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NUCLEAR REGULATORY COMMISSION

NRC Needs to Improve Its Cost Estimates by Incorporating More Best Practices

GAO Highlights

Highlights of GAO-15-98, a report to congressional requesters

Why GAO Did This Study

The March 2011 accident at Japan's Fukushima Daiichi nuclear power plant resulted in a release of radioactive material. NRC considered several new requirements for U.S. plants based on lessons learned from Fukushima, such as the installation of a filtered venting system. Nuclear industry stakeholders raised concerns that NRC's cost estimate for filtered venting systems did not reflect accurate costs of implementation.

GAO was asked to review NRC's cost estimating procedures. This report examines (1) the extent to which NRC's cost estimating procedures support the development of reliable cost estimates and (2) the extent to which NRC staff's 2012 cost estimate for proposed filtered venting systems is reliable. GAO compared both NRC's cost estimating procedures and the 2012 cost estimate to four characteristics of reliable cost estimates: comprehensive, well-documented, accurate, and credible. These characteristics relate to specific best practices identified in GAO's Cost Guide. GAO excluded some best practices that were not relevant to NRC's role as an independent regulator.

What GAO Recommends

GAO recommends that NRC align its cost estimating procedures with relevant cost estimating best practices identified in the GAO Cost Guide and ensure that future cost estimates are prepared in accordance with relevant cost estimating best practices. NRC generally agreed with GAO's recommendation.

View GAO-15-98. For more information, contact Frank Rusco at 202-512-3841 or ruscof@gao.gov.

What GAO Found

The Nuclear Regulatory Commission's (NRC) overall cost estimating procedures incorporate some best practice characteristics identified in the *GAO Cost Estimating and Assessment Guide* (Cost Guide), but not others, and do not adequately support the creation of reliable cost estimates (see table). For example, while the procedures include the best practice of developing an estimating plan by outlining the processes for selecting alternatives and performing a cost-benefit analysis, the procedures do not require the cost estimating methods to be identified. In addition, while the NRC's procedures include guidance for conducting sensitivity analyses, which examine how the cost estimate is affected by a change in a cost driver's value, the procedures do not call for an independent cost estimate to be performed. An independent cost estimate can provide decision makers with an objective and unbiased assessment of whether the estimate can be achieved. NRC staff said they are currently updating their cost estimating procedures as part of a multiyear effort.

NRC staff's 2012 cost estimate for proposed filtered venting systems is not reliable because it did not sufficiently follow related best practices to fully or substantially meet any of the four characteristics of a reliable cost estimate. For example, while the estimate included life cycle costs of filtered venting systems, covering a 25-year license term, the estimate did not include documentation explaining step by step how the estimate was developed. In addition, the estimate did not incorporate a risk and uncertainty analysis to assess variability in estimates due to factors such as a lack of knowledge about the future. Without a reliable cost estimate, decision makers do not have adequate cost information to make decisions on filtered venting systems.

Extent NRC's Overall Cost Estimating Procedures and 2012 Cost Estimate for Proposed Filtered Venting Systems Met Best Practices

Best practice characteristic	NRC's overall cost estimating procedures	2012 cost estimate for proposed filtered venting system
Comprehensive	◑	◑
Well-documented	◕	◑
Accurate	◔	◑
Credible	◑	○

Source: GAO analysis of NRC data. | GAO-15-98

●= Fully meets ◕=Substantially meets ◑=Partially meets ◔=Minimally meets ○= Does not meet

Note: A characteristic is not met when none of the underlying best practices are satisfied; minimally met when a small portion of the underlying best practices are satisfied; partially met when about half of the underlying best practices are satisfied; substantially met when a large portion of the underlying best practices are satisfied; and fully met when the underlying best practices are completely satisfied.