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# Enforcement Actions: Significant Actions Resolved

Quarterly Progress Report  
October - December 1983

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## U.S. Nuclear Regulatory Commission

Office of Inspection and Enforcement

IE Enforcement Staff



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U.S. Nuclear Regulatory Commission  
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## ABSTRACT

This compilation summarizes significant enforcement actions that have been resolved during one quarterly period (October - December 1983) and includes copies of letters, Notices, and Orders sent by the Nuclear Regulatory Commission to licensees with respect to these enforcement actions and the licensees' responses. It is anticipated that the information in this publication will be widely disseminated to managers and employees engaged in activities licensed by the NRC, in the interest of promoting public health and safety as well as common defense and security.

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ENFORCEMENT ACTIONS: SIGNIFICANT ACTIONS RESOLVED  
October - December 1983

INTRODUCTION

This issue of NUREG-0940 is being published to inform NRC licensees about significant enforcement actions and their resolution for the fourth quarter of 1983. Primarily emphasized are those actions involving civil penalties and Orders that have been issued by the Director of the Office of Inspection and Enforcement and the Regional Administrators.

An objective of the NRC Enforcement Program is to encourage improvement of licensee performance and, by example, the performance of the licensed industry. Therefore, it is anticipated that the information in this publication will be widely disseminated to managers and employees engaged in activities licensed by NRC, so all can learn from the errors of others, thus improving performance in the nuclear industry and promoting the public health and safety as well as common defense and security.

A brief summary of each significant enforcement action that has been resolved in the fourth quarter of 1983 can be found in the section of this report entitled, "Summaries." Each summary provides the enforcement action number (EA) to identify the case for reference purposes. The supplement number refers to the activity area in which the violations are classified according to guidance furnished in the U.S. Nuclear Regulatory Commission's "General Statement of Policy and Procedure for Enforcement Actions," published in the Federal Register (47 FR 9987, March 9, 1982) and corrected on April 14, 1982 (47 FR 16005). Five levels of severity for each violation show their relative importance within each of the following activity areas:

- Supplement I - Reactor Operations
- Supplement II - Facility Construction
- Supplement III - Safeguards
- Supplement IV - Health Physics
- Supplement V - Transportation
- Supplement VI - Fuel Cycle and Materials Operations
- Supplement VII - Miscellaneous Matters

Part I.A of this report is comprised of copies of completed civil penalty or order actions involving reactor licensees, arranged alphabetically. Part I.B includes copies of Notices of Violations that have been issued to reactor licensees for Severity Level III violations but for which no civil penalty was assessed. Part II.A contains civil penalty or order actions involving materials licensees and Part II.B includes copies of Notices of Violations that have been issued to materials licensees for Severity Level III violations but for which no civil penalty was assessed. The licensees' responses are also included in Parts I.A and II.A.

Actions still pending on December 31, 1983 will be included in future issues of this publication when they have been resolved.



## SUMMARIES

### I.A Reactor Licensees, Civil Penalties and Orders

Arkansas Power and Light Company, Little Rock, Arkansas  
(Arkansas Nuclear One, Unit 2) EA 83-117, Supplement I

A Notice of Violation and Proposed Imposition of Civil Penalty in the amount of \$40,000 was issued on November 9, 1983 based on the licensee exceeding a technical specification limiting condition for operation involving operability of the 125-volt DC battery system. The licensee responded and paid the civil penalty on December 9, 1983.

Baltimore Gas and Electric Company, Baltimore, Maryland  
(Calvert Cliffs Nuclear Power Plant, Units 1 and 2) EA 83-58, Supplement I

A Notice of Violation and Proposed Imposition of Civil Penalties in the amount of \$60,000 was issued on November 4, 1983 based on the violation of two technical specification limiting conditions for operation. One violation concerned the inoperability of both emergency core cooling system pump room air coolers. The other violation involved a diesel generator that stopped running during a surveillance test because of a lack of fuel. This violation was mitigated 50% because of extensive corrective action. The licensee responded and paid the civil penalties on December 2, 1983.

Carolina Power and Light Company, Raleigh, North Carolina  
(H.B. Robinson Steam Electric Plant) EA 83-94, Supplement III

A Notice of Violation and Proposed Imposition of Civil Penalty in the amount of \$20,000 was issued on November 15, 1983 based on the licensee's failure to control access to a vital area and the failure of the Contract Security Supervisor to notify management once this condition was discovered. The penalty was mitigated by 50% for prompt and extensive corrective action. The licensee responded and paid the civil penalty on December 12, 1983.

Commonwealth Edison Company, Chicago, Illinois  
(LaSalle County Nuclear Station, Unit 1) EA 83-59, Supplement I

A Notice of Violation and Proposed Imposition of Civil Penalties in the amount of \$60,000 was issued August 9, 1983 based on the failure to follow procedures when returning valves to service following surveillance testing. This resulted in the violation of a technical specification limiting condition for operation in that the "D" suppression pool to drywell vacuum breaker was inoperable. The penalty was escalated 50% for failure to take corrective action after prior notice of similar events. The licensee responded on September 6, 1983 and an Order was issued on November 30, 1983. The licensee paid the civil penalties on December 20, 1983.

Commonwealth Edison Company, Chicago, Illinois  
(Zion Nuclear Power Station, Units 1 and 2) EA 83-72, Supplement III

A Notice of Violation and Proposed Imposition of Civil Penalty in the amount of \$40,000 was issued on August 24, 1983 based on a failure to control access to the protected area and a vital area. The licensee responded on September 23, 1983 and an Order was issued on November 9, 1983. The licensee paid the civil penalty on December 7, 1983.

Duke Power Company, Charlotte, North Carolina  
(Oconee Units 1 and 2) EA 83-41, Supplement I

A Notice of Violation and Proposed Imposition of Civil Penalties in the amount of \$180,000 was issued on June 2, 1983 based on the licensee's failure to maintain primary containment integrity. The licensee responded on July 1, 1983 and, after consideration of the licensee's reply, the penalties were withdrawn on December 20, 1983.

Niagara Mohawk Power Corporation, Syracuse, New York  
(Nine Mile Point Nuclear Station, Unit 1) EA 83-84, Supplement I

A Notice of Violation and Proposed Imposition of Civil Penalty in the amount of \$40,000 was issued on October 6, 1983 based on the licensee's failure to place a main steam line high radiation trip system in a tripped condition as required by a technical specification limiting condition for operation once sufficient information existed to indicate that both channels in that system were inoperable. The licensee responded and paid the civil penalty on November 1, 1983.

Northern States Power Company, Minneapolis, Minnesota  
(Monticello Nuclear Generating Plant) EA 83-125, Supplement V

A Notice of Violation and Proposed Imposition of Civil Penalties in the amount of \$2,500 was issued on November 23, 1983 based on the licensee's failure to properly package radioactive material as required by the Department of Transportation regulations. The shipment had external radiation levels in excess of regulatory requirements when it arrived at the South Carolina burial site. The licensee responded and paid the civil penalties on December 16, 1983.

Public Service Electric and Gas Company, Newark, New Jersey  
(Salem Nuclear Generating Station, Units 1 and 2) EA 83-24, Supplement I

A Notice of Violation and Proposed Imposition of Civil Penalties in the amount of \$850,000 was issued on May 5, 1983 based upon violations involving an Anticipated Transient Without Scram (ATWS) event during which the reactor trip breakers failed to open automatically in response to a valid RPS signal. Licensee personnel failed to recognize the event and operated the reactor for three days, after which another ATWS event occurred. Because of the significance of these events, the violation was classified as a Severity Level I violation and a separate civil penalty of \$100,000, the statutory maximum for a single violation, was proposed for each day the violation existed (four days). The reactor trip breakers failed to operate because of deficiencies in procurement,

maintenance, and quality control and violations associated with these deficiencies were collectively categorized as a Severity Level II violation and the maximum civil penalty was assessed for each of four days during which the violations occurred. In addition, failure to make a required prompt response to the NRC was determined to be a Severity Level III violation and was escalated 25% for multiple examples. The licensee responded on July 6 and 22, 1983 and an Order was issued on September 29, 1983. The licensee paid the civil penalties on October 28, 1983.

University of Virginia, Charlottesville, Virginia  
EA 83-90, Supplement I

A Notice of Violation and Proposed Imposition of Civil Penalty in the amount of \$1,000 was issued on October 6, 1983 based on the licensee's violation of facility technical specifications. The licensee altered the core configuration without making the required control rod worth measurements and subsequently operated the reactor without the required minimum reactor shutdown margin. The licensee responded and paid the civil penalty on November 3, 1983.

#### I.B Reactor Licensees, Severity Level III Violations, No Civil Penalty

Baltimore Gas and Electric Company, Baltimore, Maryland  
(Calvert Cliffs Nuclear Power Plant) EA 83-129, Supplement V

A Notice of Violation was issued on November 30, 1983 based on violations involving a shipment of radioactive waste to the Richland, Washington burial site. Because this event occurred during a transition in DOT regulations, the licensee was neither fined by the State of Washington nor the NRC.

Duquesne Light Company, Shippingport, Pennsylvania  
(Beaver Valley Nuclear Station, Unit No. 1) EA 83-93, Supplement IV

A Notice of Violation was issued on October 11, 1983 based on an unplanned occupational radiation exposure to an employee. No civil penalty was proposed because the licensee promptly reported the event and took prompt and comprehensive corrective actions.

GPU Nuclear Corporation, Middletown, Pennsylvania  
(Three Mile Island, Unit 2) EA 83-123, Supplement III

A Notice of Violation was issued on December 14, 1983 based on the failure to properly secure documents containing safeguards information. No civil penalty was proposed since the violation was identified and promptly reported by the licensee, there was no indication that the Safeguards Information was transferred to an unauthorized individual, or otherwise exploited, and the licensee took corrective action to prevent recurrence.



Northeast Nuclear Energy Company, Hartford, Connecticut  
(Millstone Nuclear Power Station, Unit 2) EA 83-114, Supplement III

A Notice of Violation was issued on November 16, 1983 based on violations involving degradation of a vital area barrier. No civil penalty was proposed because the violations were promptly reported when identified, and comprehensive corrective actions were taken by management.

Southern California Edison Company, Rosemead, California  
(San Onofre, Units 1, 2 and 3) EA 83-116, Supplement IV

A Notice of Violation was issued on October 27, 1983 based on violations involving the release of contaminated tools and equipment. No civil penalty was proposed because of comprehensive and extensive corrective action by the licensee in identifying and recovering the contaminated material.

## II.A Materials Licensees, Civil Penalties and Orders

American Testing Laboratories, Inc., Salt Lake City, Utah  
EA 83-47, Supplements IV and VI

An Order to Show Cause and Order Temporarily Suspending License (Effective Immediately) was issued June 10, 1983 based on the licensee's willful noncompliance with NRC's requirements and willful false statements. The licensee responded on June 23, 1983. After seeking Commission approval, the license was revoked on December 16, 1983.

Brigham and Women's Hospital, Boston, Massachusetts  
EA 83-97, Supplements IV, V, and VI

A Notice of Violation and Proposed Imposition of Civil Penalty was issued on November 8, 1983 based on radiation levels on the external surface of a package in excess of regulatory limits, improper shipping labels, and failure to follow DOT regulations. The licensee responded and paid the civil penalty on November 30, 1983.

The George Washington University Medical Center, Washington, D.C.  
EA 83-73, Supplements IV and VI

A Notice of Violation and Proposed Imposition of Civil Penalties in the amount of \$2,500 was issued September 1, 1983 based on multiple examples of failure to comply with NRC requirements. The licensee responded on September 26, 1983 and an Order Imposing Civil Monetary Penalties for \$2,500 was issued on November 15, 1983. The licensee paid the civil penalty on December 9, 1983.

Kay-Ray, Incorporated, Arlington Heights, Illinois  
EA 83-76, Supplements IV and V

An Order Suspending License, Effective Immediately, and Order to Show Cause was issued on August 15, 1983 based on several extremity overexposures. The licensee responded on September 2 and 12, 1983 and a letter terminating

the suspension was sent on September 16, 1983. A Notice of Violation and Proposed Imposition of Civil Penalties in the amount of \$1,800 was issued on September 23, 1983 based on the extremity overexposures and on radiation levels on the external surface of a package in excess of regulatory limits. The licensee responded and paid the civil penalties on October 20, 1983.

Hospital Metropolitano, San Juan, Puerto Rico  
EA 83-14, Supplements IV and VI

A Notice of Violation and Proposed Imposition of Civil Penalties in the amount of \$4,000 was issued on March 23, 1983 based on the licensee's failure to adhere to license conditions involving its health physics program. The licensee responded on April 18, 1983 and May 25, 1983. After consideration of the licensee's responses one violation was withdrawn and the penalties were mitigated to \$2,500. An Order Imposing Civil Monetary Penalties for \$2,500 was issued on September 29, 1983. The licensee paid the civil penalties on October 14, 1983.

Shelwell Services, Incorporated, Hebron, Ohio  
EA 83-96, Supplements IV and V

An Order to Show Cause and Order Temporarily Suspending License (Effective Immediately) was issued on September 20, 1983 based on overexposures to several employees and contamination of onsite and offsite facilities. The licensee responded on October 17, 1983 and a letter requesting additional information regarding corrective actions was sent October 28, 1983. An Order rescinding the suspension order was issued on November 7, 1983.

## II.B Materials Licensees, Severity Level II and III Violations, No Civil Penalty

Alaska Industrial X-Ray, Anchorage, Alaska  
EA 83-100, Supplement VI

A Notice of Violation was issued on November 10, 1983 based on examples of activities that were not conducted in full compliance with NRC requirements. No civil penalty was proposed since the majority of the violations were administrative in nature and the licensee has taken comprehensive corrective measures to preclude any future recurrences.

New England Nuclear Corporation, Boston, Massachusetts  
EA 83-115, Supplements IV and V

A Notice of Violation was issued on October 24, 1983 based on violations of health physics requirements, transportation of licensed material with dose rates in excess of regulatory limits, and shipment of a cask containing licensed material when the cask was thought to be empty. No civil penalty was proposed for these violations since the licensee promptly reported to the NRC the transportation events, even though it was not a requirement, and the licensee has taken prompt corrective actions to prevent recurrences.

Charles O'Brien and Son, Morris, Illinois  
EA 83-119, Supplement VI

A Notice of Violation was issued on November 3, 1983 based on the transfer of licensed material to unauthorized recipients. A civil penalty was not proposed because the licensee is no longer in business.

Westinghouse Electric Corporation, Columbia, South Carolina  
EA 83-107, Supplement V

A Notice of Violation was issued on November 22, 1983 based on a Severity Level II violation which occurred when the licensee shipped hazardous pyrophoric material which was not solidified in cement but rather was placed in crates for shipment. No civil penalty was proposed since the State of South Carolina had already imposed a civil penalty.



I.A. REACTOR LICENSEES, CIVIL PENALTIES AND ORDERS



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION IV  
611 RYAN PLAZA DRIVE, SUITE 1000  
ARLINGTON, TEXAS 76011

NOV 09 1983

Docket No: 50-368  
EA 83-117

Arkansas Power and Light Company  
ATTN: Mr. John M. Griffin  
Vice President - Nuclear Operations  
P.O. Box 551  
Little Rock, Arkansas 72203

Gentlemen:

This letter refers to the discovery on September 26, 1983 that station battery 2D11 for Arkansas Nuclear One, Unit 2, had failed to meet the surveillance testing acceptance criteria of Technical Specification 4.8.2.3.2.b.1 on September 22, 1983. Your failure to recognize this unacceptable condition resulted in violation of the action requirements of Technical Specification 3.8.2.3.b. On September 26, 1983 you provided preliminary notification of this event to NRC, Region IV, and complied with Technical Specification 3.0.3 by placing the unit in a cold shutdown condition. This prompt notification was followed up with a written report on September 27, 1983.

A followup inspection by the NRC Senior Resident Inspector during the period of September 26-29, 1983 determined that the requirements of Technical Specification 3.8.2.3 had also been violated in December 1982 and in March and July 1983.

