



Department of Energy

Washington, DC 20585

November 24, 2014

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DNF SAFETY BOARD

The Honorable Peter S. Winokur
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue NW, Suite 700
Washington, DC 20004

Dear Mr. Chairman:

This letter and its Enclosure is the Department of Energy's (DOE) response to the Defense Nuclear Facilities Safety Board's (Board) letter dated September 24 requesting an updated plan and schedule for addressing the Board's concerns with ammonia releases and spills, including specific plans to address Balance of Facilities (BOF) interactions with each of the Waste Treatment and Immobilization Plant (WTP) facilities.

There are three major ammonia hazard concerns outstanding: (1) the Pretreatment Facility (PTF) main control room habitability; (2) the BOF interactions with other WTP facilities; and (3) potential tanker truck events. Although DOE has provided briefings to the Board staff as recently as July 15 on the status of related activities, the Department has not formally provided the Board an updated schedule to address these ammonia hazard concerns. A number of the analyses of interest to the Board had been postponed as a result of DOE direction to suspend production engineering and major construction activities of the High-Level Waste Facility (HLW) and PTF.

The PTF main control room habitability hazard analysis and hazard control selection will consider impacts from ammonia and releases from other WTP facilities, including those in BOF. Hazards analysis and hazard control selection have been postponed pending resolution of outstanding technical design issues and resumption of PTF production engineering. Accordingly, these specific nuclear safety activities related to PTF are outside the current WTP planning window. Changes to the WTP scope driven by Direct Feed Low Activity Waste (DFLAW) activities will be analyzed once the DFLAW schedule has been formalized and contracts have been revised to reflect the additional scope.

The hazards analysis of BOF interactions with other WTP facilities includes ammonia, carbon dioxide, steam and chiller compressor plants. For some facilities the analysis may also include wet chemical storage interactions. Specific proposed activities and schedules are as follows:

- BOF interaction hazards analysis for the Low Activity Waste (LAW) facility is scheduled to be complete by December 15, 2014, as shown in the enclosure.
- Accident analysis and hazard control selection for LAW are scheduled to be complete by September 30, 2015.



- A supporting analysis of a postulated boiling liquid expanding vapor explosion of the liquid carbon dioxide storage vessel is scheduled to be complete by December 15, 2014.

Tanker trucks, either conveying hazardous materials or by tanker truck occurrences impacting WTP systems that may release hazardous materials, are evaluated in onsite transportation hazard analysis activities. The initial revision of the WTP onsite transportation analysis was issued in July 2013. This hazards analysis will be updated based on changes in construction schedules involving DFLAW, HLW and PTF. The transportation analysis will require further review and updates once DFLAW, HLW and PTF-specific hazards analyses are complete, as noted above.

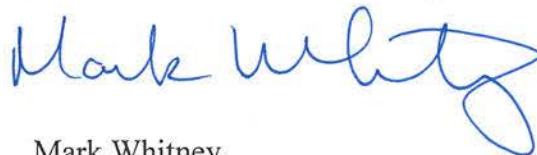
Earlier this year, the Office of River Protection (ORP) completed a design and operability review of the HLW facility and has accepted the approach the contractor has proposed to address the major recommendations identified in that review. A design and operability review of the LAW facility is currently ongoing. The review is expected to be available in early 2015. Both the HLW and LAW design operability reviews are expected to inform the hazard analyses. Thus, the nuclear safety activities involving DFLAW, HLW and PTF are yet to be finalized.

Additional details are included in the enclosure which documents the schedule of activities required to address ammonia hazards. Analyses necessary to support DFLAW are not included in the enclosure, as these activities have yet to be planned. In August 2014, ORP approved the resumption of full production engineering and design for the HLW Facility. As WTP resumes full production engineering for PTF, and as HLW and DFLAW plans become more firm, we will provide the Board an updated status of the activities noted in the enclosure no later than the first quarter of fiscal year 2016.

Safety and protection of the workers, public, and environment is our primary goal. A thorough and comprehensive hazards analysis, including interactions among BOF systems, will be completed and the hazard selected controls incorporated into the WTP safety basis for each phase of construction as well as, ultimately, for operations.

