

98-0000799



**Department of Energy**

Washington, DC 20585

January 6, 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:

Enclosures 1 and 2 summarize line management's review of actions under Defense Nuclear Facilities Safety Board 93-6 Implementation Plan, Revision 1. These reviews covered the period from September 1 to November 30, 1997.

Subsequent reviews will be semiannual per Dr. Victor H. Reis's letter of December 20, 1996. In June, 1998, we will forward you a summary of the review for December 1 to May 31, 1998.

If you have any questions, please contact me at 202-586-4879 or have your staff contact Marty Schoenbauer at 301-903-3489 or Ray Ferry at 301-903-3988.

Sincerely,

A handwritten signature in black ink, appearing to read "Gene Ives".

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

2 Enclosures

cc: M. Whitaker, S-3.1



### **Nevada Test Site (NTS) Activities**

All archiving and test readiness activities associated with the NTS are proceeding as planned. No issues were presented by any of the participating organizations. The participants were Guy Allen, Nevada Operations Office (NV); Willie Cooper, Lawrence Livermore National Laboratory (LLNL); Charlie Miller, Los Alamos National Laboratory (LANL); and Mark Dickinson, Sandia National Laboratories (SNL). A summary of the discussions presented is provided below.

A Compact Disk-Read Only Memory (CD-ROM) was completed for the stemming functional area. The CD-ROM allows organizations involved in stemming operations to have search capabilities.

Joint video archiving activities continued during the quarter. Each subject taping session also represents several organizational premeetings and extensive collecting and cataloging of subject matter documentation, drawings, etc. All of this material has been scanned and recorded digitally by keyword and other fast-retrieval technologies. The following joint archiving activities have been completed (NOTE: This completes 10 of 17 planned videotaping sessions.):

Recording trailer park and ground-zero general setup videotaping, focusing on LANL practices, was completed. LLNL procedures were captured on videotape earlier in the year. This consisted of 6 hours of videotaping and included personnel from LANL (4 current, 2 retired) and NV contractors (2 retired).

The test control activities module videotaping was completed. This session captured test responsibilities under the NV Test Controller, involving NV, laboratory, and other Federal and state agencies. This consisted of 9 hours of videotaping and included personnel from LLNL (1 current, 2 retired), LANL (5 current, 1 retired), NV (8 current, 4 retired), Bechtel Nevada (BN) (6 current, 7 retired), and other organizations (U.S. Air Force, Environmental Protection Agency, and the Special Operations and Research Division) (3 current, 1 retired).

Rack/canister design and shipping and tower installation panel discussions, with a focus on LLNL technologies, were videotaped. This consisted of 11 hours of videotaping and included personnel from LLNL (5 current) and BN (4 current, 1 retired).

Big hole drilling, a currently mothballed test capability, was discussed by a taped panel. This consisted of 10 hours of videotaping and included personnel from LLNL (1 current), LANL (1 current), and BN (3 current, 7 retired).

Joint future archiving activities:

Video premeetings and videotaping sessions are planned in the following areas: Arming and Firing, Device Assembly and Parts Shipment, Cabling, and Reaction History.

Completion of the following functional areas including production of the CD-ROM: Emplacement, Device Delivery and Insertion, Test Directors and Security Operations, and Crane Setup.

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

#### Sandia National Laboratories

- The Knowledge Preservation Program (KPP) videotaped nine individual interviews; some of the topics covered were design of capacitors, development of the W88, and inspection and acceptance testing at Y-12. KPP conducted a firing set panel and videotaped a special presentation on neutron tube design. Thirty-nine hours of videotape were collected.
- SNL hosted a six-member project team from Cinergy (a large utility company in the Midwest) that was interested in the KPP and access to the information. SNL will be giving a presentation to 12-15 people from the National Aeronautics and Space Administration regarding the transfer of knowledge. The Relevant Point of Access Video demonstration will be shown.

