

**[DOE LETTERHEAD]**

February 9, 1994

Mr. John Conway  
Chairman  
Defense Nuclear Facilities Safety Board  
625 Indiana Avenue, N.W.  
Washington, D.C. 20004

Dear Chairman Conway:

The Defense Nuclear Facilities Safety Board has raised concerns regarding the adequacy of the orders compliance assessment program at the TA-55 Plutonium Facility at Los Alamos National Laboratory. These concerns were discussed in your December 29, 1993, letter to the Department and expressed at the January 20 and 24, 1994, meetings of the Board with Department of Energy (DOE) representatives.

While I believe that Defense Programs and the Los Alamos National Laboratory have begun a serious program to comply with the Board recommendation 90-2, the Department shares the Board's sense of urgency that concerted actions be taken to resolve the status of order compliance at the TA-55 facility. To this end, the Assistant Secretary for Environment, Safety and Health has recommended several actions which have been accepted by the Assistant Secretary for Defense Programs. Details of these actions are enclosed.

You will note that respective roles and responsibilities have been delineated for both offices. The Office of Environment, Safety and Health will be responsible for defining order compliance acceptance criteria; to be applied to future order compliance activities at operating facility throughout the Department; conducting a safety review of TA-55; and performing an independent review of the adequacy of line management's order compliance assessment at this facility. Defense Programs as line management, will be responsible for actual conduct of the order compliance assessment, and any resultant corrective or compensatory actions.

I plan to make use of the technical talent available within DOE complex to carry out these actions and to develop a DOE-wide approach to Order Compliance that is pragmatic and technically sound.

I will keep you informed of the progress of these actions and brief you upon their completion.

Sincerely,

***Tara O'Toole, M.D., M.P.H.***  
***Assistant Secretary***  
***Environment, Safety and Health***

Enclosure

Environment, Safety and Health  
Enhanced Oversight of  
Los Alamos Technical Area (TA) 55  
Plutonium Facility (PF) 4

I. INTRODUCTION

In January, 1994, the Los Alamos TA-55 Facility implemented a new campaign to manufacture Pu-238 fuel for the Cassini space mission Radioisotope thermoelectric generators (RTGs). A Mentor Program had been implemented by the Office of Defense Programs (DP) in March of 1993. This program is intended to instill disciplined operations. Los Alamos National Laboratory (LANL) has also completed a preliminary evaluation of compliance with 6 orders, was completing an assessment of 51 safety health orders, was completing a Preliminary Hazards Analysis (PHA), and was in the process of updating its Safety Analysis Report (SAR).

The Office of Environment, Safety, and Health (EH) has committed to an Enhanced Oversight Program for the facility to provide independent validation of safe operation and the effectiveness of the line organization Order Compliance Assessment, Order compliance processes and programs, and disciplined facility operations. This Enhanced Oversight Program will focus primarily on the Pu-238 processing area within TA-55.

II. OFFICE OF ENVIRONMENT, SAFETY, AND HEALTH (EH) ENHANCED OVERSIGHT PLAN FOR LOS ALAMOS TA-55, PF4, OPERATIONS

The Environment, Safety and Health (ES&H) evaluation plan encompasses four major activities:

1. The conduct of an EH independent assessment of the facility basis for safe operation with emphasis on the Pu-238 processing area. This activity will provide independent assurance the facility design and functional requirements will facilitate operation within the safety envelope, provide reasonable margins of safety for radiological and chemical hazards, and provide defense in depth for safety attributes.
2. Evaluate the Order compliance program and implementation. This will provide independent review of the effectiveness of this program and the implementation of DOE Orders essential to worker and public safety, and validation of the effectiveness of the line organizations self assessment of order compliance.
3. Implement onsite EH representative presence to monitor and validate disciplined operations, corrective actions, and improvements with emphasis on the Pu-238 processing area. This added EH presence will enable direct and timely feedback to the line organization and provide added communication and support for the activities described above.
4. Develop DOE Order compliance criteria for operating facilities. These criteria, which will be generated in parallel with the enhanced TA-55 oversight, will provide definitive

guidance on Order compliance expectations to the line organizations and will serve as a basis for future EH oversight of Order compliance.

### III. FACILITY SAFETY BASIS AND TECHNICAL SAFETY REVIEW

#### Background

PF-4 has recently submitted a Basis for Interim Operation (BIO) dated January 1994. In addition, the facility is currently conducting Preliminary Hazards Analysis (PHA) to update the Safety Analysis Report (SAR). This effort was to be complete in January 1994. Past analyses included a completed hazards analysis in January 1987 (Independent Safety Review Team, and a draft Final Safety Analysis Report (draft 1991 FSAR). Also in 1991, the Office of Defense Programs conducted a Safety Survey review.

#### EH Actions

EH will conduct an independent evaluation of the TA-55, PF4 Facility to provide assurance that the design and functional requirements will facilitate operation within the safety envelope, provide reasonable margins of safety for radiological and chemical hazards, provide defense in depth for safety attributes, and compliance with applicable DOE Orders and requirements. The methodology for maintaining the safety basis combines deterministic engineering design, analysis and judgement to ensure the nuclear facility is designed, operated and maintained with a level of safety acceptable to DOE as it affects the health and safety of the facility workers, the public, and the environment.

