

Abstract

Introducing transient analysis to pipeline integrity management (IM) is strongly recommended when crater-type corrosion defects are present and when threshold criteria are more rigorous than usual. Applying transient analysis to gas pipeline integrity management does not significantly increase the number of repairs, only the manner in which they are planned for, and therefore does not result in prohibitive additional costs. A number of standards estimate the failure stress of pipelines according to the geometrical dimensions of critical defects and guide repairs needed to return a particular line to its original maximum allowable operating pressure (MAOP). Rigorous monitoring of corrosion rate requires frequent ILI inspections. But this is an expensive proposition for large pipeline systems, and ILI tool programming must take limits on available resources into account. Operators of a pipeline that has only been inspected once must estimate corrosion growth rates heuristically or by using Bayesian approaches