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**Department of Energy**

Washington, DC 20585

January 23, 2001

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DNF SAFETY BOARD

The Honorable John T. Conway  
Chairman  
Defense Nuclear Facilities Safety Board  
625 Indiana Avenue, NW  
Suite 700  
Washington, D.C. 20004

Dear Mr. Chairman:

Consistent with the Department's implementation plan for the Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 2000-2, the following provides information regarding Commitment 1, due November 2000. The Department has completed the commitment represented above and proposes closure of this commitment.

The Department committed to start conducting operability assessments of vital safety systems at certain facilities listed in the implementation plan. The attached letter from the Deputy Secretary of Energy directs the Under Secretaries for Nuclear Security and Energy, Science, and Environment to conduct of the assessments, and provides a Criteria Review and Approach Document (CRAD) and schedule. The CRAD, the facility selection, and the schedule were all coordinated with your staff. The assessments are already under way at a number of facilities.

If you have any questions, please contact me at 202-586-0264 or have your staff contact Earl Hughes at 202-586-0065.

Sincerely,

Steven V. Cary  
Principal Deputy Assistant Secretary for  
Environment, Safety and Health

Enclosure

cc w/enclosures:

D. Burnfield, DNFSB Staff  
K. Fortenberry, DNFSB Staff  
J. DeLoach, DNFSB Staff  
M. Whitaker, S-3.1





## The Deputy Secretary of Energy

Washington, DC 20585

January 19, 2001

### MEMORANDUM FOR THE UNDER SECRETARY FOR NUCLEAR SECURITY

THE UNDER SECRETARY FOR ENERGY, SCIENCE,  
AND ENVIRONMENT

FROM:

T. J. GLAUTHIER

A handwritten signature in black ink, appearing to read "T. J. Glauthier".

SUBJECT:

Safety System Operability Assessments under Implementation Plan for Defense Nuclear Facilities Safety Board (Board) Recommendation 2000-2, *Configuration Management, Vital Safety Systems*.

The Department is committed to conducting safety system operability assessments at a number of defense nuclear facilities. These assessments will provide data to steer some of the later actions of the Implementation Plan and are a vital first step in resolving the Board's recommendations. The scope and criteria of the assessments and the selection and scheduling of facilities for assessment were extensively coordinated among Defense Programs, Environmental Management and Board staff. Attached are the adopted Criteria and Review Approach Document (CRAD) and a copy the facilities list, Appendix E of the Implementation Plan.

The Implementation Plan schedule for completion of the operability assessments is aggressive but achievable:

- February 2001: Safety class, confinement ventilation, and fire protection systems at the listed priority facilities.
- May 2001: Safety class, confinement ventilation, and fire protection systems at the listed follow-on facilities.
- June 2001: All remaining vital safety systems (as defined in the Implementation Plan) at all listed facilities.

Please proceed with the assessments in accordance with the CRAD and the Implementation Plan schedule as soon as practicable. The results will be given to the Assistant Secretary for Environmental Management and the Deputy Administrator for Defense Programs, with copies to the Assistant Secretary for Environment, Safety and Health.

Attachments

cc:

Deputy Administrator for Defense Programs

**S E P A R A T I O N**

**P A G E**

**Criteria, Review, and Approach Document  
for the Assessment of Operational Readiness  
of Vital Safety Systems (VSS)**

Directions: Complete an Assessment Form for each system assessed using the review approach provided. This assessment is intended to be conducted at the **system level**, and is only intended to consider **existing** information and processes (i.e., completion of the assessment does not require development of new or additional information). Where the requested information does not exist, it should be so noted in the Discussion of Results sections of the form. Provide this report to [Program Office Representative name at email address]. Retain an auditable record of the information compiled according to the Review Approach, but do not submit that record with this form.

