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Special Report

Fast Flux Test Reactor: Re-evaluation of the Department's Approach to Deactivation, Decontamination, and Decommissioning

DOE/IG-0683

March 2005

Department of Energy

Washington, DC 20585

March 29, 2005

MEMORANDUM FOR THE SECRETARY

FROM: Gregory H. Friedman
Inspector General

SUBJECT: INFORMATION: Special Report on "Fast Flux Test Reactor: Re-evaluation of the Department's Approach to Deactivation, Decontamination, and Decommissioning"

INTRODUCTION

In 2002, the Department decided to permanently shutdown the Hanford Site Fast Flux Test Facility (FFTF). Since the FFTF was the last sodium-cooled reactor remaining in the United States, the decision involved significant debate within and outside the Department and a series of reviews going back to the early 1990s. The shutdown, as directed by the Department, will encompass three activities -- deactivation, decontamination, and decommissioning.

The Department's site contractor, Fluor Hanford, Inc. (Fluor), was initially tasked with performing the deactivation work. At the time of our review, Fluor had completed the removal and storage of 305 of 376 fuel assemblies associated with the FFTF deactivation. In 2003, as a part of its overall program to accelerate clean-up work and reduce associated costs, the Department decided to change the focus of Fluor's contract and to award a separate single contract to a small business to complete deactivation. The small business contractor, under the new approach, was also to perform the additional steps necessary to decontaminate and decommission the FFTF. Consistent with this approach, a contract was awarded, in September 2004, to SEC Closure Alliance, LLC, (SCA) in the amount of $235 million.

Following the award of the new contract, the Government Accountability Office received a contract bid protest from another small business proposer. The Department subsequently halted the transition of the deactivation work from Fluor to SCA and, in January 2005, the Government Accountability Office sustained the protest. Our review examined the Department's strategy for deactivating, decontaminating, and decommissioning the FFTF given the recent challenges that have resulted from the contract protest.

CONCLUSIONS AND OBSERVATIONS

Given the transition delay, the Department has a unique opportunity to re-evaluate its closure plan for the FFTF. Changes to the project's operating environment have occurred and the Department's existing project plan and acquisition strategy may not be the most effective approach to shutting down the FFTF. Specifically, the final end state of the FFTF

remains uncertain; the Environmental Protection Agency and the State of Washington have questioned the priority of the decommissioning work on the facility; significant progress has been made on the deactivation work under the existing contractual arrangement, making the wisdom of transitioning to a new contractor problematic at this juncture; and, a number of key technical personnel have not transitioned to the new contractor as anticipated, raising obvious concerns about the skill mix of the prospective workforce.

Each of these issues, we believe, should be thoroughly examined as part of a comprehensive re-evaluation of the Department's future plans to deactivate, decontaminate, and decommission the FFTF.

End State Determination

The final end state of the FFTF is uncertain and changes to the planned end state could lead to increased costs. In the Department's Request for Proposals, it required bidders to price their proposals assuming an end state of entombment for FFTF. Entombing the reactor contemplates removing the reactor dome above ground, including the reactor vessel, equipment, and piping. However, the Department has not yet determined an approved, final end state for FFTF because it has not completed an environmental impact statement (National Environmental Policy Act (Policy Act)). In initial Policy Act public hearings, certain stakeholders expressed opposition to the entombment concept due to the proximity of the FFTF to the Columbia River. Department officials told us that the work necessary to entomb the reactor would also have to be completed even if the Policy Act process results in demolition being selected as the final end state. Accordingly, they believed it was appropriate to proceed with a contract that included a scope of work for future decommissioning of the FFTF before completing the Policy Act process. However, Department officials acknowledged to the Office of Inspector General that the alternative end state of completely demolishing and removing the reactor building would require a contract renegotiation. Department officials told us that their independent cost estimate showed that demolition could cost over $20 million more than the entombment approach. The Department expects to complete the environmental impact assessment by August 2005.

Deferment for Higher Priority Projects

The decommissioning of the FFTF may not represent the highest risk and environmental priority at Hanford. In January 2005, the U.S. Environmental Protection Agency (EPA) and the Washington State Department of Ecology (Ecology) requested that the Department consider deferring portions of the work to decommission the FFTF because of higher priority cleanup projects at Hanford. Specifically, EPA and Ecology supported completing the deactivation work of de-fueling, removal of liquid sodium, and other actions to place the reactor in a safe configuration. However, EPA and Ecology have asserted that the decommissioning of FFTF is not one of the greatest environmental risks at Hanford. These organizations have recommended that tight cleanup budgets be shifted to higher priority cleanup projects.

Progress Prior to Transition

Since 2003, when the Department decided to change contractors on the FFTF project, Fluor has made significant progress on the deactivation. Fluor now expects to complete deactivation within 18 months. The length of time the Department needs to resolve the bid protest is uncertain. Thus, transitioning to a new contractor to complete deactivation may be unnecessary and may ultimately affect the timely completion of the work.

Availability of Experienced Staff

Deactivation may be adversely affected because experienced Fluor employees are unlikely to transition to the new contractor as expected. SCA anticipated bringing Fluor employees into their workforce to complete the FFTF project. However, we found that key Fluor personnel who previously worked on deactivation had decided to leave the project rather than transfer to the new contractor. We noted that 17 individuals of the approximately 60 staff working on deactivation, including the project director, project controls manager, and several senior project staff, had recently taken positions elsewhere at Hanford and had not transitioned to the new contractor.

The shutdown of the FFTF is a complex matter requiring a multi-faceted decision making process to ascertain the best path forward. As part of this process, we believe that the issues discussed above should be thoroughly examined permitting the Department to implement a project plan and acquisition strategy that will ensure the health and safety of Hanford's workforce, and will ensure the prudent expenditure of taxpayer-provided resources.

cc: Deputy Secretary
Under Secretary for Energy, Science and Environment
Assistant Secretary for Environmental Management
Manager, Richland Operations Office
Team Leader, Audit Liaison Team, ME-100
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