

Inspections, statistical and reliability assessment study of corroded pipeline

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Abstract: The purpose of this work is to examine some points of views on the burst pressure standards assessment for a pipeline with internal and/or external corrosion defects. The proposed work contains three major parts. First, we used several analytical and numerical methods with the use of Ansys Software. The goal is presenting different aspects concerning burst pressure standards computation of real burst test. The second part shows an experimental study in order to check the inspections standards using an intelligent pig tool over a 48?km of a pipeline located in Algeria. All detected defects in the corroded pipeline are statistically analyzed. The final part, the reliability index β of the corroded pipeline subjected to internal pressure is estimated by using the SORM reliability approach.

Keywords : Corroded pipeline burst test, Probability of failure, Failure assessment diagram, Finite Element Analysis