Donald F. Santa
President & CEO

April 27, 2012

Ms. Cynthia L. Quarterman
Administrator
U.S. Department of Transportation
Pipeline and Hazardous Materials Safety Administration
1200 New Jersey Avenue, S.E.
Room E27-314
Washington, DC 20590

Dear Administrator Quarterman:

The leaders of the INGAA board of directors appreciated the opportunity to meet with you, Secretary LaHood and senior PHMSA staff on March 27 to discuss the progress we together are making to enhance pipeline safety. On behalf of our board of directors, I am transmitting to you INGAA's response to the secretary's request for additional ideas to improve the safety of the nation's pipeline infrastructure.

The operators of interstate natural gas transmission pipelines are committed to improving the industry's safety performance and restoring public confidence in natural gas pipelines. Even before Secretary LaHood's call to action on pipeline safety, INGAA conducted a comprehensive assessment of the safety performance and practices of interstate natural gas transmission pipelines. This assessment resulted in the creation of a data-results-based action plan to improve pipeline safety continuously, protect the people who live and work near pipelines and ensure the reliability of natural gas supplies. INGAA's commitments go beyond current regulations and include the expansion of integrity management practices beyond highly populated areas and reducing response time to pipeline accidents.

Our industry took seriously Secretary LaHood's call to action on pipeline safety and stepped up activities to engage stakeholders, including emergency first responders, public safety advocates, state, local and federal officials and the public. We also worked with the administration and Congress to enact reauthorization of the Pipeline Safety Act.

INGAA also formed task forces to address many key technical issues, including pipeline fitness for service, records verification, automatic and remote-controlled valves, emergency response procedures, data collection, maximum allowable operating pressure, inline inspection, and implementation of quality management systems and safety culture. Highlights of our achievements are described in the documents attached to this letter.

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In response to Secretary LaHood's request for additional action items to improve pipeline safety that may include government, the industry and stakeholders, INGAA's members compiled the following list, which builds on our ongoing initiatives:

1. **Consider including permitting for activities related to pipeline safety under the April 13 Presidential Executive Order supporting safe and responsible development of unconventional domestic natural gas resources**

   The secretary or PHMSA could initiate recommendations to build on the Presidential Executive Order to include and expedite any federal permits required for pipeline inspection, repair and replacement projects that improve pipeline safety.

   This advances the goal of pipeline safety across the country by facilitating accelerated replacement programs that have been proposed by industry.

2. **Validate INGAA's proposed Fitness for Service (FFS) process for pre-regulation pipelines and provide forums for input on upcoming PHMSA records validation plans.**

   a. FFS – Schedule a session, as part of 2012 summer technical advisory committee, to receive formal recommendations on adequacy, gaps and merits of INGAA's FFS proposal. Regulatory certainty, or at least an early signal, will expedite the process.
   b. Records Validation – Recommend that PHMSA convene a forum to seek stakeholder input regarding the upcoming PHMSA Advisory Bulletin related to records.

   These forums will help focus operators' plans to improve pipeline safety with date certain timelines corresponding with PHMSA's expectations.

3. **Support PHMSA's Integrity Management Program (IMP) metrics.**

   Support PHMSA's plans on IMP metrics and recommend that PHMSA convene a public forum focused on measuring the results of pipeline safety efforts.

   This forum will advance pipeline safety by strengthening operators' capability to evaluate and reduce risk continually while building consensus on metrics that will increase transparency.

4. **Work with the industry to refine the practices outlined in INGAA's proposed Incident Mitigation Management (IMM) plan through a pilot/demonstration program and lead a national emergency preparedness consortium.**

   a. Develop and implement an exercise to apply the IMM plan to improve preparedness and execution of emergency procedures.

   This initiative would demonstrate, through tangible examples, the potential to minimize both the consequences and duration of a pipeline failure through a comprehensive performance-based approach. It also could help industry and emergency responders prepare for site-specific emergencies by improving situational awareness.

   b. Solicit ideas on how to build a broad-based emergency preparedness consortium.

   Through such an alliance, the chief safety officer could promote a forum that would be a "one-stop shop" for communications, coordination and response programs.

5. **Study the Federal Aviation Administration (FAA) Safety Management System experience.**

    a. Invite the FAA to make a presentation at the summer technical advisory committee meeting regarding lessons learned from the 2006-2010 evolution of the Safety Management System.
    b. Convene a forum to explore the effectiveness and limitations of performance-based regulations used in other industry sectors.

