April 3, 1996

Dr. Walter Apley, Ph.D., P.E.
[ ]
Battelle, Pacific Northwest National Laboratory
P.O. Box 1970
Richland, WA 99352

EA 96-01

Dear Dr. Apley:

Subject: Preliminary Notice of Violation (NTS-RL--PNL-325-1995-0001)

This refers to the Department of Energy's (DOE) investigation of the circumstances surrounding a seven month delay in responding to a high level alarm for a criticality safe slab tank in the [specified building's] laboratory vacuum system. The DOE Office of Enforcement and Investigation initiated its investigation on November 27, 1995, after an Occurrence Report issued on October 11, 1995 identified collectively significant related occurrences in the [building's] laboratory vacuum system. These included, among others, the fact that an engineered safety feature for criticality prevention had been in a high level alarm condition for seven months. The Summary Report of Investigation was provided to you on February 22, 1996.

On December 21, 1995, you reported potential noncompliances with 10 CFR Part 830.120 (Quality Assurance Requirements) associated with these events into the DOE Noncompliance Tracking System. Based on DOE's onsite evaluation conducted on January 17-18, 1996, coupled with our review of your internal investigation of this matter, DOE concluded that violations of these requirements likely occurred. On March 13, 1996, a conference was held with you and 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.

As described in the enclosed Notice, these violations involved the Work Processes and Quality Improvement Provisions of the Quality Assurance rule. Specifically, between March and October 1995, a seven month delay in the draining of the slab tank occurred after a high level alarm was received in the control room. The slab tank remained in a high level alarm condition and was not drained during this period even though (1) the facility authorization basis required the slab tank to be drained at regular intervals, and (2) the applicable Operator Call List required the operators to valve out the system and drain the tank upon receipt of a high level alarm.

The effect of the failure to respond to the high level alarm during this seven month period resulted in the inability of the slab tank to fully meet its design basis function for criticality safety. A reduction in criticality safety margins increases the potential for an adverse event that could have consequences for workers and the public. In addition, once the alarm condition occurred, processes were not in place to effectively recognize this condition as a quality problem and, as a result, timely actions were not initiated to determine the safety significance of the event and effect appropriate corrective actions.

While you were subsequently able to determine that the probability of an inadvertent criticality event was low, DOE is concerned that prior to this determination, a valid technical basis for operating the facility outside of its approved safety authorization basis did not exist. Additionally, neither building management nor the operations staff understood that the slab tank was an engineered safety feature, or that the facility authorization basis required the slab tank to be drained at regular intervals. DOE is particularly concerned that there has been a history of excessive delay in draining the slab tank as required by the facility's safety authorization basis when the tank was in a high level alarm condition. For example, while not being cited as a violation because it occurred prior to the effective date of the Quality Assurance Rule, in 1993, there was a 15 month delay between the time the control room received a high level alarm for the slab tank and the time it was emptied.

The long delay in draining the tank after the high level alarm was received for an engineered safety feature, coupled with the repetitive nature of the problem, would normally warrant classifying these violations as a Severity Level II problem. However, in this case DOE recognizes that once this matter was elevated to senior management, an aggressive and thorough investigation was undertaken to understand the significance of this event and the associated root causes. Further, the corrective actions outlined by you during the conference, when fully implemented, should provide substantial improvement in safety management at the facility and prevent recurrence of similar problems. Therefore, in accordance with the "General Statement of Enforcement Policy"
10 CFR Part 820, Appendix A, these violations have been classified lower as a Severity Level III problem in order to emphasize the need to ensure that corrective actions are fully implemented to prevent a recurrence of similar violations, but recognizing the positive long-term actions you have outlined.

You are required to respond to this letter and should follow the instructions specific in the enclosed Notice of Violation (Notice) when preparing your response. In your response you should document the specific actions taken and any additional actions you plan to prevent recurrence. 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,

R. Keith Christopher
Director
Office of Enforcement and Investigation

Enclosure:
Preliminary Notice of Violation
Conference Summary Report

PRELIMINARY NOTICE OF VIOLATION

Battelle, Pacific Northwest National Laboratory
[Specified building]
EA 96-01

During a DOE onsite evaluation conducted on January 17-18, 1996 at the [ ] Pacific Northwest National Laboratory, apparent violations of DOE nuclear safety requirements were identified. In accordance with the "General Statement of Enforcement Policy," 10 CFR Part 820, Appendix A, the violations are listed below.

A. 10 CFR Part 830.120, Section (c)(2)(i) (Work Processes), requires that work shall be performed to established technical standards and administrative controls using approved instructions, procedures, or other appropriate means.

Contrary to the above, between March-October 1995, work was not performed to established technical standards and administrative controls using approved procedures or instructions in that:

(1) [ ] No implementing procedures or instructions were in place to establish regular intervals for draining the criticality safe slab tank, and for a period of seven months between March and October 1995, the criticality safe slab tank was in a high level alarm condition and was not valved out, sampled and drained; and

(2) The 9A High Level Alarm Call List, which is the operative instruction, procedure or administrative control, required that upon receipt of a high level alarm in the criticality safe slab tank, the power operator is to, among other things, valve out the "slab tank" and pump and dispose of liquid as per procedure. However, the Call List requirements were (a) not implemented between March-October 1995 even though the slab tank was in a high level alarm condition, and (b) contained in unapproved and uncontrolled instruction, procedure or administrative control.

B. 10 CFR Part 830.120, Section (c)(1)(iii), (Quality Improvement) requires that Processes to detect and prevent quality problems shall be established and implemented. Items, services, and processes that do not meet established requirements shall be identified, controlled and corrected according to the importance of the problem and the work affected.

Contrary to the above, between March-October 1995, processes were not in place to detect that the high level alarm condition for the criticality safe slab tank was a significant quality problem and initiate timely evaluation and corrective actions.

These violations constitute a Severity Level III problem.

Pursuant to the provisions of 10 CFR Part 820, Battelle, Pacific Northwest National Laboratory is hereby required within 30 days of the date of this Notice to submit a written statement or explanation to the Director, Office of Enforcement and Investigation, Attention: Office of the Docketing Clerk, EH-3, CXXI, U.S. Department of Energy, 19901 Germantown Rd.,

Germantown, Md. 20874-1290 with copies to the Manager, DOE, Richland Operations Office, Mr. Robert Rosselli, Assistant Manager for Technology Management, DOE Richland, and to the Cognizant DOE Secretarial Office, for the facility that is the subject of this Notice. This reply should be clearly market as a "Reply to a Preliminary Notice of Violation" and should include for each violation: (1) the reason for the violation, or, if contested, the basis for disputing the violation, (2) the corrective steps that have been taken and the results achieved, (3) the corrective steps that will be taken to avoid further violations, and (4) the date when full compliance will be achieved.

Dated at Germantown, Maryland
this___day of____ 1996

Sincerely,

R. Keith Christopher
Office of Enforcement and Investigation