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Gas Transmission Pipeline Integrity Management System Through Corrosion Mitigation and Inspection Strategy: A Case Study of Natural Gas Transmission Pipeline from Wafa Field to Mellitah Gas Plant in Libya

Authors : Osama Sassi, Manal Eltorki, Iftikhar Ahmad

Abstract : Poor integrity is one of the major causes of leaks and accidents in gas transmission pipelines. To ensure safe operation, it is must to have efficient and effective pipeline integrity management (PIM) system. The corrosion management is one of the important aspects of successful pipeline integrity management program together design, material selection, operations, risk evaluation and communication aspects to maintain pipelines in a fit-for-service condition. The objective of a corrosion management plan is to design corrosion mitigation, monitoring, and inspection strategy, and for maintenance in a timely manner. This paper presents the experience of corrosion management of a gas transmission pipeline from Wafa field to Mellitah gas plant in Libya. The pipeline is 525.5 km long and having 32 inches diameter. It is a buried pipeline. External corrosion on pipeline is controlled with a combination of coatings and cathodic protection while internal corrosion is controlled with a combination of chemical inhibitors, periodic cleaning and process control. The monitoring and inspection techniques provide a way to measure the effectiveness of corrosion control systems and provide an early warning when changing conditions may be causing a corrosion problem. This paper describes corrosion management system used in Mellitah Oil & Gas BV for its gas transmission pipeline based on standard practices of corrosion mitigation and inspection.

Keywords : corrosion mitigation on gas transmission pipelines, pipeline integrity management, corrosion management of gas pipelines, prevention and inspection of corrosion
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