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# DEFENSE NUCLEAR FACILITIES SAFETY BOARD

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94-0000303



January 27, 1994

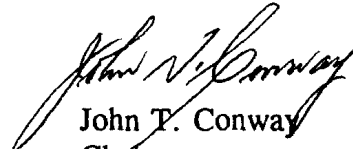
The Honorable Victor H. Reis  
Assistant Secretary for  
Defense Programs  
Department of Energy  
Washington, D.C. 20585

Dear Dr. Reis:

During the period November 15-18, 1993, members of the Defense Nuclear Facilities Safety Board Staff and Outside Experts conducted reviews at Los Alamos National Laboratory (LANL) on conduct of operations, including training and qualifications, and on radiation protection. The review of conduct of operations focused on LANL's TA-55 Plutonium Facility. The radiation protection review was more broad, but also included an emphasis of TA-55.

The enclosed trip reports are forwarded for your information and use. A number of the observations are relevant to your reviews of compliance with DOE Orders, and are illustrations of difficulties seen by the Board as affecting the important question of readiness of the TA-55 facility to carry through its activities for the Cassini mission.

Sincerely,

  
John T. Conway  
Chairman

c: The Honorable Tara O'Toole, EH-1  
Mr. Mark Whitaker, Acting EH-6

Enclosures

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

January 12, 1994

**MEMORANDUM FOR:** G. W. Cunningham, Technical Director

**COPIES:** Board Members

**FROM:** J. W. Troan  
R. W. Zavadoski

**SUBJECT:** Los Alamos National Laboratory (LANL), Radiation Protection Review, November 15-18, 1993

1. **Purpose:** This trip report documents a review by the Defense Nuclear Facilities Safety Board (DNFSB) technical staff (Jim Troan and Roger Zavadoski) and outside expert (Ted Quale) of the Radiation Protection Program at the Los Alamos National Laboratory (LANL) conducted on November 15-18, 1993.
2. **Summary:** The Radiation Protection Program at LANL was given an initial review at the LANL institution level and at a facility level for one specific facility, namely the TA-55 Plutonium Facility. Based on this review, the program was considered by the staff to be marginally satisfactory and in need of improvement. Specific observations include: the schedule for implementing radiation protection standards is not aggressive; it is not clear that the Radiological Control Manager has adequate authority; DP-AP-202 (Rev. 3) (now called by DOE *The Standards/Requirements Implementation Assessment Instruction*) has not been used by LANL in the compliance assessment of DOE radiation protection Orders; and technical justification for the methods of compliance with some key Radiological Protection Requirements, e.g. air sampling, is not adequately documented.
3. **Background:** DOE Order 5480.11, *Radiation Protection for Occupational Workers*, DOE Notice 5480.6, *Radiological Control, (Radiological Control Manual)* and DOE Order 5400.5, *Radiation Protection of the Public and the Environment* establish the requirements for radiation protection for workers, the public and the environment. These standards were used in the assessment of the program and of employee work practices, training and knowledge level.
4. **Discussion/Observations:**
  - a. **Implementation of Radiation Protection Standards:** LANL in October, 1992 submitted an Implementation Plan for the Radiological Control Manual (RCM). LANL stated that it originally planned to reach full compliance with the RCM in September, 1997. However, DOE-Albuquerque Health Protection Division has committed LANL defense nuclear facilities to achieve full compliance with the RCM by October, 1996. LANL stated that the Implementation Plan for 5400.5 will be submitted in November, 1994.

Following the DNFSB staff review, in a November 30, 1993 letter from Dennis J. Erickson, LANL Division Director of Quality, Environment, Safety and Health Assurance to Jerry Bellows, Manager, Los Alamos Area Office, LANL outlined plans for accelerated Order compliance self-assessments. DNFSB Staff expects that the implementation plans and compliance assessment will be significantly accelerated, although a revised schedule is not yet available.

Implementation of a LANL Radiation Protection ALARA Program appears slow. Annual facility Administrative Control Levels prescribed by the RCM § 211.3 have not yet been adopted. The implementation date for the program is February 1994. LANL noted that active ALARA programs were in place in TA-55 and TA-43, and that implementing a laboratory-wide ALARA program would begin in FY94.

- b. Authority of Radiological Control Manager: The person designated as the LANL Radiological Control Manager does not head the Radiological Controls Organization (RCM Article 141.3), but instead leads the Policy and Program Analysis (P&PA) Group, which is one of eighteen groups in the Quality, Environmental, Safety and Health Assurance Division. It appeared that the P&PA Group is on par with the eighteen groups in its division. LANL's new organization structure has twenty-seven divisions. The Radiological Control Manager has not been given authority over the radiological controls or operational line organization. Other group leaders that worked in the radiation protection area did indicate a sense of cooperation with the Radiological Control Manager.
- c. Method of Compliance Assessment: The process used prior to the November 15-18, 1993 review to assess compliance to the RCM, DOE Order 5480.11 and DOE Order 5400.5 has not followed DP-AP-202. Determination of compliance was sometimes informal and undocumented. Objective evidence to substantiate compliance was not required in all cases. LANL personnel described the decision making process as sometimes simply discussion and consensus agreement without documentation. It is noted that the November 30, 1993 LANL letter on Order Compliance states that LANL will use DP-AP-202 (Revision 3).
- d. Technical Justification of Some Methods of Compliance and Operation: The implementation plans and compliance assessments developed to date for the RCM were found in some cases to be incomplete and did not give sufficient technical justification for compensatory measures. The resolution of ambiguities in the RCM and interpretation of certain sections appear to be accomplished somewhat informally and are not always well-coordinated with the planning effort.

Technically justified compliance to the Radiation Protection Program requirements was not always apparent. For example, variable sample air flow drawn by air monitoring equipment in PF-4, Section 200 was noted by the staff. The DNFSB staff questions

the equipment's performance, and ability to satisfy the various requirements stipulated by the RCM.

- 5. Future Staff Actions:** Staff actions are expected to include the following:
- a. Review of LANL progress in accelerating the Order Compliance Self-Assessment process as outlined in LANL's November 30, 1993 letter. The initial focus identified by LANL is at the institution level and at TA-55.
  - b. Review of RCM implementation for various Technical Areas.
  - c. Review of LANL's technical justification for RCM equivalency determinations when available.
  - d. Review of specific technical areas such as: Air monitoring standards and results from the assessment of the Augmented Evaluation Team Alpha Continuous Air Monitoring Report of August 1993; the LANL External Dosimetry Technical Basis Document; the Neutron Dosimetry Program's Field Correction Factor Determination Program.