This violation of Technical Specification requirements was discussed in an Enforcement Conference held in the NRC Region IV office on October 3, 1983 between Mr. J. T. Collins and other members of the NRC staff and Mr. J. M. Griffin and other members of the Arkansas Power and Light Company staff.

The cause of this violation appears to be a lack of understanding by those performing and reviewing the station battery surveillance tests of the relationship between the surveillance test acceptance criteria and the Technical Specification requirements. To emphasize the need for proper management controls over the performance and review of surveillance testing required by the Technical Specifications, we propose to impose a civil penalty for the item set forth in the Notice of Violation that is enclosed with this letter.

CERTIFIED MAIL  
RETURN MAIL REQUESTED

Arkansas Power and Light  
Company

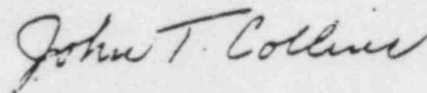
- 2 -

This violation is categorized at a Severity Level III in accordance with the NRC Enforcement Policy of 10 CFR 2, Appendix C, published in the Federal Register 47 FR 9987 (March 9, 1982). After consultation with the Director of the Office of Inspection and Enforcement, I have been authorized to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalty in the amount of Forty Thousand Dollars (\$40,000) as set forth in the Notice appended to this letter. You are required to respond to this letter and should follow the instructions in the Notice when preparing your response. Your reply to this letter and the results of future inspections will be considered in determining whether further enforcement action is appropriate.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosure will be placed in the NRC Public Document Room.

The responses directed by this letter and the enclosed Notice are not subject to the clearance procedures of the Office of Management and Budget otherwise required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,



John T. Collins  
Regional Administrator

Enclosure:  
Notice of Violation and Proposed  
Imposition of Civil Penalty

NOTICE OF VIOLATION  
AND  
PROPOSED IMPOSITION OF CIVIL PENALTY

Arkansas Power and Light Company  
Arkansas Nuclear One, Unit 2

Docket No. 50-368  
License No. NPF-6  
EA 83-117

On September 26, 1983, the Arkansas Power and Light Company reported to the NRC that station battery 2D11 had failed its surveillance test conducted on September 22, 1983. Technical Specification 3.8.2.3.b requires that an inoperable battery bank be restored to an operable status within 2 hours, or the plant must be in at least hot standby within the next 6 hours and in cold shutdown within the following 30 hours. This requirement was not recognized by the licensee until September 26, 1983. Therefore, the action statement of the Technical Specification was violated. An NRC inspection conducted September 26-29, 1983 revealed, through record review, that this Technical Specification had been violated on four other occasions during the last year.

To emphasize the responsibility of the Arkansas Power and Light Company to ensure compliance with the Technical Specifications which are a part of the Facility Operating License for Arkansas Nuclear One, Unit 2, the NRC proposes to impose a civil penalty for this violation. In accordance with the NRC Enforcement Policy, 10 CFR Part 2, Appendix C, 47 FR 9987 (March 9, 1982), and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended ("Act"), 42 U.S.C. 2282, PL 96-295, and 10 CFR 2.205, the particular violation and the associated civil penalty are set forth below:

VIOLATION ASSESSED CIVIL PENALTY

Failure to Meet Requirements of Technical Specification Limiting  
Condition for Operation for an Inoperable Battery Bank

Unit 2 Technical Specification (TS) Limiting Condition for Operation 3.8.2.3 requires that two DC bus trains be maintained in an operable status. Each of the two operable DC bus trains is required to have an operable 125-volt DC battery bank. With a 125-volt DC battery bank inoperable, the battery bank must be restored to an operable status within 2 hours, or the plant must be in at least hot standby within the next 6 hours and in cold shutdown within the following 30 hours.

Unit 2 TS Surveillance Requirement 4.8.2.3.2.b requires that each 125-volt DC battery bank be demonstrated operable at least once per 92 days by verifying that:

1. The voltage of each connected cell is  $\geq 2.15$  volts under float charge and has not decreased more than 0.05 volts from the value observed during the original test.
2. The specific gravity, corrected to 77°F and full electrolyte level, of each connected cell is  $\geq 1.200$  and has not decreased more than 0.010 from the value observed during the previous test.



3. The electrolyte level of each connected cell is between the minimum and maximum level indication marks.

Contrary to the above, on five separate occasions, one of the DC bus train 125-volt battery banks failed to meet the operability requirements of TS Surveillance Requirement 4.8.2.3.2.b, and the licensee did not restore the battery bank to an operable status within 2 hours or place the plant in hot standby within the next 6 hours as required by the limiting condition for operation. The specifics of each of the five examples of the licensee's failure to meet the limiting condition for operation established by TS 3.8.2.3 are described below:

- a. On December 30, 1982, with Unit 2 at power operation (mode 1), the 'A' train DC bus battery bank 2D11 was determined not to meet the operability requirements of TS Surveillance Requirements 4.8.2.3.2.b.1 and 4.8.2.3.2.b.2 because:

- 1) The voltage of one cell had decreased more than 0.05 volts from the value observed during the original acceptance test.
- 2) Approximately nine cells had corrected specific gravities less than 1.200.
- 3) All 60 cells had specific gravities that had decreased more than 0.010 from the value observed during the previous test.

On December 31, 1982, approximately 24 hours later, an equalizer battery charge on bank 2D11 was completed, and the licensee determined that the battery bank was operable. However, bank 2D11 was left in an inoperable condition because all 60 cells still had specific gravities that had decreased more than 0.010 from the value observed during the previous test. Throughout the period of December 30-31, 1982, Unit 2 remained at power operation.

- b. On March 28, 1983, with Unit 2 at power operation (mode 1), battery bank 2D11 was again determined not to meet the operability requirements of TS Surveillance Requirements 4.8.2.3.b.1 and 4.8.2.3.2.b.2 because:

- 1) The voltages of four cells had decreased more than 0.05 volts from the values observed during the original acceptance test.
- 2) The specific gravity of one cell had decreased more than 0.010 from the value observed during the previous test.

On March 29, 1983, approximately 24 hours later, 2D11 completed an equalizer battery charge, and the licensee determined that the battery bank was operable. However, 2D11 was left in an inoperable condition because the voltage of one cell was still more than 0.05 volts less than its value observed during the original acceptance test. Throughout the period of March 28-29, 1983, Unit 2 remained at power operation.

- c. On June 22, 1983, with Unit 2 at power operation, battery bank 2D11 was determined not to meet the operability requirements of TS Surveillance Requirement 4.8.2.3.2.b.1 because the voltage of one cell had decreased more than 0.05 volts from the value observed during the original acceptance test. On June 24, 1983, approximately 48 hours later, 2D11 completed an equalizer battery charge, and the licensee determined that 2D11 was operable. Throughout the period of June 22-24, 1983, Unit 2 remained at power operation.
- d. On July 26, 1983, with Unit 2 at power operation, 'B' train DC bus battery bank 2D12 was determined not to meet the operability requirements of TS Surveillance Requirement 4.8.2.3.2.b.2 because three cells had specific gravities that had decreased more than 0.010 from the value observed during the previous test. On July 27, 1983, approximately 24 hours later, 2D12 completed an equalizer battery charge, and the licensee determined that 2D12 was operable. Throughout the period July 26-27, 1983, Unit 2 remained at power operation.
- e. On September 22, 1983, with Unit 2 at power operation, battery bank 2D11 was determined not to meet the operability requirements of TS Surveillance Requirement 4.8.2.3.2.b.1 because the voltages of five cells had decreased more than 0.05 volts from the value observed during the original acceptance test. On September 23, 1983, approximately 24 hours later, 2D11 completed an equalizer battery charge, and the licensee determined that 2D11 still did not meet the operability requirements of TS Surveillance Requirement 4.8.2.3.2.b.1 because the voltages of six cells had decreased more than 0.05 volts from the values observed during the original acceptance test. On September 26, 1983 the licensee determined that because they had violated the limiting condition for operation of TS 3.8.2.3, the requirements of TS 3.0.3 were in effect. Unit 2 was then placed in cold shutdown in accordance with TS 3.0.3. During the period of September 22-26, 1983 Unit 2 remained at power operation.

This is a Severity Level III Violation (Supplement I)  
Civil Penalty - \$40,000

Pursuant to the provisions of 10 CFR 2.201, the Arkansas Power and Light Company is hereby required to submit to the Director, Office of Inspection and Enforcement, USNRC, Washington, D.C. 20555, within 30 days of the date of this Notice a written statement or explanation, including for the alleged violation: (1) admission or denial of the alleged violation; (2) the reasons for the violation if admitted; (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. In addition, the written statement or explanation should address (1) why immediately upon the discovery of the violation action was not taken to review past activities in this area to determine if a history of similar noncompliance had existed,

(2) the immediate measures taken to review the history and status of the battery systems in the station's second unit, and (3) the measures taken to ascertain that the noncompliance history in this area is an isolated occurrence and similar noncompliance histories do not exist for other license requirements.

Consideration may be given to extending the response time for good cause shown. Under the authority of Section 182 of the Act, U.S.C. 2232, this response shall be submitted under oath or affirmation.

Within the same time as provided for the response required above under 10 CFR 2.201, the Arkansas Power and Light Company may pay the civil penalty in the amount of Forty Thousand Dollars (\$40,000) or may protest imposition of the civil penalty in whole or in part by a written answer. Should the Arkansas Power and Light Company fail to answer within the time specified, the Director, Office of Inspection and Enforcement, will issue an order imposing the civil penalty in the amount proposed above. Should the Arkansas Power and Light Company elect to file an answer in accordance with 10 CFR 2.205 protesting the civil penalty, such answer may: (1) deny the violation listed in this Notice in whole or in part; (2) demonstrate extenuating circumstances; (3) show error in this Notice; or (4) show other reasons why the penalty should not be imposed. In addition to protesting the civil penalty in whole or part, such answer may request mitigation of the penalty. In requesting mitigation of proposed penalty, the five factors contained in Section IV.B of 10 CFR Part 2, Appendix C should be addressed. Any written answer in accordance with 10 CFR 2.205 should be set forth separately from the statement or explanation in reply pursuant to 10 CFR 2.201, but may incorporate by specific reference (e.g., citing page and paragraph numbers) to avoid repetition. The Arkansas Power and Light Company's attention is directed to other provisions of 10 CFR 2.205, regarding the procedure for imposing a civil penalty. Upon failure to pay any civil penalty due, which has been subsequently determined in accordance with the applicable provisions of 10 CFR 2.205, this matter may be referred to the Attorney General, and the penalty, unless compromised, remitted, or mitigated, may be collected by civil action pursuant to Section 234c of the Act, 42 U.S.C. 2282.

FOR THE NUCLEAR REGULATORY COMMISSION

*John T. Collins*  
John T. Collins

Regional Administrator

Dated at Arlington, Texas  
this 9<sup>th</sup> day of November 1983





ARKANSAS POWER & LIGHT COMPANY

FIRST NATIONAL BUILDING/P.O. BOX 551/LITTLE ROCK, ARKANSAS 72203/(501) 371-7901

December 9, 1983

JOHN M. GRIFFIN  
Vice President  
Nuclear Operations

ØCAN1283Ø6

Mr. Richard C. DeYoung  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
Washington, DC 20555

SUBJECT: Arkansas Nuclear One - Units 1 & 2  
Docket Nos. 50-313 and 50-368  
License Nos. DPR-51 and NPF-6  
Proposed Imposition of Civil Penalty

Gentlemen:

NRC's letter dated November 9, 1983, (2CAN1183Ø3) transmitted to Arkansas Power and Light (AP&L) a Notice of Violation and Proposed Imposition of Civil Penalty. This enforcement action was taken following AP&L's notification to NRC on September 26, 1983, that station battery 2Ø11 had failed to meet the surveillance testing acceptance criteria of Technical Specification 4.8.2.3.2.b.1 during testing on September 22, 1983. In accordance with the provisions of 10CFR2.201 and 2.205, this letter provides AP&L's response to the subject Notice of Violation and Imposition of Civil Penalty.

AP&L fully recognizes the importance of compliance with the Technical Specifications and of assuring conditions which are not in compliance with Technical Specifications are promptly identified. Therefore, upon discovery that a Technical Specification violation had occurred on September 22, 1983, and gone unidentified, AP&L promptly reported the event to NRC and initiated a shutdown of ANO-2 as required by the Technical Specifications. Subsequent to this discovery an immediate investigation of the event was initiated by AP&L management. As Vice President for Nuclear Operations, I personally directed and participated in the investigation. This investigation included review of the battery surveillance procedures, review by AP&L engineering and vendor personnel to determine the effect of these events on battery capacity, interviews with personnel involved in the September 22, 1983, event, review of previous battery surveillance results for both ANO-1 and ANO-2, and review of compliance with other surveillance testing requirements.

In summary, the investigation indicated that, although Technical Specification violations did occur, the station batteries were capable of

MEMBER MIDDLE SOUTH UTILITIES SYSTEM



performing their intended safety function. A review of previous quarterly battery surveillance tests on station batteries 2D11 and 2D12 identified several previous events similar to that occurring on September 22, 1983. These previous events include those identified in the Notice of Violation as well as twenty additional events. The results of this investigation are discussed in detail in Attachment I.

We were very concerned about these violations, and even more concerned when our investigation revealed that there had been several previous events similar to that occurring on September 22, 1983. Based on these concerns, I made the decision to keep the plant in a shutdown condition and to commence refueling early so that I could satisfy myself that any revisions to our program that were needed promptly were implemented before restart.

In order to determine if the violation of the battery surveillance Technical Specification was an isolated case, additional reviews were conducted. This effort included review of over seven hundred recently completed electrical maintenance surveillance tests involving sixty-one separate surveillance procedures, and a sample of over one hundred surveillance tests in other areas (i.e., Mechanical and I&C Maintenance, Operations, etc.). These reviews indicated one additional instance of a Technical Specification limit being exceeded and not identified. Specifically, on six separate occasions (two on ANO-1 and four on ANO-2) between July 1978 and June 1983, the results of diesel generator fuel oil analyses indicated values of either viscosity or water and sediment content which exceeded those allowed by Technical Specifications. Although in each case subsequent sampling indicated satisfactory results, the out of specification results were not identified as exceeding Technical Specification limits and the appropriate action statements of the Technical Specifications were not implemented. These events were the subject of a prompt report submitted to your office as discussed in our letter dated November 21, 1983, to Mr. John Collins from Mr. James M. Levine and was further discussed in LER 50-313/83-026/01T-0. The causes and corrective actions relative to both the station battery and diesel generator fuel oil surveillances are discussed below. Additional reviews of Technical Specification surveillance requirements are continuing.

The station battery surveillance violations resulted from several causes. First, the procedures governing battery surveillance were inadequate. Specifically, the procedures did not identify which acceptance criteria constituted Technical Specification limits and the procedures did not provide sufficient guidance to assure the appropriate immediate actions were accomplished in accordance with the Technical Specifications when the acceptance criteria were not met. Secondly, given that the procedure did not explicitly address the Technical Specification requirements, personnel involved in the implementation and review of the battery surveillance tests were not adequately familiar with the Technical Specification requirements governing station batteries. Specifically these personnel did not in most cases recognize which limits specified in the procedure represented Technical Specification limits but rather, viewed the specified limits as only an indication of the need for battery maintenance. The Technical Specifications were also apparently misinterpreted by some personnel who believed that out of tolerance conditions which were subsequently corrected were not reportable as deviations from the Technical Specifications.

The deviations from the Technical Specification limits relative to diesel generator fuel oil sampling resulted from very similar causes. The procedures governing the fuel oil sampling correctly specified the limits for viscosity and water and sediment content, however, the procedure did not identify these limits as Technical Specification requirements. The out of tolerance conditions were therefore not identified as deviations from Technical Specification requirements. The affected procedures have been revised to correct this situation and, as noted above, subsequent test have verified the fuel oil is currently within specified limits. Possible causes of the sampling errors were identified as contaminated sample containers and inadequate sample line purging. The procedure revisions noted above also address these items.