#### Lawrence Livermore National Laboratory

- The Department of Energy Device Assembly Facility (DAF) Operational Readiness Review (ORR) was completed; several prestart and post-start action items were identified and are being addressed. None will require major efforts to complete. The ORR team considered all aspects of the facility and its operations. Among other observations, they evaluated the DAF team responsiveness to exercise scenarios conducted throughout the week. Some portions of the exercise scenario assist in the maintenance of test readiness.
- Action items from the diagnostics 5-year stocktake are being worked by small teams to determine if action needs to be taken in any area to assure response consistent with a 2-3 year readiness posture. The issues fall into three categories: (1) assuring technical capabilities for measurements; (2) assuring continuity through a next generation of scientists and engineers, particularly in test-specific issues such as containment and nuclear chemistry; and (3) assuring operational safety formalities will be in place for ground zero and other activities, when needed.
- The LLNL containment program completed a sequence of five videotaping sessions on containment science and technologies. The videotaping process is also being used for other areas, such as onsite conference sessions, programmatic reviews, and panel sessions, to ensure enduring access to the information. The video will be processed into a searchable video format once that system migrates from the current unclassified implementation to cover both classified and unclassified content.

- The Nuclear Design Physics Conference was conducted at LLNL from October 20-24, 1997, and was videotaped in its entirety. The conference consisted of personnel from all three laboratories and covered various topics regarding design and physics of nuclear explosives.

#### Los Alamos National Laboratory

- LANL staff continues to monitor who has retired or getting close to retirement to ensure they are interviewed in a timely manner. Additionally, due to budget constraints, a shift to increase the mentoring of the younger staff is taking place, while cutting back on some of the producible items.

#### Test Readiness Activity:

##### HOLOG

- The HOLOG subcritical experiment was conducted on September 18, 1997.
- The final experiment and safety reviews and operations were conducted as planned, including operational features consistent with nuclear testing to enhance our readiness posture.
- The D-1 and D-day activities included delivery of the experiment assemblies that contain high explosives and plutonium from Area 27 to U1a, a downhole operation, installation into the experiment alcove, experiment alignment, alcove button up, facility button up, and execution.
- The Test Controller's Scientific Advisory Panel met at the Control Point to address safety aspects of the operation; weather and offsite impact analyses were described for a nuclear test. Execution used the nuclear testing control room for critical permissive commands.
- Skills and knowledge needed to conduct nuclear testing operations safely at the NTS were exhibited as laboratory and contractor personnel successfully completed the experiment with excellent diagnostic data results.
- Processes for assembly/disassembly, onsite transportation, insertion/emplacement, arming and firing, and timing and control were emphasized. Technical experts, who have been identified through the NTS archiving KPP, participated.

Five activities (as shown below) were conducted at the Big Explosives Experimental Facility during this time period.

September 23-25, 1997	1401 Series
October 8-10, 1997	1429 Series
October 29-30, 1997	C-Wave Series
November 19, 1997	Caballero VII
November 20, 1997	Ranchero 2-Plus

These activities exercised the following functional areas:

- Assembly,
- Storage and Transportation,
- Insertion and Emplacement,
- Timing and Control,
- Arming and Firing,
- Diagnostics, and
- Test Control Center Activities (D-1 and D-Day).

Additionally, a Containment Review Panel (CRP) for STAGECOACH was conducted on November 25, 1997. This CRP exercised the "containment" functional area.

### Summary of Weapons Operations Related Archiving Activities

At the October 16, 1997, meeting of the Executive Management Team, Wayne Lunsford, Los Alamos National Laboratory (LANL); Jerry Dow, Lawrence Livermore National Laboratory; Corey Knapp, Sandia National Laboratories; and Jeff Yarbrough, Mason & Hanger; discussed the status of their respective nuclear laboratory weapon safety specification (WSS). The WSS development program, including archiving actions in support of Defense Nuclear Facilities Safety Board Recommendation 93-6, is on schedule. The latest WSS issue with full archiving is:

<u>Weapon</u>	<u>Issue</u>	<u>Date</u>
B53	B	January 1997
W56	C	March 1997 (additional video format archiving planned)
B61 3/4/10	C	July 1997 (LANL will conduct additional archiving)
B61 7/11	C	July 1997 (LANL will conduct additional archiving)
W62	B	April 1997
W69	D	April 1996
W76	A	September 1996
W78	A	September 1997
B83	A	September 1997 (additional video format archiving planned)
W87	A	September 1997

The Lawrence Livermore National Laboratory's effort expended on WSS development is approximately one full-time equivalent and \$500,000, which includes WSS documents and archiving for the W83 and the W87.