

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

October 30, 1998

TO: G. W. Cunningham, Technical Director

FROM: M. T. Sautman

SUBJECT: RFETS Activity Report for Week Ending October 30, 1998

Subcontractor Work Scope. As expected, K-H has decided to transfer the work scope for buildings 779, 771/774, and 776/777 from SSOC to Rocky Mountain Remedial Services (RMRS). The missions for these buildings are mostly completed and they are in various stages of deactivation. SSOC will continue to operate buildings 371, 559, and 707, which have longer missions. This reassignment is scheduled to become effective in early November. New SSOC and RMRS organization charts are still being developed. The Site Rep intends to follow this reassignment closely to make sure a consistent standard for conduct of operations, training, authorization bases, and other activities is maintained for all the plutonium facilities.

SS&C Shipments. SSOC has 20 shipping containers containing sand, slag, and crucible residues ready to be shipped to SRS as soon as the residue EIS Record of Decision is issued. This is currently scheduled for November 6.

Authorization Bases Assessment. At RFFO's request, Vic Stello conducted an independent assessment of RFFO's nuclear safety posture. Other members of his team included Roger Mattson (Sciencetech), Roy Schepens (DOE-SR), Dae Chung (DP), and Chris Steele (LAAO). A summary of their recommendations is found in Appendix A. The team did not find any safety show stoppers, but found the safety bases to be complex and confusing. They felt RFFO's role was complicated by the M&I approach. Much of the team's criticism was aimed at the B771 Basis for Operations, especially its control set and the way it was developed and approved. Many of the recommendations encourage RFFO to take a more active role for determining the standards to be met, approving sitewide program procedures, and determining which accident analyses require RFFO review.

Rec. 94-3 Assessment. In response to a suggestion in the Board's 8/13/98 letter, RFFO conducted an independent assessment of the design and construction work packages for the B371 upgrades to ensure that the functional requirements had been satisfactorily met. The assessment observations are included in Appendix B. The assessment identified some issues that need to be evaluated or verified. These include:

- Seismic integrity of the system 2 duct to bypass isolation damper
- Seismic capacity vs. demand of the intake HEPA filter bank tube steel and anchorage
- Deluge system design calculations versus as-built conditions
- Attic and roof members that do not meet the specified design code factor for concrete
- Conduct of nitrogen subsystem testing for plenum deluge modifications failed to meet acceptance criteria and additional testing will be required

Maintenance Work. In response to a recent lock out/tag out (LO/TO) incident (see last week's report), all maintenance work at RFETS using Integrated Work Control Packages (IWCP) has been stopped until the following compensatory actions are accomplished:

- Management reviews all maintenance IWCPs for appropriateness and adequacy of the LO/TO.
- Ensure that LO/TO is specifically addressed at the pre-evolution briefing before authorizing the release to work the maintenance IWCP.

For new maintenance work, a process is to be developed that addresses the two previous actions.

B374 Spill Assessment. RFFO completed their assessment of the B374 acid spill that occurred last June. About 1 gallon of a phosphoric acid solution of depleted uranium was spilled. The liquid came from a tank that had been deliberately overfilled (to the point that liquid was in the vent line) years before and had been in a high-level alarm status since 1991. This high level alarm had become accepted as a normal condition and procedures for alarm response were not clear on corrective actions. RFFO found that 2 tanks in B444/447, which collect groundwater, were routinely filled until the high level alarm energized, which is contrary to the Site Conduct of Operations Manual.

