



## Department of Energy

Washington, DC 20585

NOV 21 1996

The Honorable John T. Conway  
 Chairman  
 Defense Nuclear Facilities Safety Board  
 625 Indiana Avenue, NW  
 Suite 700  
 Washington, DC 20004

RECEIVED

NOV 25 PM 3:08  
 DNF SAFETY BOARD

Dear Mr. Chairman:

Thank you for your letter of November 6, 1996, concerning issues identified by your staff regarding the operations at the Idaho National Engineering Laboratory (INEL) and the Savannah River Site (SRS) for the handling and storage of spent nuclear fuel. We share your concern that adequate provisions be in place to reduce even further the possibility of a spent nuclear fuel handling incident and to mitigate the potential impacts of such an occurrence on the health and safety of workers and the public. With respect to the two concerns identified at the INEL, we believe that further discussions between our staffs are necessary to clarify the INEL spent nuclear fuel handling practices and the Board staff's concerns before we can formally respond to these issues. To that end, my staff will be working with your staff to conduct a video conference on the subject in the near future. A detailed formal response will follow shortly after this conference.

The issues raised and our response concerning spent nuclear fuel handling and storage in the K- and L-Basins and the Receiving Basin for Offsite Fuels at the SRS were discussed with your staff on August 29, 1996, shortly after we learned of these issues. Enclosed is a summary response to address the issues raised in the trip report. Confirming our discussions with your staff on November 18, 1996, more detailed information concerning these issues will be provided at the same time we formally respond to the INEL concerns.

We appreciate receiving the Board's input on potential safety issues at our facilities, and if you have any questions on this matter, please contact me or have your staff contact John Ford at (301-903-3782).

Sincerely,

Alvin L. Alm  
 Assistant Secretary for  
 Environmental Management

Enclosure

cc: Mark Whitaker, S-3.1



ATTACHMENT  
RESPONSES TO SAVANNAH RIVER SITE COMMENTS

**1. There is no assurance that makeup water will be available after an accident. This would lead to an unsafe condition including risk to operators from exposure to very high radiation levels.**

As described in the Basis for Interim Operation for the L-Reactor Facility, July 1996, section 6.3.1.3, there is no credible scenario that requires an emergency makeup capability at flowrates greater than 1500 gpm, which is ten times greater than the flowrate expected from a cask drop. Leaks less than 1500 gpm would lower levels at a maximum of 8 in/hr, which would not result in radiation levels requiring facility evacuation for four hours, providing adequate time for evacuation. Even if water is lost, no fuel damage would occur.

DOE agrees that assurance should be provided that makeup water should be available in the event a leak in the disassembly basin occurred to further the goal of providing adequate personnel shielding. At present, DOE relies on a well water makeup line which has not been flow tested recently because such a test would adversely effect the quality of disassembly basin water. DOE will evaluate revising an existing abnormal response procedure to identify sources of makeup water (e.g., domestic water, river water, fire water, etc.) and the necessary logistics to ensure that water is available if existing systems and procedures to maintain disassembly basin water level do not provide sufficient makeup.

This evaluation will ensure that the required makeup water can be provided in a manner consistent with sound ALARA practices to minimize worker radiation exposure. Documentation of this evaluation will be provided to the DNFSB along with appropriate revision to abnormal response procedure(s) for the K- and L-Basins and RBOF.

**2. Corrosion is evident along the entire length of the K-Basin cask crane's wire rope and the fatigue life of basin cranes is not known.**

DOE believes that the condition of the crane's wire ropes is adequate to ensure safe continued rigging operations. Relative to the concern of surface corrosion, the inspection program has identified no pitting or corrosion damage to the wire ropes which would indicate a more extensive problem. This determination was made by assessing cables for loss of diameter and by visually inspecting the cable under load as it traveled over the lifting drum. The latter inspection showed that, as the cable opened when it ran over the drum and revealed inner fibers, that no discoloration was evident. Given the nature of the crane's service, some surface discoloration of these stainless steel cables would be expected. However, this observation assists in validating the diameter-loss inspection criteria that no core degradation is present. It should be noted that, when the cables are wiped clean, they are free of corrosive activity.

Relative to fatigue life, a dye-penetrant testing of the hooks is routinely performed after completion of a crane load test. Additionally, as part of the 85-ton crane modernization/upgrade program, the crane vendor (Whiting Corporation) is scheduled to perform a baseline inspection of the 85-ton crane. Life extension, component fatigue, spare availability, and potential up-grades will be evaluated under this assessment program.

Although the internal inspection as described above was only conducted on the L-area and K-area 85-ton cranes, the inspection program will be applied to the RBOF cranes as well.

Crane inspection program documents for the K- and L-Basins and RBOF will be provided to the DNFSB describing inspection requirements, frequency and criteria, load tests, dye-penetrant tests, etc. Documents describing the crane modernization/upgrade program and the scope of the scheduled baseline inspection program will also be provided.

Finally, it should be noted that the 85-ton crane has four independent wire rope hoist cables with two lengths of cable at each load block. Because the nominal strength of each cable is 69.4 tons, the static load capacity of the crane is 555 tons. A cask drop would require two wire rope failures.

### **3. A qualified rigger is not present during fuel cask lifts.**

At present, DOE believes that riggers trained and qualified to perform pre-engineered lifts, using procedures approved by a fully qualified rigger, are capable of safely conducting critical lifts and that utilization of such personnel meets the requirements of the site rigging and hoisting manual. DOE will evaluate WSRC's oversight program of rigging and hoisting implementation to ensure periodic verifications are performed by qualified riggers.

The results of this evaluation and the documentation of requirements for appropriate periodic verifications will be provided to the DNFSB.

### **4. There is no disposition for highly radioactive scrap metal located in the basins.**

DOE has recently improved methods for disposing of waste at SRS. These methods include a waste certification program which ensures that the characteristics of all wastes are identified so that they can be disposed of in the proper container and repository. DOE is developing the waste characterization strategy for each scrap metal waste stream.

A scrap removal campaign in RBOF is currently underway. Although scrap removal efforts are concentrated in RBOF, the waste characterization experience gained there will be used to ensure the successful removal and disposal of scrap in the other basins. The removal process for RBOF is scheduled for completion in 1997.