

February 27, 1997

Mr. W. John Denson
[]
Lockheed Martin Idaho Technologies Company
P.O. Box 1625, MS 3989
Idaho Falls, ID 83415-3898

EA 97-01

Subject: Preliminary Notice of Violation and Proposed Imposition of Civil Penalty -
\$25,000 (NTS-ID-LITC-PHASEOUT-1996-0001)

Dear Mr. Denson:

This letter refers to the Department of Energy's (DOE) evaluation of the circumstances surrounding a number of radiological and work control deficiencies associated with the unplanned internal radiation exposures to five workers on July 22, 1996, during decommissioning activities at the [] Waste Calcining Facility [room]. Lockheed Martin Idaho Technologies Company (LMITCO) convened an independent investigation team to review this event and initiated a review on July 25, 1996. The team issued its report on August 28, 1996.

The DOE Office of Enforcement and Investigation initiated an evaluation of this occurrence on July 23, 1996, but deferred any action pending completion of the LMITCO's independent investigation. After a review of the independent investigation team report and other documentation, the Office of Enforcement and Investigation concluded that violations of 10 CFR 830.120 and 10 CFR 835 likely occurred. On January 29, 1997, a conference was held with members of your staff to discuss the facts and circumstances surrounding these violations, their safety significance, and the status of corrective actions taken or planned to resolve the problem. A summary conference report is enclosed.

During this incident, five workers received unplanned and preventable internal radiation doses ranging from [dose values]. A sixth worker received minor skin contamination. The radiological uptakes took place when a pipe was cut, causing the spread of airborne radiological contamination throughout the room in which the individuals were working. These uptakes occurred due to multiple failures across several organizational levels to implement and adhere to the basic radiological and work control processes established by you to ensure that this work was performed safely. For example, the required air monitoring to detect airborne contamination releases was not in place, the required radiation surveys were not performed during the pipe cutting, and work was

not stopped, as required, to implement the necessary surveys. As a result, the workers, (who were not wearing the necessary respiratory protection) were unaware that the release had occurred, and they continued to work unprotected for approximately 40 minutes.

Although regulatory exposure limits were not exceeded, a significant potential for over-exposures was present. Specifically, the exposures were not limited by the processes you established to control the work, but by the fortuitous exit of two of the workers from the area for unrelated reasons. While exiting the control point, it was determined that the individuals were contaminated at which time the other workers were evacuated from the room, and an evaluation was begun to assess the exposures to the workers.

As described in the enclosed Preliminary Notice of Violation and Proposed Imposition of Civil Penalty, the violations associated with these exposures involve inadequate radiological monitoring of the workplace and failure to implement adequate work controls. In this case, although the radiological hazards had been properly identified in your work planning process, this information was not adequately communicated to those individuals performing the work. As a result, the workers did not understand the potential radiological hazards and did not have adequate information to comply with radiological requirements and work hold points.

DOE recognizes that your investigation of this incident was thorough and led to a complete understanding of the underlying causes of these exposures. However, DOE is concerned that the number of work control deficiencies associated with this incident, coupled with the fact that these deficiencies crossed into several different organizations, is indicative of a potentially broader weakness in the implementation of your work control program. Additionally, a number of other less serious radiological events caused by inadequate implementation of work controls have occurred during the past year that also contribute to this concern. Therefore, in accordance with the "General Statement of Enforcement Policy" (Enforcement Policy) 10 CFR 820, Appendix A, the violations associated with this incident have been classified as a Severity Level II programmatic problem.

To emphasize the need to develop and fully implement corrective actions to assure the proper control of radiological work-related activities at the facility level, I am issuing the enclosed Preliminary Notice of Violation and Proposed Imposition of Civil Penalty in the amount of \$25,000.

