DEFENSE NUCLEAR FACILITIES SAFETY BOARD

June 17, 1995

MEMORANDUM FOR: G. W. Cunningham, Technical Director

COPIES: Board Members

FROM: Wayne L. Andrews, Jr.

SUBJECT: Readiness of EG&G's Mound Special Unload Operations

1. **Purpose:** This report documents a trip by Defense Nuclear Facilities Safety Board (Board) staff members Wayne Andrews, Steve Krahn, and Larry Zull on March 13-16, 1995, to observe a Department of Energy (DOE) Readiness Assessment (RA) of the Special Unload operation.

2. **Summary:**

   a. During the March 1995 readiness assessment, both the DOE RA team and the Board staff, providing oversight review of the RA, uncovered a number of deficiencies that indicated the contractor and DOE line managements were not ready to initiate Special Unload operations. Subsequently, the DOE RA team recommended that the Special Unload operations should not proceed until (1) the contractor develops a Corrective Action Plan to address the team's findings, (2) the contractor performs an operational readiness review (ORR) or an RA and, (3) DOE performs another independent ORR or RA. The more significant prestart findings noted involved Limiting Conditions for Operations (LCOs) violations resulting from failure to accomplish surveillance requirements, the training programs, and facility representative programs.

   b. The Board's staff noted issues similar to those the RA team had identified. In addition, items with respect to the safety authorization basis and the RA process are discussed further below.

3. **Background:** The Special Unload project consists of approximately 500 units of a specific design reservoir that have been removed from the active stockpile. The units will be unloaded at Mound. The tritium recovered from the units will be sent to the Savannah River Site and the reservoir components will be treated as classified waste. DOE is planning to conduct the Special Unload project over a two-year period beginning in mid-1995. This represents a change from intermittent unloading of a small number of units to a steady production unloading operation. Approximately 15 percent of the previously unloaded units have been breached (lost integrity), contaminating the belljar in which the units are unloaded.

4. Discussion:

a. RA Team Results.

(1) In conjunction with the DOE RA, four SW/R Building LCO surveillance requirement violations were identified. First, the facility ventilation system surveillance was being conducted on a monthly rather than weekly basis. Subsequently, weekly tests of the Uninterruptible Power Supply systems were found to be inadequate. Finally, it was discovered that the fire protection surveillance requirement for the wet alarm check valves was inadequate.

(2) Because of the numerous SW/R Building LCO noncompliances, surveillance requirements for the Technical Building (T-Building) were reviewed. It was previously planned to qualify work stations in the T-Building to do a significant number of the Special Unloads and conduct a separate readiness review for the T-Building. Six instances of T-Building noncompliances were identified ranging from inappropriate periodicity of checks for criticality alarms, smoke detector tests, fire suppression system tests, and nuclear criticality safety (NCS) training, to NCS audits and full-scale drills simply not being done.

(3) In addition to the above, many other discrepancies were noted by the RA team in its interim report. The RA team thus recommended that the Special Unload operations not proceed until the contractor develops and executes a corrective action plan and the contractor and DOE perform a readiness review.

b. Hazard Assessments.

(1) There appear to be other deficiencies that were not identified by the DOE RA. The SW/R Tritium Complex has a recently approved (August 1994) Facility Safety Analysis Report (FSAR). It does not reference any other documents that augment it to form the safety authorization basis and, yet, it does not adequately address the special alloy of interest during the Special Unload process.

(2) Two special safety studies, that describe the potential hazards associated with the alloy, were reviewed. The first was very specific to the Special Unload material, yet contained a very cursory, general discussion of the safety issues and did not touch upon some of the hazards. The second document was more complete, but was not consistent with the current way this particular procedure is being performed. Overall, the safety authorization basis for this procedure does not appear to be adequate because it does not clearly address all the hazards associated with the procedure.

c. Readiness Assessment Process.

(1) The composition of the DOE RA team was excellent; each functional area was addressed by a subject matter expert who had previous experience in performing RAs and ORRs. The team identified numerous valid discrepancies resulting in their conclusion that readiness was not achieved by line-management. EG&G Mound will be required to resolve the team's findings and subsequent contractor and DOE readiness reviews will be required prior to Special Unload operations.

(2) The DOE RA Plan of Action (POA) had some deficiencies. The POA did not include all of the information required by Dayton Area Office 5480.31, *Readiness Assessment Program and Procedures*. In addition, at least one of the RA prerequisites ("Plan developed for DOE Facility Representative coverage") had not been accomplished by the Miamisburg Area Office. Finally, the POA required the development of an Implementation Plan to guide the RA team's review. This plan did not exist for the duration of the RA.

5. **Future Staff Actions:** The staff plans to monitor future contractor and DOE readiness reviews for the Special Unload project at the Mound Plant and the subsequent unloading operation.