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Guided Wave Ultrasonics

Guide Wave Ultrasonic Testing has been identified as an effective pipe-screening technology capable of detecting, locating, and classifying corrosion defects. The technique enables volumetric screening of pipes, which covers 100% of the cross-sectional area of the pipes within the diagnostic length of the test. In most cases, tens of meters can be screened from a single test position, making it a rapid and cost-effective non-destructive testing (NDT) method. Additionally, access to the pipe under test is only required at the test position (remote inspection), which makes Guided Wave screening technology an ideal solution for inspecting pipes that are costly to inspect using other methods, for example, buried sections of road crossings or insulated pipelines.

The Wavemaker Pipe Screening System is a screening method that utilizes ultrasound. A probe ring is placed around the pipe and transmits guided waves through the pipe in either direction of the probe ring. The pulse echo type operation provides information on features and/or different types of defects at their positions and severity. The guided wave testing can be either performed as a single inspection or repeated inspections from the same location, which can be used for monitoring purposes (gPIMS® Monitoring)

THE Applus+ SOLUTION

Applus+ has a long history of working with guided wave ultrasonic testing technology. Through extensive training and procedure development in guided wave ultrasonic testing and pipeline inspection. Applus has developed a world-class program for asset integrity inspections, drawing on extensive knowledge in pipeline inspections across various sectors.

Guided wave NDT services may be conducted on an ad-hoc basis or as part of an asset

integrity inspection program, thereby benefiting clients looking to analyze their systems in an efficient manner, focusing efforts on identifying and resolving problems.

Target customers

The services Applus+ deploys for guided wave NDT are applicable to a number of sectors, including:

- Oil and gas (upstream, midstream, downstream)
- Power
- Nuclear
- Ore processing and handling
- Food and beverage
- Onshore/offshore NDT

Key customer benefits

The benefits of the services Applus+ provides with guided waves ultrasonic testing include:

- Available for pipe diameters DN20 to DN1800 (3/4” to 72”)
- The test can be carried out at elevated temperatures without taking the pipe out of service
- Standard application maximum surface temperature 80°C to 120°C (depending on the diameter). Under certain conditions, surface temperatures up to 300°C are possible.
- Long lengths of pipes can be remotely 100% inspected to locate critical areas of pipework quickly.
- Great screening/monitoring tool (recognized and accepted worldwide)
- Very cost-effective for CUI inspection
- Very versatile - from desert to subsea pipeline inspections
- Sensitivity can be as good as a 1% loss of cross-section in ideal conditions
- High reproducibility
- Real-time processing and evaluation