

Phased Arrays for Pipeline Girth Weld Inspections

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Abstract

Ultrasonic phased arrays offer significant advantages over radiography for pipeline weld inspections: they have higher detection rates for critical planar defects (i.e. cracks and lack of fusion), less subjective interpretation, vertical sizing capability for Engineering Critical Assessment, no safety hazards, no licensing issues, no chemical wastes, and no requirement to evacuate the area. Phased arrays also offer major advantages over multiprobe systems and manual ultrasonics.

Initially, this paper describes the standard zone discrimination inspection of pipeline welds. Then the Olympus NDT PipeWIZARD phased array system for large pipelines is described, plus some of its advantages. As phased arrays are very good for special applications, this paper will briefly show some of the key applications, like seamless piping, cladding, premium inspections and improved focusing. In addition, the paper will present a portable phased array system –suitable for repairs, tie-ins and difficult to access areas.

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