



January 5, 2008

A. J. Eggenberger, Chairman
Defense Nuclear Facilities Safety Board
625 Indiana Avenue NW, Suite 700
Washington, DC 20004

Dear Chairman and Members of the Board,

Nuclear Watch New Mexico respectfully submits these comments as follow up to the Defense Nuclear Facilities Safety Board's December 5, 2007 "Government in the Sunshine Act" public hearing. We thank the Board for this opportunity to discuss nuclear safety issues at Los Alamos National Laboratory (LANL). It is because the Board takes its difficult charge of providing advice and recommendations to the Secretary of Energy "to ensure adequate protection of public health and safety" at DOE's defense nuclear facilities so seriously, that the public is much safer today. But, concerning LANL, we still have a long way to go.

Currently, we await two decisions from the Board on extending the time for NNSA to respond to the Board's October 2007 requests for information. The first request, as you know, concerns safety-related systems at LANL that the Board has stated that it lacks confidence in the Lab's ability to improve. In the request for an additional 60 days to respond to the Board's request, NNSA stated that the additional time would allow them to report on "the progress of initiatives to address the long-standing systemic issues at LANL."

We at Nuclear Watch New Mexico believe that a couple of the longest standing systemic issues at LANL are its inability to do anything on time and the endless promulgation of initiatives, systems, and studies to address issues instead of just getting to work and fixing the problems. It seems that the Lab feels obligated to reinvent a process wheel every time that a real solution is needed.

In October 2007, the Board also requested that NNSA submit a report and briefing providing (1) a safety rationale for continuing the operation of the Chemistry and Metallurgy Research (CMR) Building, and (2) a detailed schedule of NNSA's actions to assure safe operation of this facility. The Board stated that it believes that continued operation of the CMR facility in its current condition poses significant risks to workers and the public. However, in a September 21 LANL weekly report, your site rep at Los Alamos said Lab officials did not expect to have sufficient funding in 2008 to develop the

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comprehensive new safety basis for the CMR facility. Instead, the Lab has proposed several interim "stop-gap" measures to limit risks in hot cell operations, among other issues. NNSA has stated that LANL plans to develop a CMR facility safety basis for post-2010 operations, with approval and implementation of this new safety basis in 2009. The Board stated that it was unlikely that this effort will eliminate or mitigate the safety risks of operating the CMR facility beyond 2010 without significant facility upgrades or mission changes. This timetable leaves little time for NNSA to complete any necessary safety system upgrades or identify alternative strategies for meeting mission priorities. The situation is further complicated by delays and continued budgetary uncertainty afflicting the CMR Replacement Project. Despite the seriousness and time constraints of these CMR issues, NNSA has asked for a 90-day extension for this reporting requirement to the Board. The first question that comes to mind is, "If LANL cannot find funding for a new CMR safety basis, where will it find funding for necessary CMR safety system upgrades?" And if LANL does come up with funding for a new CMR safety basis, it is unlikely that the Lab will have funding to implement it anyway. Your site rep's September 21 LANL weekly report stated that, "At present, LANL anticipates insufficient funding in FY-08 to fully implement updated safety bases..."

As we know, a safety basis is defined as the documented safety analysis and hazard controls that provide reasonable assurance that a DOE nuclear facility can be operated safely in a manner that adequately protects workers, the public, and the environment. 10 CFR 830.202 states that the contractor responsible for the nuclear facility must:

- (1) Update the safety basis to keep it current and to reflect changes in the facility, the work and the hazards as they are analyzed in the documented safety analysis; and
- (2) Annually submit to DOE either the updated documented safety analysis for approval or a letter stating that there have been no changes in the documented safety analysis since the prior submission; and
- (3) Incorporate in the safety basis any changes, conditions, or hazard controls directed by DOE.

LANL nuclear facilities are now operating under a set of safety bases ranging up to 12 years old. The CMR Facility is operating under a 1998 Basis of Interim Operations and associated Technical Safety Requirements (TSRs), PF-4 is operating under a 1996 Final Safety Analysis Report (FSAR) with more recently developed interim TSRs, and the Weapons Engineering Tritium Facility (WETF) is operating under a safety analysis that was approved in 2004, but has undergone none of the required annual updates. LANL has slipped proposing an updated safety basis for Area G TRU waste storage to 2nd quarter FY-08. Under the current safety basis (2003), Area G is postulated to have some of the highest-consequence accident scenarios of any LANL nuclear facility, yet funding has not been allocated to implement the new Area G safety basis, should it ever be completed. The Radioactive Liquid Waste Treatment Facility (RLWTF) operates under a 1995 safety basis.

What should be done about all this? Nuclear Watch recommends that the DNFSB pressure LANL to immediately complete and implement all Safety Bases or recommend

that LANL pause operations until such time that the Board feels that all Safety Bases are complete and implemented.