    Learning from FAA's collaborative and systemic approach to improving safety performance will help us achieve our goal of zero incidents.

6. **Work with industry to establish a technology roadmap for advancing pipeline safety.**

    As the industry further defines and implements a pipeline-integrity technology road map, provide opportunity to communicate and validate this road map through the technical advisory committee venue.

    This would provide stakeholders with a forum to discuss efforts to develop new technologies applicable to pipeline construction, operation, maintenance and inspection methods, and to identify solutions to technology gaps.

We applaud you and Secretary LaHood for your dedication to improving the safety of the nation's pipeline infrastructure. INGAA and its members are committed to being thought leaders in natural gas pipeline safety, a role that demands transparency in our thinking and openness to constructive input from others in the pipeline safety community. We look forward to working with you and other stakeholders to refine and implement these suggestions.

Sincerely,

Donald F. Santa

Enclosures: INGAA Makes Significant Progress with IM in 2011
INGAA Proposal to Revalidate MAOP
INGAA Explanation of Fitness for Service
INGAA Plan for Improving Integrity Management Technology
INGAA Pipeline Safety Commitments

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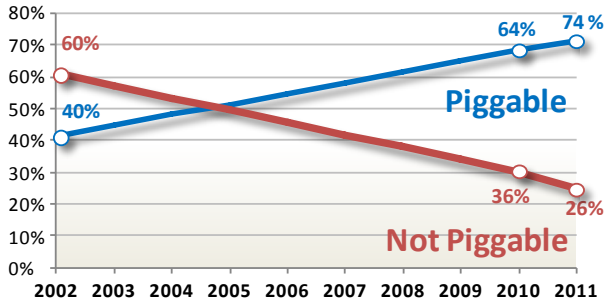
INGAA Members Achieve Significant Integrity Management Progress In 2011

Interstate Natural Gas Association of America (INGAA) members have demonstrated commitment and made significant progress toward improving pipeline integrity. INGAA members have focused specifically on three areas 1) making their systems capable of accommodating inline inspection (ILI) tools, 2) performing assessments and 3) making repairs and replacements. Survey data collected by INGAA documents the progress that has been achieved.

More Pipeline Miles Accommodate Inline Inspections

INGAA members have increased the miles of pipeline that can accommodate ILI. In 2002, only 40 percent of reported mileage was capable of accommodating ILI. By 2011 that had increased to 74 percent.



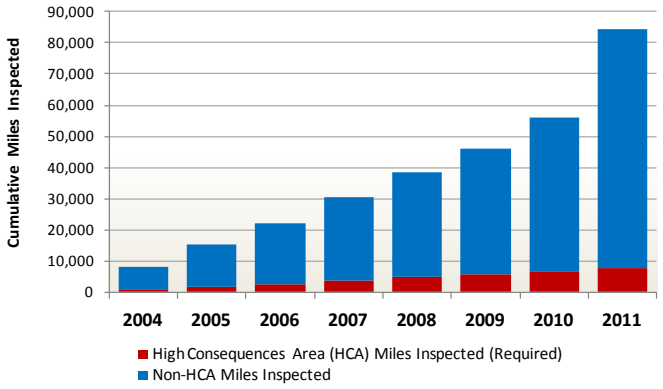
Pipeline Assessments, Repairs and Replacements Expand

INGAA's members are on track to complete the PHMSA mandated Integrity Management Program (IMP) baseline assessments by the end of 2012. Members had already assessed 95 percent of the High Consequence Area (HCA) miles subject to the IMP by 2011.

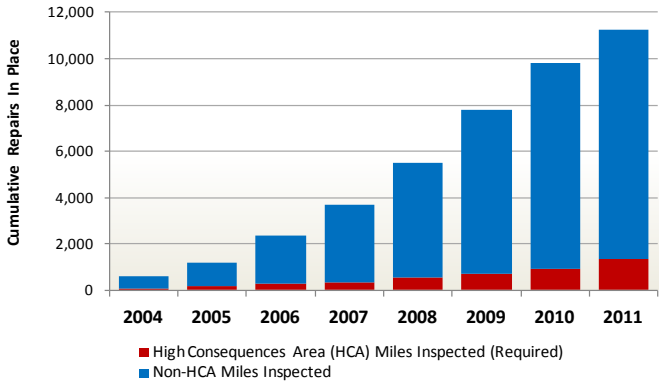
As part of their ILI inspections, INGAA members have assessed not only the 8,000 miles of pipelines within HCAs, but have also assessed more than 76,000 miles of pipe outside of HCAs. In 2011 alone, INGAA members assessed an additional 33,000 miles.

