

Why GAO Did This Study

In April 2009, President Obama announced an initiative to secure all vulnerable nuclear materials—such as those that could be stolen by terrorists and used to construct a nuclear device—within 4 years. DOE is primarily responsible for activities under this initiative, but the Nuclear Regulatory Commission (NRC), the Departments of Defense (DOD) and State, and the National Security Council (NSC) also have roles. GAO was asked to examine actions taken under this initiative.

This report (1) assesses the extent to which DOE achieved its goals for four key activities under the initiative and (2) examines DOE's goals going forward and assesses challenges that may limit its ability to secure additional vulnerable nuclear materials. GAO reviewed relevant documents and interviewed officials from DOE, NRC, DOD, and State, as well as discussed these issues with officials from NSC and selected foreign government agencies. This is a public version of a classified report GAO issued in August 2015.

What GAO Recommends

GAO continues to believe that DOE and other U.S. agencies should complete an inventory of U.S. plutonium at worldwide sites as GAO recommended in September 2011. In this report, GAO recommends that DOE complete its prioritization of nuclear materials at foreign locations. GAO also recommends that DOE and other agencies visit sites containing key quantities of U.S. nuclear materials that have not been visited in at least 5 years. DOE agreed with GAO's recommendations.

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NUCLEAR NONPROLIFERATION

DOE Made Progress to Secure Vulnerable Nuclear Materials Worldwide, but Opportunities Exist to Improve Its Efforts

What GAO Found

The Department of Energy (DOE) achieved goals for two of its four key activities under the President's 2009 initiative to secure all vulnerable nuclear materials within 4 years. Specifically, from April 2009 through December 2013, GAO's analysis of DOE's records found that DOE exceeded its goal for removing or disposing of 1,201 kilograms of highly enriched uranium (HEU) or plutonium by more than 400 kilograms, and it exceeded its goal of downblending (i.e., mixing HEU with either depleted or natural uranium, or low-enriched uranium (LEU), to produce a new product that has a lower concentration of uranium-235) 2,700 kilograms of HEU by an additional 2,200 kilograms. However, it missed its goal for providing physical protection upgrades at 43 buildings by 11 buildings and missed its goal of converting 34 foreign reactors to more proliferation-resistant LEU by 11 reactors. DOE officials said that political challenges, including access to key sites, and technical concerns such as delays in the development of LEU replacement fuels for certain high-performing nuclear reactors, complicated its efforts to achieve these goals.

DOE has developed new goals since the end of the 2009 initiative for efforts related to the initiative's four key activities. For example, DOE's goal is to remove or dispose of an additional 1,029 kilograms of fresh and spent HEU, as well as plutonium worldwide from 2014 to December 2019, and convert 27 foreign research reactors and medical isotope production facilities to LEU by the end of fiscal year 2019. However, GAO identified several challenges that may hamper future progress. For example, DOE and other U.S. agencies have not completed an inventory of U.S. plutonium overseas as GAO previously recommended in September 2011. DOE and the other agencies did not agree with this recommendation, citing such an effort was impractical and unwarranted. Without such an inventory, the U.S. government is not able to identify where vulnerable weapons-usable materials such as plutonium reside. In addition, DOE has neither completed a prioritization of nuclear materials, including recently identified U.S.-origin HEU, at foreign locations for return or disposition to identify the most vulnerable material stocks to focus efforts on, nor established a time frame for doing so. Another challenge GAO identified is that DOE and other agencies have not visited key sites to determine whether U.S. nuclear material on-site is protected according to international physical security guidelines. Specifically, GAO identified 11 key sites that hold more than 3,500 kilograms of U.S.-origin HEU that DOE and other agencies have not visited in more than 20 years to determine whether they are protected according to international physical security guidelines. DOE has taken steps to develop a methodology for selecting and prioritizing physical protection visits but has not yet provided GAO with a time frame for prioritizing and conducting such visits. Without an assessment of the physical security conditions of U.S.-origin nuclear materials at sites containing key quantities of such material, it may be difficult to ensure that such materials are being adequately protected in accordance with international physical security guidelines, and that DOE and U.S. agencies are removing or disposing of the most vulnerable nuclear materials.