

# Information Bulletin

## Inadequate Processes Used During Criticality Safety Evaluation Report Development

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**Summary:** Processes for analysis of information, communication of new information, and review of documents can only be effective if applied with the appropriate rigor. Lack of staffing, unclear roles and responsibilities, and inadequate independence can impact the effectiveness of Criticality Safety Evaluation Report (CSER) development.

**Discussion of Activities:** While performing the 2007 Annual Criticality Safety Assessment of the Solid Waste Operations Complex (SWOC), Criticality Safety Representatives identified a potential discrepancy in CSER 05-001, "Storage and Handling in Solid Waste Operations." Further evaluation of the CSER identified additional discrepancies, including invalid assumptions, inadequate or missing analysis, and non-conservative bias in the analysis. These conditions also drew several other CSERs, which had contained elements of the CSER 05-001 analysis, into question. It was determined that SWOC could not demonstrate "incredibility" as a hazard control. This resulted in an eight week recovery process to perform additional analysis and identify controls.

**Analysis:** The causal analysis identified several issues which contributed to the inadequacies in CSER 05-001.

- CSER 05-001 analysis began in 2003, the same year the Waste Retrieval Project began. In 2004 and 2005, while CSER 05-001 was in the development process, additional information on retrieved waste was identified. The CSER 05-001 analysis addressed newly generated drums, but did not fully address retrieved drums. Transuranic Retrieval, by its nature, causes information about the drums to change during weighing and Non-Destructive Assay (NDA). This would impact assumptions, controls, and limits differently than drums that were newly generated. There was a missing communications link between SWOC Operations and the Criticality Safety program.
- When the CSER 05-001 analysis was under development, the development process was assigned to three different analysts, each of whom worked on the document for some period of time. Leadership of the CSER development was not clearly assigned. Personnel assigned to support the analysis were assigned to other higher priority tasks. Because resources were frequently pulled away, CSER 05-001 took over two years to develop. Criticality safety support to the SWOC facilities was not a dedicated position, and there were insufficient resources to give appropriate priority to trending and analysis of criticality safety information.
- The review processes in place to verify the technical accuracy and adequacy of CSERs were not effective in detecting the inadequacies of CSER 05-001. HNF-7098, "Criticality Safety Program," requires that a CSER receive an independent peer review. While the peer reviewer was able, with sufficient time, to substantiate that the CSER 05-

001 analysis was adequate, the review accommodated the existing content of the product rather than forcing quality into the product. HNF-7098 also requires completion of a roundtable review. The roundtable is intended to be an independent review for technical accuracy, completeness, and applicability. There was no formal roundtable review of CSER 05-001 to provide an independent review. There was an incorrect perception that the intent of the roundtable process was addressed by meetings with the CSE and SWOC Operations personnel.

**Recommended Actions:**

1. A full time Criticality Safety Engineer was assigned to the SWOC facilities to provide additional resources, increase independent review, and support improved communications. SWOC is performed an activity-based analysis of staffing to determine if additional staffing is appropriate.
2. Fluor Hanford is revising HNF-7098 to:
  - Enhance criteria for the independence and objectivity of review during the CSER development process.
  - Require review/revision of the hazards analysis at the 90% completion stage of the CSER.
  - Enhance the adequacy of CSER Form process to evaluate impacts from changes or newly developed CSERs.

**Cost Savings/Avoidance:** Not Evaluated

**Work Function:** Criticality Safety

**Hazards:** Other

**ISM Core Functions:** Develop/Implement Controls

**Keywords:** criticality

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**References:** EM-RL—PHMC-SWOC-2007-0001