**Site:**

**Facility:**

**System:**

**System Classification:**

**System Safety Function (list):**

**OBJECTIVE**

**VSS-1**

**This vital safety system is operational and personnel and processes are in place that ensure its continued operational readiness.**

**Criteria and Discussion of Results**

**VSS-1.1**      **VSS safety functions are defined and understood by responsible line managers, and supporting information/documentation is available and adequate. System testing is adequate to ensure operability. (See Review Approach items 1, 2, 3 and 7)**

**Discussion of Results** - (List information/documentation that was unavailable or inadequate. Indicate whether the criterion was met.)

**VSS-1.2**      **The backlog for surveillances, tests, inspections, maintenance, repair, upgrades, or other work on the system is managed and kept to an appropriate minimum. (See Review Approach item 6)**

**Discussion of Results** - (Provide a discussion indicating whether the criterion was met.)

**VSS-1.3 Configuration Management and Maintenance programs effectively ensure operational availability of the system. (See Review Approach items 5, 8 and 9)**

**Discussion of Results** - (Address the maintenance program, document control, identification of system requirements and their bases, change control/work control, and assessments of the system. Indicate whether responsibility for operational readiness of this system is formally assigned.)

**VSS-1.4 The system is operable and available to fulfill its safety function when required. (See Review Approach items 4 and 10)**

**Discussion of Results** - (Provide a discussion indicating whether the criterion was met.)

**Conclusion** - (Summarize the results of the review and state whether the Objective was met. Identify any systemic, recurring, or significant issues or trends which require corrective action.)

**DOE employee who reviewed this assessment:**

**Provide an estimate of the number of hours (contractor and DOE) needed to complete the data gathering, assessment, and documentation:**

**DOE:**

**Contractor:**

**Review Approach** (Retain an auditable record of the information compiled and evaluated according to the Review Approach, but do not submit that record with this form.)

1. Using the DOE-approved facility safety analysis (i.e., SAR, BIO, etc.), identify: a) the system safety function(s); b) the normal, abnormal, and accident conditions under which the system is intended to perform its safety function(s); and c) relevant system functional requirements and performance criteria.
2. Identify the acceptance criteria from the surveillance tests used to verify that the system is capable of accomplishing its safety function(s). Review the acceptance criteria against the function(s), conditions, requirements, and performance criteria identified in Question 1 above.
3. At what frequency are the tests identified in Question 2 above performed? Determine whether these tests and inspections are required by Technical Safety Requirements, Operational Safety Requirements (OSRs), or other Authorization Basis or Authorization Agreement requirements.

4. For each of the past three years: a) identify the number of times that the system has failed to meet its test acceptance criteria; b) identify the number of times that the system has failed in response to facility operating conditions (i.e., failed on demand); and c) estimate the percentage of time that the system was not capable of accomplishing its safety function(s) when required to be operable.
5. Identify formally scheduled activities, in addition to those addressed in item 2 above, that are intended to help ensure reliable performance of the system. Include preventive maintenance, walkdowns, inspections, and assessments as appropriate.
6. Identify the current backlog for the system for items such as preventive maintenance, corrective maintenance, modifications, surveillances, tests, inspections, and corrective actions.
7. Are drawings that document the system configuration available? If so, identify the types of drawings (e.g., piping and instrumentation diagrams, electrical one-line, wiring, or schematic diagrams, installation drawings).
8. Review the processes used to ensure that work on the system and changes to the system are properly controlled (i.e., formally reviewed, approved, implemented, tested, USQ review performed if required, documents updated, and work/change accepted).
9. Determine whether the procedures identified in items 2 and 5 above, and the drawings identified in item 7 above, are controlled under a formal document control process, and indicate whether the process requires that documents be updated as necessary to maintain their accuracy.
10. Identify any systems and equipment (e.g., electric power, instrument or control air, diesel fuel transfer, vacuum, heat tracing, etc.) that directly support the operation of the vital safety system being assessed (i.e., where the support systems/equipment are essential for the safety system to perform its safety functions) that are not included within the defined system boundary.

