

Non-Intrusive Inspection (NII): Tomorrow's Technology Saving Costs Today

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As part of any inspection and maintenance program, pressure vessels and associated pipework are required to undergo periodic inspections. These inspection regimes are typically governed by regulatory requirements. However, the fundamental output is to ensure a continued safe and reliable operation. Historically, this periodic inspection has involved vessel entry and visual assessment. The very nature of Internal Visual Inspection (IVI) requires plant shutdown, extensive cleaning programmes and confined space working environments. This combination is time consuming, costly and introduces safety concerns for operators. Recent developments in Non-Destructive Testing (NDT) technology introduced a range of inspection tools and scanning equipment that can reliably test pressure system components without the requirement for plant shutdown. Carefully combining the use of specifically designed inspection methodologies, it is now possible to provide close to 100% coverage on commonly designed pressure systems. This combined inspection philosophy is regarded as Non-Intrusive Inspection (NII) and when used in conjunction with a robust risk-based assessment, it can offer a complete replacement to internal visual inspection, provide quantitative data sets for fitness for service calculations and overlay periodic information to assess degradation rates. Major oil and gas companies are quickly adopting this inspection strategy and annual savings are reported to be greater than 100 million in some circumstances. Keywords: Non-destructive testing, non-intrusive inspection, tank inspection, pipe inspection, vessel inspection