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NUCLEAR AND WORKER SAFETY

Actions Needed to Determine the Effectiveness of Safety Improvement Efforts at NNSA's Weapons Laboratories

GAO Accountability · Integrity · Reliability

Highlights

Highlights of GAO-08-73, a report to congressional requesters

Why GAO Did This Study

Federal officials, Congress, and the public have long voiced concerns about safety at the nation's nuclear weapons laboratories: Lawrence Livermore, Los Alamos, and Sandia. The laboratories are overseen by the National Nuclear Security Administration (NNSA), while contractors carry out the majority of the work. A recent change to oversight policy would result in NNSA's relying more on contractors' own management controls, including those for assuring safety.

This report discusses (1) the recent history of safety problems at the laboratories and contributing factors, (2) steps taken to improve safety, and (3) challenges that remain to effective management and oversight of safety. To address these objectives, GAO reviewed almost 100 reports and investigations and interviewed key federal and laboratory officials.

What GAO Recommends

GAO recommends that NNSA strengthen management and oversight of laboratory safety by ensuring that safety improvement initiatives be carried out in a systematic manner, with effective performance measures based on outcomes, not process; retaining sufficient independent federal oversight; and reporting annually to Congress on progress toward making the weapons laboratories safer. In commenting on a draft of this report, NNSA generally agreed with the report and recommendations.

To view the full product, including the scope and methodology, click on GAO-08-73.
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What GAO Found

The nuclear weapons laboratories have experienced persistent safety problems, stemming largely from long-standing management weaknesses. Since 2000, nearly 60 serious accidents or near misses have occurred, including worker exposure to radiation, inhalation of toxic vapors, and electrical shocks. Although no one was killed, many of the accidents caused serious harm to workers or damage to facilities. Accidents and nuclear safety violations also contributed to the temporary shutdown of facilities at both Los Alamos and Lawrence Livermore in 2004 and 2005. Yet safety problems persist. GAO's review of nearly 100 reports issued since 2000 found that the contributing factors to these safety problems generally fall into three key areas: relatively lax laboratory attitudes toward safety procedures, laboratory inadequacies in identifying and addressing safety problems with appropriate corrective actions, and inadequate oversight by NNSA site offices.

NNSA and its contractors have been taking some steps to address safety weaknesses at the laboratories. Partly in response to continuing safety concerns, NNSA has begun taking steps to reinvigorate a key safety effort—integrated safety management—originally started in 1996. This initiative was intended to raise safety awareness and provide a formal process for employees to integrate safety into every work activity by identifying potential safety hazards and taking appropriate steps to mitigate these hazards. NNSA and its contractors have also begun taking steps to develop or improve systems for identifying and tracking safety problems and the corrective actions taken in response. Finally, NNSA has initiated efforts to strengthen federal oversight at the laboratories by improving hiring and training of federal site office personnel. NNSA has also taken steps to strengthen contractor accountability through new contract mechanisms. Many of these efforts are still under way, however, and their effect on safety performance is not clear.

NNSA faces two principal challenges in its continuing efforts to improve safety at the weapons laboratories. First, the agency has no way to determine the effectiveness of its safety improvement efforts, in part because those efforts rarely incorporate outcome-based performance measures. The department issued a directive in 2003 requiring use of a disciplined approach for managing improvement initiatives, often used by high-performing organizations, including results-oriented outcome measures and a system to evaluate the effectiveness of the initiative. Yet GAO found little indication that NNSA or its contractors have been managing safety improvement efforts using this approach. Second, in light of the long-standing safety problems at the laboratories, GAO and others have expressed concerns about the recent shift in NNSA's oversight approach to rely more heavily on contractors' own safety management controls. Continuing safety problems, coupled with the inability to clearly demonstrate progress in remedying weaknesses, make it unclear how this revised system will enable NNSA to maintain an appropriate level of oversight of safety performance at the weapons laboratories.