The base civil penalty for this facility type is \$25,000. The escalation and mitigation factors described in the Enforcement Policy were considered and no adjustments were considered appropriate. DOE acknowledges that you reported the matter after it occurred. However, enforcement mitigation based on self identification and reporting is premised on "early" identification and correction of nuclear safety-related problems

before, rather than after an event occurs. This early identification includes recognition of adverse performance trends that constitute or lead to violations of nuclear safety requirements. With respect to the consideration of any mitigation based on the comprehensiveness of your corrective actions, DOE considered your investigative response and analysis of this event to be comprehensive and we considered, in recognition of that response, whether partial mitigation of the base civil penalty should be awarded. However, on January 13, 1997, another event resulting in unplanned radiation exposures to two workers occurred involving an additional example of the failure to adhere to radiological protection procedures and inadequate work planning (NTS-ID-LITC-WASTEMNGT-1997-0001). This event indicates that your broader corrective actions to address the underlying causal factors common to these events i.e., failure to follow established procedures to minimize recognized hazards, have not been sufficiently implemented to warrant mitigation. Although DOE considers this most recent event as potentially significant in and of itself, we have concluded that it is directly related to the correction of the broader work controls problem that is the focus of this enforcement action. Therefore, DOE has decided to defer any enforcement action regarding the January 1997 event pending successful implementation of your corrective actions.

You are required to respond to this letter and you should follow the instructions specified in the enclosed Preliminary Notice of Violation and Proposed Imposition of Civil Penalty when preparing your response. In your response you should document the specific actions taken and any additional actions you plan to prevent recurrence. In particular, to better understand how LMITCO will address the broader programmatic work control issues, your discussion of the corrective actions should also include the following:

- (a) A description of how LMITCO will improve the work control for all types of radiological activities (construction, deactivation/decommissioning, environmental support, maintenance, operations, etc.) conducted at the Idaho National Engineering and Environmental Laboratory (INEEL). This discussion should include the specifics on how the role of the Radiological Work Permit is being strengthened.
- (b) A description of how LMITCO will convey the INEEL work performance expectations to each of the various levels of LMITCO, from senior management down through to the individual workers.
- (c) A description of how LMITCO will evaluate the work conducted across the INEEL to determine how well the work performance expectations are being met.

- (d) A description of how LMITCO will evaluate the Radiological Controls Program to provide objective evidence of compliance with LMITCO's internal procedures for work control.

After reviewing your response to this Notice, including your proposed corrective actions, DOE will determine whether further action is necessary to ensure compliance with the applicable nuclear safety requirements.

Sincerely,

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

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Enclosures:
Preliminary Notice of Violation
Enforcement Conference Summary Report

**PRELIMINARY NOTICE OF VIOLATION
AND
PROPOSED IMPOSITION OF CIVIL PENALTY**

Lockheed Martin Idaho Technologies Company
[Building]
EA 97-01

As a result of a Department of Energy (DOE) evaluation of activities associated with the unplanned internal radioactive material uptakes by five workers during the cutting and removal of process lines in the original Waste Calcining Facility (WCF) of the Chemical Processing Plant (CPP) [building] on July 22, 1996, violations of DOE requirements were identified. In accordance with the "General Statement of Enforcement Policy, " 10 CFR 820, Appendix A, DOE proposes to impose a civil penalty pursuant to Section 234A of the Atomic Energy Act of 1954, as amended, 42 U. S. C. 2282a., and 10 CFR 820. The particular violations and associated civil penalty are set forth below.

- A. 10 CFR 830.120 (c) (2) (i) requires work to be performed to established administrative controls using approved procedures.

10 CFR 835.1001 (b) requires that where use of physical design features are demonstrated to be impractical, administrative controls and procedural requirements shall be used to maintain radiation exposures as low as reasonably achievable (ALARA).

Contrary to the above, on July 22, 1996, during the cutting and removal of process lines in the WCF, administrative controls and procedural requirements to maintain personnel radiation exposures ALARA and to control work were not implemented or adhered to in that:

1. Attachment F-1 "Radiological Work Procedure, WCF Closure Disassembly Activities, [Room] Disassembly," Revision 0, approved May 14, 1996, of "Special Conditions, Idaho Chemical Processing Plant WCF RCRA Closure Project, WCF [Room] Piping and Vessel Disassembly," Issue 1, dated May 22, 1995, (sic) requires that:
 - a. A Radiological Control Technician (RCT) perform a survey as lines are being cut or opened to determine radiological levels and special handling requirements; however, on July 22, 1996, the RCT did not perform a survey as the lines were being cut.

