

GAO Highlights

Highlights of [GAO-13-493](#), a report to congressional requesters

Why GAO Did This Study

Many U.S. commercial nuclear power reactors are reaching the end of their initial 40-year operating period. To continue operating, their owners must renew their licenses with NRC, the independent federal agency responsible for licensing and regulating nuclear reactors. NRC evaluates license renewal applications under two parallel reviews for safety and potential environmental impacts. NRC's license renewal process has received increasing public scrutiny due, in part, to the 2011 disaster at Japan's Fukushima Daiichi nuclear plant.

GAO was asked to review NRC's license renewal process for commercial nuclear power reactors. This report examines (1) the scope of the license renewal process, (2) the extent to which NRC updates its safety and environmental review guidance, (3) the extent to which NRC follows its documented license renewal procedures, and (4) knowledgeable stakeholders' views on the strengths and weaknesses in the license renewal process and any suggestions for improvements. GAO reviewed documents; visited two nuclear power plants selected based on characteristics such as having gone through the license renewal process; assessed the consistency of NRC reviews with documented procedures; and interviewed NRC officials and stakeholders from industry and public interest groups. GAO did not evaluate the adequacy or substance of NRC reviews or the quality of the agency's license renewal procedures.

GAO is not making recommendations. NRC neither agreed nor disagreed with GAO's findings.

View [GAO-13-493](#). For more information, contact Frank Rusco at (202) 512-3841 or ruscof@gao.gov.

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NUCLEAR REACTOR LICENSE RENEWAL

NRC Generally Follows Documented Procedures, but Its Revisions to Environmental Review Guidance Have Not Been Timely

What GAO Found

The scope of the Nuclear Regulatory Commission's (NRC) license renewal process focuses on managing the effects of aging on a reactor and its associated systems, structures, and components (i.e. safety) and assessing certain potential environmental impacts of extending a reactor's operating-life. As a result, reviews done as part of this process are not required to address as many topics as reviews for initial licensing, which include security and emergency planning.

NRC has regularly updated the safety review guidance it uses in the license renewal process but has not revised most of its environmental review regulations and guidance since they were first issued. NRC has revised its safety review guidance twice—in 2005 and 2010—and has issued interim updates for selected safety issues between those revisions. In contrast, NRC has not revised most of its environmental review regulations and guidance since they were first issued starting in 1996. NRC regulations state the agency's goal is to review its environmental findings every 10 years and update its license renewal regulations and guidance, if necessary. Consistent with this goal, NRC initiated the revision process in 2003. In December 2012, the NRC Commissioners approved draft regulations, but they directed agency staff to make additional changes. As of March 2013, NRC staff were working on these changes. According to NRC officials, reasons for the lengthy revision process include limited staff resources and competing demands on those resources as well as an unusually large number of technical issues needing evaluation. NRC requires applicants and expects agency staff to consider new and significant environmental information in the license renewal process, but its use of regulations and guidance originally issued 17 years ago has created the impression among some that the agency is using outdated information and has caused uncertainty for some license renewal applicants about what guidance will be used to evaluate their application.

NRC generally followed its procedures when reviewing selected safety and environmental elements in eight license renewal applications GAO examined. NRC's safety reviews were generally consistent with the agency's procedures for evaluating both an applicant's identification of components within the scope of the license renewal process and proposed buried piping and tanks inspection and fire protection programs for aging management. NRC's environmental reviews were also generally consistent with agency procedures for evaluating (1) new and significant information for two generic environmental issues; (2) applicants' assessments of two site-specific environmental issues; and (3) applicants' analyses of alternatives for mitigating severe reactor accidents.

Knowledgeable stakeholders interviewed by GAO identified various perceived strengths and weaknesses and potential improvements to the license renewal process. Stakeholders most often identified NRC staff's technical knowledge and the thoroughness of the agency's reviews as perceived strengths of the process. Stakeholders also identified a range of perceived weaknesses in the license renewal process, including claims that its scope is too narrow and that its public hearing process is flawed and inhibits meaningful public participation. Accordingly, some stakeholders suggested potential changes to improve the license renewal process, including broadening the scope of NRC's reviews and modifying aspects of the public hearing process.