

GAO Highlights

Highlights of [GAO-20-167](#), a report to congressional requesters

Why GAO Did This Study

About 400 natural gas storage sites are important to the U.S. natural gas system, providing about 30 percent of the nation's energy. During a 2015 leak at a storage site near Los Angeles, about 8,000 families were temporarily relocated due to symptoms such as migraines, nausea, and respiratory problems. The leak raised concerns about health and safety risks from other storage sites. In 2017, GAO recommended that PHMSA take actions, including using baseline data to develop performance goals for its natural gas storage program.

GAO was asked to review the health and environmental effects of activities at natural gas storage sites. This report, among other objectives, (1) assesses the extent to which PHMSA has developed its natural gas storage inspection program and (2) describes what is known about the potential health effects from chemicals in stored natural gas. GAO reviewed available documents about natural gas storage incidents from 2000 through 2018; compared PHMSA research, goals, and plans against leading planning practices; visited sites representing the three types of storage sites; and interviewed agency officials.

What GAO Recommends

GAO is making two recommendations, including that PHMSA should analyze factors affecting states' willingness to partner with PHMSA and analyze its workforce needs on an ongoing basis. The agency concurred with the recommendations.

View [GAO-20-167](#). For more information, contact Alfredo Gómez at (202) 512-3841 or GomezJ@gao.gov

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NATURAL GAS STORAGE

Actions Needed to Assess Inspection Workload and Progress toward Safety Outcomes

What GAO Found

In 2018, the U.S. Department of Transportation's Pipeline and Hazardous Materials Safety Administration (PHMSA) set a goal for its natural gas storage inspection program to inspect all approximately 400 natural gas storage sites within 5 years, according to agency officials. PHMSA expected that all 25 eligible states would help inspect sites, but only 10 states agreed to partner with the agency. As a result, the agency's inspection workload increased by almost 60 percent from when it set its goal, according to PHMSA data. Because of the increase in its inspection workload over its preliminary estimate, PHMSA does not have assurance that it has enough resources to meet its inspection goal. Furthermore, PHMSA has not used a workforce analysis to inform its budget requests. PHMSA officials said that the agency does not expect to have enough data until 2022 or 2023 to further inform analysis of its workforce. By analyzing factors affecting states' willingness to partner with PHMSA and its workforce needs on an ongoing basis, the agency would have better assurance that it has the staff it needs to meet its inspection goal.

PHMSA Inspectors Conducting a Visual Inspection at a Natural Gas Storage Site



Source: GAO. | GAO-20-167

Health effects have been reported related to chemicals that may be found in stored natural gas. Several federal agencies—including the Environmental Protection Agency and the Agency for Toxic Substances and Disease Registry—have documented potential health effects of chemicals that may be found in stored natural gas. In addition, some chemicals may be added to natural gas, such as sulfur odorants that give natural gas a distinct smell in case of leaks. The combination of such chemicals varies from one natural gas storage site to another, based on the attributes of that site such as its geologic type and the extent to which sulfur odorants are added to the natural gas before storage. Many of these chemicals have been linked to adverse health effects. However, research is limited on the health effects of exposure to stored natural gas in general and on the effects in particular from exposure to chemicals that may occur in natural gas storage leaks or be present at the storage sites. Reports linking health effects are available on specific chemicals but not in the context of natural gas storage, based on GAO's literature review.