Following the discovery of the violation of the station battery surveillance Technical Specification, a number of corrective actions were implemented. As noted above, ANO-2 was shutdown in order to achieve compliance with Technical Specifications. In addition, the quarterly battery surveillance test was performed on the ANO-1 station batteries to assure their operability and compliance with the ANO-1 Technical Specification. Concurrently with these actions, the investigation discussed above was initiated.

Following evaluation of the initial results of this investigation a number of additional actions were taken. These actions included a management directive to all station personnel instructing that, pending review and/or revision as needed to assure that Technical Specification limits were clearly identified in surveillance procedures, all deviations from limits contained in surveillance test procedures were to be identified as potential Technical Specification deviations. The effectiveness of this directive was subsequently verified via a special audit performed by Quality Control. This audit consisted of interviews with a random sample of personnel responsible for conducting surveillance testing to verify their understanding and implementation of this directive. An additional audit was performed by Quality Assurance. This audit included review of all completed surveillance tests for the two week period following issuance of the directive to verify compliance. The results of this audit indicated no deviations from the directive.

In addition to the procedural controls discussed above, actions were taken to emphasize to appropriate personnel that strict and complete compliance with Technical Specifications is of utmost concern to AP&L management. As part of this effort, the ANO General Manager and I met with the ANO department managers, superintendents, first line supervisors and technicians. A total of approximately five hundred persons participated in these meetings. These meetings were held with small groups and included discussions of the importance of compliance with Technical Specifications and the need for thorough and accurate procedures. Input was solicited from all personnel relative to existing problems and potential improvements.

Several further corrective actions were also initiated which are of somewhat longer term. In order to address longer term procedural issues a procedure review task force has been established. The purpose of this task force is to review and revise as necessary the administrative system governing procedural development and control. This task force consists of individuals



from various ANO Departments who are devoting a significant part of their time to this effort.

The effort discussed above addresses the administrative aspects of procedural development and control. In order to assure the procedures adequately implement the content of the Technical Specifications, an additional review of Technical Specification surveillance requirements is being initiated. This will include a review of all Technical Specification surveillance requirements to assure that the requirements are properly reflected in plant procedures and are being conducted in a manner consistent with the intent of the Technical Specifications. This program, which is currently under development, will require substantial manpower resources. The status of this effort will be the subject of future correspondence. Pending completion of this effort the short term measures described above will provide assurance that Technical Specification requirements are met.

In order to improve and maintain employee familiarity with, and understanding of Technical Specifications, a training program is currently being developed. The various phases of this program will be tailored to the specific duties of various groups of employees. This training will address not only the content of the Technical Specification but will also include identification of responsibility for Technical Specification compliance and reporting of violations. This training will also emphasize Technical Specification requirement for reporting and corrective action based on as-found surveillance test data. Following initial training efforts, provisions will be made to incorporate needed retraining into existing training programs.

As discussed above, corrective action has been initiated to address the specific deficiencies identified during our investigation of this event. However, the existence of unidentified Technical Specification violations over long periods of time also calls into question the effectiveness of existing management controls and our system of checks and balances. Resolution of concerns in this area will be a long term effort, however, certain actions have already been initiated. As part of this effort a review of management information systems has been conducted. The objective of this review is to identify the various sources of information which may contain indications of the quality of performance of various parts of our organization (e.g. QA audit reports, QC surveillance reports, INPO evaluation reports, NRC inspection reports, etc.) and to consolidate these information sources into a more useful format for identification of trends and potential problem areas. The initial review has been completed and a methodology developed to integrate existing information sources. A procedure to implement this methodology is currently being developed and is scheduled to be completed by March 31, 1984. Review of our management controls is continuing and additional changes will be implemented as needed.

In response to your question regarding the date of full compliance, compliance with the ANO-2 Technical Specifications was achieved on September 26, 1983, when ANO-2 was brought to cold shutdown per Technical Specification 3.8.2.3. Additional corrective action to verify operability of the ANO-1 batteries and to implement interim controls on surveillance testing have been completed. Revision of ANO-2 quarterly battery surveillance testing procedures will be completed prior to restart.

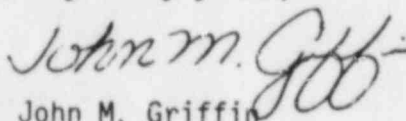
December 9, 1983

Therefore, we are currently in full compliance; however, additional actions designed to further improve our system and assure continued full compliance are ongoing.

With regard to questions posed in the Notice of Violation regarding the promptness of our review of past activities in this area, upon discovery of the condition, our immediate actions were directed at correcting the immediate out of specification condition (this was accomplished by the shutdown of ANO-2. Following this, a thorough review of the background and history of this event was initiated the following day on September 27, 1983. As discussed above and in Attachment I, this investigation included both ANO-2 and ANO-1 and included a review of surveillance procedures in a number of selected areas. We feel this review was thorough and was conducted in a timely manner.

In accordance with the provisions of 10CFR2.205 and your Notice of Violation enclosed is a check in the amount of forty thousand dollars (\$40,000) in full payment of the proposed civil penalty.

Very truly yours,



John M. Griffin

JMG:JRM:s1

Attachment



## ATTACHMENT I

### INVESTIGATION OF SEPTEMBER 22, 1983, ANO-2 STATION BATTERY SURVEILLANCE TECHNICAL SPECIFICATION VIOLATION

#### I. September 22, 1983, Event

At the direction of the acting Station Manager, an investigation of the events relating to the 9/22/83 event was initiated within several hours of its discovery. The acting Special Projects Manager conducted the investigation to determine the reasons for failure to recognize that a Technical Specification surveillance test acceptance criterion had been exceeded, which resulted in the failure to take corrective action required in the Limiting Condition for Operation action statements.

Interviews were conducted with the personnel involved in the performance of the quarterly battery surveillance test as well as the Operations Shift Supervisor on duty at the time the initial battery readings were completed.

At approximately 1315 hours on 9/22/83, Maintenance Technicians had completed the tabulation of initial battery reading data. They noted that 5 cells on battery 2D11 were out of procedural specified limits, having decreased more than 0.05 volts from the initial acceptance test data. The technicians discussed the deviations with the senior technician in their group as their normal first line supervisor was absent from the plant site. After this discussion, the lead technician notified the shift supervisor and an electrical maintenance supervisor that several cells were a "little low" on voltage. The technician was questioned by the Shift Supervisor as to whether or not the cell voltages were above 2.15 volts and if the specific gravities were above 1.200. The technician affirmed that they were and requested that the battery be placed on an equalizing charge at 2300 hours that night. The station log indicates that the battery was placed on an equalizing charge at 0015 hours on 9/23/83. The battery remained on equalizing charge until 0955 hours on 9/23/83. At that time the battery was placed in float since the technicians confirmed that it had met the procedural criteria for terminating the equalizing charge, e.g., the average-to-low cell voltage deviation was less than or equal to 0.04 volt. As required by procedure, readings were again taken after the battery had been on float for four hours. This time however, the overall-to-low cell deviation was found to be 0.05 volts. Since the procedure does not clearly state what actions to take in this situation, the technicians again conferred with the senior technician in their group (in the absence of the normal supervisor) on this latest problem. The technicians decided that the deviation would likely be corrected if the battery was given time to "settle out", therefore they decided to wait until Monday morning 9/26/83, and retake the readings. None of the technicians informed the shift supervisor of this decision. The technicians discussed the surveillance test problems with the regular electrical maintenance supervisor on Monday morning. The supervisor identified that the Technical Specification (TS) limit on

ATTACHMENT I (Continued)

cell voltage deviation had been exceeded and immediately notified the ANO-2 Operations Superintendent. Shortly after, at approximately 1100 hours, the NRC Resident Inspector was notified of the event by the Operations Manager. Shutdown of ANO-2 commenced at 1520 hours on 9/26/83.

The investigation resulted in the conclusion that the basic cause of the 9/22/83 event was the inadequate exchange of information between the shift supervisor and the maintenance technician. The basis for this conclusion was as follows:

On September 22, when the Shift Supervisor (SS) was notified, the SS asked the technician who called him if all cell voltages were greater than 2.15 volts and if specific gravities were above 1.200. The technician's reply was affirmative but he added that the voltages on some cells were a "little low" and requested that an equalizing charge be applied to 2D11 that night. He was again asked by the SS if the cell voltages were above 2.15 volts and if the specific gravities were acceptable. Again, he answered in the affirmative. The SS recalled, when interviewed later, that he did not ask about voltage deviation from initial acceptance test data nor was this information supplied by the technician. Interviews with the technician confirmed this fact.

Other factors contributing to the failure to recognize that a technical specification limit had been exceeded were:

The surveillance test procedure was not of the quality desired. Review of the procedure revealed that although the TS requirements are embodied in the procedural acceptance criteria, they are not identified as such. Discussions with the maintenance technicians indicated that had the TS limits been identified as such in the procedure, they would have communicated the fact that one had been exceeded to the Shift Supervisor. The procedure requires immediate notification to an Electrical Maintenance Supervisor and the Shift Supervisor if a cell fails to meet acceptance criteria. This notification occurred; however, the procedure fails to specify what information should be conveyed. Finally, the procedure that was used includes all required battery surveillance testing performed by Maintenance personnel and as such the procedure is bulky, difficult to follow and does not flow in an orderly manner.

The electrical maintenance supervisor who was initially contacted by the technicians (in lieu of the normal first line supervisor) was not familiar with the ANO-2 battery technical specifications. In addition, an interview with this supervisor revealed that he lacked familiarity with the procedure being performed.

## II. Previous Battery Surveillance Testing

Past battery surveillances on 2D11 and 2D12 were reviewed to identify other potential violations of the technical specification surveillance test criteria. The tests reviewed were those performed from August 1978 through September 1983. Upon completion of this review, it was noted that certain of the events described in the Notice of Violation were not, in total, correct. NRC's Notice of Violations indicated five findings. AP&L's review confirmed the details of two of these. Discrepancies between the findings and results of reviewed data for the remaining three findings are discussed below:

NRC Finding: On December 30, 1982, with Unit 2 at power operation (mode 1), the 'A' train DC bus battery bank 2D11 was determined not to meet the operability requirements of TS Surveillance Requirements 4.8.2.3.2.b.1 and 4.8.2.3.2.b.2 because:

- 1) The voltage of one cell had decreased more than 0.05 volts from the value observed during the original acceptance test.
- 2) Approximately nine cells had corrected specific gravities less than 1.200.
- 3) All 60 cells had specific gravities that had decreased more than 0.010 from the value observed during the previous test.

On December 31, 1982, approximately 24 hours later, an equalizer battery charge on bank 2D11 was completed, and the licensee determined that the battery bank was operable. However, bank 2D11 was left in an inoperable condition because all 60 cells still had specific gravities that had decreased more than 0.010 from the value observed during the previous test. Throughout the period of December 30-31, 1982, Unit 2 remained at power operation.

AP&L Review:

- 1) Same as finding above.
- 2) Fourteen cells had corrected specific gravities less than 1.200.
- 3) Forty-six cells had specific gravities that had decreased more than 0.010 from the previous test. After the equalizing charge was completed, battery 2D11 was returned to service with one cell exhibiting a decrease in specific gravity of 0.011 from the previous test.



ATTACHMENT I (Continued)

Discussion:

The 12/30/82 data sheet indicated 13 cells with corrected specific gravities less than 1.200; however, upon review, a mathematical error was noted when temperature and electrolyte level corrections were applied to hydrometer readings. This resulted in an additional cell specific gravity being less than 1.200 for a total of 14. The previous quarter specific gravity values entered into the 12/30/82 surveillance test data table were found to be incorrect. During the previous quarter, the battery was equalized, subjected to an 18-month service test, equalized a second time, subjected to a 60-month discharged test and equalized a third time. The specific gravity data logged in the 12/30/82 table to be used to calculate specific gravity deviation from previous quarter was that gathered after the third equalize described above. The data that should have been used for comparison is that gathered after the first equalize.

NRC Finding:

On March 28, 1983, with Unit 2 at power operation (mode 1) battery bank 2D11 was again determined not to meet the operability requirements of TS Surveillance Requirements 4.8.2.3.b.1 and 4.8.2.3.2.b.2 because:

- 1) The voltages of four cells had decreased more than 0.05 volts from the values observed during the original acceptance test.
- 2) The specific gravity of one cell had decreased more than 0.010 from the value observed during the previous test.

On March 29, 1983, approximately 24 hours later, 2D11 completed an equalizer battery charge, and the licensee determined that the battery bank was operable. However, 2D11 was left in an inoperable condition because the voltage of one cell was still more than 0.05 volts less than its value observed during the original acceptance test. Throughout the period of March 28-29, 1983, Unit 2 remained at power operation.

AP&L Review:

- 1) Same as finding above.
- 2) There were no cells that had decreased more than 0.010 from the value observed during the previous test.

Post review results agree with finding that one cell was still more than 0.05 volts less than initial acceptance test data.



ATTACHMENT I (Continued)

Discussion: Review of the 3/28/83 data sheets resulted in the finding that the specific gravity values recorded from the previous quarterly test were, in fact, "as-found" uncorrected hydrometer readings rather than "as-left" corrected hydrometer readings. When the proper data was used for comparison to the 3/28/83 data, all cells were found to be within specification on specific gravity deviation.

NRC Finding: On July 26, 1983, with Unit 2 at power operation, 'B' train DC bus battery bank 2D12 was determined not to meet the operability requirements of TS Surveillance Requirement 4.8.2.3.2.b.2 because three cells had specific gravities that had decreased more than 0.010 from the value observed during the previous test. On July 27, 1983, approximately 24 hours later, 2D12 completed an equalizer battery charge, and the licensee determined that 2D12 was operable. Throughout the period July 26-27, 1983, Unit 2 remained at power operation.

AP&L Review: Two cells were found to have specific gravities that had decreased more than 0.010 from the previous quarterly test value. After equalizing all cells were within specification.

Discussion: The 7/26/83 data sheet does, in fact, indicate three cells to be out of specification on specific gravity deviation. However, further review has indicated that the electrolyte level correction factor used on one cell was in error. The cell was within specification when the correct factor was used.

The following summary is a tabulation of the findings from a review of quarterly tests performed on battery 2D11 from August 1978 through September 1983:

8/11/78	As found and as left, 35 cells voltage decreased more than 0.05 volts from initial acceptance test data. No corrective action was taken.
8/25/78	All cells within specified limits.
11/17/78	As found and as left, 2 cells voltage decreased more than 0.05 volts from initial acceptance test data. No corrective action was taken.
3/10/79	As found and as left, 22 cells voltage decreased by more 0.05 volts from initial acceptance test data. No corrective action was taken.
6/18/79	All cells within specified limits.

# ATTACHMENT I (Continued)

9/14/79	As found and as left, 35 cells voltage decreased more than 0.05 volts from initial acceptance test data; 41 cells specific gravity decreased more than 0.010 from previous quarter. No corrective action was taken.
12/10/79	As found and as left, 2 cells voltage decreased by more than 0.05 volts from initial acceptance test data. No corrective action was taken.
3/15/80	Data could not be located on 26 cells. All other cells were within specified limits.
5/28/80	As found and as left, 1 cell voltage decreased by more than 0.05 volts from initial acceptance test data; 17 cells specific gravity less than 1.200; 23 cells specific gravity decreased by more than 0.010 from previous quarter. Quarterly comparison of specific gravity was not made on 26 cells due to missing data. No corrective action was taken.
8/21/80	All cells within specified limits.
12/8/80	All cells within specified limits.
2/25/81	As found and as left, 1 cell specific gravity decreased more than 0.010 from previous quarter. No corrective action was taken.
4/20/81	All cells within specified limits.
6/10/81	As found and as left, 59 cells specific gravity decreased by more than 0.010 from previous quarter. No corrective action was taken.
7/6/81	As found and as left, 2 cells specific gravity decreased by more than 0.010 from previous quarter. No corrective action was taken.
9/24/81	All cells within specified limits.
12/22/81	As found and as left, 2 cells voltage decreased by more than 0.05 volts from initial acceptance test data. No corrective action was taken.
3/22/82	All cells within specified limits.
6/28/82	All cells within specified limits.
10/01/82	The quarterly surveillance test data recorded on 10/1/82 is the data taken after the 60 month discharge and equalize cycle. As such, the usefulness of comparing specific gravities to the 6/28/82 data is questionable. Data was taken, however, prior to the 18-month service test and the 60

ATTACHMENT I (Continued)

month discharge test on 9/18/82. From this data, one cell was found to exhibit a voltage decrease of more than 0.05 volts from the initial acceptance test data. Subsequent to the 60 month test and equalize, all cells were within specified limits on 10/01/82.

