

# GAO Highlights

Highlights of [GAO-19-449](#), a report to congressional committees

## Why GAO Did This Study

NNSA is responsible for the management and security of the U.S. nuclear stockpile. NNSA has ongoing and planned efforts to modernize nearly all of the weapons in the stockpile, which require new explosive components. The production of some key explosives ceased in the early 1990s, and much of the infrastructure supporting this work is aging, making it expensive and difficult to maintain.

The Senate Report accompanying a bill for the National Defense Authorization Act for Fiscal Year 2018 included a provision for GAO to review NNSA's high explosive capabilities specific to nuclear weapons. This report examines (1) explosives activities that NNSA and its sites conduct and how NNSA manages them; (2) challenges NNSA officials and contractor representatives identified in conducting these activities and the extent to which NNSA has taken actions to address them; and (3) the extent to which NNSA's strategic plan for explosives activities describes further actions, if any, to address the challenges identified and follows leading practices for strategic planning. GAO reviewed NNSA documents related to explosives activities, including its strategic plan; compared the plan with leading practices; and interviewed NNSA officials and site representatives.

## What GAO Recommends

GAO is making three recommendations, including that NNSA, as it revises its strategic plan for explosives activities, include fully developed elements of an effective strategic plan. NNSA agreed with GAO's recommendations.

View [GAO-19-449](#). For more information, contact Allison Bawden at (202) 512-3841 or [bawdena@gao.gov](mailto:bawdena@gao.gov).

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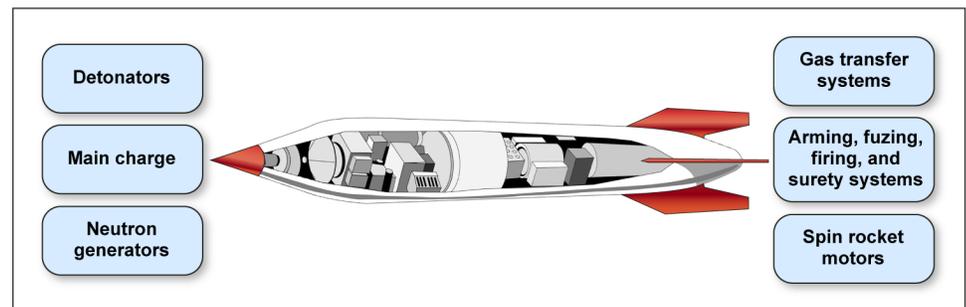
## NUCLEAR WEAPONS

### Additional Actions Could Help Improve Management of Activities Involving Explosive Materials

## What GAO Found

Five National Nuclear Security Administration (NNSA) contractor-operated sites conduct activities to design and produce explosive materials. There are about 100 different nuclear weapon components that contain explosive materials (see figure). Each site assumes primary responsibility for certain activities, but most activities require collaboration by multiple sites, according to NNSA officials and contractor representatives. In 2018, NNSA began adopting a centralized approach to managing these activities and coordinating them across its sites.

#### Key Explosive-Containing Components in a Generic Nuclear Weapon



Source: GAO analysis of National Nuclear Security Administration and Department of Energy documents. | GAO-19-449

Notes: Symbols do not show actual designs. Detonators enable components to function. Main charges compress the nuclear core, or pit, creating a nuclear reaction. Neutron generators facilitate the reaction, which can be enhanced by gas transfer systems that inject gases into the pit. Arming, fuzing, firing, and surety systems ensure that weapons will operate safely, securely, and reliably and only when authorized. Spin rocket motors perform an arming function in nuclear bombs.

NNSA officials and contractor representatives identified several challenges related to explosives activities, such as the agency's dwindling supply of explosive materials, aging and deteriorating infrastructure, and difficulty recruiting and training qualified staff. For example, only a single container of one specialized material remains. NNSA officials and contractor representatives indicated that the agency is taking some actions to address these challenges, such as working to replenish the supply of dwindling, highly specialized materials.

NNSA's strategic plan for explosives activities addresses some of the challenges agency officials and contractor representatives have identified, and NNSA followed several key leading practices in developing its strategic plan. However, some of the plan's elements have not been fully developed consistent with selected leading practices. For instance, the plan does not include a fully developed mission statement, and some performance goals are not quantifiable. NNSA officials stated that they are aware of the strategic plan's limitations and that they released it quickly to ensure that the explosives community could use it as soon as possible. NNSA officials said that they intend to revise the strategic plan in the next year or so. As NNSA revises its strategic plan, by including fully developed elements of an effective strategic plan, NNSA would help make the strategic plan more useful in measuring goal achievement and assessing accountability.