The first phase of this review will be an evaluation of the safety basis for the facility including the Safety Analysis Report (SAR), Preliminary Hazards Analysis (PHA) Basis for Interim Operation (BIO), and selected design or modification packages. This review will include analysis of key areas of the safety basis such as safety system selection, operating limits, assumptions, analysis, and safety margins. The results of this first phases of review will provide input and focus to the second phase of the review.

The second phase of the review will be a Technical Safety Review to evaluate the functionality of key systems, structures, and components and the effectiveness of supporting processes and programs. The selection of systems for review will be based on the Safety Documentation Review and evaluation of the facility operational history. For the selected systems this review will include a vertical and comprehensive evaluation of the configuration control and management, testing and calibration, system operation and maintenance, and related personnel training. EH will also review the effectiveness of the other key programs essential to public or worker safety including radiological safety, chemical control and industrial hygiene, and criticality safety.

### IV. ORDER COMPLIANCE REVIEW FOR TA-55, PF 4, PLUTONIUM 238 OPERATION

#### Background

LANL was directed to perform an Order Compliance Self-Assessment in January 1992. It initially performed an institutional assessment of 43 orders of interest. This initial assessment was rejected by Defense Programs because it did not meet the Defense Programs standard (Standards/Requirements Implementation Assessment Instruction DP-AP-202). In October 1993, LANL and the Department agreed to a new effort, the Phase I Order Compliance Self-Assessment Program. LANL would review 51 safety and health orders for the institution and for Plutonium Facility TA-55 as a first priority. The Phase I Program Plan was submitted on December 22, 1993, and approved for implementation, with a scheduled completion date of March 31, 1994. Draft corrective action plans for noncompliance are scheduled to be completed by April 30, 1994.

During the initiation of Cassini Pu238 production, LANL conducted a special assessment of six orders. The six orders selected by LANL and agreed to by Defense Programs for the special assessment were:

DOE Order 5480.11, "Radiation Protection for Occupational Workers" and the Rad Con Manual

DOE Order 5480.20, "Personnel Selection, Qualification, Training, and Staffing Requirements at DOE Reactor and Non-reactor Nuclear Facilities"

DOE Order 5480.a, "Accreditation of Performance-Based Training for Category A Reactors and Nuclear Facilities"

DOE Order 5480.24, "Nuclear Criticality Safety"

The summary results of the special assessment were provided to Defense Programs on December 23, 1993. The results indicated 647 noncompliance out of 1998 requirement statements (line-by-line assessments) for TA-55. Most of these noncompliance (459) were in the area of radiation protection. LANL determined that none of the noncompliance posed a serious threat to health and safety, and corrective actions for the noncompliance were initiated.

EH Actions:

EH will conduct an independent evaluation of the status of DOE Order Compliance at the Los Alamos TA-55 PF4, facility, as it relates to plutonium 238 operations. This review will be conducted using existing standards and procedures including DP AP 202, Standard Requirements Implementation Instruction, and the core requirements of DOE Order 5480.31, "Startup and Restart of Nuclear Facilities." The EH Order compliance review will include an evaluation of the effectiveness of programs and processes currently in place and a review of the DP and LANL Order compliance self assessments and corrective actions.

Order Compliance Process and Program Review - This portion of the EH Order compliance review for TA-55, PF4, plutonium operations will focus on the effectiveness of both DOE and LANL processes and programs in:

- Identifying and prioritizing the applicability of Orders and in Formally reviewing and controlling non-compliances, compliance schedule agreements, exemptions, and compensatory measures.
- DOE and LANL systematic monitoring of facility Order implementation and adherence and in implementing and tracking resolution of noncompliance.
- Developing processes, programs, and procedures to support the effective implementation of Orders and standards.
- Effectively incorporating applicable Order requirements into DOE, LANL, and facility training and qualification programs, including the timely distribution of new Orders to responsible DOE and LANL managers and personnel.

Review of DP and LANL Order Compliance Assessments - EH will review the effectiveness of the assessments of Order compliance conducted by DP and LANL. This includes the assessment by LANL of six selected Orders during PF-4 startup, and the current Phase I LANL Order Compliance Review scheduled to be completed March 1, 1994. EH will evaluate the scope and methodologies employed by these assessments and the effectiveness in evaluating Order compliance, identifying non-compliances, and assuring timely resolution of non-compliances and programmatic deficiencies. EH will also evaluate the effectiveness of DP and LANL processes and programs for conducting continuing assessments of Order compliance in the future.

## V. DEVELOP ORDER IMPLEMENTATION AND REVIEW CRITERIA

EH will take the lead in developing a set of criteria which establish a basis for the effective implementation of DOE Orders in a production facility and a standard by which to measure performance. These criteria, which will be provided to both the line and oversight organizations, will assist in achieving common goals and expectations in Order implementation and compliance, and facilitate effective management and oversight. EH will develop these generic criteria for Orders by assembling a team of experienced senior personnel from EH and from other DOE offices, as well as expert consultants.

## VI. SCHEDULES AND RESOURCES

The EH Enhanced Oversight will include activities at Headquarters, the Albuquerque Operations Office, and at the TA-55 facility. Oversight activities will be scheduled and coordinated to limit as much as possible the impact on facility self-assessment activities and operations. Potential issues identified by EH will be documented on issue forms and forwarded on a daily basis to line management. The reports associated with each phase of EH oversight will be generated within 2 weeks of completion of the review.

A tentative schedule of EH oversight is as follows:

A Tentative Schedule of EH Oversight