

Why GAO Did This Study

On March 11, 2011, a tsunami severely damaged the Fukushima Daiichi nuclear power plant in Japan and led to the largest release of radiation since the 1986 Chernobyl disaster. Japanese authorities evacuated citizens within 19 miles of the plant. GAO was asked to examine issues related to emergency preparedness at nuclear power plants. This report examines (1) federal, licensees', and local and state authorities' responsibilities in radiological emergency preparedness, (2) the activities NRC and FEMA take to oversee licensee and local and state radiological emergency preparedness, and (3) NRC and FEMA requirements for informing the public on preparedness and NRC's understanding of public awareness. GAO reviewed laws, regulations, and guidance; examined emergency plans from licensees and local and state authorities; visited four nuclear power plants; and interviewed federal, local and state, and industry officials.

What GAO Recommends

To better inform radiological emergency preparedness efforts, GAO recommends that NRC obtain information on public awareness and likely public response outside the 10-mile zone, and incorporate insights into guidance, as appropriate. NRC generally disagreed with GAO's finding, stating that its research shows public response outside the zone would generally have no significant impact on evacuations. GAO continues to believe that its recommendation could improve radiological emergency preparedness efforts and is consistent with NRC guidance.

View [GAO-13-243](#). For more information, contact Frank Rusco at (202) 512-3841 or ruscof@gao.gov or Stephen Caldwell at (202) 512-9610 or caldwells@gao.gov

EMERGENCY PREPAREDNESS

NRC Needs to Better Understand Likely Public Response to Radiological Incidents at Nuclear Power Plants

What GAO Found

The U.S. Nuclear Regulatory Commission (NRC) and the Federal Emergency Management Agency (FEMA) are collectively responsible for providing radiological emergency preparedness oversight and guidance to commercial nuclear power plant licensees and local and state authorities around the plants. In general, NRC is responsible for overseeing licensees' emergency preparedness at the plant (on-site), and FEMA is responsible for overseeing preparedness by local and state authorities around the plant (off-site). NRC and FEMA have also established a 10-mile emergency planning zone around nuclear power plants. Licensees are responsible for managing on-site radiological emergency preparedness and developing and maintaining plans that define activities that the nuclear power plant must take to prepare for and respond to a potential incident at the plant. Participating local and state authorities within the 10-mile zone must develop protective actions for responding to a radiological incident, including plans for evacuations and sheltering in place. A recent NRC task force considered the adequacy of the zone size and concluded that no change was currently needed but will be re-evaluated as part of its lessons learned efforts for the Fukushima incident.

NRC and FEMA conduct activities to ensure that licensees and local and state authorities have adequate plans and capabilities to respond to a radiological incident. For example, NRC and FEMA review emergency plans developed by licensees and local and state authorities to ensure that planning standards are met. In addition, NRC and FEMA observe exercises for each plant that licensees and local and state authorities conduct every 2 years to demonstrate their ability to respond to an incident. NRC also requires licensees to develop estimates of how long it would take for those inside the 10-mile zone to evacuate under various conditions. Licensees are to provide these evacuation time estimates to local and state authorities to use when planning protective action strategies.

NRC and FEMA require licensees and local and state authorities, respectively, to provide information annually on radiation and protective actions for the public only inside the 10-mile zone. Those in the 10-mile zone have been shown to be generally well informed about these emergency preparedness procedures and are likely to follow directions from local and state authorities in the event of a radiological emergency. In contrast, the agencies do not require similar information to be provided to the public outside of the 10-mile zone and have not studied public awareness in this area. Therefore, it is unknown to what extent the public in these areas is aware of these emergency preparedness procedures, and how they would respond in the event of a radiological emergency. Without better information on the public's awareness and potential response in areas outside the 10-mile zone, NRC may not be providing the best planning guidance to licensees and state and local authorities.