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DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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99-0000734



March 25, 1999

The Honorable Ernest J. Moniz
Under Secretary of Energy
1000 Independence Avenue, SW
Washington, D.C. 20585-1000

Dear Dr. Moniz:

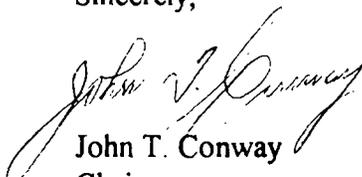
The Department of Energy (DOE) established the Spent Nuclear Fuel Project (SNFP) at the Hanford Site to remove deteriorating spent nuclear fuel from the K-Basins and place it into safe storage beginning in December 1997. The Defense Nuclear Facilities Safety Board (Board) considers the SNFP to be a necessary risk-reduction activity that needs to be expeditiously accomplished. The Board's concern regarding the significant project delays has been the subject of continuing interaction between the Board and DOE since early 1997.

On September 11, 1998, the Board transmitted a list of near-term schedule milestones for use in monitoring the project's performance in meeting schedule objectives. The project completed approximately 60 percent of these milestones early or on time, as discussed in more detail in the enclosed issue report. However, difficulties in resolving technical issues and managing procurement activities continue to result in missed or delayed milestones.

The Board recognizes that the DOE Richland Operations Office and the contractors have made improvements in developing and maintaining a resource-loaded and integrated schedule. However, continued schedule delays and management changes raise doubt as to whether timely completion of the SNFP can be ensured. The Board will continue to review the ability of the SNFP and DOE management to resolve technical issues and maintain the current schedule to remove spent fuel from the basins on an expedited basis.

If you have any questions on this matter, please do not hesitate to call me.

Sincerely,


John T. Conway
Chairman

c: Mr. Mark B. Whitaker, Jr.
Mr. James C. Hall

Enclosure

DEFENSE NUCLEAR FACILITIES SAFETY BOARD**Staff Issue Report**

February 12, 1999

MEMORANDUM FOR: G. W. Cunningham, Technical Director
J. K. Fortenberry, Deputy Technical Director

COPIES: Board Members

FROM: D. Grover

SUBJECT: Schedule Progress for the Hanford Spent Nuclear Fuel Project

The Defense Nuclear Facilities Safety Board (Board) issued a letter dated September 11, 1998, to the Department of Energy (DOE), transmitting a list of significant milestones to be used in reviewing the progress of the Spent Nuclear Fuel Project (SNFP) during a 6-month period. The SNFP is currently scheduled to begin removing spent fuel from the K-Basins by November 30, 2000. This memorandum documents the 6-month schedule review of the SNFP by the Board's staff.

The attached table lists the 17 milestones used to review the schedule progress of the SNFP. Of these 17 items, 10 were completed early or on time. These completed milestones represent activities across the project and demonstrate that the project has achieved considerable progress during the past 6 months in establishing responsible project management. The remaining 7 milestones illustrate that the project is still having difficulty in resolving technical issues. In addition, there has been a significant delay in the preparations for declaring readiness for the Integrated Safety Management System (ISMS) Phase II verification review. This is sufficient time to institute worker training and develop the safety culture necessary for successful ISMS implementation.

Since transmittal of the Board's September 11, 1998, letter, the project has developed a resource-loaded and integrated baseline schedule that includes contingency to provide a high degree of confidence in meeting schedule milestones. This schedule was used to negotiate the new Tri-Party Agreement and was approved in December 1998. Under this schedule, the date for the start of fuel removal is moved up by 1 month as compared with the previous schedule, which was used in developing the milestone list. However, the start of fuel removal from the K-East Basin and completion of fuel removal are both delayed by 4 months. On a positive note, the completion of sludge removal is accelerated by 5 months as the result of a new processing strategy for the K-East sludge. It may be noted that these dates represent a 4-year delay in removing fuel and a 56-month delay in removing sludge relative to the original dates in the Recommendation 94-1 Implementation Plan.

While the project has maintained control of the new schedule, it continues to experience schedule delays that are challenging the contingency built into the schedule. This is a concern as the project has not resolved outstanding technical issues related to the safety classification of equipment and selection of appropriate engineering standards for this equipment. These unresolved issues led to past delays with the multi-canister overpack procurement as well as present delays in the procurement of the cold vacuum drying process equipment, which is currently the critical-path activity. In addition, there are other concerns related to the management of the procurement process, including quality control and quality assurance problems associated with several procurements. Such problems were experienced most recently with regard to the Fuel Retrieval System process table, with undersized welds and dimensional tolerance making the table difficult to assemble.

The ongoing management changes within both the contractor and DOE are also of concern. The proposed removal of Duke Engineering and Services Hanford (DESH) as the major project subcontractor with corporate responsibility for project execution is resulting in continuing organizational changes to the project. DESH will now provide only personnel who will work directly under the direction of Flour Daniel Hanford, and will no longer be present as a corporate entity. This situation is coupled with major DOE-Richland organizational changes associated with the departure of the Operations Office Manager and Assistant Manager for Waste Management. These management changes raise concern about the SNFP's ability to find and retain qualified personnel capable of resolving existing and unforeseen technical and programmatic difficulties related to the project.

Attachment

Milestones for Progress Assessment Spent Nuclear Fuel Project: Hanford Status Date: February 11, 1999

No.	Milestone and Activity	Scheduled Date	Early or On-time	Actual Date
1.	Approve closure packages for:*			
2.	Aluminum hydroxide issue	8/31/98	✓	8/26/98
3.	Uranium oxidation rate issue	9/30/98		
3.	Multi-canister overpack (MCO) monitoring issue	9/30/98	✓	9/18/98
4.	Recommend resolution of 12 MCO design issues*	8/31/98	✓	8/31/98
5.	Department of Energy-Richland (DOE-RL) approve cold vacuum drying (CVD) Phase II Safety Analysis Report (SAR)	9/1/98		
6.	Complete CVD first article testing (proof of process)	9/18/98	✓	8/20/98
7.	DOE-RL approve final safety analysis document (SAD) for Fuel Retrieval System in K-W Basin	9/22/98	✓	9/2/98
8.	Start installation of Integrated Water Treatment System (IWTS) equipment in K-W Basin*	10/1/98		10/7/98
9.	Begin fabrication of Canister Storage Building (CSB) storage tubes*	10/1/98	✓	10/1/98
10.	Complete installation of queue tables in K-W Basin	10/21/98	✓	9/03/98
11.	Complete K-W fuel thermal gravimetric analysis (TGA) testing	11/4/98		1/29/99
12.	Submit MCO Topical Report to DOE-RL	11/5/98	✓	11/5/98
13.	Complete fabrication and delivery of first five MCOs (changed to three MCOs to be used for training)	12/2/98		
14.	Turnover of first CVD Building system to startup*	12/18/98	✓	12/18/98
15.	Complete turret installation in MCO Handling Machine (MHM) Crane*	1/19/99		
16.	Declare readiness for Integrated Safety Management System (ISMS) Phase II verification	2/1/99		
17.	Submit CSB Final SAR to DOE-RL	2/11/99	✓	2/11/99

Notes:

* Indicates items identified to the Board during its visit of August 5, 1998

Scheduled dates are from the High Probability Level III schedule, Rev. 5"H", of 06/09/98.