Innovative Methods for Assessing Non Piggable Pipelines

Pigging the Un-Piggable

September 11, 2013
2002 NYSEARCH began development of technology

2004 InvoDane began development of MFL sensor for plug valve

2007 InvoDane began integrating all technologies and field testing

2009 InvoDane began commercialization of services

2010 Pipetel formed to be a service provider Explorer 6/8
Pipetel Capabilities

- Live pipelines up to 750 psi
- Self propelled
- Tetherless
- Axial MFL sensor
- Visual inspection
- High, low or no flow
- Valves
- Tees
- Bends
- Vertical segments
Explorer Tools
Inspection Technology

- **High Resolution Magnetic Flux Leakage (HRMFL)**
  - Magnetizes the pipe and measures magnetic flux
- **Remote Field Eddy Current (RFEC)**
  - Transmits low frequency alternating current (AC) through the pipe wall
  - Ultrasonic testing (UT) technology without the use of a liquid slug
Inspection Technology

- Internal video inspection
  - Identify location of dents
  - Unable to size dents
Applications for Explorer

Where traditional assessment methods may not feasible
• Pipe within casings
• Water crossings
• Pipeline spans
To Date

- Questar has been a sponsor of the NYSEARCH project since 2002.
- Questar has assessed 10 of its casings requiring multiple sizes of the Explorer inspection tools.
Tool Performance Verification Process

Questar created test pipe with known anomalies to verify tool performance.

- Tool run through test pipe before and after each assessment
- Results included in final reports
- Results of test run are compared to actual measurements of test pipe anomalies
- Comparison confirms tools performance
Preparation for Live Assessment

- Hot tapping of pipeline
- Installation of launcher/receiver
- Loading of Explorer inspection tool into launcher/receiver
Assessment Results

- Anomaly information
  - Type, stationing, orientation on pipe
  - Calculated safety factor
- Pipeline features
  - Measured casing length
  - Taps, tees, bends, etc.
- Information gained is comparable to traditional In Line Inspection tools
- Appropriate inspection method where other assessment methods are not feasible
Questions