- 12/30/82 As found, 14 cells specific gravity was less than 1.200; 1 cell voltage decreased by more than 0.05 volts from initial acceptance test data; 46 cells specific gravity decreased by more than 0.010 from the previous quarter using the as left data subsequent to the first of three equalize charges on 9/18/82. The battery was equalized on 12/31/82, however, as left data indicates specific gravity value of one cell had decreased by more than 0.010 from the data of 9/18/82.
- 3/28/83 As found, 4 cells voltage decreased by more than 0.05 volts from initial acceptance test data. An equalizing charge was placed on the battery, however, the as left data indicates the voltage of cell was still greater than 0.05 volts from initial acceptance test data.
- 6/22/83 As found, 1 cell voltage had decreased by more than 0.05 volts from initial acceptance test data. After an equalizing charge was placed on the battery, all cells were within specified limits.
- 9/22/83 As found, 5 cells voltage had decreased by more than 0.05 volts from initial acceptance test data. The battery was equalized, after which 6 cells voltage had decreased by more than 0.05 volts.

The following summary is a tabulation of the findings from a review of quarterly tests performed on battery 2D12 from August 1978 through September 1983.

- 8/11/78 This was the first test reviewed and as such specific gravity comparison to a previous quarter was not calculated. All cells were within limits.
- 12/1/78 As found and as left, 2 cells specific gravity decreased by more than 0.010 from previous quarter. No corrective action was taken.
- 3/11/79 As found and as left, 26 cells specific gravity decreased by more than 0.010 from previous quarter. No corrective action was taken.
- 6/18/79 All cells within specified limits; however, the total maximum combined interval time for three consecutive surveillance intervals above was 3.38 times the specified interval.
- 9/14/79 As found and as left, 15 cells specific gravity was less than 1.200; 24 cells specific gravity decreased by more than 0.010 from previous quarter. No corrective action was taken.



ATTACHMENT I (Continued)

12/10/79	As found and as left, 2 cells specific gravity decreased by more than 0.010 from previous quarter. No corrective action was taken.
3/15/80	All cells within specified limits.
5/28/80	As found and as left, 3 cells specific gravity was less than 1.200; 16 cells specific gravity decreased by more than 0.010 from previous quarter. No corrective action was taken.
8/21/80	All cells within specified limits.
12/8/80	As found, 50 cells specific gravity decreased by more than 0.010 from previous quarter. An equalizing charge was placed on the battery. Data taken immediately after equalize indicated that all cells were within specified limits.
2/26/81	All cells within specified limits.
5/6/81	All cells within specified limits.
6/12/81	As found and as left, 3 cells specific gravity decreased by more than 0.010 from previous quarter. No corrective action was taken.
7/21/81	All cells within specified limits.
10/22/81	All cells within specified limits.
1/11/81	The test copy of the test for this surveillance interval could not be located.
4/26/82	As found, all cells were within specified limits. The battery was equalized, however, and as left, 1 cells specific gravity had decreased by more than 0.010 from the 10/22/81 quarterly data.
7/23/82	As found, 2 cells specific gravity decreased by more than 0.010 from the previous quarter. The battery was placed on equalizing charge. Data taken immediately after the equalizing charge was terminated indicated all cells were within specified limits.
8/23/82	All cells within specified limits.
11/1/82	All cells within specified limits.
1/26/83	All cells within specified limits.
4/25/83	All cells within specified limits.

## ATTACHMENT I (Continued)

7/26/83 As found, 2 cells specific gravity had decreased by more than 0.010 from the previous quarter. The battery was placed on equalizing charge. Subsequent readings indicated all cells were within specified limits.

The following summary is a tabulation of the findings of a review of 18-month tests performed on batteries 2D11 and 2D12 from August 1978 through September 1983.

### 2D11

10/10/79 All parameters within specified limits.

4/22/81 All parameters within specified limits.

9/21/82 Recorded data indicates a resistance of 0.02 ohms in the correction between cells 24-25. The data sheet did not indicate whether the data was as found or as left, however, the procedure clearly states that corrective action will be taken if resistance is greater than 0.01 ohm.

### 2D12

10/11/79 All parameters within specified limits.

5/6/81 All parameters within specified limits.

9/16/82 All parameters within specified limits.

Review of the 60-month surveillance tests performed on 2D11 (10/1/82) and 2D12 (9/28/82) indicated compliance with Technical Specifications. The seven-day surveillance test results were not reviewed.

### III. Review of Other Surveillance Testing

In order to determine if the weakness in battery surveillance testing was an isolated problem, additional reviews were conducted of other surveillance testing. Within the electrical maintenance area, this consisted of a review of recently completed surveillances, and included the majority of most surveillance test procedures within the electrical maintenance area. A total of sixty-one different procedures and over seven hundred completed surveillances were reviewed. Although a number of procedural inadequacies were identified, no additional cases of Technical Specification limits being exceeded have been identified. Additional reviews in this area are continuing.

A sample of surveillance procedures outside of the electrical maintenance area was also reviewed. This review was conducted by AP&L Quality Assurance and consisted of approximately sixty different surveillance procedures and over one hundred recently completed surveillance tests. This review revealed that one additional Technical Specification surveillance limit involving diesel fuel oil for both ANO-1 and ANO-2 was exceeded and appropriate actions not taken. This

involved the sampling of diesel fuel oil for both ANO-1 and ANO-2. Specifically, ANO-1 Technical Specification 4.6.1.4.e and ANO-2 Technical Specification 4.8.1.1.2.b require verification of diesel generator operability at least once per 92 days for ANO-2 and monthly for ANO-1. The surveillance testing includes, among other things, requirements relative to the properties of the diesel fuel oil. On six occasions extending from July 1978 to June 1983 diesel fuel oil sample results exceeded the specified limits of water and sediment content or viscosity. These were not identified as Technical Specification violations at the time and therefore appropriate actions were not taken. In each case subsequent routine resampling showed the fuel oil to be within specified limits. In all cases, the subsequent resample was completed within six days. The cause of that violation was similar to the station battery surveillance violations in that the procedures did not identify the limits on fuel oil water and sediment content and viscosity as Technical Specification limits. Additional details of this event are contained in LER 50-313/83-026/01T-0.

#### IV. Evaluation of Battery Capability

Each of the two redundant station batteries provides dc power to various loads in the event of a loss of the ac power sources (off site power and emergency diesel generators) to the battery chargers. These loads include dc control power for off site power selection, dc control power and field flashing to the emergency diesel generators, dc control power to the reactor protection system and engineered safety features actuation system, dc control power to the emergency feedwater system, and dc power to the vital ac inverters.

Following discovery on September 26, 1983, that the September 22, 1983, quarterly battery surveillance had indicated several cells to be out of Technical Specification tolerances, a review of the condition of the station battery 2D11 was conducted to determine what effect this condition had on the battery's capability to perform its intended function. This review included reviews by AP&L engineering personnel and discussions with the battery vendor.

This review showed that the battery was capable of performing its intended function and that there is no indication of any significant degradation in battery capacity. This conclusion is based on the fact that cell voltages and specific gravities were within acceptable limits per the manufacturer's recommendations and IEEE 450-1980, there were no significant cell to cell deviations, and the battery responded normally to an equalize charge.

Review of previous out of tolerance conditions yielded similar results. While there were several occasions when battery cell voltages or specific gravities were out of limits as specified in the Technical Specifications, these conditions did not indicate a loss of battery capacity in accordance with the most current IEEE standard. Specifically, there were no cases of cell voltages less than 2.13 and no cases of specific gravities below 1.200 and trending downward.





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
831 PARK AVENUE  
KING OF PRUSSIA, PENNSYLVANIA 19406

November 4, 1983

Docket Nos. 50-317, 50-318  
License Nos. DPR-53, DPR-69  
EA No. 83-58

Baltimore Gas and Electric Company  
ATTN: Mr. A. E. Lundvall, Jr.  
Vice President, Supply  
P. O. Box 1475  
Baltimore, Maryland 21203

Gentlemen:

Subject: Notice of Violations and Proposed Imposition of Civil Penalties  
(Inspection Nos. 50-317/83-15, 50-318/83-15 and 50-317/83-22,  
50-318/83-22)

This refers to special inspections conducted on May 25 - June 1, 1983 and August 17 - 22, 1983 at the Calvert Cliffs Nuclear Power Plant, Units 1 and 2, Lusby, Maryland, of activities authorized by NRC License Nos. DPR-53 and DPR-69. The inspection reports were forwarded to you on June 27, 1983 and August 26, 1983. During these inspections, two violations of technical specification limiting conditions for operation were identified. One of the violations was identified by an NRC inspector. The other violation was identified by licensee representatives only when a diesel generator stopped running during a surveillance test because of a lack of fuel. You then reported the violation to the NRC.

These violations are described in the enclosed Notice of Violation and Proposed Imposition of Civil Penalties. Enforcement Conferences were held with you and other members of your staff on July 1, 1983, and September 2, 1983, during which each violation, its cause, and your corrective actions were discussed.

The first violation (Violation A in the enclosed Notice of Violation) involved the inoperability of both Emergency Core Cooling System (ECCS) pump room air coolers for a period of approximately 22 hours between May 24 - 25, 1983. As a result, without this room cooling, both trains of the ECCS and the Containment Spray System (CSS) were considered inoperable in that required auxiliary equipment, specifically the pump room air coolers, was out of service. This violation occurred primarily because operators did not recognize that the coolers provided a necessary support function for the ECCS and CSS. Consequently, an operator shut the inlet valve to the operating cooler while maintenance was being performed on the other cooler. A causative factor in this incident was that the procedures used to perform the maintenance activity on the coolers were not sufficiently detailed. As a result, one cooler was drained into the redundant cooler by means of a temporary hose connection without a formal and systematic evaluation of the safety implications.

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

The second violation (Violation B in the enclosed Notice of Violation), which existed for a period of approximately 6 days in August 1983, concerned the inoperability of one diesel generator as a result of the isolation of its fuel oil tank level switches. One of these switches functions to automatically replenish the fuel supply in the diesel generator's fuel supply tank whenever a low level in the tank exists. The violation occurred because one valve was not reopened after the performance of a planned maintenance activity on that diesel generator. We are concerned that the associated post maintenance activities were not sufficient to ensure that the valve was reopened. Specifically, the independent verification of valve lineups was inadequate and a post-maintenance surveillance test was not properly conducted.

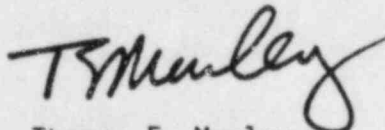
These violations indicate weaknesses in (1) the systematic evaluation of planned maintenance activities, (2) the adequacy of procedures to perform these activities, and (3) proper implementation of both maintenance procedures and post-maintenance testing procedures designed to ensure that safety systems are not adversely affected. To emphasize the serious nature of these violations, I have been authorized, after consultation with the Director of the Office of Inspection and Enforcement, to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalties in the amount of Sixty Thousand Dollars (\$60,000) for the violations described in the enclosed Notice. The violations have been categorized at Severity Level III in accordance with the NRC Enforcement Policy, 10 CFR Part 2, Appendix C. The base civil penalty for a Level III violation is \$40,000. This base amount for Violation B has been reduced by 50%, in accordance with the Enforcement Policy, because of your extensive corrective actions which were described at the Enforcement Conference on September 1, 1983, and which were documented in a letter to Region I dated September 16, 1983.

You are required to respond to the enclosed Notice and you should follow the instructions specified therein when preparing your response. Your response should specifically address the corrective actions taken or planned with regard to: (1) future planned maintenance for the ECCS pump room air coolers to ensure operability requirements during reactor operation; (2) the training of personnel regarding identification of necessary support systems for safe plant operation; (3) proper review and implementation of maintenance procedures and post-maintenance testing; and (4) operation of the facility as described in the FSAR or performance of appropriate safety evaluations. In your response, appropriate reference to previous submittals is acceptable.

In accordance with 10 CFR 2.790 of the NRC's "Rules and Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosure will be placed in the NRC's Public Document Room.

The responses directed by this letter and accompanying Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,



Thomas E. Murley  
Regional Administrator

Enclosure:

Notice of Violation and Proposed  
Imposition of Civil Penalties

cc w/encl:

R. M. Douglass, Manager, Quality Assurance  
L. B. Russell, Plant Superintendent  
S. M. Davis, General Supervisor, Operations QA  
R. C. L. Olson, Principal Engineer  
J. A. Tiernan, Manager, Nuclear Power  
R. E. Denton, General Supervisor, Training and Technical Services  
Public Document Room (PDR)  
Local Public Document Room (LPDR)  
Nuclear Safety Information Center (NSIC)  
NRC Resident Inspector  
State of Maryland (2)



NOTICE OF VIOLATION  
AND  
PROPOSED IMPOSITION OF CIVIL PENALTIES

Baltimore Gas and Electric Company  
Calvert Cliffs Nuclear Plant, Units 1 and 2

Docket No. 50-317, 50-318  
License No. DPR-53, DPR-69  
EA No. 83-58

During an NRC inspection of the Calvert Cliffs facility conducted May 25 - June 1, 1983, a violation of NRC requirements was identified (Violation A). On August 17 - 22, 1983, another NRC inspection was conducted to review the circumstances associated with another violation of NRC requirements, which was identified by the licensee and reported to the NRC (Violation B). Both occurrences involved violations of technical specification limiting conditions for operation (LCO). A description of the events associated with each violation is provided below.

Events Associated with Violation A

On May 27, 1983 the NRC resident inspector discovered that both Emergency Core Cooling System (ECCS) pump room air cooler systems had been out of service simultaneously for approximately twenty-two hours between May 24-25, 1983 while the Unit 1 reactor was operating at power. As a result, without this room cooling, both trains of the ECCS and the Containment Spray System (CSS) were considered inoperable in that required auxiliary equipment, specifically the pump room air coolers, was out of service.

At 7 PM on May 24, 1983 with the No. 12 ECCS room air cooler system out of service to clear a clog in its salt water cooling supply line, the licensee isolated the No. 11 ECCS room air cooler system by gagging shut its inlet valve. This valve was shut to facilitate drainage of the No. 12 cooler system by means of a temporary hose connection, using a portable pumping rig, into the salt water inlet piping of the No. 11 cooler system downstream of the inlet valve. The inlet valve to the No. 11 cooler system is designed to automatically open to initiate salt water flow to the coolers whenever ECCS pump room air temperature exceeds approximately 104 F. Gagging shut this inlet valve isolated the No. 11 cooler and rendered it incapable of automatically opening, thereby resulting in the No. 11 cooler system becoming inoperable. The No. 11 cooler was subsequently returned to operation about 5 PM on May 25, 1983.

Events Associated with Violation B

On August 16, 1983 Diesel Generator 12 tripped due to lack of fuel oil during the conduct of an operational surveillance test. The Fuel Oil Supply Tank or Day Tank which directly supplies fuel to the diesel had emptied. An instrument sensing low level in the Day Tank was improperly isolated (due to personnel error) by a valve closure. This isolation prevented the instrument from sensing a true low level condition and sending a signal to start the automatic tank makeup system. The valve closure had occurred on August 10, 1983 thereby rendering Diesel Generator 12 inoperable from August 10 to August 16, 1983 in that the minimum diesel operability requirements of the Technical Specification had not been met.

Diesel Generator 12 is one of three facility diesel generators and is designated as the station swing diesel generator. It can supply emergency power to either unit. Technical Specification 3.8.1.1 requires a minimum of two operable diesel generators per unit, one of which may be the swing diesel generator, when a reactor unit is operating in Modes 1 - 4. During the period of August 10 - 16, 1983, Unit 1 operated for about 135 hours and Unit 2 operated for about 113 hours in Modes 1 - 4 with only one diesel generator operable per unit.