The cumulative repairs made and pipe replaced in HCAs and non-HCAs are depicted in graphs that follow. This demonstrates that pipelines located outside HCAs clearly have benefited from the over testing that occurs in connection with assessing of HCA mileage. In 2011 alone, INGAA members made 2,700 repairs in place, and replaced 206,000 feet of pipe as a result of those assessments.

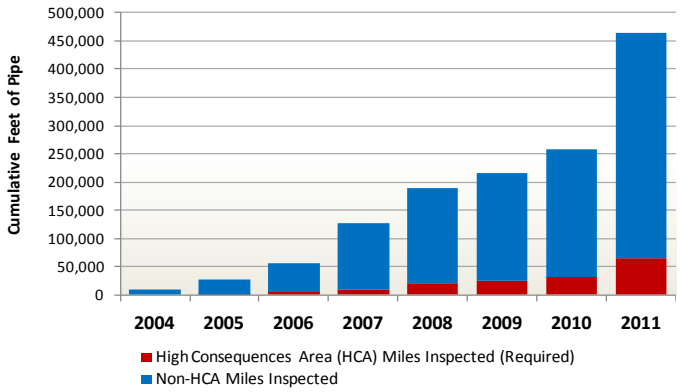
IMP Assessments – Total Cumulative Miles Inspected (2004 – 2011)



Total Cumulative Repairs Made In Place (2004 – 2011)



Total Cumulative Feet of Pipe Replaced (2004 – 2011)



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Pre-Regulation Pipe Records and Maximum Allowable Operating Pressure

In advance of the passage of the 2011 Federal reauthorization of the pipeline safety act (PSA), Interstate Natural Gas Association of America (INGAA) members commissioned an executive level workgroup focused on records and Maximum Allowable Operating Pressures (MAOP) for pipelines built prior to the 1970 Department of Transportation regulations. The purpose of the workgroup is to address concerns defined by the National Transportation Board, to address the 2011 Pipeline and Hazardous Materials Administration Safety bulletin, and to support the MAOP validation as required by the PSA.

- INGAA members began to search their records and committed to develop and apply a process to verify records and revalidate the MAOP for pipelines within High Consequence Areas (HCAs).
- INGAA members are acting according to the requirements of the PSA to provide records of pressure testing performed on pre-regulation pipes. To address the NTSB recommendation, records must be:
  - Traceable – the record can be linked to a facility and traced back to the origin of the data.
  - Verifiable – the record can be confirmed by supporting documentation, credible statements that have been recorded, or field verification through inspection and testing.
  - Complete – the record was complete according to the requirements in place at the time the data was created or it provides sufficient information to determine or confirm a parameter.
- INGAA members are working to meet PSA-prescribed MAOP and testing requirements. INGAA has prioritized this initiative based on three risk classifications:
  - **High-priority pipe or HCAs:** Will be pressure tested by 2020 if records or pressure tests are insufficient. INGAA is working with technology providers and research organizations to expand ILI capabilities to evaluate material and construction threats in lieu of hydrostatic pressure testing for high priority pipe segments.
  - **Medium priority or Class 1 and 2 areas outside HCAs with a known history of long seam issues and Class 3:** will be pressure tested or inspected via advanced ILI by 2030.
  - **Low priority or Class 1 and 2 outside of HCAs with no history of long-seam issues**; may continue to operate under current regulations and standards.
- INGAA members defined a process to verify pipeline records and revalidate MAOP of pre-regulation pipelines (built prior to March 12, 1970). The plan included the following action items:
  - Prioritize risk levels of segments of pipelines
  - Establish guidelines
  - Define verification and mitigation procedures
  - Ensure documents are traceable, verifiable and complete
  - Manage changes prescribed
  - Employ technology to ensure traceability and transparency of records
  - Identify segments with record gaps – Apply Fitness for Service Process

Records and related data are essential for effective risk assessment. Determining risk factors include:

- Pipe properties – seam type, install date, size, material strength
- Environmental factors – activity, stress levels, outside forces
- Operating characteristics – pressure, gas quality, cycles, etc.
- Testing and Assessment history – qualifications tests, integrity assessments, etc.

