Department of Energy
Washington, DC 20585

April 15, 1999

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:

The Department of Energy (DOE) appreciates the Board's review and comments provided in your letter and its enclosure of March 12, 1999, regarding our pit management plan. Enclosed are our responses to the issues and comments made by the Defense Nuclear Facilities Safety Board (DNFSB) staff.

We agree that the current Integrated Pit Storage Program Plan (IPSPP) does not fully address all pit life-cycle issues. The current effort has been focused on assessing our near-term plans for managing the increased pit inventory at the Pantex facility where the majority of the pit population currently exists. We believe this approach was necessary to initiate timely pit repackaging actions. The repackaging will provide us information on pit condition and ensure the pit inventory is stored in a safe manner. This approach also is consistent with the January 1997 Record of Decision (ROD) for the Storage and Disposition of Weapons-Useable Fissile Materials. In this ROD, the DOE decided to reduce, over time, the number of locations where the various forms of plutonium are stored, through a combination of storage alternatives in conjunction with a combination of disposition alternatives.

The repackaging of pits at the Pantex Plant into containers capable of maintaining the environment specified by the design agencies is the immediate focus. There may be substantial changes in the currently anticipated schedule and the outcome for long-term disposition of these pits, but the immediate need for repackaging and suitable storage environment will not change. The Staff Issue Report identified a number of issues that we have addressed or are currently addressing. None of these issues pose an immediate or quantified safety concern.

With identification of the preferred site for the Pit Disassembly and Conversion Facility and the interim storage container selection complete, DOE will proceed to examine longer-term and complex-wide issues associated with pit management. This effort will begin, in the summer of 1999, by establishing a multidiscipline team whose members have responsibility for pit management activities. Core team members are expected to consist of DOE representatives from the Albuquerque Operations Office, the Amarillo Area Office, the Office of Defense Programs, and the Office of Fissile Materials Disposition. The core team will utilize pit experts from the Lawrence Livermore National Laboratory and the Los Alamos National Laboratory and a systems engineer from Sandia National Laboratories. The core team will identify appropriate issues and develop the desired end-states; assign, subject to higher approval, the responsibilities

for their achievement; and identify the resources. DNFSB staff members are invited to participate in these meetings.

DOE will update the IPSPP to include those issues that bear on the long-term aspects of pit storage and disposition. The schedule for updating the IPSPP is dependent on the final scope of the long-term management issues. Some of these issues may dictate identification of alternate means of executing the IPSPP goals and objectives should there be unforeseen delays in implementation or a change in the desired end-state for pits.

If you have further questions, please contact me or have your staff contact Lester Lee of my staff at 301-903-4006.

Sincerely,

Victor H. Reis
Assistant Secretary
for Defense Programs

Enclosure

cc w/enclosure:
M. Whitaker, S-3.1

Response to Defense Nuclear Facilities Safety Board (DNFSB) Comments on the Integrated Pit Storage Program Plan (IPSPP)

A clear statement of the desired end-states and major constraints for both the strategic reserve pits and surplus pits.

The immediate intent of the IPSPP was to develop a planning document to show how the Department of Energy (DOE) planned to provide safe storage of national security and excess pits at the Pantex facility. DOE agrees with the DNFSB staff that a list of major constraints in achieving our desired end-states was not developed. In addition, the DNFSB staff is correct in that the IPSPP does not discuss, in any detail, pit storage at the Lawrence Livermore National Laboratory (LLNL), the Los Alamos National Laboratory (LANL), or the Savannah River Site (SRS). Storage of pits at those facilities and transportation between sites has not yet been brought into the scope of the revised integrated plan.

With the announced preference of the Pit Disassembly and Conversion Facility (PDCF) and selection of the interim storage container, DOE feels that it is now appropriate to examine more comprehensive issues associated with pit management. This effort will begin by establishing a multidiscipline team whose members have responsibility for pit management activities. Core team members are expected to be representatives of the Albuquerque Operations Office (AL), the Amarillo Area Office (AAO), the Office of Defense Programs, the Office of Fissile Materials Disposition (MD), and the Office of Environmental Management as program office for SRS. Experts from LANL, LLNL, and Sandia National Laboratories will be utilized, as necessary. The purpose of this team will be to develop a list of all end-states and constraints associated with pit storage across the DOE complex and a determination of where efforts need to be focused. This information will be contained in future revisions of the revised integrated plan.

