

August 14, 1997

Dr. C. Paul Robinson
[]
Sandia Corporation
Sandia National Laboratories
Albuquerque, NM 87185-1142

EA 97-06

Subject: Preliminary Notice of Violation (NTS-ALO-KO-SNL-9000-1997-0001)

Dear Dr. Robinson:

This letter refers to the Department of Energy's (DOE) evaluation of the facts and circumstances associated with the December 7, 1996, Annular Core Research Reactor (ACRR) scram, immediate restart, and destruction of records. These issues were uncovered by your staff through questioning by Sandia National Laboratories (SNL) management and through their subsequent investigation.

The DOE Office of Enforcement and Investigation initiated an investigation and issued an Investigation Summary Report on May 20, 1997, in which it was concluded that potential violations of 10 CFR Part 830.120, (Quality Assurance) likely occurred. On July 10, 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 Conference Summary Report is enclosed.

The incident under review involved a plant protection system scram of the reactor on high power [specified power level] when the reactor supervisor was trouble-shooting a problem with two of the control rods. The power rise was caused due to a lack of operator attention to the control rods' movements that were being made to investigate the control rod problem. The reactor was immediately restarted following the scram without proper notifications of management and performance of reviews, post-scram actions, and pre-restart procedures as required by contractor procedures. Several other procedural requirements and documentation of information in logs were not performed. Additionally, the reactor supervisor destroyed a portion of the logs covering the immediate restart of the reactor following the scram and roughly 19 minutes of subsequent operation. SNL Management later (about 9 days after the

incident) learned of the scram from the reactor operator when discussing a number of other topics, and promptly initiated an investigation to ascertain the facts and circumstances surrounding the reactor shutdown.

As described in the enclosed Preliminary Notice of Violation (PNOV), the multiple failures to comply with contractor established procedures to ensure the safe operation of the ACRR constitute violations of 10 CFR Part 830.120 (c)(2)(i), (Work Processes). Additionally, the instances associated with this event of failing to complete and preserve proper operating logs constitute violations of 10 CFR Part 830.120 (c)(1)(iv), (Documents and Records). Specifically, it is clear that in this case, work was not performed in accordance with approved procedures, and that required records were not prepared and maintained. While the safety significance of the violations is low in that the reactor did not approach safety limits, and potential consequences to workers and the public were low, the numerous failures to comply with established contractor procedures, and the subsequent destruction of records is of particular concern. Therefore, in accordance with the "General Statement of Enforcement Policy" (Enforcement Policy), 10 CFR Part 820, Appendix A, these violations have each been classified as Severity Level II Violations.

A civil penalty would normally be considered for a Severity Level II problem. In this case, the base civil penalty would normally have been \$40,000 (\$5,000 for each of the eight (8) violations). However, I have considered the discretionary adjustment factors set forth in the Enforcement Policy and have concluded that your actions in this case warrant 100% mitigation of the civil penalty. Specifically, your management staff undertook proactive initiatives in this case that resulted in timely self-identification, and reporting of the regulatory issues that arose after you uncovered this incident, thus providing a basis for 50% mitigation of the base civil penalty. Additionally, your corrective actions, including your prompt management response in dealing with the individuals involved in this incident, as well as your broad and objective investigative actions, and the designation of a senior level Nuclear Facility Review Panel with outside participation, are considered timely and comprehensive, and therefore form the basis for an additional 50% mitigation of the civil penalty.

As part of your investigation of this matter, you also established a staff team to evaluate past history in operation, surveillance and modification of the ACRR. That team identified several prior instances of noncompliance with 10 CFR Part 830.120 requirements, that included the following: (1) failure to complete required technical specification surveillances; (2) failure to follow safety committee review unresolved safety question procedures; (3) improper measurements of control rod reactivity worth, not performing regulating rod calibrations; (4) modification of the plant protection system without required quality plan; and (5) design documentation and reviews.

Although these instances were not directly related to the ACRR incident, their identification resulted from a broad contractor evaluation of ACRR historical compliance performance, and were reported to DOE into the NTS under NTS-ALO-KO-SNL-9000-0002. Since the identification of these issues resulted from a comprehensive contractor formal evaluation effort and have been aggressively addressed by contractor corrective actions, in accordance with Section VIII of the Enforcement Policy, DOE will forego any investigation and enforcement action for these subsequent issues.

You are required to respond to this letter and should follow the instructions specified in the enclosed Notice when preparing your response to the Preliminary Notice of Violation. Your response should more formally document the long-term corrective actions and schedules resulting from this case, as well as the broader Laboratory-wide initiatives that are intended to address, among other things, lessons learned from the ACRR incident and subsequent investigation. These should be formally transmitted to the DOE-Kirtland Area Office (DOE-KAO), and referenced in the related NTS reports.

Neither this case nor the additional noncompliances associated with the broader evaluation conducted by your staff subsequent to the ACRR scram will be closed until verification is received from the DOE-KAO of your satisfactory completion of corrective actions, including long-term and site-wide related initiatives. Failure to complete such actions could constitute a basis for reconsidering decisions to mitigate civil penalties.