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Fitness for Service - *Defined & Explained*

Fitness for Service Defined

Fitness for Service (FFS) is the pipeline's ability to operate in a manner that ensures the safety of the people that live and work near pipelines, protects the environment, while dependably transporting natural gas from sources to markets.

Interstate Natural Gas Association of America (INGAA) members established natural gas pipeline FFS principles similar to those of programs widely used in other industries, such as transportation, energy, construction, chemical, nuclear and power generation.

FFS has been an integral part of consensus standards for pipelines since the mid-1980s, and is now embodied in American Society of Mechanical Engineers' B31.8 and B31.8S. The Pipeline and Hazardous Materials Administration has incorporated many elements of the consensus standards into the Minimum Pipeline Safety Standards.

FFS Has Been Applied to Metal Loss/Corrosion Since the 1980s

Pipeline operators apply a variety of techniques to assess a pipeline segment's physical condition. In-line inspection (ILI) with high-resolution magnetic flux leakage sensors is used to identify and characterize metal loss. High-resolution geometry sensors are used to identify, characterize and measure deformations in pipelines. Operators use this data to calculate risks and predict pressure failure points. Their calculations account for a generous, built-in safety margin below regulated maximum allowable operating pressure (MAOP).

Why INGAA Created FFS

INGAA designed their FFS program to address previously untested pre-regulation pipeline, or pipelines built prior to federal regulations established March 12, 1970. Pre-regulation pipe accounts for approximately two thirds of all onshore natural gas transmission pipelines.

Starting Point and Timeline

The FFS program establishes a starting point for evaluation and remediation of pre-regulation pipeline in High Consequence Areas (HCAs) that lack traceable, verifiable and complete test records. Further, the FFS process defines a priority-based process, and includes a timeline for analysis, implementation and completion of the program.

Evaluation of Pre-Regulation Pipe

INGAA members designed a decision tree for evaluation of pre-regulation pipeline records to identify any existing gaps. Pipe segments that have had a pressure test to 1.25xMAOP are fit for service subject to 49 CFR 192, consistent with the NTSB recommendation on the PG&E failure in San Bruno. Where traceable, verifiable and complete records are lacking, progressive steps are taken that are incrementally more and more conservative in correlation to the sufficiency of data. This process yields eight possible cases. Each case assigns conservative testing, operating and corrective measure guidelines. The cases are:

1. Pipe segments in **HCAs, Class 3 or 4 that have a strength test to at least 1.25xMAOP** can continue to operate under 49 CFR 192, subject to the Continual Evaluation requirements of 49 CFR 192.937.
2. Pipe segments in **HCAs^{H}, Class 3^{M} or 4^{M} that have a strength test to at least 1.1xMAOP that are piggable** can do one of the following:
   a. Run ILI that identifies and characterizes long seam and pipe body anomalies,
   b. Conduct a pressure test to 1.25xMAOP,
   c. Reduce pressure to 80% of the established MAOP, or
   d. Replace the pipe not meeting these conditions.
3. Pipe segments in **HCAs^{H}, Class 3^{M} or 4^{M} that have a strength test to at least 1.1xMAOP that are not piggable or those that do not have a strength test of at least 1.1xMAOP** can:
   a. Conduct a pressure test to 1.25xMAOP,
   b. Reduce pressure to 80% of the established MAOP or
   c. Replace the pipe not meeting these conditions.
4. Pipe segments in **Class 1 or 2 that have a strength test to at least 1.1xMAOP that do not contain pipe with known long seam issues** can continue to operate under 49 CFR 192.
5. Pipe segments in **Class 1^{M} or 2^{M} that contain pipe with a known history of long seam issues that are also piggable** can:
   a. Run ILI that identifies and characterizes long seam and pipe body anomalies,
   b. Conduct a pressure test to 1.25xMAOP,
   c. Reduce pressure to 80% of the established MAOP or
   d. Replace the pipe not meeting these conditions.
6. Pipe segments in **Class 1^{M} or 2^{M} that contain pipe with a known history of long seam issues that are non-piggable segments** can:
   a. Conduct a pressure test to 1.25xMAOP,
   b. Reduce pressure to 80% of the established MAOP or
   c. Replace the pipe.
7. Pipe segments in **Class 1^{L} or 2^{L} that contain pipe with no known history of long seam issues** can continue to operate under 49 CFR 192, subject to the Continual Evaluation requirements of 49 CFR 192.937.
8. Pipe segments that are **not HCAs^{L}, Class 3^{L} or 4^{L}, and that are operating at or below 30% SMYS** can continue to operate under 49 CFR 192, subject to the Continual Evaluation requirements of 49 CFR 192.937.

