **Transportation and Storage of Hydrogen:** Hydrogen represents tremendous potential in decarbonizing the natural gas transmission network. INGAA and its members will continue to stay at the forefront of research around the safe transportation and storage of hydrogen and collaborate with government officials, the public and customers.
- **Rupture Detection and Response:** As part of the original IMCI effort, INGAA developed goals to shorten valve closure times. To expand on this effort, INGAA members commit to update valve response and automation plans and continually meet to discuss the latest automation technologies.

INGAA's Five Guiding Principles for Pipeline Safety

1. **Our goal is zero incidents**—A perfect record of safety and reliability for the natural gas transmission pipeline system. We work every day toward this goal.
2. **We are committed to a strong safety culture** as a critical dimension to continuously improve our industry's performance.
3. **We are relentless in our pursuit of improving by learning**—Our industry benefits from learning from the past, preventing recurrence of incidents and anticipating future challenges.
4. **We are committed to implementing and continuously improving Pipeline Safety Management Systems (PSMS)** and will continue to enable industry to improve work processes and technology that support reliability and resilience.
5. **We will regularly engage our stakeholders** from local groups to national groups, so they can help us participate in reducing risk.

- **Managing Emissions from Integrity and Maintenance Work:** INGAA members recognize that even as we decarbonize the network, we must also prioritize controlling emissions from integrity and maintenance work. Our members will share best practices around emissions reduction strategies associated in these areas.

- **Development of American National Standards Institute (ANSI) Standard for Managing Geohazards:** Geohazards, such as landslides, can affect the integrity of the gas transmission network. INGAA and its members will support and provide direction for a standard developed under ANSI requirements to manage geohazards in order to improve safety.

- **Integration of Electro-Magnetic Acoustic Transducer (EMAT) In-Line Inspection (ILI) into Standards:** INGAA and its members will work to develop an industry technical guidance document for usage of EMAT ILI tools so that cracking, especially stress corrosion cracking, can be reduced.

- **Regulatory Acceptance of Non-Traditional Pipe:** INGAA and its members will work to compile data to inform the industry on non-traditional pipe.

Safety & Climate

INGAA members are determined to lead the effort to modernize our nation's interstate natural gas delivery network infrastructure with a goal of reducing emissions and helping minimize the impact on our climate. We will work together as an industry towards achieving net-zero GHG emissions by 2050. Through the safe and reliable transportation of natural gas, consumers can continue to enjoy the benefits of this abundant energy, while furthering our nation's environmental goals. Learn more about INGAA's commitment to helping address climate change by reviewing our climate statement.

INGAA Member Companies

INGAA is comprised of 25 members, representing the vast majority of the interstate natural gas transmission pipeline companies in the U.S. and Canada. INGAA members operate almost 200,000 miles of pipeline in North America. INGAA membership includes:

- BHE GT&S
- Boardwalk Pipelines
- Cheniere Energy, Inc.
- DT Midstream
- DTE Energy
- Eastern Shore Natural Gas
- Enbridge Energy
- Equitrans Midstream
- Iroquois Pipeline Operating Company
- Kinder Morgan, Inc.
- Millennium Pipeline Company, LLC
- National Fuel Gas Supply Corporation
- National Grid
- NextEra Energy
- ONEOK, Inc.
- Pacific Gas & Electric
- Sempra LNG
- Southern Company Gas
- Southern Star Central Gas Pipeline, Inc.
- Spire, Inc.
- TC Energy
- Tellurian, Inc.
- The Williams Companies
- UGI Energy Services, LLC
- WBI Energy Transmission, Inc.

IMCI Program Key Initiatives

Interstate Natural Gas Association of America

Outlined below are the eight key initiatives that comprise INGAA's IMCI program. Through these efforts, INGAA is committed to bolstering our industry's safety efforts and continuing to work toward our goal of zero pipeline incidents.

Regular Stakeholder Engagement

Stakeholder engagement is an essential and core element of a Pipeline Safety Management System (PSMS). Engaging and collaborating with our external stakeholders including government officials, nongovernmental organizations, the public, and customers, such as utilities, shippers and end users.

OBJECTIVE:

We aim to regularly connect, inform, seek feedback from and understand stakeholders' concerns regarding the interstate natural gas pipeline network. We will also share our progress on IMCI 2.0 and adapt to address stakeholders' issues as necessary.

DELIVERABLES:

INGAA and its members commit to review and continuously improve stakeholder engagement programs. This includes providing timely updates to external stakeholders including government officials, nongovernmental organizations, the public, and customers on key issues, such as IMCI 2.0 progress. It also will entail improving transparency and support for American Petroleum Institute's process for developing Recommended Practice 1185, Pipeline Public Engagement.

