THE ROLE OF NATURAL GAS STORAGE

UNDERGROUND STORAGE BY THE NUMBERS

- There are approximately 400 active storage facilities in 30 states.
- There are three principal types of underground storage sites used in the United States today: depleted natural gas or oil fields (80%), aquifers (10%) and salt caverns (10%).
- “Working gas” (gas that can be taken out of storage and distributed to customers) in underground storage in the United States reached 4 trillion cubic feet in November 2015.
- Underground storage working gas capacity in the United States increased 18.2 percent between 2002 and 2014, helping to ensure that natural gas is available when it is needed most.
- Approximately 20 percent of all natural gas consumed during the five-month winter heating season each year is supplied by underground storage.

Underground storage of natural gas is an integral component of the nation’s energy system, and our nation’s significant storage capacity enables utilities to reliably offer clean natural gas to consumers throughout the year in a cost-efficient manner and without interruption.

During summer months, when U.S. customers use less gas and there is excess supply, utilities purchase natural gas and store it for distribution in the colder months when there is peak demand. Underground storage provides a physical location to hold supplies not being consumed and is also used to maintain system integrity and necessary pressure on pipelines, which contributes to keeping them operating efficiently.
The owners/operators of underground storage facilities are primarily interstate pipeline companies, intrastate pipeline companies, local distribution companies (LDCs) and independent storage service providers. About 120 entities currently operate underground storage facilities in the U.S., approximately half of which are interstate and half intrastate.

The Natural Gas Pipeline Safety Act of 1968 gave authority to the U.S. Department of Transportation (DOT) to regulate the transportation and “storage” of natural gas, which a federal court has confirmed includes underground storage. Colorado Interstate Gas Co. v. Wright (D. Kansas 2010).

The Pipeline Safety Act, 49 U.S.C. 60104(c), provides that “A State may not adopt or continue in force safety standards for interstate pipeline facilities or interstate pipeline transportation.” The court in CIG v. Wright held this provision preempted state safety regulation of interstate underground storage facilities.

Section 60104(c) further provides that “A State authority that has submitted a current certification … may adopt additional or more stringent safety standards for intrastate pipeline facilities and intrastate pipeline transportation only if those standards are compatible with the minimum standards prescribed under” the Act.

Section 14 of the “Securing America’s Future Energy: Protecting our Infrastructure of Pipelines and Enhancing Safety Act” (SAFE PIPES Act, S. 2276) directed PHMSA to promulgate minimum, uniform, consensus safety standards for the operation, environmental protection, and integrity management of underground natural gas storage facilities. This bill was passed by the Senate Committee on Commerce, Science, and Transportation in December 2015 and is not yet law.

In September 2015, the American Petroleum Institute (API) published recommended practices (RP) 1171 entitled “Functional Integrity of Natural Gas Storage in Depleted Hydrocarbon Reservoirs and Aquifer Reservoirs,” and 1170 “Design and Operation of Solution-Mined Salt Caverns Use for Natural Gas Storage.”

These RP’s provides guidance to operators in the design, construction, operation, monitoring maintenance, integrity assessment and management, and documentation practices associated with underground storage facilities.

The process to develop and publish an API standard such as RP 1171, is accredited by the American National Standards Institute (ANSI). This oversight helps ensure that these documents are developed, reviewed and approved following a rigorous and well-defined process. This process must be open and balanced, and as such, the federal and state regulators, academia, experts from industry, and others from the public with an interest or expertise in the subject matter are brought together to develop the content of these documents.

Once the document is complete, it is available for public comment. Each comment must be considered and addressed appropriately. Finally, ANSI accreditation requires that a representative group of affected stakeholders must review and approve the document. ANSI also requires as part of its accreditation process that API regularly review each document with the stakeholders to help ensure it remains up to date and incorporates the latest information.