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DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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STATUS REPORT

Impact of Cerro Grande Fire on LANL
Tuesday, May 23, 2000, 9:00 EDT

Background

- Public Law 100-456 empowers the Defense Nuclear Facilities Safety Board to conduct independent health and safety oversight of Department of Energy (DOE) defense nuclear facilities such as Los Alamos National Laboratory (LANL). During the recent fire event at LANL, the Board had technical staff stationed at the DOE Headquarters Emergency Operations Center in Washington, DC and the Albuquerque Emergency Operations Center to provide immediate monitoring and oversight during the emergency. In addition, two Board staff surveyed the damage/recovery operations this past weekend. The Board's staff concentrated its review on the condition of defense nuclear facilities, efforts to assess if these buildings suffered any unseen damage from the fire (e.g. ventilation, electrical, radiation monitoring systems), and DOE/contractor plans to safely restart operations. The fire damage in and around the site was surveyed from the air and by vehicle.

Status of Defense Nuclear Facilities

- No significant damage has been identified at any defense nuclear facility. At some places at the laboratory, clearing of underbrush as an on-going program mitigated fire damage.
- The emergency was terminated at 4:30 pm yesterday, May 22, 2000.

Resumption of Facility Activities

- No programmatic work will take place until approved by the responsible line manager using the five-step Integrated Safety Management (ISM) process fundamental to Board Recommendation 95-2. The ISM process involves defining the work scope, analyzing the hazards, developing hazard controls, performing the work within the controls specified, and providing feedback and improvements.
- A facility recovery process is being completed for each facility prior to its reoccupation. The facility recovery 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 were 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. After resumption, additional preparation will likely be required in order to resume operations and programmatic work. The Board's staff reviewed facility recovery planning activities, including the 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 to assess the overall condition of a facility and the operation of its systems. A condition assessment may require starting a system in order to be able to assess the functionality of system components.
- 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. It 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. DOE brought in at least seven DOE people from other locations to assist in this process. Upon approval of the recovery report, the Facility Recovery Manager declares the facility ready for reoccupation and issues a declaration of readiness memorandum.
- At a high level, the procedures for performance of these actions appear to be well thought-out and comprehensive.

Potential for Erosion of Burnt Lands and Subsequent Flooding

- To the west and uphill of LANL, the land, which belongs to the U.S. Forest Service, is steeper and the trees and underbrush more heavily burnt than on LANL property. A wildfire and resulting ash can seal the soil so that it absorbs little water. During moderate and heavy rains, heavy runoff and erosion can be expected. The mud and debris carried with the water could clog culverts, causing flooding.
- Typically, beginning near the end of June or early July, LANL experiences a period of afternoon showers or thundershowers, which can be heavy.
- Both the town of Los Alamos and the laboratory itself may be affected by this potential flooding.

- Two parallel, yet coordinated, efforts to mitigate the possibility of flooding are taking place:
 1. External to LANL
 - S** A Burned Area Emergency Rehabilitation (BAER) Team, directed by the U. S. Forest Service and including members of the Bureau of Land Management, Park Service, U.S. Geological Survey, LANL, Los Alamos County, and the Pueblos has been formed to evaluate the entire 50,000 acres directly affected by the wildfire.
 - S** The purpose of the BAER Team is to give the Forest Service direction on controls needed.
 2. Internal to LANL
 - S** A team of subject matters experts headed by LANL's Environment, Safety and Health division, is addressing flooding of Lab property and the potential release of contamination.
 - S** Technical Areas (TAs) of particular concern are:
 - N** TA-18, which houses the Pajarito Laboratory where nuclear criticality experiments are performed and significant quantities of Special Nuclear Materials are stored. The facilities of TA-18 are within Pajarito Canyon, which originates on Forest Service land. Usually water flows are small in this canyon.
 - N** TA-2, the former location of the Omega West Reactor. The reactor has been defueled, but some residual contamination remains. There is a basement which has the potential for flooding.
 - N** TA-41, which was once used for work involving tritium and for storage of materials such as tritium, plutonium and uranium. At present, TA-41 has residues of tritium and plutonium. In the event of flooding, there may be the potential for residues to be released.
 - S** The results of LANL modeling, including estimates of the water flow that the LANL property can handle, are being provided to the BAER Team.
- To reduce the runoff from Forest Service lands to levels that the LANL property can handle, the BAER Team may create log dams, place straw bales strategically, or implement other controls.

Coordination of Federal Response

- The DOE, together with the LANL contractor staff, have the primary responsibility for assessing and developing any mitigation plans that may be necessary to counter any potential hazards resulting from the fire. This includes the potential impacts of mud slides on the LANL site.
- The Defense Nuclear Facilities Safety Board and the DOE Office of Environment Safety and Health provide oversight to ensure that public and worker health and safety are adequately protected.
- It is the Board's understanding that the EPA and the New Mexico Environmental Department have been working with DOE to conduct radiation monitoring around the site.
- The focus of LANL's immediate efforts is on quickly identifying and taking actions needed to address issues involving flooding, and not on reporting, although a report is expected to eventually become available. The Board's staff plans to monitor closely the LANL restart/recovery efforts, and will deploy its technical specialists to the site as necessary to address any emerging health and safety issues.