



Highlights of [GAO-10-199](#), a report to the Subcommittee on Energy and Water Development, Committee on Appropriations, House of Representatives

Why GAO Did This Study

The Department of Energy (DOE) spends billions of dollars on construction projects—those that maintain nuclear weapons, conduct research, and process nuclear waste—and projects that clean up nuclear and hazardous wastes at DOE's sites; these projects are largely executed by contractors. DOE has struggled to keep these projects within cost and schedule estimates. GAO was asked to assess (1) DOE's cost-estimating policies and guidance, (2) the extent to which selected projects' cost estimates reflect best practices compiled in GAO's cost-estimating guide, and (3) DOE's recent actions to improve cost estimating. GAO reviewed relevant documents, including support for cost estimates at three major construction projects—those costing \$750 million or more—and one environmental cleanup project, and interviewed DOE officials.

What GAO Recommends

GAO is making six recommendations to improve DOE's cost estimating. Among other things, GAO recommends that DOE (1) ensure its new policy and guide fully reflect cost-estimating best practices, in part by requiring independent cost estimates (ICE) for its major projects, (2) create a centralized, independent cost-estimating capability within the department, and (3) conduct ICEs for those major projects that have not received one. In commenting on a draft of this report, DOE generally agreed with GAO's recommendations.

View [GAO-10-199](#) or [key components](#). For more information, contact Gene Aloise at (202) 512-3841, or aloisee@gao.gov.

DEPARTMENT OF ENERGY

Actions Needed to Develop High-Quality Cost Estimates for Construction and Environmental Cleanup Projects

What GAO Found

DOE has not had a policy that establishes standards for cost estimating in place for over a decade, and its guidance is outdated and incomplete, making it difficult for the department to oversee the development of high-quality cost estimates by its contractors. DOE's only cost-estimating direction resides in its project management policy that does not indicate how cost estimates should be developed. In addition, DOE's outdated cost-estimating guide assigns responsibilities to offices that no longer exist and does not fully include most of the best practices from government and industry in GAO's cost-estimating guide. Lacking a documented policy and associated guidance that contain best practices, DOE does not have appropriate internal controls in place that would allow its project managers to provide contractors a standard method for building high-quality cost estimates. DOE has drafted a new cost-estimating policy and guide but the department expects to miss its deadline for issuing them by more than a year.

The cost estimates for the four projects we reviewed did not exemplify the four characteristics of high-quality cost estimates as established by best practices—credible, well-documented, accurate, and comprehensive. The four estimates lacked credibility because DOE did not sufficiently identify the level of confidence associated with the estimates, adequately examine the effects of changing key assumptions on the estimates, or cross-check the estimates with an ICE—an estimate created by an entity with no vested interest in the project. In addition, the four estimates were only partially documented, in part because the projects did not ensure that the contractors thoroughly documented the details of how they developed the estimates. Moreover, all four estimates lacked accuracy because they were not based on a reliable assessment of costs most likely to be incurred. Finally, none of the four estimates were comprehensive; for example, three of the estimates did not include costs associated with the full life cycle of the projects, and the estimating teams' expertise and compositions did not reflect best practices.

Although DOE has undertaken some actions to improve cost estimating, the department may undercut their impact by limiting the role and effectiveness of its new Office of Cost Analysis (OCA). In contrast to best practices and DOE's stated mission for OCA, DOE's draft cost-estimating policy does not require OCA to conduct ICEs at project milestones unless requested by senior management. As a result, major projects are likely to continue to be approved without this independent check, limiting their credibility. Further, locating OCA apart from the existing DOE office that performs a similar but broader review function may lead to duplication of efforts and does not reflect best practices. That is, centralizing a cost-estimating team, rather than maintaining separate teams, facilitates sharing resources and using standard processes. Finally, placing OCA under the office that manages DOE's finances may limit OCA's independence and its access to relevantly skilled staff. It is also inconsistent with Congress' recent action to establish an independent cost-estimating office at the Department of Defense, whose project management responsibilities are similar to those of DOE.