# DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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May 24, 2000

Brigadier General Thomas F. Gioconda
Acting Deputy Administrator
for Defense Programs
Department of Energy
1000 Independence Avenue, SW
Washington, DC 20585-0104

Dear General Gioconda:

The Defense Nuclear Facilities Safety Board (Board) continues to follow emergency response and recovery in response to the Cerro Grande fire at the Los Alamos National Laboratory (LANL). During most of the declared emergency, as LANL and Department of Energy (DOE) personnel worked intensely to control the fires and maintain the laboratory's facilities in a safe condition, the Board monitored progress from the Albuquerque and DOE-Headquarters Emergency Operations Centers and by communications from the field. As the situation stabilized and facility recovery and resumption planning began, two members of the Board's staff were dispatched to Los Alamos to better understand the condition of the facilities and plans to resume operations. The enclosed report summarizes the staff's observations.

The defense nuclear facilities at LANL incurred little or no damage, in part because of the implementation of pre-existing controls to mitigate the effects of wildfires. In particular, the clearing of underbrush appears to have been quite effective. Most notable during the fire were the outstanding efforts of the firefighters who courageously fought the fires, and of the laboratory personnel who maintained their positions at the Emergency Operations Center directing operations while the fire raged around them.

LANL, while still under a general emergency to better control activities at the laboratory, has developed procedures for recovering the facilities and resuming programmatic operations. The procedures include safety reconnaissance, condition assessment, facility recovery planning, and planning for a return to programmatic work.

The Board's staff noted that planning procedures are generally thorough, involve appropriate review by DOE, and are expected to permit operations to resume safely and efficiently. Full implementation of the procedures is needed, as well as continual attention to the potential for overlooking problems caused by the fire, firefighting, or other causes. While this imperative is apparent to emergency response and facility recovery personnel, all LANL employees and subcontractors need to understand it as well.

In its observations of the responses of DOE and its contractors to the Cerro Grande fire, the Board's staff noted exceptionally high worker morale and a commendable level of professionalism, competence, and commitment to safety.

Sincerely,

John T. Conway
Chairman

General Eugene Habiger
Mr. Mark B. Whitaker, Jr.

Enclosure

DEFENSE NUCLEAR FACILITIES SAFETY BOARD

# Staff Issue Report

May 23, 2000

MEMORANDUM FOR: J. K. Fortenberry, Technical Director

COPIES: Board Members

FROM: A. Jordan
D. Thompson

SUBJECT: Recovery of Los Alamos National Laboratory from Cerro Grande Fire

This report describes recovery plans of the Los Alamos National Laboratory (LANL) following the Cerro Grande fire. It also provides comments on the response to the emergency by the Department of Energy (DOE) and LANL. This report is based on observations by Defense Nuclear Facilities Safety Board (Board) staff members J. Blackman at the Albuquerque Emergency Operations Center (EOC) and A. Jordan at the DOE-Headquarters EOC during the period May 8–15, 2000. The discussion of recovery plans is based on on-site observations by A. Jordan and D. Thompson during May 19–20, 2000.

**Introduction.** The Cerro Grande fire began on May 4, 2000, at the Bandelier National Monument southwest of LANL. On May 7, 2000, at 6:47 p.m., LANL declared an emergency in response to the fire. Approximately 50,000 acres was eventually burned, and about 270 dwellings housing more than 400 family units were destroyed. A portion of the 43 square miles of the laboratory received some fire damage. Some temporary structures, such as trailers, were destroyed. However, no significant damage has been identified at any defense nuclear facility. In some places at LANL, clearing of underbrush as an ongoing program mitigated fire damage. During the emergency response, line management responsibilities shifted from the normal organizational structure to the emergency management team headed by the Emergency Director (Deputy Director, LANL).

Lessons-learned assessments concerning emergency response are under way by both DOE and LANL. The Board's staff notes that it would have been quite useful to have better maps at both the Albuquerque and DOE-Headquarters EOCs. Particularly useful would have been the "Fire Progression History" map that was prepared at the Incident Command Center and initially was not available even at the LANL EOC.

