

Why GAO Did This Study

DOE carries out many of the nation's most critical missions, including stewardship of the nation's nuclear weapons stockpile and the environmental remediation of radioactive and hazardous legacy waste left over from the Cold War. DOE uses a system of regulations and internal directives that lay out requirements and guidance for ensuring the safety of staff and contractors, the public, and the environment. Over the past 10 years, GAO and others have repeatedly made recommendations for DOE to improve safety performance. In March 2010, DOE announced a reform effort to revise safety-related directives to increase productivity and reduce costs while maintaining safety.

This report examines (1) how DOE revised safety directives under its reform effort, (2) the costs of the reform effort and the benefits DOE hoped to achieve, and (3) the extent to which its reform effort addresses safety concerns GAO and others have identified. GAO reviewed relevant DOE reform effort documents, visited selected DOE sites to interview site office and contractor officials, and analyzed past GAO and other reports on DOE's safety problems.

What GAO Recommends

GAO recommends that DOE analyze the costs and benefits of its safety reform effort and identify how the effort will help address safety concerns. DOE agreed with the recommendations but commented that it had significant concerns about the accuracy of the report's findings and conclusions. GAO stands by its findings and conclusions for the reasons discussed in the report.

To view the full product, click on [GAO-12-347](#). For more information, contact Gene Aloise at (202) 512-3841 or aloisee@gao.gov.

NUCLEAR SAFETY

DOE Needs to Determine the Costs and Benefits of Its Safety Reform Effort

What GAO Found

Under its safety reform effort, the Department of Energy (DOE) reduced the number of safety directives by eliminating or combining requirements it determined were unclear, duplicative, or too prescriptive and by encouraging the use of industry standards. DOE reduced the number of its safety directives from 80 to 42, and for some of the directives DOE retained, it made extensive revisions. For example, DOE deleted requirements from its quality assurance directive addressing a corrective action program because another safety directive adequately covered these requirements. DOE obtained comments on its proposed revisions from DOE and contractor staff and from the Defense Nuclear Facilities Safety Board (Safety Board).

The benefits of DOE's reform effort are not clear. DOE intended to enhance productivity and reduce costs while maintaining safety, but DOE did not determine how the original requirements contained in safety directives impaired productivity or added costs before undertaking the reform effort. Moreover, DOE did not assess whether the cost to implement the revised directives would exceed the benefits, but officials said they had launched an initial study to determine, among other things, the costs associated with implementing selected safety requirements. DOE also did not develop performance measures in order to assess how the reform effort will lead to improved productivity or lower costs while maintaining safety. Instead, DOE is measuring success by using output-oriented measures, such as the number of directives eliminated, and not outcome measures, such as specific productivity improvements or cost savings. In the absence of clear measures linking the reform effort to productivity and safety improvements, DOE is not well positioned to know that its reform effort will achieve the intended benefits.

DOE's reform effort did not fully address safety concerns GAO and others have identified in three key areas: (1) quality assurance, (2) safety culture, and (3) federal oversight. Regarding quality assurance, DOE strengthened its quality assurance directive by clarifying that contractors must follow specific industry quality assurance standards, but quality assurance problems persist. For example, DOE proposed a nearly \$250,000 fine against a contractor in July 2011 after identifying quality assurance problems in an incident where a worker punctured his hand with a sharp object contaminated with plutonium. With regard to safety culture, DOE revised its Integrated Safety Management directives to attempt to strengthen the safety culture at its sites, but DOE removed requirements for contractors to follow the directives because contractors already had to comply with safety management requirements in federal regulation. Safety Board officials raised concerns that the requirements in federal regulation are less detailed and, as a result, contractors may not implement safety practices as rigorously as if they were subject to the more specific requirements in DOE's directives. Finally, regarding federal oversight, DOE revised its approach to place greater emphasis on having its independent oversight staff review safety design documents before facilities are constructed, rather than after they are built. Other changes, however, such as requiring oversight staff to coordinate their assessment activities with DOE site office and contractor staff, raise concerns about the oversight staff's ability to provide a critical review of safety at DOE's sites that is independent from DOE site office and contractor staff.