If you have any questions, please contact me or Mr. James Hutton, Acting Deputy Assistant Secretary for Safety, Security, and Quality Programs, at (202) 586-5151.

Sincerely,

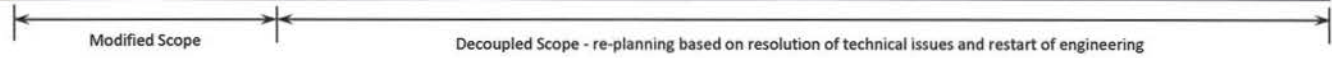


Mark Whitney
Acting Assistant Secretary
for Environmental Management

Enclosure

Status Update for WTP Facilities Hazard Analysis (October 2014)

Facility	LAW		DFLAW		HLW		PTF		MCR		ETG	
	HA	AA/CS	HA	AA/CS	HA	AA/CS	HA	AA/CS	HA	AA/CS	HA	AA/CS
BOF Interaction	15-Dec-14	30-Sep-15	Pending implementation into contract		Date Pending - Beyond 2 year planning window		Pending resolution of Tech-issues and Engineering restart		Pending resolution of PTF Tech-issues and Engineering restart		Pending resolution of PTF Tech-issues and Engineering restart	
BOF Supporting Calc / Studies	Ammonia	X	X	X	X	X	X	X	X	X	X	X
	Carbon Dioxide	X	X	X	X	X	X	X	X	X	X	X
	Wet Chem Storage	N/A	N/A	N/A	N/A	X	X	X	X	X	X	X
	Steam Plant	X	X	X	X	X	X	X	X	X	X	X
	Chiller Compressor Plant	X	X	X	X	X	X	X	X	X	X	X
Onsite Transportation HA (24590-BOF-HAR-NS-13-0001-09)	30-Jul-13	30-Jun-15	Revise Transportation HA Pending implementation into contract		Review and revision of Transportation HA, as necessary based on facility HA and CS. Dates Pending - Beyond 2 year planning window							



Previous Supporting Deliverables

Deliverable Number	Deliverable Description	Revision	Date
24590-BOF-ZOC-W14T-00001	Concentrations at the Emergency Generators Following a Postulated Release from the Liquid Carbon Dioxide or Anhydrous Ammonia Storage Vessels	00C	30-Jan-13
24590-WTP-ZOC-W14T-00023	Main Control Room Concentrations of Chemicals due to Releases from Transportation, Process and Storage Accidents	00B	28-Feb-13
24590-WTP-ZOC-W14T-00029	Ammonia Tank BLEVE at the Hanford Waste Treatment Plant	00A	14-Sep-14
24590-LAW-ZOC-W14T-00014	Liquid Carbon Dioxide Storage Vessel BLEVE		15-Dec-14
24590-BOF-P1-89-00011	Balance of Facilities General Arrangement ETG Facility Ash Fall System Plan at Elev. 676'-0"	00A	01-Nov-12
24590-BOF-P1-89-00012	Balance of Facilities General Arrangement ETG Facility Ash Fall System Plan at Elev. 689'-0"	00A	01-Nov-12
24590-BOF-P1-89-00013	Balance of Facilities General Arrangement ETG Facility Plan at Elev. 676'-0"	00A	01-Nov-12
24590-BOF-P1-89-00014	Balance of Facilities General Arrangement ETG Facility Plan at Elev. 697'-0"	00A	01-Nov-12
24590-BOF-P1-89-00015	Balance of Facilities General Arrangement ETG Facility Plan - Roof	00A	01-Nov-12
24590-BOF-P1-89-00016	Balance of Facilities General Arrangement ETG Facility Sections A and B	00A	01-Nov-12

Legend:

- Indicates items that are issued
- Indicates items in progress
- Indicates items that are pending
- "x": Denotes applicability to specific HA/AA/CS
- HA: Hazard Analysis
- AA: Accident Analysis
- CS: Control Selection
- BLEVE: Boiling Liquid Expanding Vapor Explosion
- LAW: Low Activity Waste Facility
- DFLAW: Direct-Feed Low Activity Waste Facility
- HLW: High Level Waste Facility
- PTF: Pretreatment Facility
- MCR: Main Control Room
- ETG: Emergency Turbine Generator