Northeast GAS ASSOCIATION
NYSEARCH

Technology Brief

Multi-Technology Validation Testing for Cased Pipe Applications

Status: Testing of guided wave technologies has been completed. Novel technology testing will be undertaken in 2008.

Description: A program to compare and evaluate the performance of new and existing technologies for inspection of live cased pipe.

BENEFITS

This program is intended to provide valuable performance information about a variety of technologies for inspecting cased pipe. It is aimed to help operators meet ECDA or ICDA requirements under the rules of the Pipeline Hazardous Materials safety Association (PHMSA). The information supplied to operators will help provide solutions for hard-to-reach areas and avoid the high costs of inspection by excavation and casing removal. Newer and existing technologies will be evaluated as well as the associated vendors who license such technologies.

BACKGROUND

The 2002 DOT/PHMSA Pipeline Integrity ruling requires integrity assessment of pipes in high consequence areas and does not provide an exception for special areas such as in cased crossings. NYSEARCH and NGA have been evaluating an assortment of methods with initial focus on guided wave ultrasonic inspection technologies. These and other emerging technologies may provide solutions to specialized testing needs. However, the performance of the technologies varies, and some may be used in combination with others to provide an assessment of pipeline integrity. An independent evaluation of technologies is needed to guide the expectations of operators in making wise decisions for allocating their resources.

30" Carrier within a 48" Cast Iron Casing

TECHNICAL APPROACH

Five guided wave inspection contractors participated in the 2007 portion of the test program. Their equipment consisted of both Guided Ultrasonics Limited (GUL) and Teletest™ devices.

Guided Wave Transducer Belt in Place

Four live cased pipe sections in New York City were inspected which ranged from 16" OD to 30" OD carrier pipes. The lengths of the carrier sections ranged from 40 feet to 120 feet. These pipes were scheduled for casing removal; therefore the predicted anomalies could be later compared with actual features after the casings were removed.

Ultrasonic Thickness Gage Verification

One of the cased test sections was an above-ground field mockup which contains multiple known machined defects.

ConEdison Astoria Yard Field Mockup

After testing was completed and all the actual features were documented, the pipes were drawn in AutoCAD. The new CAD drawing illustrated both the vendors' predicted features and actual features. This enabled a visual comparison of predictions with actuals and the dimensioning of the differences (or offsets) between the data.

PROJECT STATUS

A report has been issued which illustrated the performance of the guided wave contractors. Planning is now underway for the testing of several novel technologies in 2008. Novel technologies include a casing inspection camera, new types of guided wave technologies and others.

FOR ADDITIONAL INFORMATION

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