For the most part, the comments below address the facility and program recovery process designed to ensure that any damage is appropriately assessed and repaired, and that resumption of operations occurs safely.

**Resumption of Facility Activities.** A decision was made by the Emergency Director to implement recovery activities in two phases: preparation for facility recovery and reoccupation, and resumption of programmatic operations. In cases in which the facility and programmatic activities are closely linked, such as the Technical Area-55 Plutonium Facility, preparation for resumption of programmatic operations is being integrated with the final steps of facility recovery.

*Facility Recovery and Reoccupation*—To initiate planning for facility recovery, the Emergency Director established the Facility Recovery Center. The Center is headed by the Facility Recovery Manager, who is normally the deputy director of the Facility and Waste Operations Division. All 18 Facility Managers are members of the Facility Recovery Center, supported by appropriate staff members. DOE also assigned personnel to support this effort.

The facility recovery planning process includes prioritizing the order of facility recovery, conducting safety reconnaissance, performing condition assessments, developing facility recovery plans, completing recovery operations, and determining facility readiness for reoccupancy. Specific high-level procedures have been prepared by the Facility Recovery Center for each step leading to facility reoccupancy. It should be noted that facility reoccupancy does not mean resumption of operations. The Board's staff reviewed facility recovery planning activities, including the associated procedures.

Safety reconnaissance consists of an initial entry into a facility or group of facilities to conduct a visual assessment of any obvious safety hazards resulting from fire, fire fighting activities, or other causes. It addresses utilities; industrial hazards; and observable damage to structures, systems, and components.

A condition assessment is an entry or series of entries conducted to assess the overall condition of a facility and the operation of its systems. A condition assessment may require starting a system so that the functionality of system components can be assessed.

A facility recovery plan describes the process of restoring a facility to a condition in which it (1) meets appropriate requirements, including, as applicable, authorization basis requirements; and (2) makes the facility ready to support programmatic activities. The plan does not describe or authorize the resumption of programmatic activities that are to be conducted within the facility.

For Hazard Category 2 and 3 nuclear facilities, radiological facilities, and moderate and high-hazard non-nuclear facilities, both the Facility Recovery Manager and a DOE Facility Representative must approve the facility recovery plans and the recovery report documenting implementation of the plans. At least seven DOE individuals were brought in from other sites to assist in this process. Upon approval of the recovery report, the Facility Recovery Manager will declare the facility ready for reoccupation and will issue a declaration-of-readiness memorandum.

At a high level, the procedures for performance of these actions appear to be well-thought-out and comprehensive. However, the Board's staff has some reservations concerning the level of detail called for in these procedures. These reservations relate to examination of critical electrical and electronic systems to determine the extent of smoke damage which will not be evident under visual scrutiny alone.

*Resumption of Programmatic Operations*—Once the emergency has been terminated, line management responsibilities revert to the normal organizational structure. Line Management will then bear responsibility for planning for resumption of programmatic operations. For most defense nuclear facilities, this activity is expected to be completed within the next week. The Board's staff has reviewed the procedure *Programmatic Operations Recovery Following the Cerro Grande Fire Emergency*, and concludes that it is adequate for a safe return to normal programmatic operations.

**General Comments.** In general, work in all three EOCs (Headquarters, Albuquerque, and LANL) and in the Facility Recovery Center has proceeded in a professional, disciplined, and orderly manner. At LANL, work products have been expeditiously prepared and distributed and internal communications were clear and concise. Workers' morale has been exceptionally high, and their enthusiasm in the face of the impact of the fire on their community and work site is commendable.

As has been noted by DOE and LANL, actions need to be taken expeditiously to mitigate the effects of erosion and flooding resulting from the loss of vegetation. Action plans are being developed by a Burned Area Emergency Rehabilitation Team (directed by the U.S. Forest Service) and by an internal LANL team.