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Department of Energy

Washington, DC 20585

July 27, 1998

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DNF SAFETY BOARD

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

Dear Mr. Chairman:

As committed in Dr. Victor H. Reis' letter of December 20, 1996, regarding maintaining access to nuclear weapons data and expertise, enclosed are the semiannual line management updates associated with Defense Nuclear Facilities Safety Board Recommendation 93-6 Implementation Plan, Revision 1. They cover the period December 1, 1997, to May 31, 1998.

Enclosure 1 summarizes accomplishments in the weapon archiving and knowledge preservation programs of stockpile stewardship activities at the Nevada Test Site, the Los Alamos National Laboratory, the Sandia National Laboratories, and the Lawrence Livermore National Laboratory. Enclosure 2 summarizes activities at the Pantex, Kansas City, and Y-12 Plants.

A copy of the briefing Charlie Stuart provided on the status of the weapon archiving and knowledge preservation projects is not included in this update since it was delivered to the Board in May 1998. Under Charlie Stuart's direction, Defense Programs is assessing archiving program requirements and establishing site-specific archiving and knowledge preservation program plans. Defense Programs has included the archiving and knowledge preservation program requirements in the Production and Planning Directive. These actions will further facilitate the institutionalization of the archiving program activities into the line management organizations as an ongoing responsibility.



If you have any questions, please contact me at 202-586-4879 or have your staff contact Marty Schoenbauer at 301-903-3489 or Dennis Miotla at 301-903-5427.

Sincerely,

A handwritten signature in black ink, appearing to read "Gene Ives", written over the printed name.

Gene Ives
Deputy Assistant Secretary
for Military Application and
Stockpile Management
Defense Programs

2 Enclosures

cc w/enclosures:

M. Whitaker, S-3.1

Enclosure 1**Nevada Test Site (NTS) Activities**

All archiving and test readiness activities associated with NTS dealing with Recommendation 93-6 are proceeding as planned. A summary of actions is provided below:

A Compact Disk-Read Only Memory (CD-ROM) was completed for the Test Directors' and Security and Operations' functional areas. Additionally, a CD-ROM was completed dealing with the Device Emplacement Module for light loads.

Joint video archiving continued this period. Each subject taping session also represents several organizational premeetings and extensive collecting and cataloging of the subject matter documentation, drawings, etc. All of this material, plus archiving information, will be scanned and recorded digitally, by keyword and other fast-retrieval technologies, and be placed on a CD-ROM. The following joint archiving activities have been completed:

Prompt diagnostics dealing with recording contractor, focussing on Lawrence Livermore National Laboratory (LLNL) technologies.

Prompt diagnostics with special measurements on reaction history using Los Alamos National Laboratory (LANL) technologies.

Scientific cable connectors and gas blocks, with a focus on LLNL technologies.

The static models, which model activities and procedures performed by the national laboratories as functional areas necessary to conduct an underground nuclear test, were issued for Stemming, Device Delivery and Insertion, and Device Assembly Facilities/Processes.

Completed conversion of 100 tapes of well-logging data from analog tapes to CD-ROM.

Joint future archiving activities:

CD-ROMs will be completed for the following functional areas: event hole logging; test authorities; rack/canister design, preparation, shipping and installation; site preparation - recording trailer park and ground zero set-up; and diagnostics equipment.

Videotaping sessions will cover prompt diagnostics, special measurements, and prompt gas sampling. This will complete the videotaping sessions planned for the 21 functional areas. The scanning of backup documents, generation of metadata sets, and production of CD-ROMs will continue.

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Archiving of the JULIN series (last UGT series) containment database preservation and integration, and high-yield test seismic data preservation will be performed by LANL, U.S. Geological Services, and Sandia National Laboratories.

Specific laboratory activities, which support archiving in addition to the above.

Sandia National Laboratories (SNL)

The Knowledge Preservation Program (KPP) conducted a panel on the Area III test site at SNL. The topics included field testing; shock and vibration environments; development testing cycle; management issues; environmental simulations; and environment, safety, and health issues.

KPP conducted a panel concerning specific firing set issues on the W76, W78, and W88. This panel also included personnel from the Kansas City Plant.

Three classes were videotaped for future reference. The classes were: System Engineering, Neutron Generators, and Batteries.

A total of 14 people were interviewed, and 177 hours of videotaping was completed.

Test Readiness Activity:

The STAGECOACH subcritical experiment was conducted March 25, 1998. All functional areas, which are archived, were exercised except for post-shot drilling.

