

NAPSR Perspectives on Pipeline Safety-Related Research & Development Projects

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Distribution vs. Transmission

- Transmission in 2013 has 983 operators for 4520.2 miles of offshore pipe, and 298254.8 miles onshore pipe for a total of 302775 miles of transmission pipeline.
- Distribution in 2013 has 1338 operators for 888441 miles of service and 1253285 miles of main for a total of 2141726 miles of pipeline.
- Pipelines are located in all areas and are affected by all conditions to provide safe and reliable gas service

Technology for Crack Detection

- Transmission line cracks occur from SCC, seam corrosion, and weld defects
- Distribution line cracks occur from graphitization of cast materials, dents, dents with corrosion and weld defects
- The ability for a pipeline operator to identify the location of the pipeline defects that contribute to the propagation of cracks is a tool needed by pipeline operators

171 Mardi Gras Drive



1238K00177000000

171 Mardi Gras Drive on March 5, 2008



Cracked Distribution Pipe



Continued Development of Keyhole Tool Technology

- This technology is in use now and has proven to lessen impact to streets and to save time
- Need more projects to enhance keyhole technology and to expand applications



Material Tracking and Traceability Technology

- Identification and tracking materials has become a common thread to locating inadequate material and equipment
- A system to be able to trace pipe, fittings and equipment that become a liability is needed
- This will allow operators to identify and trend facilities in their pipeline systems



Tools or Processes for Identifying Plastic Pipe Degradation

- Early vintage plastic pipe exists in most distribution systems (PVC, ABS, Aldyl A, Aldyl HD, etc.)
- Suggest testing of samples of failed early vintage pipe using current ASTM guidelines
- Develop a matrix using testing results to identify risk levels for each type of pipe and year
- Publish results for operators to use in Distribution Integrity Management (DIMP) program risk rankings



Improved Technology for Assessment of Casings

- Casings that are “shorted” can result in accelerated corrosion and other issues
- Established methods of detection of electrical isolation are often inadequate
- Casings with anodes can cause additional challenges to determination of electrical isolation



Development of In Line Inspection Tools for Small Diameter Pipelines

- Current Explorer II technology can inspect pipelines down to 6" in diameter
- Need micro technology to enable internal inspection of even smaller diameter steel pipelines that may be operating at transmission SMYS or at higher distribution pressures



Technology for Monitoring of Graphitization of Cast Iron Pipelines

- Cast Iron deterioration continues to be a high profile issue
- Equipment to identify graphitization in cast iron pipe and measure the depth are needed for better pipe replacement programs
- Data on rates of graphitization can help with risk ranking in DIMP programs

January 18, 2011 Philadelphia

Explosion Kills 1 person,
injures 5, and destroys 2
buildings caused by a 12-inch
cast iron gas main failure.

Cured in Place Liners for Pipelines

- NAPSR generally disagrees with use of cured in place liners
- Not enough data to form a conclusion
- Issues with sharp edges as cast iron deteriorates
- Issues with tapping and potential for leakage at lateral joints
- Issues with MAOP unclear and relationship from a regulatory perspective on what the pipe MAOP becomes if cast iron completely goes away
- NAPSR agreeable with research of liner performance





Questions?



Thank You!