



Department of Energy

Washington, DC 20585

October 31, 2005

The Honorable A. J. Eggenberger
Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue, N.W.
Suite 700
Washington, D.C. 20004-2901

Dear Mr. Chairman:

The purpose of this letter is to transmit the *Exclusion Reporting Process* to satisfy Commitment 8.2 of the *Department of Energy Implementation Plan for Defense Nuclear Facilities Safety Board Recommendation 2004-2, Active Confinement Systems*, August 2005. The exclusion reporting process establishes criteria to be used to exclude certain hazard category 2 and 3 defense nuclear facilities and operations from further review under this Recommendation. In addition, the reporting process specifies the information to be reported when a facility or operation is excluded. This process was discussed at the recent 2004-2 Workshop and the document was provided to your staff for comment. Our Central Technical Authorities agree with the attached document and we believe we have addressed your staff's comments.

We will continue to work with your staff as we progress in meeting our commitments to this Recommendation. If you or your staff have any questions, I can be reached by telephone at (301) 903-0078 or by e-mail at richard.black@eh.doe.gov.

Sincerely,

A handwritten signature in cursive script that reads "Richard L. Black".

Richard L. Black

Director

Office of Nuclear and Facility Safety Policy

Enclosure

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D. Garman, US
L. Brooks, NA-1
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U. S. Department of Energy

Commitment 8.2 of Implementation Plan for Defense Nuclear Facilities Safety Board Recommendation 2004-2

Recommendation 2004-2 Exclusion Reporting Process



Washington, D.C. 20585

October 2005

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1. Introduction

On December 7, 2004, the Defense Nuclear Facilities Safety Board (Board) issued Recommendation 2004-2, *Active Confinement Systems*. Recommendation 2004-2 noted concerns with the safety system (safety-class or safety-significant) designation strategy utilized in or planned for several facilities to confine radioactive materials during or following accidents. The Board's main issue is that for the purpose of confining radioactive materials through a facility-level ventilation system, safety system designation should be based on the active safety function (forced air through a HEPA filter system). The Board is concerned that a passive confinement safety function may not be as effective as the active safety function in a few postulated accident scenarios.

The Board recommended that DOE disallow designation of passive systems for the purpose of performing the confinement safety function for all new and existing hazard category 2 and 3 defense nuclear facilities. The Board stated that active ventilation systems are expected to be classified as safety-class or safety-significant for hazard category 2 nuclear facilities. Exceptions to these requirements are to be approved at a level in DOE that ensures a consistent, conservative approach throughout the complex.

On March 18, 2005, the Secretary accepted Board Recommendation 2004-2. The Secretary stated that the Department agrees with the Board that DOE cannot rely solely on passive building confinement safety function when such reliance cannot be justified. The Department agreed that active building ventilation confinement systems can provide added safety benefit and are normally the preferred alternative when a building confinement safety function is needed to provide adequate protection to the public or collocated workers. The Recommendation was accepted based upon the understanding that it can be implemented as follows: DOE will proceed to review all hazard category 2 and 3 defense nuclear facilities. The review criteria will be based in large part on the Department's existing regulatory infrastructure, requirements, and methodologies established in 10 CFR Part 830, DOE Order 420.1A, DOE-STD-3009, and related guidance documents. First, DOE will establish criteria to exclude certain facilities and operations from further review based on sound safety considerations. For facilities not excluded by these criteria their confinement ventilation systems will then be reviewed for proper safety system designation and assessment of the effectiveness of the confinement safety function to ensure it will perform as intended.

This document, *Recommendation 2004-2 Exclusion Reporting Process*, is submitted to satisfy Commitment 8.2 in DOE's Implementation Plan for Board Recommendation 2004-2. The exclusion reporting process establishes criteria to be utilized by DOE sites for excluding certain Hazard Category 2 and 3 facilities and operations from further review. In addition, this document specifies the minimum reporting information in the site's *Recommendation 2004-2 Exclusion Report*, Commitment 8.3 of the Implementation Plan.

2. Instructions

Overview

Each site excluding facilities or operations from further review as part of the Department's response to Board Recommendation 2004-2 will prepare a report, referred to as a *Recommendation 2004-2 Exclusion Report*. This report will identify each of the Hazard Category 2 and 3 facilities and operations that the site determines meets any of the criteria for exclusion. A facility or operation may be excluded from further review as part of the Department's response to Board Recommendation 2004-2 if any of the criteria are met, Categorical Exclusion (CE) criteria or Non-Beneficial (NB) criteria. These criteria are provided in Section 3 *Exclusion Criteria*.

