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NUCLEAR POWER

Analysis of Regional Differences and Improved Access to Information Could Strengthen NRC Oversight

GAO Highlights

Highlights of GAO-13-743, a report to congressional requesters

Why GAO Did This Study

The 2011 disaster at Japan's Fukushima Daiichi Nuclear Power Plant demonstrated that unexpected nuclear accidents with extreme consequences can occur and, thus, heightened concerns about NRC's ability to oversee the safety of U.S. commercial nuclear power reactors. NRC oversees safety through multiple processes, such as physically inspecting reactors and also responding to signs of declining performance (i.e., findings) or violations of its requirements.

GAO was asked to review NRC's oversight of the U.S. nuclear power industry. This report examines (1) how NRC implements its processes for overseeing the safety of commercial nuclear power reactors; (2) the extent to which NRC consistently identifies and resolves findings through these processes; and (3) NRC's methods for developing lessons learned to improve its oversight and challenges, if any, NRC faces in doing so. GAO reviewed NRC policies and guidance; visited five nuclear power plants located in multiple NRC regions; analyzed NRC data on findings, violations, licensee performance, and inspection hours; interviewed NRC officials and industry representatives; and observed demonstrations of NRC's database search tools.

What GAO Recommends

GAO recommends, among other things, that NRC analyze the causes of differences in identifying and resolving findings across regional offices and address these differences, and that it improve its database search tools. NRC agreed with GAO's recommendations.

View GAO-13-743. For more information, contact Frank Rusco at (202) 512-3841 or ruscof@gao.gov.

What GAO Found

The Nuclear Regulatory Commission (NRC) relies on its staff's professional judgment in implementing its processes for overseeing the safety of U.S. commercial nuclear power reactors. In implementing this oversight, NRC allocates specific roles and responsibilities to resident inspectors assigned to each plant, regional officials at one of four regional offices responsible for most oversight activities, headquarters officials, and the nuclear power industry. NRC also builds into its processes incentives for plant managers to identify concerns about reactor safety, report those concerns to NRC, and take prompt actions to correct them. NRC's processes for identifying and assessing findings and violations are based on prescribed agency procedures and include several points where NRC staff must exercise their professional judgment, such as determining whether issues of concern identified during physical inspections constitute findings or violations and the risk significance of any findings or the severity of any violations, among other things.

NRC is aware of differences across regional offices in identifying and resolving findings that result from physical inspections. GAO's analysis of NRC's data indicated that the number of escalated findings had fewer differences across regions than nonescalated findings, which are lower-risk findings and less severe violations. According to NRC officials, several factors, such as the hours spent on inspections, may explain the differences in nonescalated findings. However, GAO found that the regional office with the fewest reactors and the fewest inspection hours had the most nonescalated findings. NRC officials and industry representatives have raised concerns that the differences may also be due to differences in how NRC staff identify and resolve findings. NRC has taken some steps to examine the consistency of its oversight. For example, in 2009, the four regional offices implemented an initiative to explore how the regional offices identify and assess inspection findings. However, NRC has not conducted a comprehensive analysis of the causes of the differences in the number of nonescalated findings across regions. Under federal standards for internal control, managers are to compare actual performance with planned or expected results throughout the organization and analyze significant differences. Without such an analysis, NRC does not know whether its regional offices are applying regulations and guidance consistently.

NRC has both formal and informal methods for developing lessons learned to improve its oversight. Formal methods include agencywide programs, annual and biennial assessments, and special initiatives. Informal methods include reaching out to peers and technical experts across the agency and accessing various agency databases. Although NRC guidance directs inspectors to use information in agency databases on past experiences to plan and conduct inspection activities, inspectors face challenges accessing this information, which may limit their ability to use it. For example, several NRC inspectors reported contacting other inspectors informally because NRC's database search tools contain limited instructions and do not ensure thorough results. Without better search tools, inspectors may overly rely on information available through informal channels.