

# USING TESTING METHODS TO EVALUATE SUBSEA PIPELINE PERFORMANCE AND INTEGRITY

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## ABSTRACT

Evaluating the integrity of subsea pipelines involves a variety of tool and skill sets. Over the past several years there has been an increased interest in assessing the performance of pipeline systems using full-scale testing. Modes of testing have included full-scale bursting, pressure cycle fatigue, bending, and dropped object work. While lessons learned from prior experience and analysis are valuable, the role of testing in the evaluation process is receiving focused attention due to the critical nature of the subsea pipeline infrastructure.

This paper includes discussions on how testing has been used assist pipeline companies assess the integrity of their pipeline systems and components used to support pipelines. Specific emphasis is placed on helping the reader better understand what testing techniques are most appropriate and determining how to interpret and correlate the results into useful information for operating safe pipelines. Case studies are presented that include burst testing and pressure cycling anchor-damaged pipes, proof testing a riser cross-haul bucket tool, impact testing a pipeline protection system, and using burst testing to determine the limit state capacity of a pipeline.

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