



Department of Energy

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Mr. Roy Kasdorf
Defense Nuclear Facilities Safety Board
625 Indiana Ave. NW, Ste. #700
Washington, D.C. 20004

Reference: H.R. O'Leary to Hon. J.T. Conway, "Implementation Plan (Phase I) for Defense Nuclear Facilities Safety Board Recommendation 94-3; Evaluation of Suitability of Rocky Flats Building 371 for Interim Storage of Special Nuclear Material," dtd. June 30, 1995

Dear Mr. Kasdorf,

In accordance with the above reference, Stage 1 of Phase I was completed on July 26, 1995. The results were discussed with EM, the Defense Nuclear Facilities Safety Board (DNFSB), and the Board's staff during the week of July 24-28, 1995. Subsequently, RFFO revised the Stage 2 schedule to reflect clarifications in scope and to incorporate Board staff comments and stakeholder interactions. Based on discussions with the Board staff it was agreed that the schedule revision was the only required change to the Implementation Plan (IP).

As committed to the Board staff, this memorandum documents clarifications to the Stage 2 scope as a result of the discussions between the Rocky Flats 94-3 Team and the Board staff and their consultants in late July. The main topics that required clarifications were:

- List of "high cost" safety class systems identified for evaluation in Tasks 7 & 8 (Deliverable 2-1)
- Details of the alternatives study (Task 3)
- Evaluation Bases Earthquake (Task 4)
- Scope of follow-on structural evaluations as a result of insights gained in Stage 1 (Sub-task 6.8)
- Approach to pushover analysis (Sub-task 6.7)
- System classification and selection (Task 9)

Enclosure 1 provides the details of the clarifications to the above topics. Enclosure 2 provides the revised schedule.

Overall, the Stage 1 efforts in the IP confirm the capability of B371 to accommodate its original design basis earthquake (0.14 g at reference datum). Further, while a number of potential vulnerabilities were identified, there is considerable promise that the Stage 2 structural analyses

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plus limited modifications (e.g. "paper joint") will demonstrate that B371 is capable of accommodating the analysis basis earthquake in the IP. This level of seismic capability is judged likely to be acceptable for the interim storage mission, particularly in light of the risk reduction now anticipated from the planned 94-1 material repackaging. Stage 2 will confirm these judgments, establish the system backfits needed to afford capability comparable to that of the structure, identify any further cost-beneficial alternatives applicable within B371, and determine if alternatives to B371 warrant consideration for the interim storage mission.

Sincerely,



Shirley J. Olinger
DOE 94-3 Project Manager

2 Enclosures

cc w Enc:

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Enclosure 1 Clarifications to Stage 2 Scope

Task 2: The Board staff objected to a proposed priori differentiation of safety systems that assumed less required seismic capability for worker protection than for public protection and based the IP high cost categorization on that perspective. They did not preclude the possibility that such a differentiation might be justified based on cost benefit considerations after walkdowns had been performed. Accordingly, six additional systems were identified for consideration in the Task 7 and 8 walkdowns making the total 17 vs. 11. All systems that had a safety function after an earthquake and were judged to entail potentially high retrofit costs are now included. The 17 systems (Deliverable 2-1) are:

System Number	System Description
1	HVAC System 1
2	HVAC System 2
4	HVAC System 4
9	HVAC System 9
10	Gloveboxes and Hoods
14	Air Monitoring
15	Health Physics Vacuum System
16	Criticality Detection & Alarm System
20	Fire Suppression
21	Normal & Alternate Power System
23	Emergency Power System
27	Criticality Drain System
28	Water Systems
31	Building 371 Structure
32	Subsurface Drain System
33	Vault Storage Racks
34	Stacker/Retriever

Task 3: While the IP states that the primary purpose for the study of alternatives is for use in the event that B371 is deemed unacceptable, the scope of the Task has been broadened to include alternatives that may be sufficiently safer or more cost-effective to warrant consideration even if B371 is deemed acceptable for the interim storage mission. The alternatives to be studied in Task 3B will be developed and discussed with the Board staff the week of Sept. 11, 1995.