Transportation and Storage of Renewable Natural Gas (RNG)

RNG represents tremendous potential in decarbonizing the gas transmission network by providing methane offsets for agriculture, landfills, and wastewater treatment facilities, among others. This initiative will draw upon INGAA members' decades of experience with transporting RNG and the variety of work being undertaken to ensure safe transportation and storage of larger quantities of RNG.

OBJECTIVE:

INGAA and its members will develop guidelines that include complete and current information to inform regulators, shippers and the public regarding safe transportation and storage of RNG while supporting and encouraging the development of RNG sources.

DELIVERABLES:

INGAA and its members will develop a technical guidance document that describes best practices for transporting and storing RNG.

Hydrogen Transportation and Storage

INGAA members are actively engaged in practices to safely transport and store hydrogen. These efforts will lead to emission reductions and decarbonization of the gas transmission network. This initiative will provide an overarching compilation of information for INGAA members to consider in order to safely transport and store this key commodity.

OBJECTIVE:

Provide INGAA members with current information regarding the safe transportation and storage of hydrogen, as well as helping to identify other areas that need further study.

DELIVERABLES:

A report summarizing the technical challenges to enable the safe transportation and storage of hydrogen. The report should include identification of the industry, research and governmental organizations that are evaluating the technical challenges to identify potential research gaps that could impede a safe and efficient transition to hydrogen.

Rupture Detection and Response

INGAA and its members over the last 10 years studied automatic and remote-control valves in addressing the larger issue of response times following a rupture. As part of this work, INGAA developed a response time goal as an alternative to valve automation in highly populated areas. INGAA members are now updating this effort to improve safety. Additionally, INGAA and its members look forward to PHMSA's completion of the Valve Installation and Minimum Rupture Detection Standards rule.

OBJECTIVE:

The goal is to minimize valve closure time in High Consequence Areas (HCAs) and non HCA class 3 and 4 pipelines greater than 12 inches.

DELIVERABLES:

INGAA members will develop a risk based valve response and automation plan by December 31, 2022. The plan will include metrics, an implementation schedule, and an annual review. The plan should consider operator's system changes, regulatory requirements, recent incidents, response times, and track metrics against the plan's progress. Separately, operators will consider the latest automation and rupture detection technologies.

Managing Emissions from Integrity and Maintenance Work

INGAA and its members recognize the need to reduce emissions while conducting integrity and maintenance-related work, where practical. These emissions can be reduced in many instances, but the safety of the public, employees, contractors and assets must remain priorities.

OBJECTIVE:

INGAA and its members aim to share best practices regarding emissions reduction strategies associated with pipeline integrity and maintenance-related work.

DELIVERABLES:

INGAA and its members will produce a best practice white paper identifying various strategies to reduce emissions from the interstate natural gas pipeline network.

Development of American National Standards Institute (ANSI) Standard for Managing Geohazards

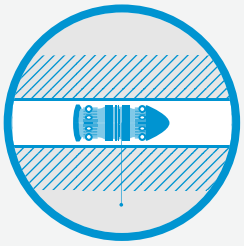
For the last several years, INGAA and its members have been working to address land movement hazards that can arise across the interstate pipeline network. This initiative will develop geohazard technical guidance and support development of recommended practices for the pipeline industry.

OBJECTIVE:

Establish geohazard program structures, performance metrics, and recommended best practices for the identification, assessment and management of geohazards that can be adopted by the pipeline industry.

DELIVERABLES:

A technical guidance document will be produced defining a framework for geohazard management in pipelines. After the document is completed, INGAA and its members will support an effort by the American Petroleum Institute to draft a Recommended Practice on geohazards. Additionally, an INGAA white paper will be written detailing recommendations for future work to improve safety from geohazards.



Integration of Electro-Magnetic Acoustic Transducer (EMAT) In-Line Inspection (ILI) into Standards

EMAT technology has been utilized for in-line inspection of pipelines for over two decades and has reached a level of maturity where both the performance specifications and response planning can be standardized. As the EMAT ILI technology is being used more broadly in the industry, development of technical guidelines will help ensure that all operators can benefit from the experience of early users, leading to improved safety and reliability for the industry as a whole.

OBJECTIVE:

Development of an industry technical guidance document specific to the use of EMAT ILI for management of cracks, with specific emphasis on stress corrosion cracking.

DELIVERABLES:

An EMAT ILI industry technical guidance document.

Regulatory Acceptance of Non-Traditional Pipe (NTP)

NTP represents a significant opportunity for interstate transmission pipelines, and pipelines as a whole, to enhance safety and improve the environment. Some benefits include reduction of methane emissions, land disturbances, and overall cost. NTP solutions will also advance the transportation of next generation fuels. This initiative will help identify a streamlined regulatory path to acceptance for NTP.

OBJECTIVE:

Enable the broader use of NTP by creating a path to streamlined regulatory adoption and educate INGAA membership on benefits of its usage.

DELIVERABLES:

A report that will help identify the best approaches for broader regulatory acceptance of NTP, focusing on environmental benefits and currently available technologies.