The site or field office will review and approve the site's *Recommendation 2004-2 Exclusion Report* and forward it to the appropriate Central Technical Authority (CTA) and Program Secretarial Office (PSO) for review and concurrence. The 2004-2 Core Team will provide oversight of this process.

If the plans for a facility change result in the facility no longer meeting an exclusion or non-benefiting criterion, then the implementation of Recommendation 2004-2 must be considered.

New Facilities and Facilities Undergoing Major Modification

New facilities and facilities undergoing major modification can not be excluded from further review based on only Non-Beneficial criteria.

Multi-Program Sites

For Sites with multiple program responsibilities (e.g. Environmental Management and NNSA), more than one *Recommendation 2004-2 Exclusion Report* may be developed and submitted.

Segmented Facilities

For facilities in which hazard categorization is segmented (refer to DOE-STD-1027, *Hazard Categorization and Accident Analysis Techniques for Compliance with DOE Order 5480.23, Nuclear Safety Analysis Reports*), each segment to be excluded must be identified. In addition, some facilities may have sections of the facility that, due to their unique configuration and mission, meet one or more of the exclusion criteria. In such cases, each section of the facility that will be excluded must be identified in the exclusion report.

3. Exclusion Criteria

There are two categories of exclusion criteria, one based upon the mission and physical characteristics of the operation, and the other based upon projected longevity and operational status. The first category takes into consideration that for certain DOE nuclear facilities there would be no benefit to installing an active confinement ventilation system (Categorical Exclusion). The second set acknowledges that many DOE nuclear facilities are being closed, deactivated, decontaminated, and demolished, and that significant safety analysis, design, and modification activities would only distract the facility from the overall risk reduction efforts already underway, and further stress DOE financial assets unnecessarily (Non-Beneficial Exclusion).

Categorical Exclusion (CE) Criteria

Certain facilities and operations may be excluded based upon mission and physical characteristics.

- CE-1** Facilities in which radioactive materials are in containers that have been qualified or certified (e.g., to specific standards) to survive all accident scenarios analyzed in the Documented Safety Analysis.
- CE-2** Burial grounds, e.g., sites meeting inactive waste site criteria (See Memorandum from Jessie Hill Roberson, *Hazard Categorization of EM Inactive Waste Sites as Less Than Hazard Category 3*, dated September 17, 2002), not undergoing any intrusive operations that might disturb materials and cause a release.
- CE-3** Storage facilities where radiological material is entirely in approved containers (e.g., Type 7A drums, standard waste boxes, IP-2 containers) and the building design, when present, is limited to providing weather protection. This includes outside storage facilities, e.g., storage pads and yards, where no repackaging, or intrusive inspection or characterization is allowed. This does not include facilities in which processing or repackaging operations are authorized.
- CE-4** Facilities with radioactive materials in non-dispersible form (e.g., glass or vitrified waste) and where energetic forces that could result in a release do not exist.
- CE-5** Facilities and operations associated with nuclear explosives. This includes facilities that store or stage full-up nuclear weapons and those designed to relieve accidental over-pressurization.
- CE-6** Facilities with only “low level residual fixed radioactivity” lacking the potential for release.
- CE-7** Facilities containing only radioactive materials for which an active confinement ventilation system will not be effective in release reductions. For example, tritium facilities not containing any other radioactive materials.

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CE-8 Existing buried or in ground-waste tanks and waste transfer line sections (e.g., piping, jumper boxes, in-ground cell, etc) that do not have sufficient energy for dispersal of radioactive materials, or do not rely on a confinement system to mitigate the potential radiological release of an accident.

General Rationale for Categorical Exclusion – The lack of a credible scenario for which an active confinement ventilation system could be relied upon to limit exposures to on-site and off-site personnel is a sound safety basis for eliminating these facilities from any evaluation under the Department's Recommendation 2004-2 Implementation Plan. Facilities that contain a non-dispersible form of radioactive material (e.g., glass and vitrified waste) do not require further evaluation. Facilities that store or stage full-up nuclear weapons would not benefit from an active confinement system as discussed in the Board's recommendation and should be excluded from further evaluation.

Non-Beneficial (NB) Exclusion Criteria

Certain existing facilities and operations may be excluded based upon a determination of non-beneficial for consideration. New facilities and facilities undergoing major modification cannot be excluded from further review under the Recommendation 2004-2 Implementation Plan based on Non-Beneficial criteria. Facilities that meet NB-2 criterion below and are undergoing a major modification for risk reduction may be excluded from further review under the Recommendation 2004-2 Implementation Plan so long as the criteria are met at the time of this evaluation (e.g., replacement facility is to start operation by 2015).