**S E P A R A T I O N**

**P A G E**

# **APPENDIX E**

## **Recommendation 2000-2 Defense Nuclear Facilities of Interest**



**DEFENSE PROGRAMS  
PRIORITY AND FOLLOW-ON FACILITIES**

**DP PRIORITY FACILITIES**

**Lawrence Livermore**

Superblock:  
Building 332, Plutonium Facility

**Los Alamos**

TA-55, Bldg.4, Plutonium Facility  
TA-3, Bldg. 29, Chemical Metallurgical Research (CMR) Facility

**Oak Ridge**

Y-12:  
Bldg. 9212, Wet Chemistry, Casting, Storage  
Bldg. 9204-2E, Disassembly Operations  
Bldg. 9215, SNM Processing &Fabrication

**Pantex**

Zone 12, Nuclear Explosive Bays 84, 104 and Cells 85, 98

**DP FOLLOW-ON FACILITIES**

**Lawrence Livermore**

Building 231 Complex (Vaults)  
Building 334, Hardened Engineering Testing Facility  
Building 331 Tritium Facility

**Los Alamos**

TA-18, Los Alamos Critical Experiments Facility  
TA-16, Weapons Engineering Tritium Facility  
TA-50, Radioactive Materials Research, Operations and Demonstration Facility (RAMROD)  
TA-54-G Solid Waste Disposal Site  
TA-54-TWISP Transuranic Waste Inspectible Storage Facility

**DP FOLLOW-ON FACILITIES- continued**

**Nevada Test Site**

Device Assembly Facility

**Oak Ridge**

ORNL:

Building 3019, Material Storage

Y-12:

Bldg. 9201-5, Depleted Uranium Machining, Arc Melt, Casting

Bldg. 9720-12, Warehouse Recoverable Salvage

Bldg. 9720-18, Depleted Uranium Warehouse

Bldg. 9206, Enriched Uranium Chemical Processing

Bldg. 9720-5, Warehouse Operations

Bldg. 9204-4, Quality Evaluation

**Pantex**

Building 12-116, SNM Staging Facility

Zone 12, Bays 64, 99 and Cells 44 (including 44-8), 96

Bldg 12-50 Separation Testing

Bldg. 12-60 Dynamic Balancer

Zone 4 Pit and Nuclear Weapons Storage

**Sandia National Laboratory**

Sandia Pulse Reactor Facility

**Savannah River**

Tritium Facilities

# ENVIRONMENTAL MANAGEMENT PRIORITY AND FOLLOW-ON FACILITIES

## EM PRIORITY FACILITIES

### Hanford

Tank Farms  
Plutonium Finishing Plant

### Rocky Flats

Building 371, Plutonium Chemical Processing Facility

### Savannah River

Canyons  
F Canyon  
FB Line  
H Canyon  
HB Line

Liquid Radioactive Waste Handling Facilities

### Idaho

CPP-666 Underwater Fuel Storage

## EM FOLLOW-ON FACILITIES

### Hanford

Waste Encapsulation and Storage Facility (WESF)  
Spent Nuclear Fuel Processing Facility<sup>1,2</sup>  
K Basins (East and West)  
Cold Vacuum Drying Facility  
Canister Storage building

- 1 Phase 1 assessment completion may be delayed until the latest Phase 1 Commitment due date
- 2 Phase 1 assessments may take credit for recent Readiness Assessment and Operational Readiness Reviews where appropriate

**EM FOLLOW-ON FACILITIES- continued**

**Idaho**

CPP-603-B Irradiated Fuel Storage Facility (Dry SNM Storage)  
CPP-659 New Waste Calcining Facility  
CPP-651 Unirradiated fuel Storage Facility  
Radioactive Waste Management Complex (RWMC)

**Lawrence Livermore National Laboratory**

233 Canister Storage Facility

**Nevada Test Site**

Radioactive Waste Management Sites in Area 5, Area 3, and the TRU Pad  
Waste Evaluation Facility

**Rocky Flats**

Building 559, Analysis Laboratory

**Savannah River**

235-F  
Defense Waste Processing Facility  
Waste Pretreatment Facilities  
Receiving Basin for Offsite Fuel (RUBOF)  
Savannah River Technology Center  
K-Reactor  
L-Reactor  
Central Laboratory Facility

**Waste Isolation Pilot Plant (WIPP)**

Entire Facility