A clear identification of the line responsibility and accountability for each step toward the end-states, along with defined mechanisms for transition of responsibility at intermediate states, where appropriate.

Given the focus of the IPSPP (safe storage of pits at the Pantex facility), to date, DOE believes that a clear identification of line responsibility and accountability has been provided. Future revisions encompassing the DOE complex as a whole will provide clear identification and defined transition mechanisms as required above. Section 3 of the document provides the general hierarchy of line responsibility and accountability for Pantex. It is the responsibility of the Pantex contractor (Mason & Hanger Corporation (MHC)) to manage the day-to-day operations for safe storage of pits at the Pantex facility. When issues are identified that cannot be resolved by the contractor, they are transferred through line management to the next higher level (MHC to AAO to AL to Headquarters (HQ)). The design agencies supply technical support to DOE. Issues requiring resolution by the design agencies are the responsibility of AL. Actions required by other DOE operations offices, or by HQ, would be managed by AL or HQ, depending upon the magnitude of the issue. Future revisions of the integrated plan will further address roles and responsibilities for achieving desired end-states. For example, lines of responsibility and accountability will need to be further defined when the IPSPP is modified to include pit management activities at other sites. This issue will be further evaluated through the forum described above.

A clear definition of the role of the design agencies, particularly in developing a rational technical basis for storage conditions and surveillance requirements that accounts for programmatic and technical uncertainties.

Section 3.4 of the IPSPP outlines the role of the design agencies in providing technical support to DOE in their areas of expertise. Design agency support is provided when specifically tasked by DOE. DOE tasked the design agencies to develop the storage and surveillance requirements to ensure safe storage of pits. As noted above, the core team will continue to look to the design agencies for their expertise and advice in the performance of the tasks noted above.

In regard to the container design and the repackaging program, the DNFSB is correct that the design laboratories were not formally tasked to participate in these activities. The design laboratories were verbally requested to participate in the review and concurrence of the container design. Representatives from LANL and LLNL have participated as Product Realization Team (PRT) members from the beginning of the container development effort. As PRT members, the design agencies are required to formally concur with each stage of the design development through packaging start-up. Design agency approval will be required for any significant changes made to the design now and in the future.

DOE also requested design agency participation in review of the proposed repackaging strategy. The laboratories are in agreement with the proposed repackaging strategy, given a repackaging rate of 200 pits per month. DOE has tasked them to determine what issues may arise if MHC cannot maintain this repackaging rate.

A logical development of functions and requirements--using a systems engineering approach--to achieve the above end-states for both the strategic reserve pits and the surplus pits.

DOE agrees with the DNFSB staff that the functions and requirements for the current end-states are not fully developed. The functions and requirements for these end-states are expected to be more fully evaluated during the Phase III systems engineering analysis and incorporated into the revised integrated plan.

A description of how current or proposed programs, controls, containers, and facilities meet the above functions and requirements, as well as where uncertainties exist and where improvements are needed.

There remain a number of open issues, many of which require evaluation against the anticipated end-states. The list of issues identified in the Phase II Systems Engineering Analysis is a list of questions that was developed by the individual performing the analysis. These questions were identified as issues because answers to the questions were not available prior to completion of the analysis. The outstanding questions will be tracked to ensure they were addressed. Questions that have been added to the list are items thought worthy of further investigation. More issues will be added as the functions and requirements for the end-states are fully developed. None of the questions or issues identified were found to be significant.

A description of resources allocated to execute the plan and the expected schedule, as well as a statement of the risks involved if delays are incurred.

DOE acknowledges that the risks involved, if delays to the schedule occur, were not fully evaluated and documented. This issue will be evaluated and added to the revised integrated plan.