Task 4: The EBE determined for B371 may be limited by the practical capacity of the building. Consequently, a separate EBE may be determined for a new facility.

Task 6B: The approach to the pushover analysis (sub-task 6.7) discussed with the Board staff was separately documented and transmitted for comment. Numerous agreed refinements (6.8) to the Stage 1 structural analysis are underway, including: caisson model refinements; static model modifications to include interior walls between the attic and ground floors; and studies to resolve the 4-86 loads on the basement walls (i.e. assessing effects of offset of sub-basement and basement walls with ABAQUS, determining allowable f_u including negative moments, adding concrete aging effect on strength). The wind and tornado evaluation (6.9) will be performed in Stage 2 using the pending updated NPH study for Rocky Flats if it is completed in time (otherwise existing wind and tornado loads will be used). The floor response spectra (6.10) for the Task 7 walkdowns will be estimated using a preliminary dynamic model, but confirmed and reconciled with the final dynamic model per the IP. Sub-tasks 6-11 through 6-13 will be performed as described in the IP; margins of 10-15% will be judged acceptable in 6-13 for torsional loads.

Task 9: The basis for system classification and selection will be separately documented and reviewed with the Board staff on September 13, 1995 to establish a common understanding of proposed evaluation criteria.

Enclosure 2

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United States Government

Department of Energy
Rocky Flats Field Office

memorandum

DATE: AUG 10 1995

REPLY TO
ATTN OF: AMESH:SJO:12551

SUBJECT: Defense Nuclear Facilities Safety Board Recommendation 94-3 Revised Schedule

TO: Thomas P. Grumbly, Assistant Secretary for Environmental Management, EM-1, HQ

Reference: "Implementation Plan (Phase I) for Defense Nuclear Facilities Safety Board Recommendation 94-3: Evaluation of Suitability of Rocky Flats Building 371 for Interim Storage of Special Nuclear Material." dtd 6/30/95

The purpose of this memorandum is to transmit the revised Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 94-3 Implementation Plan (IP) Stage 2 schedule.

In accordance with the referenced plan, Stage 1 was completed on July 26, 1995. The decision was made to continue with the evaluation of Building 371 while also focusing further evaluations on alternatives to Building 371. The results were discussed with EM-2, DNFSB and the Board's staff the week of July 24-28, 1995. While it appears that Building 371 structure, systems and components may be made acceptably safe for the interim storage mission, at a yet to be determined cost, alternatives affecting material form, packaging, or a new building afford potential for greater risk reduction and perhaps will be more cost effective. In addition, some alternatives more readily address uncertainties associated with life cycle costs and interim storage mission duration and scope.

The schedule for Stage 2 has been finalized and is attached. The revised schedule incorporates the further studies identified in the Stage 1 effort, DNFSB staff comments, stakeholder involvement strategy, and a bottoms up review of the Stage 2 scope. Therefore, the revised date on which DOE will make a decision on interim storage is November 28, 1995 and the Integrated Program Plan (IPP) will be submitted to the DNFSB by December 29, 1995. The original IP date for both of these milestones was October 24, 1995. The DNFSB staff agreed that the Stage 2 scope definition is adequately encompassed in the IP and therefore the text is not required to be revised.

The critical path to the schedule is controlled by the seismic analyses and system walkdowns. Specifically, the seismic analysis effort for B371 involves updates to the present static model, development of a corresponding dynamic model, and determination of the floor response spectra; the system walkdowns involve first the 11 systems originally identified as Safety Class in Task 2 and then six additional systems to address further concerns for worker safety recently identified by the Board staff. The delay in the milestone completion dates resulting from these additional analyses have been discussed with the Board staff.

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The IPP addresses the remaining 94-3 issues and implements DOE's course forward relative to the interim storage mission. Therefore, the IPP will entail scope heavily dependent on the decision outcome making its completion on the day of the decision, as previously scheduled, unrealistic. In addition, the stakeholder involvement efforts on the new building option are being integrated with this IP and reflected in the revised schedule.



Mark N. Silverman
Manager

Attachment

cc w/Att:

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