

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

March 20, 1998

TO: G. W. Cunningham, Technical Director

FROM: R. F. Warther, M.T. Sautman

SUBJ: RFETS Activity Report for Week Ending March 20, 1998

Building 779 Management Review. K-H completed its management review for B779 on Tuesday. Fifteen pre-start findings, twelve post-start findings and eleven good practices were noted. Some key pre-start findings that are unique to this D&D management review include:

- The B779 combustible control program does not address unique D&D fire hazards.
- Building 779 lacks an authorization basis and accident analysis for storage and staging of low level waste crates (wooden) in areas immediately outside and surrounding the building. This may constitute an unreviewed safety question.
- The project guidance provided to identify and respond to beryllium during conduct of operations is inadequate.

Detailed good practices, pre-start and post-start findings are included as Attachment 1. The pre-start findings are arranged within three broad categories of AB or ISM related findings, findings unique to D&D activities, and other findings.

Metal and oxide. The Site Reps attended a meeting between RFFO and K-H to discuss treatment, packing and shipping of Pu metal and oxide, including installation of PuSPS and possibility of shipments off-site. K-H presented two options. The preferred option is to not install the PuSPS at RFETS, consolidate oxides in B371, install furnaces in B371, and stabilize a minority of oxides to meet DOT Loss on Ignition (LOI) criteria. Shipments to SRS would begin in January 2000 assuming NEPA issues could be resolved. The recommended alternative is to install only the packaging portion of PuSPS in B371, install manual furnaces in B371 and package all metal and oxide to meet the 3013 standard. K-H believes that they would meet the 2002 commitment to the Board, but admits it would be tight. RFFO is leaning toward the alternative proposal and plans to make a decision within two weeks. One other discussion item was presented. The PuSPS at RFETS is a prototype for the complex. K-H does not want to test the PuSPS if it is to be shipped to another site. RFFO management is considering a task to K-H, as an operator, to test the PuSPS. This would provide needed data for RFFO to determine what portion, if any, of the PuSPS should be installed at RFETS and would also provide reliability data for the rest of the complex. RFFO will make a decision on this subject next week.

Sand, Slag, and Crucible (SS&C) Repack. SS&C residues will be weighed, crushed and blended as needed, packed into produce cans and nylon bags, assayed, and placed in shipping containers for shipment to SRS. The Management Review (MR) team leads declared this week's MR a failure halfway through the review due to the number of deficiencies being identified. The procedures were not properly verified and validated nor did they incorporate all the Activity Control Envelope controls. Other issues included discrepancies between the criticality evaluation and postings, weak response to upsets, and poor training documentation.

B771 Limiting Condition of Operation (LCO) Violations. The recent flow test for the main filter plenum deluge system identified that one zone had been inoperable since June 1997 because of an improper post maintenance test for a replaced circuit board. A facility representative and building personnel later identified that the surveillance periodicities for testing the automatic and manual deluge fire suppression systems had been exceeded. These are both LCO violations. As required by the recently implemented Basis for Operation (BFO), all mission operations were suspended. During transition from the FSAR to the BFO, it was not noticed that the past surveillances being credited did not meet the surveillance requirement (SR) acceptance criteria defined in the system evaluation report. All LCOs and SRs are being reviewed to make this problem does not exist for other systems. Another issue is that DOE needs to establish a process for authorizing restart, as required by the BFO.

cc: Board Members

Attachment 1

Results of B779 Management Review

Strengths from the Management Review

1. Radiation Protection program showed significant improvement.
2. Strong performance was exhibited by the CCA.
3. The workforce demonstrated a questioning attitude.
4. Housekeeping was very good in D&D areas.
5. Lockout and tagout LO/TO and process walkdowns were positive.
6. The D&D foreman and team conducted evolutions very well.
7. Criticality safety evaluations were done well.
8. Conduct of ventilation test was well executed.
9. Waste packaging reject rate is well below site average.
10. Project team is open, supportive and engaged in readiness determination.
11. Conduct of pre-evolution briefings for glovebox removal was very good.

