

Why GAO Did This Study

DOE participates in the annual process to assess the safety and reliability of the U.S. nuclear stockpile, which is now made up largely of weapons that are beyond their original design lifetimes. In 2007, faced with a mounting backlog of required tests, DOE's NNSA announced plans to use its Enhanced Surveillance Program for a more cost-effective surveillance approach under its 2007 Surveillance Transformation initiative. Under this initiative, predictive models were to assess the impact of aging on weapons in the stockpile without having to dismantle them as the agency has done in the past.

The Senate Report accompanying the National Defense Authorization Act for Fiscal Year 2015 included a provision that GAO review the status of the Enhanced Surveillance Program. This report assesses the extent to which NNSA implemented the vision for the Enhanced Surveillance Program from its 2007 initiative and developed a long-term strategy for the program. GAO reviewed NNSA plans and budget and other documents; interviewed agency officials; and discussed surveillance issues with members of a group of nationally known scientists who advise the government and who reviewed the program in September 2013.

What GAO Recommends

GAO recommends that the NNSA Administrator develop a long-term strategy for the Enhanced Surveillance Program that incorporates leading practices. NNSA concurred with GAO's recommendation and estimated completion of a long-term strategy by June 2017.

View [GAO-16-549](#). For more information, contact David Trimble at (202) 512-3841 or trimbled@gao.gov.

NUCLEAR WEAPONS

NNSA Should Evaluate the Role of the Enhanced Surveillance Program in Assessing the Condition of the U.S. Nuclear Stockpile

What GAO Found

The Department of Energy's (DOE) National Nuclear Security Administration (NNSA) did not fully implement the Enhanced Surveillance Program as envisioned in the agency's 2007 Surveillance Transformation Project (2007 initiative) and has not developed a long-term strategy for the program. Surveillance is the process of inspecting a weapon through various tests of the weapon as a whole, the weapon's components, and the weapon's materials to determine whether they are meeting performance expectations, through dismantling the weapon or through the use of diagnostic tools. As called for in its 2007 initiative, NNSA took steps to improve the management of the overall surveillance program, which primarily tests dismantled weapons and their components, but the agency did not increase the role of the Enhanced Surveillance Program, as envisioned. The program develops computational models to predict the impact of stockpile aging; identifies aging signs; and develops diagnostic tools. Under the 2007 initiative, NNSA was to conduct more Enhanced Surveillance Program evaluations using computer models to predict the impacts of aging on specific weapon components—especially nonnuclear components and materials—and to assess the validity of more diagnostic tools. Instead of expanding the program's role, NNSA reduced program funding by more than 50 percent from fiscal year 2007 to fiscal year 2015. NNSA also delayed some key activities and reduced the program's scope during this time. For example, NNSA did not complete its proposed evaluations of the impact of aging on nonnuclear components and materials. These evaluations, originally estimated to be completed by 2012, were dropped as program goals in fiscal year 2016, according to NNSA officials and contractor representatives.

In fiscal year 2016, NNSA broadly refocused the Enhanced Surveillance Program on multiple nuclear weapon life-extension efforts and supporting activities but has not developed a corresponding long-term strategy for the program. Instead, program officials have focused on developing general long-term goals and managing the program on a year-to-year basis under reduced funding levels to maintain key stockpile assessment capabilities. These general goals, however, do not provide measurable outcomes or encompass the entirety of the program. In addition, as GAO's previous work has shown, managing longer term work, such as multiyear technology development projects, on an annual basis makes it difficult for Congress and other decision makers to understand up front what they are funding and what benefits they can expect. As a result, these projects may receive a lower priority and may not be consistently funded. GAO's body of work has identified a number of leading practices in federal strategic planning that include defining strategic goals, defining strategies and resources for achieving these goals, and developing and using performance measures to track progress in achieving these goals and to inform management decision making. A new strategy for the Enhanced Surveillance Program that incorporates outcome-oriented strategic goals, addresses management challenges and identifies resources needed to achieve these goals, and develops and uses performance measures to track progress in achieving goals would allow the agency to better inform long-term planning and management decision making for the program as well as help ensure that it complements NNSA's other efforts to assess the nuclear weapons stockpile.