

Pipeline Condition Assessment

OVERVIEW

Pipeline structural performance capability is defined by the design and construction details. During service the maintenance history, and pipe wall deterioration influence performance capability. Loading regimes also vary along pipelines. Significant differences in maintenance and replacement requirements for pipeline and pipe systems therefore arise. Optimised investment decisions require current condition and ongoing deterioration rates to be assessed.



Factors influencing pipeline structural performance are:

- Pipe materials properties
- Applied loading regimes
- Structural strength
- Construction details

For many pipelines external and internal loading regimes can be significant and the combined loading regimes can vary along the pipeline. Pipe wall condition also varies along the pipeline. Thus the condition assessment process must recognise the influences of these differences on pipeline performance.

CONDITION ASSESSMENT

The AESL condition assessment process involves collecting and analysing appropriate data. Predicting current pipeline performance capability requires data on:

- Construction standards
- Pipe wall deterioration
- Loading regimes
- Failure mechanisms

Predicting future pipeline performance requires pipeline deterioration with time to be assessed.

The AESL condition assessment process involves:

- Reviewing the pipeline route
- Selecting appropriate inspection sites
- At each site assessing the pipe coating, pipe wall and soil
- Defining the present and future pipeline condition using statistical models
- Predicting the modes of failure and their probability with time under the applied loading

AESL provide pipeline condition assessment services for the range of ferrous and plastic materials.

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