Planning and funding issues associated with shipment of pits to the Pit Disassembly and Conversion Facility (PDCF) have been considered. MD discussed the purchase of additional Model FL containers with AL a number of times over the last year. New containers have not been purchased because it was not known whether shipment of the pits would be required for PDCF. Had containers been purchased, they may not have been needed.

The IPSPP included information associated with development and production of a new shipping container and packaging the pits into the container. This evaluation was performed to fully evaluate the differences and cost effectiveness of the AL-R8 Sealed Insert versus the AT-400A.

The IPSPP does not address safety system designation issues as they may relate to Building 12-116, the AL-R8 SI, or even the pit clad.

This issue is not presently addressed in the IPSPP. It will be addressed in the next revised integrated plan.

The pit packaging sequence is not defined in the IPSPP.

MHC has submitted a draft sequence to AAO for consideration. It is based upon Building 12-116/Zone 4 facility considerations, as opposed to pit family considerations. The design agencies stated this will not result in a safety concern if pits are repackaged by 2006.

The IPSPP does not address pits that will not fit in the current AL-R8 SI.

In Section 4 of the IPSPP, the systems engineering analysis identified this as an outstanding issue. AL has initiated actions to develop a modified container to accommodate these pit types. The revised integrated plan will include this issue and reexamine those issues of programs, controls, containers, and facilities addressed in response to the preceding comment.

The IPSPP does not address pit cleaning in the projected process flow. This process could have a significant effect on cost, schedule, and personnel exposure, depending on the number of pits that need cleaning.

The cleaning process was not addressed in the IPSPP. This issue will be addressed in the next revised integrated plan. It is agreed the cleaning process will cause an increase in personnel exposure as compared to the base exposure for repackaging into the AL-R8 Sealed Insert. However, this exposure is no greater than what was evaluated for repackaging into the AT-400A. The increase in personnel

exposure and program cost are not seen to be significant, since the number of pits expected to require this enhanced cleaning is small in comparison to the total repackaging effort.

The IPSPP does not address selection criteria for pits to be placed in the national security asset category or surveillance criteria for surplus pits.

National security needs determine the selection criteria for pits to be placed in the national security asset category. The nuclear design agencies have been tasked by the Deputy Assistant Secretary for Military Application and Stockpile Management to further develop these criteria.

The surveillance criteria for pits is discussed in the IPSPP, Section 7. It will be reviewed for completeness and revised, as necessary.

The IPSPP does not resolve what is to be done with pits currently in AT-400A.

Section 4.2.3 of the IPSPP identifies the pits in AT-400As as being an issue that needs to be addressed in the future. MHC would like to see these pits removed from the AT-400As as soon as possible so that AT-400A equipment can be disassembled and placed in long-term storage. The nuclear design laboratories would like to see the pits remain in the AT-400As for the next few years in order to evaluate the container performance. In AL's letter to AAO (January 7, 1999), we requested that MHC evaluate options for handling the pits in AT-400As. MHC's evaluation is currently ongoing. Once a decision is made regarding management of the pits in the AT-400As, we will add this information to the revised integrated plan.

Details left to the individual project plans that comprise the IPSPP are not necessarily carried out in a straightforward manner. For example, the SI project plan stated that a final design review would take place in December 1998. In fact, this review was little more than a Product Realization Team working meeting, at which one issue raised for discussion was whether or not to have a final design review.

As noted by the DNFSB, DOE was not prepared for a final review of the AL-R8 SI design in December 1998. The final design review for the AL-R8 SI was held in mid-February 1999.

The IPSPP still presents Building 12-66 as a viable alternative for pit storage although AAO acknowledged informing the Board that Building 12-66 was no longer under consideration.

Building 12-66 is still considered to be an option; however, further analysis has shown Zone 4 to be a better option. Building 12-66 will continue to be shown as an option until the National Environmental Policy Act documentation is completed and the preferred option is identified.

There are a number of contradictory statements and assumptions in the various IPSPP sections. For example, Section 4 states that additional shipping containers are necessary to support off-site shipment to PDCF, while Section 6 states that there are currently sufficient shipping containers for this purpose.

The IPSPP will be reviewed, and inconsistencies will be corrected. Section 6 is in error and will be corrected.