
memorandum

Idaho Operations Office

Date: October 1, 2007

Subject: The Department of Energy, Idaho Operations Office Sodium Bearing Waste Treatment Project Response to the Defense Nuclear Facilities Safety Board Questions Regarding the Geotechnical and Seismic Investigations Associated with the Integrated Waste Treatment Unit Facility Design (FMDP-MTPP-07-015)

To: Mr. J.K. Fortenberry
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, NW, Suite 700
Washington, D.C. 20005-2901

This letter defines the actions the Sodium Bearing Waste (SBW) Treatment Project has taken in response to your staff's remaining questions regarding the geotechnical and seismic investigations associated with the Integrated Waste Treatment Unit (IWTU) facility design. Your staff communicated these issues to the Federal Project Director on September 7, 2007 and they were subsequently discussed with the SBW Project staff on September 13, 2007. Based upon the September 13, 2007 meeting, three remaining issues require resolution to demonstrate adequate design margin for the process and packaging cell facility structure. These issues and our actions to address these items are outlined below.

1. The design basis earthquake response spectra are artificially low due to use of the mean from the site specific soils spectra data.

Proposed Action: The project proposes to develop appropriately broadened horizontal and vertical IWTU Performance Category (PC) 3 soil design basis earthquake response spectra at 5% damping using the 84th percentile spectra from the soil surface spectra data.

2. The geotechnical input for the engineered fill using the technical approach relying on a thesis paper was not justified.

Proposed Action: The project will revise the geotechnical input to the Soil Structure Interaction (SSI) analysis for both the natural soils, using the results from item 1, and the engineered fill, to address the compacted nature of the backfill. Justification of the use of the approach described in the thesis paper, as reported in the project geotechnical report, will be provided as part of this analysis to address the over-compacted nature of the backfill.

3. The time histories used in the soil-structural interaction (SSI) analysis should be evaluated matching both the 5% damped and 13% damped values to the appropriately broadened horizontal and vertical IWTU PC3 soil design basis earthquake response spectra from item 1.

Proposed Action: The project intends to perform the analysis as noted.

Your staff recommended that the results from the above three items be evaluated by rerunning the SSI analysis to fully understand the impact, if any, on the design. These items need to be completed prior to placement of the process cell walls concrete as these walls are more sensitive to changes in the seismic loads, than is the basemat. Consensus has been reached with your staff that placement can proceed for the facility process and packaging cell base slab.

We have initiated work to address these three remaining issues. Initial data representing the 84th percent spectra was provided to your staff on September 17, 2007. The IWTU Geotechnical Blue Ribbon Panel (BRP) has undertaken actions to address items 2 and 3, as directed by CH2M-Hill Washington, Inc. I have directed my staff and the contractor to target addressing these items by November 1, 2007 and completing the SSI analysis by December 3, 2007. A one-line schedule for completing these actions is provided in the attachment.

We will continue to work with your staff during this period to ensure our actions are adequately addressing these issues. I request that you acknowledge the successful completion of these activities, should they provide the expected degree of design margin, will resolve the issues identified in your September 7, 2007 communication.

My staff has worked closely with the Office of Safety Management and Operations on this approach and schedule to resolve this issue. If you or your staff has any question regarding this path forward please contact me at 208-526-5665 or Mr. Joel Case, the SBW Treatment Project Federal Project Director, at 208-526-6795.



Elizabeth D. Sellers
Manager

cc:

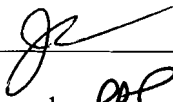

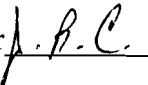
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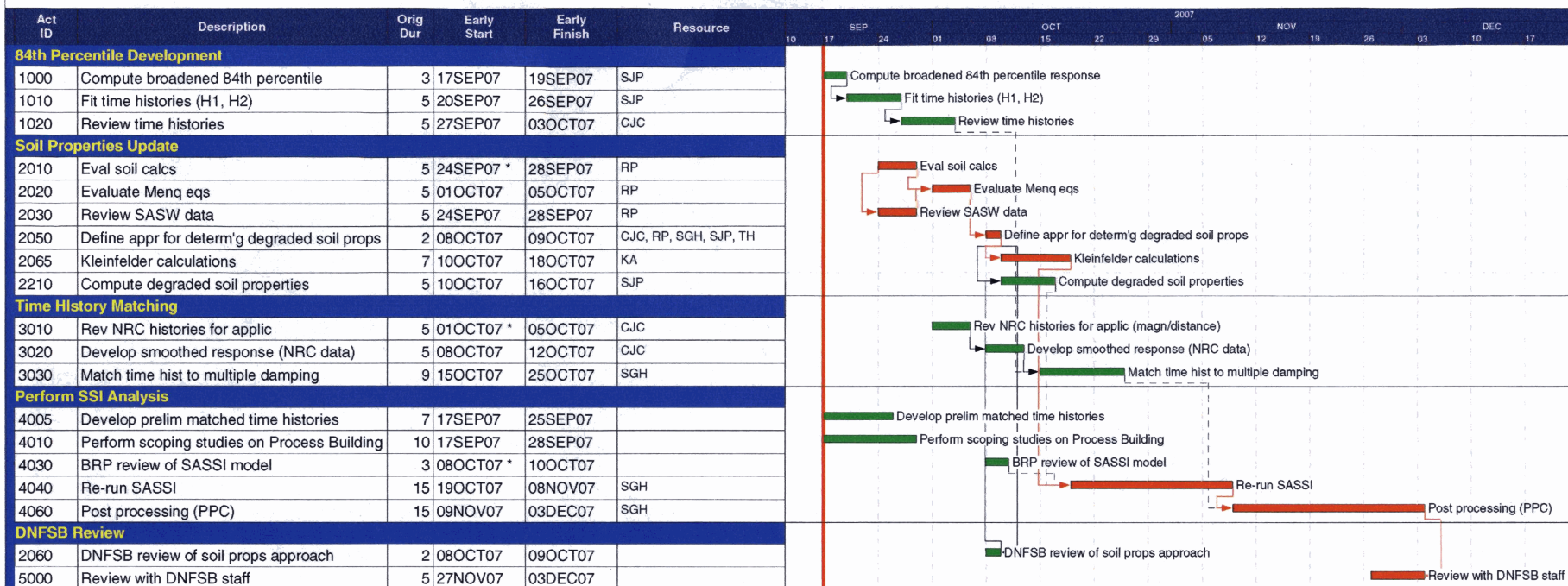
Dae Chung via email

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RECORD NOTES:

1. The Department of Energy, Idaho Operations Office Sodium Bearing Waste Treatment Project Response to the Defense Nuclear Facilities Safety Board Questions Regarding the Geotechnical and Seismic Investigations Associated with the Integrated Waste Treatment Unit Facility Design
2. Joel Case prepared this memo.
3. This memo closes Pegasus number N/A
4. The attached correspondence has no relation to the Naval Nuclear Propulsion Program.

Response to DNFSB on IWTU Seismic



Date	Revision	Checked	Approved
24SEP07	B		
25SEP07	C		
26SEP07	D		
27SEP07	E		