The isolation valve in question was the lower isolation valve for the Fuel Oil Day Tank standpipe (12-DF0-1003). This valve had been closed on August 10, 1983 by a technician during the performance of a Planned Maintenance activity (PM-1-24-I-A-105). The fact that the valve had been improperly left closed should have been, but was not, recognized on August 10, 1983, during a required double verification valve lineup check. Similarly, the inoperability of Diesel Generator 12 should have been, but was not, identified when the requirements of diesel generator surveillance test STP-0-8-0 were not met upon performance of the test on August 10, 1983. This test required that automatic operation of the Fuel Oil Transfer Pump (for Day Tank makeup) be verified during a one hour diesel run. The operators improperly assumed that the pump did operate and so documented it, even though the Fuel Oil Transfer Pump did not operate because of the closure of the standpipe isolation valve.

In order to emphasize the importance of: (1) proper review and safety evaluation of safety-related activities, (2) adequate training of personnel regarding identification of necessary support systems to ensure that activities involving these systems do not affect safe plant operation, (3) proper implementation of maintenance procedures, and post-maintenance testing procedures, and (4) operation of the facility as described in the FSAR and in accordance with Technical

Specifications, the Nuclear Regulatory Commission proposes to impose civil penalties in the amount of Sixty Thousand Dollars (\$60,000) for the violations set forth in this Notice. In accordance with the NRC Enforcement Policy (10 CFR 2, Appendix C), and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2282, PL 96-295 and 10 CFR 2.205, these particular violations and their associated civil penalties are set forth below:

- A. Technical Specification LCO 3.5.2 and 3.6.2.1, respectively, require two independent Emergency Core Cooling Systems (ECCS) and two independent Containment Spray Systems (CSS) be operable whenever the plant is in the power operation or startup mode, or if the plant is in a hot standby mode with pressurizer pressure greater than or equal to 1,750 psig.

Technical Specification 1.6 defines operability and specifies as a condition for operability of a system that all auxiliary equipment required for the system or subsystem must be capable of performing its related support function.

Technical Specification 3.0.3 specifies that, when an LCO is not met, action shall be initiated to place the unit in hot standby within six hours, hot shutdown within the following six hours, and cold shutdown within the subsequent 24 hours.

Contrary to the above, from 7 PM on May 24, 1983 until 5 PM on May 25, 1983, while Unit 1 was in power operation, both ECCS and CSS systems were inoperable in that required auxiliary equipment, specifically, both ECCS air room coolers were inoperable, and action was not taken to place the reactor in hot standby in six hours, hot shutdown within the following six hours, and cold shutdown within the subsequent 24 hours.

This is a Severity Level III violation (Supplement I).  
Civil Penalty - \$40,000

- B. Technical Specification LCO 3.8.1.1.b requires a minimum of two separate and independent diesel generators to be operable, one of which may be a swing diesel generator capable of serving either Unit 1 or Unit 2, whenever the reactor is in power operation, startup, hot standby, or hot shutdown (Modes 1 through 4).

Technical Specification 1.6 defines operability and specifies as a condition for operability of a system that all auxiliary equipment required for the system or subsystem must be capable of performing its related support function.

With one of the diesel generators inoperable, Technical Specification LCO Action Statement 3.8.1.1.a requires restoration of at least two diesel generators to operable status within 72 hours, or the plant must be brought to Hot Standby within the next six hours and Cold Shutdown within the following 30 hours.



Contrary to the above, from 10:10 PM on August 10, 1983 until 1:50 PM on August 16, 1983 for Unit 1, and from 8:15 PM on August 11, 1983 until 1:50 PM on August 16, 1983 for Unit 2, while the Unit 1 reactor was operating in Mode 3 and the Unit 2 reactor was operating in Modes 1 - 4, only one diesel generator (No. 11 for Unit 1 and No. 21 for Unit 2) was operable, and action was not taken to place the reactors in Hot Standby within six hours and Cold Shutdown within the following 30 hours. The swing diesel generator (No. 12) was inoperable during these periods due to unavailability of required auxiliary equipment, specifically, the automatic diesel fuel makeup system was isolated.

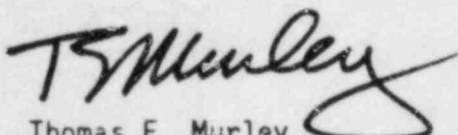
This is a Severity Level III violation (Supplement I).  
Civil Penalty - \$20,000

Pursuant to the provisions of 10 CFR 2.201, Baltimore Gas and Electric Company is hereby required to submit to the Director, Office of Inspection and Enforcement, USNRC, Washington, D.C. 20555, with a copy to this office, within 30 days of the date of this Notice a written statement or explanation, including for each alleged violation, (1) admission or denial of the alleged violation; (2) the reasons for the violation if admitted; (3) the corrective steps which have been taken and the results achieved; (4) the corrective steps which will be taken to avoid further violations; and (5) the date when full compliance will be achieved. Consideration may be given to extending the response time for good cause shown. Under the authority of Section 182 of the Act, 42 U.S.C. 2232, this response shall be submitted under oath or affirmation.

Within the same time as provided for the response required above under 10 CFR 2.201, Baltimore Gas and Electric Company may pay the civil penalties in the amount of Sixty Thousand Dollars (\$60,000) or may protest imposition of the civil penalties in whole or in part by a written answer. Should Baltimore Gas and Electric Company fail to answer within the time specified, the Director, Office of Inspection and Enforcement will issue an order imposing the civil penalties in the amount proposed above. Should Baltimore Gas and Electric Company elect to file an answer in accordance with 10 CFR 2.205 protesting the civil penalties, such answer may: (1) deny the violations listed in this Notice in whole or in part; (2) demonstrate extenuating circumstances; (3) show error in this Notice; or (4) show other reasons why the penalties should not be imposed. In addition to protesting the civil penalties in whole or in part, such answer may request remission or mitigation of the penalties. In requesting mitigation of the proposed penalties, the five factors contained in Section IV(B) of 10 CFR Part 2, Appendix C should be addressed. Any written answer in accordance with 10 CFR 2.205 should be set forth separately from the statement or explanation in reply pursuant to 10 CFR 2.201, but may incorporate by specific reference (e.g., giving page and paragraph numbers) to avoid repetition. Baltimore Gas and Electric Company's attention is directed to the other provisions of 10 CFR 2.205, regarding the procedure for imposing a civil penalty.

Upon failure to pay the civil penalties due, which have been subsequently determined in accordance with the applicable provisions of 10 CFR 2.205, this matter may be referred to the Attorney General, and the penalties, unless compromised, remitted, or mitigated, may be collected by civil action pursuant to Section 234c of the Act, 42 U.S.C. 2282.

FOR THE NUCLEAR REGULATORY COMMISSION



Thomas E. Murley  
Regional Administrator

Dated at King of Prussia, Pennsylvania  
this 4<sup>th</sup> day of November 1983



CHARLES CENTER • P. O. BOX 1475 • BALTIMORE, MARYLAND 21203

ARTHUR E. LUNDVALL, JR.  
VICE PRESIDENT  
SUPPLY

December 2, 1983

U. S. Nuclear Regulatory Commission  
Office of Inspection and Enforcement  
Washington, D. C. 20555

ATTENTION: Mr. Richard C. DeYoung, Director  
Office of Inspection and Enforcement

ENCLOSURE: (a) Letter from Mr. A. E. Lundvall, Jr., to Mr. R. W. Starostecki dated  
September 16, 1983, regarding I&E Inspection Report  
50-317 (318)/83-22.

Gentlemen:

This letter provides the required response to certain items of apparent noncompliance with NRC regulations as set forth in I&E Inspection Report Nos. 50-317(318)/83-15 and 50-317(318)/83-22. These items of apparent noncompliance set forth in the inspection reports are uncontested. Accordingly, a check for \$60,000 is enclosed.

Subsequent investigations by members of our staff have confirmed that the violations referenced did occur at our Calvert Cliffs facility. Our review of the noncompliance items indicates that the major causes were:

- (a) deficiencies regarding the adequacy of procedures for controlling certain operations, testing and maintenance activities,
- (b) failure of some personnel to fully implement existing procedures, and
- (c) a lack of awareness on the part of some personnel regarding the importance of certain subsystems to the operability of safety-related systems.

The corrective actions provided herein have been directed towards alleviating the above concerns.

The measures that have been or will be taken to improve procedures in the operations, maintenance, and testing areas to preclude recurrence of similar violations are as follows:



**ITEM A** (UNAVAILABILITY OF ECCS PUMP ROOM AIR COOLERS)

1. A precautionary statement has been added to the Operating Instructions for the Safety Injection, Containment Spray, and Saltwater Cooling Systems to alert the operator of the importance of the ECCS Pump Room Air Coolers for maintaining the operability of Engineered Safety Features Systems. This action was completed on November 28, 1983.
2. A new Operating Instruction has been developed for using the portable dewatering rig for maintenance activities on safety-related systems. This instruction contains provisions for alerting the operator of the requirements for maintaining operability of the ECCS Pump Room Air Coolers during plant operations consistent with the Technical Specification requirements. This action was completed on November 29, 1983.
3. Calvert Cliffs Instruction (CCI-117) for the control of Lifted Leads and Jumpers is being revised to diversify the classification of authorized changes performed on safety-related equipment. This revision incorporates a new category of authorized changes which includes such items as hoses, mechanical gagging, flow restricting and jumper (bypass) devices, etc. This revision of CCI-117 will ensure in the future that authorized changes (e.g., addition of hoses, etc.) to safety-related systems will receive the appropriate safety reviews and be controlled in such a manner as to ensure that operability of safety-related systems is maintained during the modes specified in the Technical Specifications.

**ITEM B** (UNAVAILABILITY OF NO. 12 EMERGENCY DIESEL GENERATOR)

Enclosure (a) provides a response to certain procedural inadequacies. Corrective actions have been provided in the response for items 7, 8 and 9 under the paragraph labeled, **Adequacy of Independent Verification of Plant System Valve Line-Ups** and items 2 and 3 under the paragraph labeled, **Validity of Operator Verification of Fuel Oil Day Tank Level**.

The measures that have been or will be taken to address the failure of certain personnel to fully implement existing procedures are as follows:

**ITEM A**

Within the scope of the violations described in I&E Inspection Report 83-15, and subsequent investigations performed by our staff, we have determined that the inadvertent isolation of the ECCS Pump Room Air Cooler did not constitute a condition where personnel failed to fully implement existing procedures. Therefore, no corrective actions have been taken in this area for this item.

**ITEM B**

Enclosure (a) provides a response to inadequacies regarding implementation of existing procedures. Corrective actions have been provided in the response for items 1, 2, 3, 4, 5 and 6 under the paragraph labeled, **Adequacy of Independent Verification of Plant System Valve Line-Ups.**

The measures that have been or will be taken to increase the awareness of personnel regarding the importance of certain subsystems to the operability of safety-related systems are as follows:

**ITEM A**

1. In July of this year, we initiated a program to systematically review the Unit 1 and 2 Technical Specifications. The purpose of this review has been to determine the adequacy of the current Technical Specifications with respect to identifying all equipment that is credited in the Updated Final Safety Analysis Report (UFSAR) for accident mitigation. Several approaches have been taken in verifying the adequacy of the Technical Specifications in preserving the accident analysis assumptions of the UFSAR. The first approach involved a comparison of the Combustion Engineering Standard Technical Specifications (NUREG-0212) with the current Calvert Cliffs Technical Specifications. The second approach has involved a comprehensive review of Chapter 14 (Safety Analysis) of the UFSAR with the intent of compiling a list of equipment assumed to operate during accident conditions. The list of equipment generated as a result of the Chapter 14 review will be used to revise the Technical Specifications and the Safety-Related classification lists (Q-List) where appropriate. Any changes to the Technical Specifications resulting from this review are being processed (as they are identified) in a timely manner. Following the review, processing, and NRC approval of any license amendments, training will be provided to all licensed operators through the existing Licensed Operator Training Program.
2. Following discovery of the ECCS Pump Room Air Cooler event, the General Supervisor-Operations issued a Standing Instruction (83-08) alerting Operations personnel of the importance of maintaining ECCS Pump Room Air Coolers operable during all modes requiring operable Safety Injection and Containment Spray Systems. The standing instruction provided guidance for maintaining the equipment operable and entering action statements if the equipment became inoperable during operating modes.

#### ITEM B

Enclosure (a) provides a response which addresses measures we have taken to increase personnel awareness regarding the importance of certain subsystems to maintaining the operability of safety-related equipment. Corrective actions have been provided in the response for items 2, 3, 4, 5 and 6 under the paragraph labeled, **Adequacy of Independent Verifications of Plant System Valve Line-Ups.**

In addition to the previously outlined corrective actions we have taken or plan to take, we anticipate that the following longer term actions will enhance our overall management objective of safe nuclear power plant operations. An integrated maintenance management system is currently under development for the Calvert Cliffs facility. One of the elements of this program involves an enhanced maintenance planner position whose primary responsibility would be planning and scheduling maintenance activities. Our past practice with regard to specifying post-maintenance operability testing has relied primarily on the Senior Control Room Operator's (SCRO) judgement. Because of the SCRO's detailed knowledge of system characteristics, we continue to place a high degree of confidence in his ability to specify appropriate post-maintenance testing. However, we realize that the SCRO may not always be cognizant of the detail of certain maintenance activities. A new program will integrate recommendations for post-maintenance testing from the maintenance planner as well as, the SCRO. This change will provide a more comprehensive review of testing requirements necessary to ensure that equipment returned to service meets the operability requirements of the Technical Specifications.

In an effort to upgrade administrative control of maintenance and operations activities at our facility, we recently scheduled a special (voluntary) INPO Assistance visit. This visit will concentrate on evaluating our current compliance in implementing existing maintenance and operations programs at Calvert Cliffs. This inspection will be conducted during the last part of November 1983. Weaknesses identified in this evaluation will be dealt with appropriately.

Enclosure (a) provided a discussion of our personnel error reduction program. We have seen a substantial decrease in the number of personnel error related LERs since implementing this program. We are committed to continuing and enhancing this program as necessary to reduce personnel errors at Calvert Cliffs.

The previous discussions provide a summary of the corrective actions we have taken or intend to take regarding the May 24, 1983, and August 10, 1983, incidents. We share your concern regarding the events culminating in the violations of our Technical Specifications. We believe that the above actions will provide assurance that similar events will not recur in the future.



Mr. R. C. DeYoung  
December 2, 1983  
Page 5

Should you have further questions regarding this matter, please do not hesitate to contact us.

Very truly yours,

*Arthur E. Lundvall Jr.*

AEL/LOW/sjb

STATE OF MARYLAND :  
: TO WIT:  
CITY OF BALTIMORE :

Arthur E. Lundvall, Jr., being duly sworn states that he is Vice President of the Baltimore Gas and Electric Company, a corporation of the State of Maryland; that he provides the foregoing response for the purposes therein set forth; that the statements made are true and correct to the best of his knowledge, information, and belief; and that he was authorized to provide the response on behalf of said Corporation.