The Code of Federal Regulations (CFRs) is enacted to be enforced. What can be done about LANL's apparent lack of regard for the Code of Federal Regulations? Since June 2006, LANL has been managed by Los Alamos National Security (LANS) LLC, a for profit corporation. Perhaps LANL would be more motivated to create and implement safety bases if monetary penalties were involved. Section 234A of the Atomic Energy Act authorizes DOE to issue civil penalties for violations of requirements related to nuclear safety. Therefore, DOE could impose civil penalties for violations of the safety basis requirements if they are related to nuclear safety.

Nuclear Watch requests that the DNFSB recommend that the DOE Secretary impose civil penalties when LANL is out of compliance on safety bases. The Board should recommend that a Price Anderson Act fine be assessed to protect the public, the workers and the environment.

LANL has had many other nuclear safety violations. In October 2006, Area G discovered about three dozen drums that were unvented, a condition which violates the outdated Area G safety basis since it could result in flammable gas buildup. In March 2007, TA-55 declared a TSR violation and stood down operations when gas cylinders were found to lack the multiple restraints required by a specific administrative control. In August 2007, several monthly surveillance requirements for two safety-class confinement doors in the TA-55 basement were found to be absent from the implementing procedure. As a result, these monthly surveillances had not been performed since January 2006. This discovery resulted in a TSR violation. Also in August 2007, CMR declared a TSR violation upon discovering that 31 of about 600 rooms had been omitted from a surveillance procedure to inspect fire sprinkler heads. This surveillance went through CMR's procedure review and validation process and passed an independent verification review without the deficiencies being identified. Receipt of prohibited drums resulted in Technical Safety Requirement violations at WCRR last fall.

Nuclear Watch requests that the DNFSB recommend that the DOE Secretary impose civil penalties when LANL is out of compliance with Technical Safety Requirements.

The Board has asked LANL to eliminate known hazards. Area G currently has about 20,000 TRU waste containers above ground. There is a comparable inventory below ground. The 2003 Area G safety basis identifies about 3 dozen postulated accident scenarios with unmitigated off-site consequences ranging from 1 to 1,800 Rem CEDE. The Board has repeatedly stated that NNSA needs to expeditiously develop a viable pathway for shipping these drums to the Waste Isolation Pilot Plant or, if an acceptable approach cannot be identified in a timely manner, implement additional engineered measures to improve the safety posture of Area G. At current rates, these risks will persist for many years. Assuming the drum rejection, certification, and shipping rates experienced during the last 15 months, it will take roughly 8 to 11 years to certify and

ship the current aboveground inventory and another 8 to 11 years to address the belowground and TA-55 waste inventories.

Because LANL has been unable to identify and implement an acceptable approach to ship these drums to WIPP in a timely manner, Nuclear Watch requests that the Board recommend that LANL implement additional engineered measures to improve the safety posture of Area G.

Several of the largest postulated accident scenarios at LANL involve seismically induced fires. The updated LANL Probabilistic Seismic Hazards Analysis (PSHA) was released in May and concluded that seismic hazards at the site are higher than previously believed, e.g. a roughly 50% increase in Performance Category 3 (PC-3) seismic criteria. In July, LANL committed to provide a draft Project Execution Plan for a multi-year effort to perform facility-specific structural analyses to fully characterize the impacts of increased seismic risk and identify any necessary modifications or compensatory measures to ensure defensible protection. Evaluations of priority nuclear and high hazard facilities were expected to be completed within 2 years. LANL argued that the probability of an earthquake is small that exceeds the existing design basis for its nuclear facilities with credited engineered controls during this 2 year evaluation window, and rolled the dice for continuing normal operations. However, the \$11 million LANL needed for this two-year project execution plan for analyzing the effects of the increased seismic spectrum on nuclear facilities and the \$9M for the non-nuclear scope have not been funded. LANL is revising the plan based on only \$0.8M available in FY-08.

Nuclear Watch recommends that the DNFSB pressure LANL to immediately fund, complete, and implement the PSHA Project Execution Plan, or recommend that LANL pause operations until such time that the Board feels the PSHA Project Execution Plan is complete and implemented. Even though the probability of a seismic event may be small, consequences can be severe, too severe to ignore. We also request that the Board review the site Probabilistic Seismic Hazards Analysis of May 2007 for inadequacies.

A major reason that seismically induced fires might have high consequences is found in *Seismic Fragility of the LANL Fire Water Distribution System, LA-14325, March 2007*.

