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Abstract

This paper provides an overview of a large-scale testing program that is associated with an ongoing, joint government/industry funded research program, which is intended to advance the state-of-the-art in strain-based design as it pertains to the tensile capacity of girth welds in steel pipelines. The testing program has exercised a number of parameters that are known to have a significant impact on tensile strain capacity including: the effects of internal pressure, the strain hardening characteristics of the pipe body and weld material, the degree of weld strength overmatch and the location of the assumed flaw. This paper describes the type of tests performed and the instrumentation plan; it also provides a summary and discussion of the results obtained to date.

Keywords

Pipeline, Strain-based design, Curved-wide plate, Full-scale test, Tensile strain capacity