Pre-start Findings from the Management Review

AB and ISM Related Findings

1. Building 779 lacks an authorization basis and accident analysis for storage and staging of low level waste in areas immediately outside and surrounding the building. This may constitute an unresolved safety question.
2. Certain staff engineers are weak in building and site specific process knowledge. Specifically: an understanding of the building AB and the Unreviewed Safety Question (USQ) screen process.
3. A systematic causal analysis and collective significance evaluation on the health and safety first aid incidents occurring in the past 4 to 5 months has not been completed to determine the need for process, behavior, or hardware changes to reduce the frequency and limit severity of injuries for future D&D operations.
4. Lessons learned from training gloveboxes have not been evaluated and screened to identify pre and post-start actions to address these lessons learned.
5. Some glovebox removal work instructions are not sufficiently complete nor integrated to describe controls in a single document so that requirements, hold points and work steps can be readily understood and not be confused during work execution.

B779 and D&D Unique Issues

6. Project guidance for the identification of Be and the response to discovered Be during the conduct of operations is inadequate.
7. Modifications to FP-405 Plenum are required to satisfy air quality monitoring due to a desired change in the exhaust configuration and due to the D&D work requiring size reduction in Zone II ventilation areas.
8. Project's Combustible Control Program (Ops Order 153) is generic & does not address unique D&D fire hazards.
9. NSM 03.12 (GB Inspection Procedure) is inadequate for D&D work. Also, NSM 03.12 is an inappropriate tool to confirm removal of material in glovebox during D&D.

Other Findings Potentially Applicable to Other Facilities

10. Building did not demonstrate the ability to respond to an event involving a contaminated, injured person, and did not demonstrate effective control and evaluation of a building exercise.
11. Incomplete training on spills and upset conditions - non-operational emergency spill response procedures not in Health and Safety Plan (HASP).
12. Procedure UOP-779-10 (SOE operating procedure) does not provide work instructions; no data sheets provided.
13. Utilities, maintenance, LO/TO all performed by one individual which creates conflicting priorities in performance of these activities.
14. Project personnel must be cognizant of their own exposure, administrative control levels and the potential for unplanned exposures (ALARA).
15. Most personnel have not met the training and qualification and HASP requirements.

Post-Start Findings

1. The criteria used to determine if a lift is a critical lift in the hoisting and rigging checklist used in B779 project IWCPs is not consistent with the requirements of the DOE Standard for Hoisting and Rigging which is required by the project specific HASP.
2. The Project has not effectively applied several aspects of the Site Corrective Action Program to some Project issues.
3. Building 779 Safety Evaluations are conducted in a manner that does not ensure appropriate consideration of all documents which comprise the authorization basis. NS-4. Building 779 Safety Evaluations are conducted in a manner that does not ensure appropriate consideration of all documents which comprise the authorization basis.
4. Implementation of compressed gas storage program and procedures to assure compressed gas cylinders are stored properly.
5. LCO tracking forms used incorrectly or completed incorrectly.
6. Utility manager is not included in the review of IWCP.
7. Some positions have insufficient numbers of fully qualified personnel including CCAs, SOEs, WAT manager, and maintenance/utility manager/foremen.
8. Workers, RCTs and Supervisors are generally unaware of the negative impacts of respirator use.
9. HASP training matrix does not include fall protection, ladder safety, and scaffolding training for positions that routinely require these job activities (e.g., D&D workers, support crafts, RCTs).
10. Assessment of training activities has not been planned, scheduled or conducted for B779 project per SSOC training program plan.
11. The list of qualified individuals (LOQI) should include D&D foremen.
12. The HASP training matrix should include nuclear criticality training for the D&D manager since this position oversees the activities of D&D workers who will be working on gloveboxes and ventilation systems that contain fissionable material.