TELETEST™ FOCUS+ IN EXTRA-LARGE-DIAMETER PIPELINE INSPECTION APPLICATIONS

Eddyfi Technologies inspected and assessed the integrity of an elevated section of the 137.2 cm (54 in) natural gas flare line that could not be inspected with a pig at a refinery in the Middle East.

The customer in the Middle East made the decision to use guided wave ultrasonic inspection at these locations as the line is elevated, necessitating extensive scaffolding for conventional NDT techniques.

Teletest™ FOCUS+ guided wave ultrasonic testing was used to screen the 137.2 cm (54 in) line, elevated to a height of 10 m (32.8 ft), and identify areas for detailed follow-up inspection.

The greatest challenge facing the inspection team was the large diameter of the pipe. Historically, FOCUS+ was only used on pipelines less than 122 cm (48 in) in diameter to prevent overcurrent errors caused by driving too large a load. Recent developments and testing of a 168 cm (66 in) diameter vessel demonstrated that cylindrical structures of much larger diameters can also be tested with the existing equipment. Test frequencies, however, must be limited to prevent overcurrent errors.

Figure 1. Teletest Focus guided wave ultrasonic test equipment applied to inspect the 66" vessel

For pipeline diameters greater than 122 cm (48 in), three FOCUS+ collars must be linked together. The combination of collars was carefully made for the minimum number of modules per octant (reducing the load to a minimum). The standard test schedule was also modified to remove some of the higher frequency tests, again, to reduce the capacitive load.

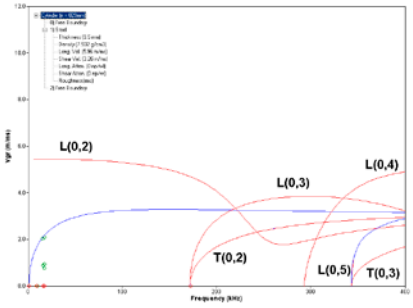

Figure 2. Dispersion Curves for 66" vessel

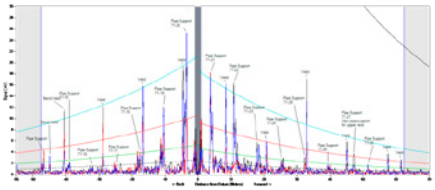

Figure 3. A-scan showing 110m of 54" pipeline

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