



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
**ENVIRONMENTAL
MANAGEMENT**

Defense Nuclear Facilities Safety Board Correspondence on the Integrated Waste Treatment Unit Citizens Advisory Board

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Correspondence Summary

Summary of correspondence from the Defense Nuclear Facilities Safety Board (DNFSB) on the Idaho Integrated Waste Treatment Unit (IWTU)

- 1/24/07 No significant safety issues; some items still need to be addressed prior to final design and construction
- 5/1/08 All design basis ground motion issues have been resolved
- 5/23/14 DNFSB requests DOE evaluate the need for an additional, independent assessment of IWTU prior to radioactive operations

DNFSB Reports to Congress:

- 9/19/14 DNFSB annual Report to Congress on the Status of Significant Unresolved Issues—for IWTU: “No open issues remain.”
- 3/11/15 March 11, 2015: DNFSB 25th Annual Report to Congress—for IWTU: “No open issues remain.”

Items Need to be Addressed Prior to Final Design

- Letter “items” included:
 - **IWTU Computer Control and Instrumentation System:** Distributed Control System Design—fail-safe logic, relation to rapid shutdown system
 - **Mercury Adsorber Vessels:** Complete investigation into pilot plant mercury adsorber bed over-temperature event
 - **Final Waste Form:** Complete analysis of pilot plant testing of mineralized waste vice carbonate waste form
 - **Documented Safety Analysis Assumptions:** Validate radionuclide assumptions in the safety basis
 - **Documented Safety Analysis Updates:** Configuration management of safety basis documents carried through finalized design
- Items were adequately dispositioned as indicated in the Feb. 9, 2009 DNFSB Report to Congress on the Status of Significant Unresolved Technical Differences between the Board and the Department of Energy on Issues Concerning the Design and Construction of DOE’s Defense Nuclear Facilities

Seismic Analysis Issues Resolved

- Letter described some identified issues with the seismic analysis that were successfully resolved
- Seismic analyses are required to ensure the facility and systems are designed, built, and will perform as intended during design basis earthquakes
- Seismic issues were related to the computer modeling and input parameters that were used for IWTU, mostly related to sensitivity
- DFNSB also stated:
 - Significant effort by DOE and the IWTU structural designer
 - Structural designer incorporated conservatism into the original design
 - DOE chartered a geotechnical and soil-structure interaction peer review panel

Request to DOE to Evaluate the Need for Independent Review

- The DNFSB letter identifies issues and changes since the most recent readiness review (March 2014 DOE Readiness Assessment):
 - Continued design changes
 - Operational issues
 - Safety basis changes
- Requests DOE to evaluate the need for additional independent assessment prior to the introduction of radioactive waste
- DOE responded to the letter on June 20, 2014
 - DOE conducted the DNFSB-requested evaluation
 - DOE agreed to the value of an additional independent assessment based on the “operational and facility changes that have been executed since the March 2014 DOE RA”

Request to DOE to Evaluate the Need for Independent Review

- DOE chartered an independent assessment to evaluate:
 - Normal facility operations during simulant processing
 - Facility modifications performed since the DOE RA was completed (March 2014)
 - Evaluate readiness of the facility radiation protection program and personnel
- DOE conducted the independent review in December 2014, and issued the “Integrated Operations Review of the IWTU Final Report,” in January 2015:
 - Review identified one minor non-compliance and two observations
 - **Recommendation:** “. . . continue testing the IWTU in accordance with their procedures and startup plan.”
 - Note: In the 2015 DNFSB 25th Annual Report to Congress, the DNFSB stated, “Members of the Board’s staff observed this review in December 2014 and found it to be satisfactory.”

DNFSB Reports to Congress

- September 19, 2014: DNFSB Report to Congress on the Status of Significant Unresolved Issues with the Department of Energy's Design and Construction Projects
 - Routine report provided by the DNFSB to Congress
 - Includes open (and previously closed) issues deemed significant by the DNFSB
 - For IWTU, states "No open issues remain."

- March 11, 2015: DNFSB 25th Annual Report to Congress
 - Routine report that covers DNFSB Board and staff activities in calendar year 2014; includes DNFSB topics:
 - current safety initiatives
 - evaluates improvements in the safety of defense nuclear facilities
 - discusses safety problems yet to be resolved
 - For IWTU, this report states "No open issues remain."

Any Questions?