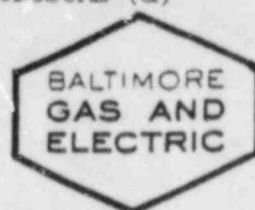
WITNESS my Hand and Notarial Seal:

*Ruth H. Grese*  
Notary Public  
*July 1, 1986*

My Commission Expires:

cc: J. A. Biddison, Esquire  
G. F. Trowbridge, Esquire  
D. H. Jaffe, NRC  
R. E. Architzel, NRC  
T. E. Murley, NRC

ENCLOSURE (a)



CHARLES CENTER • P. O. BOX 1475 • BALTIMORE, MARYLAND 21203

September 16, 1983

ARTHUR E. LUNDVALL JR.  
VICE PRESIDENT  
SUPPLY

U.S. Nuclear Regulatory Commission  
Region I  
631 Park Avenue  
King of Prussia, PA 19406

ATTENTION: Mr. R. W. Starostecki, Director  
Division of Project & Resident Programs

Gentlemen:

On September 2, 1983, Messrs. J. A. Tiernan, L. B. Russell, J. T. Carroll, and I met with you and other members of the NRC Region I staff to discuss an event that recently occurred at our Calvert Cliffs Nuclear Power Plant. This event involved the operation of Units 1 & 2 beyond the Technical Specification Limiting Conditions for Operation (LCO) concerning emergency diesel generator operability. As these events were fully discussed at our meeting and in NRC Inspection Report 50-317/83-22; 50-318/83-22, the details will not be repeated. In our meeting, we provided you with preliminary information concerning our corrective measures. This letter provides a written summary addressing corrective measures we have taken or plan to take for each area of concern specified in your Inspection Report.

ADEQUACY OF INDEPENDENT VERIFICATION OF PLANT SYSTEM VALVE LINE-UPS

1. Upon discovery of the event, the instrument bridle lower isolation valve on each fuel oil day tank was verified open and the surveillance test was successfully run on each diesel generator.
2. Personnel Incident Reports (PIRs) were written by each individual involved in the performance of the Preventive Maintenance (PM) and Surveillance Test Procedures (STPs) associated with the August 10, 1983, violation. The purpose of this program is to increase personnel awareness of the event by having each individual confront, acknowledge, and document their involvement in personnel errors. The PIRs are selectively routed as required reading or are disseminated (e.g., for training) to affected groups at Calvert Cliffs.
3. The Technicians and Operations personnel involved in the event were counseled by the Division Vice President, Plant Superintendent, and respective General Supervisors. The purpose of this counseling was to communicate Management concerns regarding the seriousness of the event.

4. Training sessions are being scheduled with all Maintenance and Operations personnel to ensure all personnel are aware of the expectations (requirements) inherent in an independent verification of valve position, (i.e., independent hands-on verification that the valve is in the proper position). This training will be completed by no later than October 30, 1983.
5. A meeting was scheduled with each Instrument Shop for the purpose of providing the opportunity for the cognizant Instrument Technicians and General Supervisor to review the event and provide a description of the lessons learned. This action was completed on September 9, 1983.
6. A weakness was identified in the practice of some Electrical & Control shops in the nature of assigning work to some Technicians on one job. To correct this deficiency, whenever more than one technician is assigned to a job, the Shop Work Coordinator will designate a lead individual to instill a stronger sense of responsibility and accountability for that job. This action has been implemented.
7. All PMs, STPs, and Functional Tests (FTIs) in the Instrument & Controls Section, will be reviewed by no later than December 31, 1983, to determine the adequacy of the independent verification steps in these procedures. In addition to the above, an evaluation of all Instrument & Controls PMs will be performed to determine whether it is advisable to include (in the verification step), a listing of all valves repositioned during the performance of the PM. This action will be completed by no later than September 30, 1983.
8. Calvert Cliffs Instruction-211D for Preventive Maintenance will be revised to be consistent with our present practice to require an independent verification step in all PMs that involve valve repositioning. This action will be completed by no later than September 30, 1983.
9. All Instrument & Controls PMs will be reviewed to evaluate the adequacy of post maintenance testing to ensure, where feasible, that the functional operability of involved components are adequately tested. This action will be completed by no later than September 1984.

#### VALIDITY OF OPERATOR VERIFICATION OF FUEL OIL DAY TANK LEVEL

1. Facility Change Request (FCR 81-129), which specifies the addition of a gauge glass on each fuel oil day tank, is being expedited. Although the FCR specifies the use of a gauge glass, equivalently effective alternative methods such as dipstick, float, or air bubbler indicators are under consideration. Pending engineering and parts availability, we are proceeding on a schedule to install local level indicators during the scheduled fall 1983 Unit 1 refueling outage.



2. STP 0-8-0 (Diesel Generator Weekly Test) has been revised to include: (a) a step to verify the frequency and duration of the fuel oil transfer pump operation when the diesel is being tested in a fully loaded condition, (b) a step to verify that the fuel oil day tank low level alarm is cleared, and (c) a separate data sheet for the Outside Operator to log the above information.
3. All Operations STPs will be reviewed no later than December 31, 1983, to determine if separate or additional data sheets (similar to the above) are appropriate.

#### MANPOWER AND TIME ALLOCATIONS FOR PM WORK

Management has in the past and will continue in the future to be sensitive to the issue of manpower and time allotment for performing safety-related activities. This is an issue which is faced, essentially, on a daily basis. We do not view this area as being deficient in Management Controls, but instead an invalid defense by the Technicians involved. Management has never tolerated shortcuts to meet a schedule. In the incident cited above, controls were exercised to alleviate the concern regarding manpower and time allotment. The PM scheduling includes estimates of man-hour requirements (in this case, 2 men/10 hours and 2 men/8 hours). To meet operational constraints during the above incident, one additional technician was assigned to the task to ensure timely performance. Maintenance supervisors at Calvert Cliffs are highly experienced at assigning safety-related work during rigorously scheduled periods and are very aware of personnel performance and capability. We continue to emphasize never sacrificing nuclear or personnel safety for time as a very basic Management objective in our training and awareness programs.

#### RECURRENCE OF PERSONNEL ERROR-RELATED SAFETY PROBLEMS

As discussed at our meeting, one of our major goals is to reduce personnel errors. In this regard we have implemented a program that draws upon existing controls and implements new controls that we feel will produce positive results for achieving our goal. Awareness and attitude programs have been one area of concentration, including: (a) emphasis on discussions with Supervisors and others to increase communications and awareness, (b) the formation of Interdepartmental Quality Circles, and (c) Corporate studies on quality workmanship. Training programs continue to provide a basic framework for achieving a reduction in personnel error. We have upgraded a number of areas in training including system descriptions, staffing, facilities, and feedback of plant events. In addition, error reporting and personnel counseling programs have been improved. Currently, Personnel Incident Reports are used at Calvert Cliffs. Comprehensive and independent event reports are prepared for serious events and when necessary direct counseling is performed with involved personnel and Line Supervision (up to the Vice President's level). Data analysis and evaluation programs have been implemented to assemble and review error information for trends and root causes.

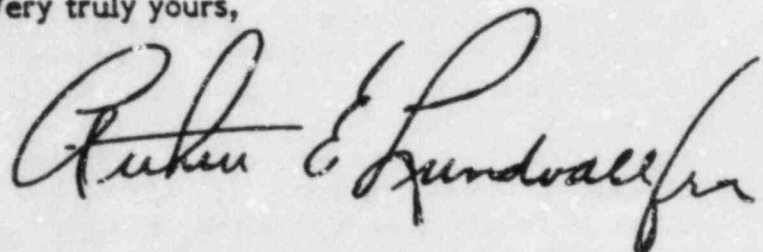
Mr. R. W. Starostecki  
September 16, 1983 -  
Page 4

As an integral part of our continuing effort to reduce personnel errors, we currently track and report personnel error trends to our Plant Operations and Safety and Off-Site Safety Review Committees. In the recent (September 1983) report a significant decrease in the number of personnel error initiated Licensee Event Reports (LERs) for the current year is noted as compared to an equivalent eight month period in 1982. This decreasing trend indicates approximately 64% fewer personnel error LERs reported. To ensure that all appropriate individuals on-site are informed and made aware of personnel error incidents and Management objectives in this area, meetings have been held with affected units and Calvert Cliffs Supervisors and key personnel to provide a forum for discussion on the seriousness of such trends.

The previous discussions provide a summary of steps we have taken or intend to take regarding the August 10, 1983, incident. We share your concern regarding the events culminating in the violation of our Technical Specifications. We believe that the above measures will provide assurance that similar events will not recur in the future.

Should you desire additional information, please do not hesitate to contact us.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Robert E. Lundvall".

AEL/LOW/gla

cc: J. A. Biddison, Esquire  
G. F. Trowbridge, Esquire  
R. E. Architzel, NRC  
D. H. Jaffe, NRC





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA ST., N.W., SUITE 3100  
ATLANTA, GEORGIA 30303

NOV 15 1983

Carolina Power and Light Company  
ATTN: Mr. E. E. Utley  
Executive Vice President  
Power Supply and Engineering  
and Construction  
411 Fayetteville Street  
Raleigh, NC 27602

Gentlemen:

SUBJECT: PROPOSED CIVIL PENALTY ACTION: EA 83-94 (REFERENCE INSPECTION  
REPORT NO. 50-261/83-22)

This refers to the special safeguards inspection conducted by Mr. B. L. Hall of this office on July 29, 1983, of activities authorized by NRC License No. DPR-23 at H. B. Robinson Steam and Electric Plant and to the discussions of our findings held with Mr. R. Connolly, Assistant to the Plant General Manager, at the conclusion of the inspection.

The purpose of this inspection was to evaluate the significance of the licensee's failure to control access to a vital area and corrective actions taken in response to a security event reported to the NRC on July 28, 1983. The findings revealed that, on July 27, 1983, access to a vital area was not controlled in that an individual gained undetected access to it. Following notification of the contract security service of this event, the contract security service supervisor failed to immediately notify Carolina Power and Light Company (CP&L) of the event as specified in procedures implementing the facility physical security plan. This resulted in two apparent violations of regulatory requirements. The security service contractor failed to demonstrate its ability to fully implement required procedures. The violations and related NRC concerns were further discussed during an Enforcement Conference conducted telephonically on August 16, 1983.

The violations identified in the enclosed Notice of Violation and Proposed Imposition of Civil Penalty have been categorized in accordance with NRC Enforcement Policy, 10 CFR Part 2, Appendix C. The failure to control personnel access into a vital area from inside the protected area has been categorized as a Severity Level III violation (Supplement III). The failure of the contract security service supervisor to notify CP&L of the event has been categorized as a Severity Level IV violation (Supplement III). Collectively, these violations are evidence of a security weakness, specifically the failure to communicate to your contract security service force the importance of maintaining an adequate level of security. After consultation with the Director of the Office of Inspection and Enforcement, I have been authorized to issue the enclosed Notice of Violation and Proposed Imposition of a Civil Penalty in the amount of Twenty Thousand Dollars. The base Civil Penalty amount for a Severity Level III violation of this type is \$40,000. Because CP&L, when informed of the event, initiated prompt, responsive, and extensive corrective action consisting of disciplinary action



NOV 15 1983

against responsible personnel, revision of procedures and "post instructions", and awareness training of contract service personnel on procedural requirements, this base penalty has been reduced 50% as permitted by the Enforcement Policy. We propose to impose this civil penalty in the amount of \$20,000 to emphasize the need for Carolina Power and Light Company to ensure that its security program is adequately managed to prevent violations of this nature from occurring in the future.

You are required to respond to the Notice of Violation. You should include in your response a specific discussion as to how CP&L will monitor the activities of the security service contractor to ensure compliance with security procedures. You should follow the instructions specified in preparing your response and, in doing so, you should place all Safeguards Information as defined in 10 CFR 73.21 only in enclosures, so as to allow your letter to be placed in the Public Document Room. In your reply you should give particular attention to those actions designed to increase the effectiveness of the management of your security program, particularly with regard to delineation of responsibilities of contract security service officers in order to ensure continuing compliance with NRC requirements in this area. Your reply to the Notice and the results of future inspections will be considered in determining whether further enforcement action is appropriate.

The material enclosed herewith contains Safeguards Information as defined by 10 CFR 73.21 and its disclosure to unauthorized individuals is prohibited by Section 147 of the Atomic Energy Act of 1954, as amended. Therefore, the material, with the exception of the Inspection Report cover page which is an inspection summary, will not be placed in the Public Document Room.

The responses directed by the Notice of Violation are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Should you have any questions concerning this letter, we will be glad to discuss them with you.

Sincerely,

James P. O'Reilly  
Regional Administrator

Enclosures:

1. Notice of Violation  
(Safeguards Information)
2. Inspection Report No. 50-261/83-22  
(Safeguards Information)

cc w/encl:

R. E. Morgan, Plant  
General Manager  
G. T. Beatty, Jr., Manager  
Robinson Nuclear Project Dept.



**Carolina Power & Light Company**

P. O. Box 1551 • Raleigh, N. C. 27602

SERIAL: LAP-83-545

DEC 12 1983

E. E. UTLEY  
Executive Vice President  
Power Supply and Engineering & Construction

Mr. Richard C. DeYoung, Director  
Office of Inspection and Enforcement  
United States Nuclear Regulatory Commission  
Washington, DC 20555

H. B. ROBINSON STEAM ELECTRIC PLANT, UNIT NO. 2  
DOCKET NO. 50-261  
LICENSE NO. DPR-23  
I. E. INSPECTION REPORT NO. 50-261/83-22  
RESPONSE TO NOTICE OF VIOLATION

Dear Mr. DeYoung:

In accordance with the Code of Federal Regulations, Title 10, Section 2.201, Carolina Power & Light Company (CP&L) provides the enclosed response to the November 15, 1983 transmittal of IE Inspection Report 50-261/83-22 for the H. B. Robinson Steam Electric Plant, Unit No. 2. The response to the violation identified is enclosed as Attachment A.

Since the contents of Attachment A deal with matters pertaining to plant security, CP&L requests that this information be protected as Safeguards Information in accordance with the provisions of 10 CFR 73.21, and if redesignated as not protected, we request that this information be withheld from public disclosure as provided in 10 CFR 2.790(d)(1).

In as much as CP&L does not protest the imposition of the civil penalty, please find enclosed a check in the amount of Twenty Thousand Dollars (\$20,000) in payment of this penalty.

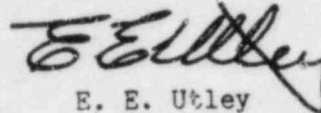
DEC 12 1983

Richard C. DeYoung

- 2 -

If you have any questions concerning this response, please contact our staff.

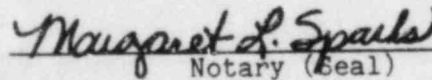
Yours very truly,

  
E. E. Utley

JBW/tda (85510NH)  
Attachments

cc: Mr. J. P. O'Reilly (NRC-RII) W/A\*  
Mr. G. Requa (NRC)  
Mr. Steve Weise (NRC-HBR)

E. E. Utley, having been first duly sworn, did depose and say that the information contained herein is true and correct to the best of his information, knowledge and belief; and the sources of his information are officers, employees, contractors, and agents of Carolina Power & Light Company.

  
Notary (Seal)

My commission expires: *June 5, 1984*

\*Only those individuals with W/A (with Attachment) following their names are to receive copies of the letter and Attachment. All other individuals and files to receive the letter only.





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLY, ILLINOIS 60137

AUG 9 1983

Docket No. 50-373  
EA 83-59

Commonwealth Edison Company  
ATTN: Mr. James J. O'Connor  
President  
Post Office Box 767  
Chicago, IL 60690

Gentlemen:

This refers to the special safety inspection conducted at LaSalle County Nuclear Station, Unit 1, by Messrs. W. G. Guldemon and A. L. Madison of the Region III staff on June 21 through July 1, 1983. This inspection concerned the circumstances that resulted in a suppression pool to drywell vacuum breaker isolation valve being mispositioned during facility operation. Operation of LaSalle County Nuclear Station, Unit 1, is authorized by NRC Operating License No. NPF-11. The results of this inspection were discussed on June 30, 1983, during an Enforcement Conference held in the NRC Region III office between Mr. Cordell Reed and other members of your staff and Mr. J. G. Keppler, Regional Administrator, Mr. J. H. Sniezek, then Deputy Director, Office of Inspection and Enforcement, and other members of the NRC staff.

This inspection revealed that, prior to a reactor startup on May 28, 1983, the suppression pool side isolation valve for the "D" suppression pool to drywell vacuum breaker was improperly returned to service following a local leak rate test. The isolation valve was left in the closed position rendering the vacuum breaker inoperable. Deficiencies in the administrative program for equipment control and valve lineup verification and inadequate implementation of that program resulted in the improper valve position going undetected while the unit was started up on five occasions and operated in violation of the Technical Specification for a cumulative total of 21 days. These deficiencies include conflicting requirements in the out-of-service procedure and lack of double verification on return to service in the local leak rate test procedure.