- NB-1** Facilities planned by the PSO to complete deactivation and decommissioning within 7 years and have an approved 10 CFR 830 compliant safety basis document for deactivation and/or decommissioning activities.
- NB-2** Facilities to be replaced with new facilities that (1) have received critical decision (CD) CD-0 (approved mission need) and have remaining CD milestone schedules approved; (2) the replacement facilities are scheduled to start operations within 10 years; and (3) the existing facility(ies) will have the radioactive material inventory significantly reduced or eliminated during the 10-year period.
- NB-3** Facilities in a surveillance and maintenance mode, with no intrusive activities that are deactivated and awaiting decommissioning activities.
- NB-4** Environmental remediation activities that are temporary in nature and use temporary confinement structures (e.g., tents) and temporary ventilation systems (e.g., portable air movers), provided that these temporary confinement features meet appropriate confinement performance requirements.
- NB-5** Facilities that have an approved 10 CFR 830 compliant safety basis and are planned by the PSO to reduce their inventory of radioactive material significantly below Hazard Category 3 threshold quantities within 7 years.

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General Rationale for Non-Beneficial Exclusion – The need to evaluate the confinement strategy for certain facilities is not warranted for those facilities and operations where the either the active confinement ventilation system would be ineffective or impractical due to risk reduction activities planned or already in progress. Reductions and elimination of the material at risk for these nuclear facilities provides significant overall reductions to analyzed accidents and should be allowed to continue without disruption. Significant ventilation system modifications to facilities approaching the end of their operating life cycle stage would detract from resources that would otherwise be available for new facilities undergoing design and construction and existing facilities with a long-term nuclear operating mission. Evaluating the confinement strategy for major modifications to facilities scheduled for replacement within 10 years that are being performed for risk reduction would provide little benefit based on the expected life of the facility/modification.

4. Reporting Requirements

Format and Content

The specific format of the *Recommendation 2004-2 Exclusion Report* is left to the discretion of the individual reporting organizations; however, a table format listing all of the excluded facilities and operations is recommended (see attached sample report). The minimum reporting information for each *Recommendation 2004-2 Exclusion Report* is identified below.

Site – DOE/NNSA site and program, if the report does not address the entire site (e.g. Savannah River Site – Environmental Management).

Facility – Identifier and name (e.g. 105-K K-Area Material Storage Facility)

Segment – For facilities in which hazard categorization is segmented

Hazard Category – Indicate 2 or 3

Description – Provide a brief description of the current status of the facility, major modifications planned or in progress and future anticipated missions. The description should include adequate information to explain why the designated exclusion criterion is applicable to the facility.

Exclusion Criteria – Indicate the criterion or criteria which apply (e.g. CE-1)

Comments – List the references used to reach the CE or NB conclusion, including any DOE letters, decision, or contractor documents, and any other pertinent amplifying information that will be useful for reviewers. Identify plans, transmittals, or contract that supports future mission (or lack of it) for the facilities being replaced or undergoing D&D.

Submitted By – The contractor or DOE/NNSA individual responsible for the technical accuracy of the *Recommendation 2004-2 Exclusion Report*.

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Approved By – The DOE/NNSA manager responsible for the accuracy of the information and the submittal of the *Recommendation 2004-2 Exclusion Report* for review by DOE/NNSA program offices and the 2004-2 Core Team.

Concurring Organizations

The completed *Recommendation 2004-2 Exclusion Report* should be sent to the applicable CTA and PSO, and the Director, Office of Nuclear and Facility Safety Policy, EH-22.

The appropriate CTA and PSO will review and concur with the Site's *Recommendation 2004-2 Exclusion Report*. Requests for additional information and clarification will be directed to the Site Operations office.

The Recommendation 2004-2 Core Team, under the leadership of the Director, Office of Nuclear and Facility Safety Policy, will provide oversight of this process to ensure timely completion of required deliverables.

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Sample Recommendation 2004-2 Exclusion Report

Savannah River Site – Environmental Management					
Facility	Segment/ Section	Hazard Category	Description	Exclusion Criteria	Comments Justification
Facility A	N/A	2	Formerly processed Pu-bearing solutions, currently undergoing de-inventory and deactivation.	NB-1	Scheduled for completion within 1 year per closure contract XXXX.
Facility B	N/A	2	Operating low-level waste disposal facility	CE-2	Outside burial facility
Facility C					
Facility D					
Facility E					
Facility F					
Submitted By:			Approved By:		
Signature _____ Organization _____ Date _____			Signature _____ Organization _____ Date _____		
PSO Concurrence:			CTA Concurrence:		
Signature _____ Organization _____ Date _____			Signature _____ Organization _____ Date _____		