H*- High priority (HCAs); will be pressure tested by 2020 if records or pressure tests are insufficient. INGAA is working with technology providers and research organizations to expand ILI capabilities to evaluate material and construction threats in lieu of hydrostatic pressure testing for high priority pipe segments.*

M *– Medium priority Class 1 and 2 areas outside HCAs with a known history of long seam issues and Class 3); will be pressure tested or inspected via advanced ILI by 2030.*

L *– Low priority may continue to operate under current regulations and standards, subject to the Continual Evaluation requirements of 49 CFR 192.937.*

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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.

INGAA Members' Pipeline Safety Program: Accomplishments, Plans and Commitments

Interstate Natural Gas Association of America (INGAA) in early 2011 began a comprehensive assessment of the pipeline safety performance and practices of transmission pipelines. The analysis resulted in the creation of a data-results-based action plan to continuously improve pipeline safety, protect the people who live and work near pipelines, and ensure the reliability of natural gas supplies.

Pre-Regulation Pipeline Risk and Integrity Assessment

INGAA members agree that pre-regulation pipelines need to be analyzed to ensure that they are fit for service. INGAA members have worked collaboratively to analyze pipeline data, and have sought to make this data transparent and easily accessible. In accordance with 2011 Pipeline and Hazardous Materials Safety Administration (PHMSA) safety bulletin, members closely analyzed pre-regulation pipeline assets records. Their findings generally confirmed the existence of accurate records and adherence with Maximum Allowable Operating Pressures. These efforts have led to streamlined record-keeping. They also have contributed to formulation of procedures to ensure that pipelines – regardless of age – are fit for service, and that records exist to give regulators and the public confidence in these pipelines.

Engaging Our Stakeholders

INGAA and its members are committed to being thought leaders in natural gas pipeline safety. That role demands being transparent in our efforts and soliciting feedback and information from other members of the pipeline safety community. Over the past year, INGAA has met with stakeholders, including federal and state pipeline officials and pipeline safety advocates, to discuss its pipeline safety proposals, exchange information and views and enhance the process to implement its safety plans. INGAA also has engaged first responders, including fire chiefs and firefighters, to find new and better ways to communicate and share safety information. INGAA is actively promoting the Pipelines and Informed Planning Alliance to help communities make risk-informed decisions for land-use planning and development adjacent to pipelines.

Managing Incident Responses

While INGAA's pipeline safety program looks primarily at preventing accidents, it also believes it is important to plan to respond to any emergencies. As part of this effort, INGAA members studied and created an Incident Mitigation Management System. Key elements include enhanced public awareness; providing information to emergency responders regarding pipeline locations, pressures, controls and contents; and developing coordinated response plans with emergency responders. For its larger pipelines in populated areas, INGAA is committed to achieving a pipeline isolation response time of one hour in populated areas.

Quality Management Systems & Safety Culture

INGAA members analyzed Quality Management Systems (QMS) and their effectiveness to see if implementing these systems could bolster pipeline safety. After studying a number of other industries, including chemical manufacturing, aviation and healthcare, they found that quality management systems worked best when incorporated into an overall safety culture. As a result, INGAA has embraced a zero incident safety culture and is clarifying the elements of QMS for consistent application by members. INGAA and other North American pipeline groups are conducting a comprehensive study to explore safety models and procedures currently utilized by other industry sectors in an effort to deliver natural gas and pipeline-transported liquids more safely and reliably. The study, to be completed later in 2012, will assist the energy pipeline industry to identify and implement a model that will measurably improve pipeline system safety.

Continuously Improving Pipeline Safety

Pipeline safety is not a one-year effort or a five-year effort. It demands a long-term commitment. INGAA members have made that commitment and have laid out a number of Integrity Management (IM) benchmarks they intend to achieve in coming years:

- INGAA pipelines will complete an initial assessment using IM principles on pipelines that cover 90% 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% of the population living along INGAA member pipelines by 2030.

April 2012