- b. A radiological hold point be implemented during cutting activities in order for the RCT to perform a survey as lines are being cut or opened; however, workers did not adhere to the hold point and continued cutting process lines without the required radiological survey being performed.
 - c. Respiratory protection be addressed on the radiation work permit (RWP) for welding activities or for opening radiological systems; however, RWP 96-WP-522 was used on July 22, 1996, for work activities conducted simultaneously with the cutting of radiologically internally contaminated piping, and the RWP did not address respiratory protection.
2. Radiation work permits (RWPs) 96-WP-522 and 96-WP-532 identify limiting conditions which would void the RWPs. These limiting conditions include 1) a change in the maximum contamination levels listed on the RWPs or 2) the presence of liquid in the pipes.

Contrary to the above, on July 22, 1996, work continued after changes in the working conditions exceeded the limiting conditions and voided the RWPs in that:

- a. Contamination levels in the work area increased due to low level positive air flow from an internally contaminated cut pipe and exceeded the maximum contamination levels identified in the RWPs; however, work was not stopped for approximately 40 minutes after the RWP was voided.
 - b. Liquid was found in a cut pipe; however, workers, not recognizing that liquid in a cut pipe, voided the RWPs, continued to work.
3. RWP 96-WP-532 requires an airline for respiratory protection. On July 22, 1996, several workers, e.g., carpenters and laborers, signed the RWP indicating that they would comply with the specified radiological requirements; however, these workers did not wear airline respiratory protection during work activities.
- B. 10 CFR 835.401 (a) requires that monitoring of individuals and areas be performed to (3) detect changes in radiological conditions and (4) detect the gradual buildup of radioactive material in the workplace.

Contrary to the above, on July 22, 1996, during the cutting and removal of contaminated process lines in the WCF, radiological monitoring was not performed to detect the change in radiological conditions and the increase in radioactive material in the workplace.

- C. 835.403 (a) (1) requires air samples to be taken as necessary to detect and evaluate levels of airborne radioactive material at work locations.

Contrary to the above, on July 22, 1996, during the cutting and removal of contaminated process lines in the WCF, air sampling was not performed to evaluate the levels of airborne radioactive material prior to or during the contamination release from the cut piping.

Collectively, these violations constitute a Severity Level II problem and a civil penalty of \$25,000.

Pursuant to 10 CFR 820.24, Lockheed Martin Idaho Technologies Company (LMITCO) is hereby required within 30 days of the date of this Notice and Proposed Imposition of Civil Penalty, to submit a written statement or explanation to the Director, Office of Enforcement and Investigation, Office of the Assistant Secretary for Environment, Safety and Health, U.S. Department of Energy, 19901 Germantown Road, Germantown, MD 20874-1290, Attention: Office of the Docketing Clerk, CXXI, Suite 305, with copies to the Manager, DOE Idaho Operations Office, and to the cognizant DOE Secretarial Office for the facilities that are the subject of this Notice. This reply should be clearly marked as a "Reply to a Preliminary Notice of Violation and Proposed Civil Penalty" and should include for each violation: (1) admission or denial of the alleged violations, (2) the facts set forth above which are not correct and the reasons for the violations if admitted, and if denied, the reasons they are not correct, (3) the corrective steps that have been taken and the results achieved, (4) the corrective steps that will be taken to avoid further violations, and (5) the date when full compliance will be achieved.

Any request for remission or mitigation of civil penalties must be accompanied by a substantive justification demonstrating extenuating circumstances or other reasons why the assessed penalties should not be imposed in full. Unless the violations are denied, or remission or mitigation is requested within the 30 days after the issuance of the Preliminary Notice of Violation and Civil Penalty, LMITCO shall pay the civil penalties totaling \$25,000 (imposed under Section 234a of the Act) by check, draft or money order payable to the Treasurer of the United States (Account Number 891099) mailed to the Director, Office of Enforcement and Investigation, U.S. Department of

Energy. Should the contractor fail to answer within the time specified, an order imposing the civil penalty will be issued.

If requesting mitigation of the proposed penalty, LMITCO should address the adjustment factors described in Section VIII of 10 CFR 820, Appendix A.

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

Dated at Washington, D.C.
this 2nd day of February 1997