Conduct the BAGPIPE subcritical experiment in fourth quarter Fiscal Year 1998.

Enclosure 2**Summary of Weapons Operations-Related Archiving Activities**

The members of the Executive Management Team (Wayne Lunsford, Los Alamos National Laboratory; Jerry Dow, Lawrence Livermore National Laboratory; Corey Knapp, Sandia National Laboratories; and Jeff Yarbrough, Mason & Hanger) have reviewed the status of their respective nuclear laboratory weapon safety specification (WSS) program activities. The WSS development program status, including archiving actions in support of Defense Nuclear Facilities Safety Board (DNFSB) Recommendation 93-6, is provided below.

I. WSS Archiving (Pantex)

<u>Weapon</u>	<u>Revision</u>	<u>Date</u>
B53	B	Complete
W56	C	Complete
B61-3/4/10	C	Complete
B61-7/11	C	Complete
W62	B	Complete
W69	D	Complete
W76	A	Complete
W78	A	Complete*
W80	A	September 1998
B83	A	September 1998*
W84	A	September 1998
W87	A	Complete
W88	A	September 1998

NOTE:

WSSs are living documents; they are updated as additional data are added by weapon component changes or when new information is discovered.

* Revision is being scheduled.

II. Oak Ridge Semiannual Status Report**A. Knowledge Preservation Program (KPP)**

The KPP Plan for the Y-12 Plant and the Oak Ridge Operations Office, Y/DA-9370, dated July 15, 1995, outlines the activities in support of DNFSB Recommendation 93-6. This report covers the program status through May 31, 1998. A list of accomplishments to date is included below:

- a. Completed the list of key positions for each facility from the Y-12 Plant Training Implementation Matrix (TIM).

- b. Completed identification of key functional areas/positions (identified a total of 102 critical positions) using the TIM, critical safety elements, and critical functional areas, list.
- c. Completed identification of current and former personnel with critical knowledge, skills, and abilities (initially, 175 names).
- d. Completed all the initial interviews (totaling 232) at the Y-12 Plant.
- e. Institutionalized an exit questionnaire for personnel occupying critical positions.
- f. Completed a searchable knowledge preservation database, with all interviews archived.
- g. Completed preservation and conversion of approximately 80 quality evaluation videotapes to the modern format.
- h. Developed a draft Generic Secondary Safety and Hazards Guideline.
- i. Utilized the preserved quality evaluation videotapes in personnel training. Utilized the archived interviews for procedural development, as appropriate, and generated an operations and safety information sources list.
- j. Established the Y-12 Plant Retiree Corps Program, with 34 retiree members to date.

B. Weapon Records Archiving Program (WRAP)

The Oak Ridge Y-12 Plant WRAP Plan, Y/AMT-343, dated September 1996, outlines the activities in support of the findings from the Department of Energy-Oak Ridge Operations Office Assessment of Weapon Programs Records Management, conducted in May 1996, by the Y-12 Site Office. This report covers the program status through May 31, 1998. A list of accomplishments to date is included below:

- a. Completed the Vital Weapons Records Proposal, Y/ES-182, dated May 1997.
- b. Completed the Strategic Plan for WRAP at the Oak Ridge Y-12 Plant, Y/ES-195, dated June 30, 1997.
- c. Completed the Preliminary Technical Architecture Specification and Records Study for WRAP at the Oak Ridge Y-12 Plant, Y/ES-193, dated July 18, 1997.
- d. Developed the pilot project and issued a report, As-Built Nuclear Test Unit Characterization Project, Y/EN-5738, dated March 9, 1998.

- e. Developed the pilot project, Material Property Database and Database Management System of Existing Stockpile Data, which has scanned 163 quality evaluation reports covering the seven weapon systems to date.

III. Kansas City Plant (KCP)

Knowledge Preservation and Archiving Programs

- a. KCP has completed the volume and quantity assessments of paper, x-rays, microfilm, aperture cards, microfiche, and magnetic media-type information.
- b. KCP completed development of a knowledge preservation system using six sigma process mapping methodology. This methodology has been demonstrated in a "Proof-of-Concept" Compact Disk Read-Only Memory format, showing how associates with a need to know could instantly access processes or product information. This system could be applied to new workers to accelerate their learning or as a performance support system to retrieve process information, thereby reducing production planning cycle time and the associated "ramp-up" costs for beginning manufacturing of a new fabricated product or one that is being returned to production after significant interruption.