We are concerned that your equipment control system, requiring independent position verification on return to service of valves important to safety, was bypassed during an in-process local leak rate test of the suppression pool to drywell vacuum breaker, and that proper return to service was not

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

AUG 9 1983

achieved prior to facility operation. A significant causative factor of these violations was the poor performance of plant personnel in that individuals designated to verify valve position failed to do so. We are also concerned that effective broad scope preventative action regarding valve position control deficiencies previously identified in NRC Inspection Reports No. 50-373/83-01(DPRP) and 50-373/83-05(DPKP) had not been implemented. Additionally, it appears that valves were periodically left in an incorrect position prior to final outage clearance in anticipation of additional maintenance and testing. Further, while we recognize that the Senior Resident Inspector was informed of this event, we are concerned that your analysis and reporting of the event was not conducted in a timely manner.

To emphasize the importance of properly controlling safety related equipment and operating the facility in accordance with the Technical Specifications, we propose to impose civil penalties for certain violations as set forth in the Notice of Violation enclosed with this letter. The violations in Section I of the enclosed Notice have been categorized in the aggregate as a Severity Level III in accordance with the General Policy and Procedure for NRC Enforcement Actions, 10 CFR Part 2, Appendix C. The base civil penalty for a Severity Level III problem is \$40,000. However, after considering the prior notice of similar events, the lack of effective preventative actions taken in response thereto, and the failure of multiple administrative controls which had they been properly implemented would have prevented the violation of the Technical Specifications, the base penalty for this event has been increased by 50%. After consultation with the Director of the Office of Inspection and Enforcement, I have been authorized to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalties in the amount of Sixty Thousand Dollars.

You are required to respond to the enclosed Notice of Violation and Proposed Imposition of Civil Penalties and should follow the instructions in the Notice when preparing your response. In addition to your response to the specific violations, your response to the enclosed notice should address: (1) Actions you have taken to ensure that double verification of equipment lineup is performed on return to service following all maintenance and test activities on equipment important to safety; (2) Actions you have taken to establish a feedback mechanism from personnel utilizing procedures to ensure that procedural deficiencies identified during work are resolved prior to completion of this work; and (3) Actions you have taken to ensure that short term corrective actions following future events include determination and resolution of causal factors that resulted in personnel performance deficiencies.


Your written reply to his letter and the results of future inspections will be considered in determining whether further enforcement action is warranted.

In accordance with 10 CFR 2.790, "Rules of Practice," a copy of this letter and the enclosure will be placed in the NRC Public Document Room.

AUG 9 1983

The response directed by this letter and the enclosed Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,

  
James G. Keppler  
Regional Administrator

Enclosure: Notice of Violation  
and Proposed Imposition of  
Civil Penalties

cc w/encl:

D. L. Farrar, Director  
of Nuclear Licensing  
D. L. Shamblin, Site  
Construction Superintendent  
T. E. Quaka, Quality  
Assurance Superintendent  
G. J. Diederich, Station  
Superintendent  
R. H. Holyoak, Project Manager  
DMB/Document Control Desk (RIDS)  
Resident Inspector, RIII  
Phyllis Dunton, Attorney  
General's Office, Environmental  
Control Division



## NOTICE OF VIOLATION

AND

### PROPOSED IMPOSITION OF CIVIL PENALTIES

Commonwealth Edison Company  
LaSalle County Station, Unit 1

Docket No. 50-373  
License No. NPF-11

A special inspection conducted at LaSalle County Station, Unit 1, during the period June 21 through July 1, 1983, disclosed that a suppression pool to drywell vacuum breaker was rendered inoperable as a result of improperly returning a vacuum breaker isolation valve to service during an outage. The unit was then started up on five occasions and operated for a total of 21 days with that vacuum breaker inoperable in violation of the Technical Specifications.

To emphasize the importance of properly controlling safety related equipment and operating the facility in accordance with the Technical Specifications, the NRC proposes to impose a civil penalty in the cumulative amount of Sixty Thousand Dollars. The base civil penalty for a Severity Level III event is \$40,000. However, after considering the prior notice of similar events and issues in NRC Inspection Reports No. 50-373/83-01(DPRP) and 50-373/83-05(DPRP), the lack of effective preventative actions taken in response thereto, and the failure of multiple administrative controls which, had they been properly implemented, would have prevented this violation of Technical Specifications, the base penalty for this event has been increased by 50%. In accordance with the General Policy and Procedure for NRC Enforcement Actions (Appendix C to 10 CFR Part 2), 47 FR 9987 (March 9, 1982), and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended (Act), 42 U.S.C. 2282, PL 96-295, and 10 CFR 2.205, the particular violations and associated civil penalties are set forth below:

#### I. Civil Penalty Violations

- A. Technical Specification 6.2.A requires, in part, that detailed written procedures shall be adhered to for the applicable areas recommended in Appendix "A" of Regulatory Guide 1.33 Revision 2, February 1978.

Appendix "A" of Regulatory Guide 1.33, Revision 2, February 1978, recommends administrative procedures for equipment control (e.g., locking and tagging/out of service procedures). Administrative control of equipment is implemented through LaSalle Administrative Procedures LAP 900-4, "Equipment Out of Service Procedure," and LAP 240-1, "Use of Locks on Valves."

LaSalle Administrative Procedure LAP 900-4, "Equipment Outage Service Procedure," Steps F.2.j and F.2.k require the Shift Supervisor in charge of the equipment or his designee to audit the Equipment Outage Checklist to verify proper positioning of the physical isolation points; and for Safety Related Outages, the Shift Supervisor must designate a second person to make an inspection and verify that the physical isolation points have been properly positioned, before returning the equipment to service.

LaSalle Administrative Procedure LAP 240-1, "Use of Locks on Valves," Step F.6 requires that, if plant conditions require a locked valve to be positioned in a manner other than that indicated in Attachment A(B), the valve may be unlocked and repositioned either by an approved procedure or an outage checklist. When the procedure or outage is completed the valve shall be placed in the position indicated in Attachment A(B) and locked.

Contrary to the above, LAP 900-4, Steps F.2.j and F.2.k, and LAP 240-1, Step F.6, were not adhered to on May 26, 1983, when the suppression pool side isolation valve for the "D" suppression pool to drywell vacuum breaker was returned to service. This resulted in the isolation valve being left in the closed position rendering the vacuum breaker inoperable.

This is a violation.

Civil Penalty - \$40,000.

- B. Technical Specification 3.0.4 prohibits entry into an operational condition (including hot shutdown, startup or power operation) unless the Limiting Conditions for Operation are met without reliance on provisions contained in the Action Statements.

Technical Specification Limiting Condition for Operation 3.6.4 requires that, whenever the reactor is in hot shutdown, startup, or power operation, all suppression pool to drywell vacuum breakers be operable and closed.

Contrary to the above, the reactor entered the operational conditions of hot shutdown, startup, and/or power operation on May 28, June 2, June 7, June 8, and June 14, 1983, while the Limiting Conditions for Operation were not met. The "D" suppression pool to drywell vacuum breaker was isolated and rendered inoperable on May 26, 1983, and that condition was not corrected until June 21, 1983.

This is a violation.

Civil Penalty - \$20,000.

Violations A and B when viewed in the aggregate have been categorized as Severity Level III (Supplement I). Cumulative penalties of \$60,000 have been proposed for the violations associated with this Severity Level III problem based on the considerations set forth above. The amount assessed for each violation is based on its relative significance.

## II. Violation Not Assessed a Civil Penalty

Technical Specification 6.6.B.1.b requires that the director of the appropriate regional office or his designee be notified as expeditiously as possible but within 24 hours and confirmed by telegraph, mailgram, or facsimile transmission, no later than the first working day following any event involving operation of the unit or affected system when any parameter or operation subject to a limiting condition is less conservative than the least conservative aspect of the limiting condition for operation established in the Technical Specifications.

Contrary to the above, on June 21, 1983, the licensee discovered that the unit was operated in a condition less conservative than the least conservative aspect of the Limiting Condition for Operation established in Technical Specification 3.6.4. Technical Specification 3.6.4 requires that all suppression pool to drywell vacuum breakers be operable during hot shutdown, startup and power operation. The unit was operated with the "D" suppression pool to drywell vacuum breaker isolated and inoperable and this condition was not reported to NRC Region III until June 24, 1983.

This is a Severity Level IV violation (Supplement I).

Pursuant to the provisions of 10 CFR 2.201, Commonwealth Edison Company is hereby required to submit to the Director, Office of Inspection and Enforcement, U. S. Nuclear Regulatory Commission, Washington, D.C. 20555, and a copy to the Regional Administrator, U. S. Nuclear Regulatory Commission, Region III, 799 Roosevelt Road, Glen Ellyn, IL 60137, within 30 days of the date of this Notice a written statement or explanation, including for each alleged violation: (1) admission or denial of the alleged violation; (2) the reasons for the violation, if admitted; (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. Consideration may be given to extending the response time for good cause shown. Under the authority of Section 182 of the Act, 42 U.S.C. 2232, this response shall be submitted under oath or affirmation.

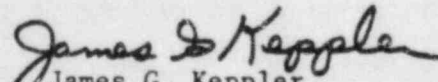
Within the same time as provided for the response required above under 10 CFR 2.201, Commonwealth Edison Company may pay the civil penalties in the amount of \$60,000 or may protest imposition of the civil penalties, in whole or in part, by a written answer. Should Commonwealth Edison Company fail to answer within the time specified, the Director, Office of Inspection and Enforcement, will issue an order imposing the civil penalties proposed above. Should Commonwealth Edison elect to file an answer in accordance with



10 CFR 2.205 protesting the civil penalties, such answer may: (1) deny the violations listed in this Notice, in whole or in part; (2) demonstrate extenuating circumstances; (3) show error in this Notice; or (4) show other reasons why the penalty should not be imposed. In addition to protesting the civil penalties, in whole or in part, such answer may request remission or mitigation of the penalties. In requesting mitigation of the proposed penalties, the five factors contained in Section IV(B) of 10 CFR Part 2, Appendix C, should be addressed. Any written answer in accordance with 10 CFR 2.205 should be set forth separately from the statement or explanation in reply pursuant to 10 CFR 2.201, but may incorporate statements or explanations by specific reference (e.g., citing page and paragraph numbers) to avoid repetition. Commonwealth Edison Company's attention is directed to the other provisions of 10 CFR 2.205, regarding the procedures for imposing a civil penalty.

Upon failure to pay any civil penalties due, which has been subsequently determined in accordance with the applicable provisions of 10 CFR 2.205, this matter may be referred to the Attorney General, and the civil penalties, unless compromised, remitted, or mitigated, may be collected by civil action pursuant to Section 234c of the Act, 42 U.S.C. 2282.

FOR THE NUCLEAR REGULATORY COMMISSION

  
James G. Keppler  
Regional Administrator

Dated at Glen Ellyn, IL  
this 9 day of August 1983



Commonwealth Edison  
One First National Plaza, Chicago, Illinois  
Address Reply to: Post Office Box 767  
Chicago, Illinois 60690

September 6, 1983

Mr. James G. Keppler, Regional Administrator  
- Region III  
U.S. Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, IL 60137

Subject: LaSalle County Station Unit 1  
Request for Mitigating and Remitting The  
Proposed Civil Penalty of the Notice of  
Violation and Proposed Civil Penalty  
NRC Docket No. 50-373

Dear Mr. Keppler:

By this letter, Commonwealth Edison Company is requesting your consideration to the matter of mitigating the Proposed Civil Penalty as allowed for in 10 CFR 2.205. This request is initiated separately as directed by the Notice of Violation dated August 9, 1983.

While Commonwealth Edison admits to the violations described in the Notice of Violation and recognizes the severity of the incidents, we believe the Civil Penalty proposed is excessive and merits your review for reduction for the following reasons:

1. After discovery of the event on June 21, 1983, LaSalle County Station undertook an exhaustive review to identify and promptly correct the violation, verify no further violations had occurred, and implement supplemental actions to verify generic deficiencies did not exist or were positively addressed. The full scope of this task is described in the LaSalle County Station Response to the Notice of Violation. In addition, all Commonwealth Edison Operating Nuclear Stations have been contacted and where a similar problem as experienced at LaSalle was identified, corrective actions are being implemented. We believe the full range of corrective action, the promptness of implementation, the extensive retraining conducted and planned, and our audits to verify compliance represent a complete and outstanding effort in problem analysis and correction.
2. While this event revealed shortcomings in the areas of administrative control and the conduct of operations, we believe these problems have been properly remedied. The assertion that the lack of effective preventative actions taken in response to issues on NRC Inspection Reports Nos. 50-373/83-01 (DPRP) and 50-373/83-05 (DPRP) does not appear correct. A review of these reports and LaSalle County Station's responses indicates that corrective action was properly taken and implemented. While both of these issues indicated inconsistencies among different procedures that manipulated common

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September 6, 1983

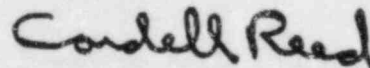
equipment, our corrective actions reflect an effort to identify, address and correct the deficiencies identified. Only in the broadest retrospective analysis could this occurrence be similarly categorized when both reports are taken as a whole. After several years of operation in accordance with the Equipment Out-of-Service Procedure, an option that allowed the "before" position to be used as the "after" position when returning equipment to service resulted in an event that revealed the inadequacy of this provision. A significant shortcoming was identified and remedied.

Operator response was in accordance with procedure and did not reveal any specific personnel error, except that despite proper identification and completion of some 70 checklists prior to start-up, an important checklist was overlooked. Our revision to LAP 900-4, Equipment Out-of-Service Procedure, has provided that as equipment is returned to service, the "after" position will be provided by a supervisor in charge of the equipment from an approved mechanical or electrical checklist and proper completion will be verified by a supervisor. This will effectively ensure all mechanical and electrical checklists are current at all times.

In conclusion, Commonwealth Edison understands the significance of the violations involved. We also feel that our investigation and prompt corrective actions merit consideration. The contention that previous non-compliance items should have identified this potential for violation appears to be in error. Our review of these items fails to establish a link to any recognizable indications for the prevention of this violation. Because of the redundancy of the vacuum breakers as described in the FSAR, the Safety consequences of this event were minimal and the health and safety of the public were maintained.

On these bases, we request your consideration for mitigating the Civil Penalties involved.

Very truly yours,



Cordell Reed  
Vice-President

CWS/lm

cc: Director, Office of I&E  
NRC Resident Inspector - LSCS  
G. R. Benson, Regulatory Affairs

7226N





Commonwealth Edison  
One First National Plaza, Chicago, Illinois  
Address Reply to: Post Office Box 767  
Chicago, Illinois 60690

September 6, 1983

Mr. James G. Keppler, Regional Administrator  
- Region III  
U.S. Nuclear Regulatory Commission  
799 Roosevelt Road  
Glen Ellyn, IL 60137

Subject: LaSalle County Station Unit 1  
Response to Notice of Violation  
and Proposed Civil Penalty  
NRC Docket No. 50-373

Dear Mr. Keppler:

By this letter, Commonwealth Edison Company responds to the Notice of Violation and Proposed Imposition of Civil Penalties of the NRC, the Special Inspection Report, and its accompanying letter regarding the occurrence that resulted in a Suppression Pool to Drywell Vacuum Breaker Isolation Valve being mispositioned during facility operation. In accordance with 10 CFR 2.201, this response is submitted within 30 days as specified. In addition, upon completion of your review of this response, we are requesting that you consider mitigating or remitting the proposed civil penalty as allowed for in 10 CFR 2.205. This request is submitted separately.

Commonwealth Edison understands the significance of the violations cited in the Notice. We rely heavily on a well trained and highly motivated staff of operators, engineers, technicians, and managers to safely and efficiently operate LaSalle County Station. Strict adherence to procedure is required and compliance is emphasized by all levels of supervision. We recognize that the events in question which gave rise to this enforcement action demonstrate deficiencies in administrative control as well as actions that were less than expected from this group of professionals.