...the DRAFT 2007 PSHA is estimated to increase the probability of water distribution system failure by a factor of 2 or less. (Pg. 32)

The acceptance criterion for CMR is to survive an earthquake with 0.06 g peak ground acceleration. The criterion for CMR is relaxed from PC-2, based on the condition of the facility and safety-basis commitments. The CMR water distribution system also meets the PC-2 target performance goal if existing isolation valves are closed to dedicate the water distribution system to that facility and remove leaking branch lines.

These results are highly dependent on the length of piping in the distribution system that can break. The results for CMR, RLWTF,

TWISP, and WCRRF assume that existing isolation valves will be closed and that all piping that is not essential for supplying the nuclear facility from the distribution system will be removed.

- Up to 48 (CMR) isolation valves per facility may need to be closed to dedicate the water-distribution system to a specific facility and remove leaking branch lines.

- At this time, there is no protocol in emergency response that requires closing isolation valves.

- Closing the isolation valves will negate fire-fighting capability at nonnuclear facilities.

- The potential for and consequences of closing the wrong isolation valve were not considered in this assessment. (Pg. 33)

Nuclear Watch recommends that the DNFSB pressure LANL to immediately fund, complete, and implement a fire water distribution system upgrade or recommend that LANL should pause operations until such time the Board feels a fire water distribution system upgrade is complete and implemented. There must be a more reliable way to fight fires after a seismic event than to rely on manually closing many valves.

Many seismic upgrades will involve welding to strengthen structural members. In July 2007, LANL quality assurance division recently audited the institutional welding program. Findings include: lack of control of weld filler material; welding performed to unqualified processes and procedures; welding performed by personnel who have not been adequately trained; welding not inspected in accordance with codes and standards; lack of a NDE examiner to certify inspectors; a structural steel welding procedure used on some projects (e.g., WCRR seismic upgrades) not meeting code requirements; and welding program management assessments not being performed. These issues are similar to those found in 2003 that were the subject of substantial corrective actions through 2005.

Nuclear Watch requests that the Board pressure LANL to improve its welding program.

We at Nuclear Watch used to be concerned about “mission over safety” at LANL, but now a more ominous concern, profit over safety, has arisen. For example, the antiquated security-related nuclear Material Accounting and Safeguards System (MASS) software program plays a role in maintaining criticality safety, although it was not designed for this function. MASS modernization and functionality improvements are being planned, but funding for much needed upgrades to this critical system is uncertain.

As stated earlier, LANL anticipates insufficient funding in FY-08 to fully implement updated safety bases, to assess facility-specific impacts of the updated seismic spectrum, and to develop a new CMR safety basis supporting post-2010 operations. Due to funding issues, LANL is beginning to close down the project for a new storage and shipping facility for newly generated TRU waste. TA-55 is probably LANL's best-maintained nuclear facility, but at current funding levels, sub-standard practices persist. TA-55 is not

supported in a manner commensurate with its national importance. While core activities such as pit manufacturing are meeting targets, support operations and safety programs are increasingly strained to meet commitments within budget. LANL has proposed a new TA-55 safety basis; if approved, LANL estimates it will take a year to implement within the current budget. The 44-year-old RLWTF is in degraded material condition and is a potential single-point-failure for nearly all LANL nuclear operations. In the last year, due to budgetary issues, the replacement project has slipped expected operational startup from mid-FY- 10 to early FY- 12. LANL has recognized for some time the need for TRU waste facilities to evolve to an efficient, disciplined, and organizationally integrated state. In 2005, LANL provided NNSA an improvement plan designed to achieve such a state. In early 2006, NNSA added this improvement plan to appropriate authorization agreements. Then, in mid-2006, LANL curtailed the plan for budgetary reasons.

A recent LANL staffing analysis indicated that laboratory engineering staffing levels are at about half the assessed need. Present budget uncertainties impede adding engineering staff, and LANL management has made only a small number of limited-term offers. This will complicate efforts to address issues related to vital safety systems on a timely basis.

The Chemistry and Metallurgy Research Building Replacement Project nuclear facility may need to begin to phase down in January 2008, given current budget projections; design and construction of the radiological facility (RLUOB) will continue. Such a phase-down would further delay the replacement facility and extend the period during which NNSA will likely depend on CMR, particularly if the design team dissolves and has to be reconstituted later.

Nuclear Watch requests that the Board investigate all of the effects of the for-profit corporation, LANS LLC, on LANL. Is “lack of funding” always an actual funding loss, or just LANS’ unwillingness to spend the money on safety?

LANL’s history of chronic violations combined with its expanding plutonium pit production mission demand ever-sharper scrutiny of nuclear safety at the Lab. We contend that assuring nuclear safety will require hitting LANS in its wallet to really get its attention so that it truly fix problems. In that vein, we hope DNFSB will make recommendations to the DOE Secretary to penalize LANS whenever there is a nuclear safety infraction.

Sincerely,

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