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
List of Attendees

PRELIMINARY NOTICE OF VIOLATION

Sandia Corporation
ACRR Reactor Scram
Sandia National Laboratories
EA 97-06

As a result of the Department of Energy's (DOE) evaluation of activities associated with an Annular Core Research Reactor (ACRR) scram, immediate restart, and subsequent destruction of records, violations of DOE requirements were identified. In accordance with the "General Statement of Enforcement Policy," 10 CFR Part 820, Appendix A, DOE is issuing this Preliminary Notice of Violation (PNOV). The particular violations are set forth below:

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

The DOE approved Sandia Research Reactor and Experimental Program Quality Assurance Program Plan requires that technical standards and administrative controls be implemented through approved instructions, procedures or other appropriate means.

Contrary to the above, work was performed on the Annular Core Research Reactor (ACRR) without the use of approved instructions, procedures, or other appropriate means in that:

- (1) On December 7, 1996, operators performed work on the ACRR involving the performance of trouble-shooting diagnostic operations on the reactor control rods while at 100% power without the use of any approved instructions, procedures or other appropriate means.

This Constitutes a Severity Level II Violation.

- (2) []. The DOE approved ACRR Moly-99 Experiment Plan No. 817, approved December 4, 1996, established a maximum nominal steady state power level []. However, on December 7, 1996, plant operators manipulated control rods without adequately monitoring reactor power resulting in reactor power [exceeding limits].

This constitutes a Severity Level II Violation.

(3) The Sandia Tech Area-V Conduct of Operations Manual, Chapter 6, (Investigation of Abnormal Events) procedure, dated June 26, 1996, requires that Operations Staff Personnel are responsible for promptly notifying management of events and conditions which could have adverse safety, health, quality, security, operational or environmental implications. Sandia's Event Response procedure (EVENTRES. WPD), dated October 12, 1995, requires that following a reactor scram, among other things, the Department Manager shall be notified. However, on December 7, 1996, the ACRR scrambled on high power and the Department Manager was not informed of the scram until December 16, 1996, (9 days later).

This constitutes a Severity Level II Violation.

(4) Sandia's Pre-Operations Checkout Procedure, (PREOP.WPD), dated October 2, 1996, requires that the checkout procedure be completed, including the pre-operational checklist, prior to operation of the ACRR. However, on December 7, 1996, the ACRR was restarted approximately three minutes after the reactor scram without performing the Pre-Operational Checkout Procedure.

This constitutes a Severity Level II Violation.

(5) Sandia's Conduct of Operations Manual, Chapter 12, Rev. 1, (Operations Turnover) procedure, dated June 20, 1996, requires that "Offgoing Personnel discuss and explain any important items which affect the facility operations and safety, with oncoming personnel." On December 8, 1996, at approximately 4:00 a.m., a shift turnover occurred between the shift on duty at the time of the reactor scram, and the oncoming shift. However, the offgoing shift failed to communicate to the oncoming reactor operator that the ACRR had scrambled at high power or that the reactor had been immediately restarted after the scram.

This constitutes a Severity Level II Violation.

(B) 10 CFR 830.120 (c)(iv), (Documents and Records) requires that "Records shall be specified, prepared, reviewed, approved and maintained."

Contrary to the above, specified records were not prepared, reviewed, approved or maintained in that:

(1) ACRR Reactor Operating Procedure, dated October 25, 1996, requires the operator to enter in the comments or narrative section of the operating logs information on any unplanned reactor shutdowns. However, although an unplanned reactor shutdown (scram) occurred on

December 7, 1996, operators failed to record in reactor operating logs that the reactor had scrammed.

This constitutes a Severity Level II Violation.

(2) Sandia's Event Response Procedure, (EVENSTRESS.WPD), dated October 25, 1995, requires that following a reactor scram, actions be taken and documented in the narrative log including (1) regulating rods confirmed to have been dropped; (2) reactor power and temperature are exhibiting normal characteristics; and (3) determine whether Technical Specifications or experiment limits are determined to have been exceeded. However, the narrative log does not document that these actions were taken as required.

This constitutes a Severity Level II Violation.

(3) []. The Sandia Tech Area-V Conduct of Operations Manual, Chapter 11, Rev. 1 (Logkeeping) procedure, dated June 20, 1996, requires that events be recorded in a timely fashion and that log entries include, among other things, the occurrence of any significant event and status changes to safety related and other major facility equipment. However on December 7, 1996, computer generated run sheets with operator narrative comments covering the period of the immediate reactor restart after the scram and approximately 19 minutes of subsequent reactor operation were intentionally discarded by the reactor supervisor.

This constitutes a Severity Level II Violation.

Pursuant to the provisions of 10 CFR Part 820. 24, Sandia Corporation 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, U.S. Department of Energy, 19901 Germantown Road, Germantown, MD 20874-1290, Attention: Office of the Docketing Clerk, EH-10, CXXI, with copies to M. Zamorski, Acting Area Manager, Kirtland Area Office, and to the Cognizant DOE Secretarial Office for the facility that is the subject of this Notice. This reply should be clearly marked as a "Reply to a Preliminary Notice of Violation" and should include for each violation: (1) admission or denial of the alleged violations; (2) the long term corrective steps that will be taken, and (3) the date when completion of corrective steps will be achieved.

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

Dated at Washington, D.C.
this 14th day of August 1997