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**REGULATORY RESPONSE TO UNANTICIPATED GEO-MECHANICAL  
EVENTS EFFECTING GAS STORAGE CAVERN OPERATIONS IN TEXAS**

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**Abstract:**

There are currently 32 active gas storage caverns in Texas, 31 caverns store natural gas and one stores hydrogen. Seventeen of the active gas storage caverns in Texas have been placed in service since 1990; five more have been permitted, but not completed. Regulatory responses have been necessary to address recent unanticipated geo-mechanical events effecting the operation of some caverns. These events include (1) significant (greater than 200 ft) upward roof migration of a bedded salt cavern, (2) loss of integrity within the salt of a domal cavern resulting in inter-cavern communication and, (3) difficulties de-brining a newly-developed bedded salt cavern caused by repeated ledge falls. Regulatory responses to those events have resulted in (1) permit modifications and interim operating procedures to accommodate operational changes, (2) additional testing, monitoring, and reporting requirements, and (3) a second directionally drilled well to de-brine the bedded salt cavern, respectively.

Key Words: Gas Storage Caverns, Storage Cavern Regulation