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API Recommended Practice 1170 Summary and Discussion

Terrance P Rittenhour

Spectra Energy US Transmission, Houston, TX USA

Abstract

In December of 2011, the Interstate Natural Gas Association and the American Gas Association (AGA) asked the American Petroleum Institute (API) to be the secretariat for a new recommended practice (RP) for the design and operation of natural gas storage caverns. As a result a task team was assembled to produce this document. This team of industry experts worked for more than three years to produce the new API RP 1170 titled "Design and Operation of Solution Mined Salt Caverns Used for Natural Gas Storage". This industry consensus document was published in July of 2015.

This document provides the functional recommendations for salt cavern facilities used for natural gas storage service and covers site geomechanical assessments, cavern well design and drilling, solution mining techniques and operations, including monitoring and maintenance practices. The recommended practice is based on the accumulated knowledge and experience of geologists, engineers, regulators, and other personnel in the petroleum and gas storage industries and promotes public safety by providing a comprehensive set of design guidelines.

The RP recognizes the nature of subsurface geological diversity and stresses the need for in-depth, site specific geomechanical assessments with a goal of long-term facility integrity and safety.

In addition, a parallel effort was undertaken to produce API RP 1171 titled "Functional Integrity of Natural Gas in Depleted Hydrocarbon Reservoirs and Aquifer Reservoirs".

Also of note: The US Pipeline and Hazardous Materials Safety Administration (PHMSA) issued an Advisory Bulletin in February 2016 recommending all US natural gas cavern storage operators voluntarily implement API RP 1170.

Key words: recommended practice, geomechanical, well design, solution mining

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