Oral Boards. The Site Rep has observed that most Shift Manager/Shift Technical Advisor/ Configuration Control Authority candidates have been weak in incident command during their oral boards. Some candidates have performed poorly in accident scenarios, but are still being passed. The compensatory action of having a senior SSOC manager sit all oral boards does not appear to prevent questionable candidates from passing. This issue is being pursued with K-H and RFFO training.

cc: Board members

Appendix A - Authorization Basis Division Independent Self Assessment Findings

Recommendations

1. Issue clarifying guidance on the role of TSRs and authorization bases
 - Remove administrative control (AC) TSRs for program attributes and replace with program requirements.
 - Guidance on role of CSAs/exemptions for sitewide program compliance
 - Move discrete ACs to LCOs where appropriate
 - Issue policy to clarify AC violations and train RFFO facility representatives
2. Authorization Bases's Chapter 3 should be modified to reflect reliance placed upon sitewide programs to assure Order compliance
3. RFFO should recognize that Orders and requirements were not developed for the RFETS mission and therefore, full compliance is not necessary. Rather RFFO should articulate standards appropriate to work and hazards involved.
4. RFFO should approve level 1 manuals.
5. M&I should assure building operator's ownership of sitewide programs and authorization bases.
6. RFETS should drop Evaluation Guideline chart.
7. RFFO should review all accident safety analyses or Hazard Categorizations (example: Trench 1 segmentation).
8. RFFO should replace B771 Basis for Operations with deactivation, decommissioning, and decontamination Basis for Interim Operations.
9. RFFO needs to review and approve contractor Unreviewed Safety Question Determination procedures per DOE 5480.21 (p. 9)

Appendix B - B371 Upgrades Assessment Observations

1. The team found that the work to achieve the safety margin enhancements called for by the Recommendation 94-3 Integrated Program Plan Priority Upgrades is substantially complete and effective. The functional requirements were properly incorporated in the work packages (design and IWCP construction packages) with some questions yet to be resolved.
2. A selection of the BIO Upgrade work packages were sampled by the assessment team. Only the design and applicable testing portions of these packages were assessed. The team found that for the upgrades examined, that the designs adequately reflected applicable functional requirements. Routine self-assessment and oversight practices can provide adequate assurance that implementation of the work packages will achieve the intended functional requirements of the upgrades.
3. The assessment team determined that the design objectives, as described in the engineering design packages for the Priority Upgrades, were consistently incorporated in the IWCP work packages for construction.
4. The assessment team determined that testing to confirm achievement of functionality in upgraded systems and components was acceptable for method, conduct and results evaluation with the exception of one instance where this review could not confirm that the tests and inspections performed met the design acceptance criteria.
5. No imminent safety issues have been identified by the assessment team. However, the assessment team was left with questions regarding the effectiveness of corrective actions for previously noted deficiencies as well as potential weaknesses in project scoping and traceability of BIO/System Evaluation Report (SER) functional requirements. The adequacy of design reviews, processes for confirmation of upgrade operability, and integrated assessment of large scale corrective action situations are also areas that warrant further assessment by Kaiser-Hill and its subcontractors.
6. The team observed numerous documentation completion deficiencies during examination of work packages that still existed after the majority of physical work had been completed. These led the team to question the effectiveness of the criteria for the normal project milestone of Beneficial Occupancy to provide a sufficient measure of completeness for declaring operability under the requirements of the BIO/SER. The team concluded that Kaiser-Hill should confirm with its B371 facility operating contractor that documentation requirements in work packages fully support BIO administrative control requirements for declaration of SSC operability and also assure timely administrative closeout of completed work packages.
7. B371 management needs to assure that subcontractor designers fully understand the functional requirements as expressed in the approved BIO/SER. The quality of B371 design reviews should be sufficient to confirm that designs satisfy the applicable functional requirements. A self assessment should be conducted to verify these competencies.
8. Kaiser-Hill needs to ensure that suppliers of design and construction services are functionally competent in key procedures of site infrastructure (e.g., BIO, SER, IWCP manual, etc.) prior to contract performance, or establish appropriate compensatory measures until site specific authorization basis proficiency is confirmed.

9. Kaiser Hill integration of the feedback and improvement actions resulting from the Cure Notice issued to its subcontractor, did not appear to involve all parties affected by the underlying challenge to the authorization basis posed by major subcontractor QA deficiencies. DOE RFFO should ensure that the integration issues, of potential sitewide significance, raised in the RFEC corrective action plan are fully resolve prior to acceptance of the associated Price Anderson Amendment Act closeout action.