1.3.36. PERMANENTLY INSTALLED TRANSDUCERS FOR GUIDED WAVE MONITORING OF PIPELINES

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The Guided Wave inspection method (GW) is now used routinely in the petro-chemical industry to screen long lengths of pipe for corrosion. The method is attractive because it gives 100% coverage of the volume of the pipe within the diagnostic range of the test, and tens of metres can be covered from a single transducer location. Therefore full coverage can be obtained at a fraction of the cost required for spot thickness gauging or automated UT inspection. The conventional application of the method is to use a re-movable transducer ring and to gain temporary access to the pipe at test locations spaced out along the pipeline. These test locations spacing is selected according to the test range which is achieved for a given application, but are typically of the order of tens of metres.

In many applications where the GW testing method is applied, a large percentage of the total cost of the inspection is spent on gaining access to the pipe at the test location, for example offshore risers, road-crossings and elevated pipe-work. In these cases a cost effective option is to use a permanently installed transducer ring, where one-time access is needed to attach the transduction system and subsequent tests can be carried out from an easily accessible remote location. The gPIMS® pipe monitoring system manufactured by Guided Ultrasonics Ltd., used in conjunction with the proven WaveMaker®G3 instrumentation and WaveProG3 software, provides a complete solution to GW monitoring of pipe.

This paper reports the performance, in terms of stability of results, reliability for long-term testing and sensitivity, achieved using the gPIMS® system. There is also a discussion of the operating conditions and applications for which it is recommended.