VERSA
INTEGRITY GROUP

Nondestructive Examination Services

GUIDED-WAVE ULTRASONICS (MsS)

What are Guided-Wave Ultrasonics (MsS)?

MsS is a device that electromagnetically generates and receives low-frequency ultrasonic guided waves. It is used for rapidly surveying a long length of pipe or plate from a single test location. The corrosion wall loss and cracks in aboveground, buried, and insulated pipe or plate can be detected, and their locations and sizes can be estimated by analyzing the data with software. The MsS system is also useful for inspecting and monitoring areas that are difficult to access. This saves time and money that would otherwise be used for scaffolding, insulation removal, or excavation.

Common MsS Applications

- Pipe and Pipeline Inspection and Monitoring
- Vessel or Plate Monitoring
- Heat Exchanger Tube Inspection
- Corrosion Under Re-pads and Supports

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Advantages of MsS Guided-Wave Ultrasonics

- The total cross-sectional wall of the pipe is inspected
- The MsS system can inspect and monitor all pipe diameters from 0.5 to 60 inches
- Ability to detect corrosion wall loss and cracks in aboveground, buried, and insulated pipe
- Sensitivity can be as good as 2% loss of cross-section in idea conditions (but is set at 5% or 10% for buried pipeline or at long distance)
- Signal-to-noise ratio of better than 50 dB is obtained with epoxy-bonded MsS probe on site. The generated signal with MsS probe is 50 dB (300 times) higher than the coherent noise of unwanted modes
- MsS probes can be epoxy-bonded to pipelines for periodic inspection and monitoring
- Inexpensive MsS probes can be permanently installed to pipelines at difficult-to-access locations for long-term pipe monitoring
- A pipe of up to 300°C surface temperature can be tested without taking it out of service
- Pulse-echo operation provides information on anomaly location and severity
- Pitch-catch operation provides information on general corrosion of high-attenuation pipelines
- Sophisticated analysis software reduces false calls and helps in the creation of inspection reports
- Phase of the signal is used to differentiate defects from geometric features if the signal-to-noise ratio of the signal is high
- Only a small clearance between pipes is required - about 12 mm (0.5”) for monitoring and 25 mm (1.0”) for dry coupling
- Narrow insulation removal along the circumference of pipe - about 60 mm (2.4”) for monitoring and inspection
- Ability to test for corrosion under insulation (CUI) for long pipe runs without stripping the main insulation

THE UNIFIED SOLUTION.

Versa Integrity Group is expanding operations to cover the areas that are close to our clients. If you need solutions to your complex NDE, inspection, and reliability challenges, we have an office that can quickly and conveniently meet your needs.

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