As described in Attachment A to this letter, the LaSalle County Station has instituted a full range of measures to address the concerns which were identified by these violations. These actions are directed at correction of the procedural as well as the performance problems. They have been researched and implemented with the ultimate goal of removing the possibility of future generic type deviations. They have the full support and backing of both station and company management.

Management recognizes the importance of good administrative control in fostering awareness and compliance with good operating practice. In answer to the three questions in your letter addressed to such measures, Commonwealth Edison affirms the following actions:

- A. Ensure double verification of equipment line-up is performed on return to service of all safety related equipment after maintenance and test activities:
1. I.E. Inspection Report 50-373/83-05 identified a discrepancy between LAP 240-1, Locked Valve Procedure, and Individual System Checklists.
    - a) A total of 36 procedures were revised to bring all procedures into compliance. In addition, as procedures are reviewed as required by LAP 820-1 every two years, an audit is being conducted to verify locked valve manipulations are documented and verified. This is done in accordance with the appropriate Mechanical Checklist on LOS-LV-SR1, Locked Valve Surveillance.
    - b) LAP 900-4, Equipment Outage Procedure has been revised to add the requirements that the supervisor in charge of the equipment must determine and fill in the "after" position on outage checklists from an approved Mechanical or Electrical Checklist. By doing this, the last full checklist remains effectively current. The supervisor must also audit the checklist for proper completion and sign and date the checklist.
    - c) The position of Operating Department Outage Co-ordinator has been established and will be manned at the request of the Unit Operating Engineer, to co-ordinate the planning and conduct of maintenance from the Operations viewpoint. One of his duties involves co-ordinating with the Unit Operating Engineer and Shift Supervisors to accomplish required Mechanical and Electrical checklists in a timely manner after completion of all maintenance and surveillances on a particular system.
    - d) LAP 240-1, Attachments A(B), C(D), Locked Valve Checklist, has been revised and divided such that locked valves associated with safety systems will be verified current prior to start-up. This is directed as a final step by LCP 1-S1, Master Start-up Checklist.
- B. Establish a feedback mechanism from personnel utilizing procedures to ensure that procedural deficiencies identified during work are resolved prior to completion of the work:
1. Procedures are established and in effect that provide for timely correction of procedural deficiencies. These procedures include:
    - a) LAP 820-4, Temporary Procedures Changes, provides a mechanism for immediate procedure revision and is applied in cases where the change does not change the procedure intent.

- b) LAP 820-2, Station Procedure Preparation and Revision, provides for an accelerated approval of a necessary procedure change for timely approval. Once approved, the procedure is copied and authorized for use prior to final typing and distribution to controlled plant procedure manuals. This copy is used and maintained in the Temporary Procedure Change Log when not being performed until the final typed revision is distributed. This effort is directed at completion within one working day.
  - c) LAP 820-7, Special Procedures, provides for procedure preparation which is required for one time or limited time use, and which is not, in itself, a test and is not a temporary change to existing station procedures. This provision is used to provide approved procedures for use in problem analysis and identification of suspect equipment or system performance.
  - d) LTP 100-2, Special Operation Tests, provides for procedure preparation and conduct of tests of systems or components performed by LaSalle County Station personnel and/or by vendor representatives. Use of these approved procedures will be emphasized in the training sessions planned and committed to in Attachment A.
- C. Ensure that short term corrective actions following future events include determination and resolution of causal factors that resulted in personnel performance deficiencies:
- 1. The LaSalle County Station maintains close supervision and documentation of all incidents. This is accomplished by independent investigations of all deviations to determine cause and appropriate corrective actions. The report is then forwarded for approval by On-Site review.
  - 2. In addition, for occurrences of a significant nature involving personnel and performance, Station Management evaluates the event to determine if it is reportable to the Division Vice President per Production Instruction 1-3-F/N-7. The Division Vice-President then designates the level of investigation (on-site, informal, or formal) to be performed. When the event is non-reportable per this program, the Superintendent or Assistant Superintendent shall determine if an on-site investigation is required, and initiate as appropriate. As soon as possible after identification of an event, a debriefing meeting is scheduled with all involved personnel to provide a basis for evaluation of the causal factors. In the future, LaSalle County Station will ensure that corrective actions as described above will be directed at determining and correcting both the causes of the event and attempting to recognize generic associated problems to prevent recurrences of a similar nature.



J. G. Keppler

- 4 -

September 6,

In summary, Commonwealth Edison reaffirms its commitment to proper administrative control of all equipment under all circumstances in accordance with Technical Specifications. We recognize the importance of a thorough investigation of events being promptly completed to ensure that problems are effectively resolved. Through the measures we have described in this letter and the attachment to it, we believe that the recurrence of this incident and similar incidents can be prevented. The operation of LaSalle County Station can continue with full assurance of plant safety.

If there are any questions regarding this matter, please contact this office.

Very truly yours,

*Cordell Reed*

Cordell Reed  
Vice-President

lm

Attachment

cc: Director, Office of I&E  
NRC Resident Inspector - LSCS  
G. Benson, Regulatory Affairs

7227N

ATTACHMENT A

RESPONSE TO NOTICE OF VIOLATION

COMMONWEALTH EDISON COMPANY

Docket No. 50-373

LASALLE COUNTY NUCLEAR POWER STATION  
UNIT 1

License No. NPF-11

This is Commonwealth Edison Company's response, pursuant to 10 CFR 2.201, to the Nuclear Regulatory Commission's Notice of Violation and Proposed Imposition of Civil Penalties (EA 83-59) issued on August 9, 1983.

VIOLATION A - (373/83-26-02 (DPRP))

LaSalle County Technical Specifications Section 6.2.A requires that written procedures shall be adhered to for equipment control (e.g. locking and tagging/out-of-service procedures). Administrative control of equipment is implemented through LAP 900-4, "Equipment Out-of-Service Procedure", and LAP 240-1, "Use of Locks on Valves". The NRC finds that contrary to this requirement, the licensee did not adhere to these procedures as indicated below:

1. LAP 900-4, "Equipment Out-of-Service Procedure", Step F.2.J requires that the supervisor in charge of the equipment or his designee, will audit the equipment outage checklist to verify proper completion. Step F.2.K requires, for safety related outages, that the shift supervisor will designate a second person to make an inspection and verify that the physical isolation points have been properly positioned for return to service.
2. LAP 240-1, "Use of Locks on Valves", Step F.6 requires that, if plant conditions require a locked valve to be positioned in a manner other than that indicated in Attachment A(B), the valve may be unlocked and repositioned either by an approved procedure or an outage checklist. When the procedure or outage is completed, the valve shall be placed in the position indicated in Attachment A(B) and locked.

Contrary to the above, the Suppression Pool Side Isolation Valve (1PC003D) for the "D" Suppression Pool to Drywell Vacuum Breaker was left closed upon clearance of OGS 1-541-83 on May 26, 1983. This resulted in the "D" Vacuum Breaker being inoperable.

DISCUSSION

- A. Commonwealth Edison admits Violation A.

B. The reasons for the violation are summarized as follows:

1. Failure of the administrative control of equipment.

- a) LAP 900-4 stated "The position "after" should be the same as position "before" unless plant conditions prohibit". The several outages used to accomplish modification package 1-1-83-230, and temporary lifts of the outages to accomplish necessary Local Leak Rate Tests, allowed the situation to arise where the "before" position was listed as closed. The persons clearing and verifying clearance of the final outage used this provision to determine the "after" position. The supervisor in charge of the equipment recognized this discrepancy but believed additional testing was required and thus returned the equipment to service per the outage checklist.
- b) Failure to perform a line-up in accordance with LGP 1-S3, Pre-Start Line-Up Check Off List. This final system valve line-up was not conducted due to an oversight by the Unit Operating Engineer and Shift Supervisors. This was a failure to implement an existing procedure. LAP 240-1, Attachment A, Locked Valve Checklist was performed satisfactorily on May 17, 1983, and was felt to be adequate. However, significant work continued on the Vacuum Breaker subsequent to this effort.
- c) Failure of Test Procedure LTS 500-1, "Drywell/Suppression Pool Vacuum Breaker Valve Force Check", to require locking, verification, and documentation of the final position of the vacuum breaker isolation valves.

C. Corrective Actions Taken and the Results Achieved:

1. Upon discovery on June 21, 1983 at 11:30 a.m., the valve was immediately locked open and all other vacuum breaker isolation valves were checked and verified to be in the correct locked position.
2. A DVR (Deviation Report) was submitted and a Shift Engineer and Shift Control Room Supervisor were assigned to conduct a Professionalism Program On-Site Investigation.
3. The Senior Resident NRC Inspector was notified.
4. A re-verification of flow path "Locked Closed" valves per LAP 240-1, Attachment A, Locked Valve Checklist, was initiated. This action was completed on June 25, 1983 at 6:00 a.m.



D. Corrective Steps Taken to Avoid Further Violations:

1. The Professionalism Investigation was completed on June 24, 1983 and the following corrective actions were taken:

- a) A sequence of events for the violation was developed, documented and prepared for review by all operating crews. The violation was reviewed with all shifts as they reported to work, to ensure all were aware of the importance of repositioning valves properly, following the O.O.S. procedure, and the Locked Valve Checklist. This was accomplished for each crew by the Shift Engineer with the Operating Assistant Superintendent present. This action was completed on July 1, 1983.

- b) Equipment O.O.S. Procedure, LAP 900-4, was revised as follows:

Step F.2.e The "Supervisor in Charge of the Equipment" then enters the position required by the Normal Start-up Mechanical or Electrical Checklist for the component in the "Position After" column of the Equipment Outage Checklist. Flexibility is provided to accommodate special plant conditions as required.

Step F.2.g Deletes reference to "before" position for determining proper "after" position.

Step F.2.j The "Supervisor in Charge of the Equipment" or his designee will audit the Equipment Outage Checklist to verify proper completion, and sign and date the Equipment Outage Checklist.

This procedure was revised, approved and entered into control documents on June 27, 1983. Crew tailgate training sessions on the Revision were conducted by the Shift Engineers. This action was completed on September 1, 1983.

- c) A complete review of the following items was conducted to identify and implement improvement of administrative control of equipment:

1. LAP 240-1 has been revised to divide the locked valve checklist into four sections

- a) Attachment A(B) includes Type 1, 2, and 3 valves.
- b) Attachment C(D) includes Type 4 valves.

LGP 1-S1, Master Start-Up Checklist, has been revised to require that as a final check, LAP 240-1 Attachment A(B) will be verified current prior to start-up. This action was completed on September 5, 1983. This action provides assurance that any locked valves that may have been manipulated by maintenance actions or surveillance are properly positioned prior to a mode change.

2. Equipment Out-of-Service Procedure, LAP 900-4, was reviewed to identify further generic problems. With the enhancement of administrative control as provided by the Supervisor in Charge of the Equipment assigning "after" positions to the Equipment Outage Checklists and signing verification of proper completion, no further changes were found necessary. A Quality Control Surveillance of the Equipment Out-of-Service Procedure to identify chronic, recurring problems was conducted on June 27, 1983. No further problems were identified and the Out-of-Service System was deemed adequate. The Operating Assistant Superintendent has requested that further audits by Quality Control be conducted on the Equipment Out-of-Service Procedure in October and December, 1983, to verify full compliance with the procedure change, and to identify any further procedural inadequacies.
3. Locked Valve Position Verification, LOS-LV-SR1, was reviewed for adequacy. This procedure allows for changing a Locked Valve position when the operation is not covered by an approved procedure or Out-of-Service Checklist. A revision was made to limit the use of this procedure to occasions when the operator is in continuous attendance. Any other situations not covered by a procedure will require use of the Equipment Out-of-Service procedure. This item was completed on September 5, 1983.
4. Drywell/Suppression Pool Vacuum Breaker Valve Force Check Surveillance, LTS 500-2, as well as all LaSalle Technical Procedures and LaSalle Technical Surveillances have been reviewed to verify the requirement for locking, verification, and documentation of the final position of any locked valves associated with their performance. This item was completed on September 5, 1983.
5. The completion time-frame for checklists after an outage was also reviewed. In accordance with LGP 1-S3, Pre-Start-Up Line-Up Check Off List, the Unit Operating Engineer provides a list with the Master Outage Checklist of Mechanical and Electrical checklists requested prior to startup. Due to the varying work load and number of systems that may be affected and the delays that can occur in any outage, application of a specific time frame is not considered prudent.

In August, the position of Outage Co-ordinator for the Operating Department was established. When required, this position will function to assure a timely flow of maintenance throughout an outage. Among his tasks, the co-ordinator will interface with the Unit Operating Engineer and Shift Supervisors to ensure necessary mechanical and electrical checklists are completed as system maintenance and surveillance is completed. Specific checklists are required to be performed prior to Unit Start-up following each Refueling Outage or extended maintenance (greater than two months). Satisfactory completion of LGP 1-53 is noted as a sign-off in the final checks of the Master Start-up Checklist, LGP 1-S1.

6. Classroom Training has been rescheduled for the period of September 9, 1983 through October 18, 1983. These sessions, with each operating crew, will cover:
  - a) The sequences of events for this event.
  - b) The professionalism investigation and findings.
  - c) The Inspection and Enforcement Conference Summary.
  - d) The Station Response.
  - e) Review of corrective actions and procedure changes.
  - f) Discussion

This training will be conducted by the Shift Engineer with an Operating Engineer or the Operating Assistant Superintendent in attendance. This action will be completed on October 18, 1983.

E. Date When Full Compliance Will Be Achieved:

In our effort to ensure a full understanding by all operating staff of this incident and corrective actions, and to identify any further generic procedural inadequacies, training sessions will be conducted as described in item D.1.c.2 and D.1.c.6. Full compliance will be completed as described in these sections.

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VIOLATION B - (373/83-26-01 (DPRP))

LaSalle County Technical Specification 3.0.4 prohibits entry into an operational condition (including hot shutdown, start-up or power operation) unless the Limiting Conditions for Operation are met without reliance on provisions contained in the Action Statement. Technical Specification Limiting Conditions for Operation 3.5.4 requires that, whenever the reactor is in hot shutdown, start-up, or power operation, all suppression pool to drywell vacuum breakers be operable or closed. The NRC finds that contrary to this, the reactor entered the operational conditions of hot shut down, start up and/or power operation with the "D" Suppression Pool to Drywell Vacuum Breaker isolated and inoperable on May 28, June 2, June 7, June 8, and June 14, 1983.

DISCUSSION

A. Commonwealth Edison Admits Violation B.

B. The reasons for this violation are summarized as follows:

1. Failure of administrative control of equipment.

- a) An extensive maintenance outage was completed on 5/28/83. Included in this maintenance outage was Modification 1-1-83-230 on "D" Suppression Pool to Drywell Vacuum Breaker. A total of three different Equipment Outages were used to control the various aspects of the job. The last outage to be cleared listed the "before" position of the 1PC003D "D" Vacuum Breaker Suppression Pool Isolation Valve as closed. This was used as the "after" position by the operator clearing the outage as was permitted by the Equipment Out-of-Service Procedure, LAP 900-4. The clearance of the outage was safety verified as required and the checklist was audited by the supervisor. The Supervisor recognized the position discrepancy but believed additional testing was required, and thus returned the equipment to service per the outage checklist. Outage completion test LOS-PC-M2, Drywell-Suppression Pool Vacuum Breaker Operability Test for Conditions 1, 2, and 3, was performed satisfactorily. This test cycles the vacuum breakers and checks proper indication.
- b) Locked Valve Checklist, LAP 240-1, Attachment A(B), was performed on May 17, 1983 and the valve 1PC003D verified locked open. Successful completion of this checklist was signed on LGP 1-S3, Pre-Startup Line-up Check-Off List. This was eleven days prior to the start-up. Maintenance and Surveillance Testing continued after this date.

- c) The Unit Operating Engineer and Shift Supervisors overlooked the need to perform LOS-PC-01M or LOS-PC-01E prior to start-up. A total of seventy checklists were performed in accordance with LGP 1-S3 prior to the start-up on May 28, 1983.
- 2. No further manipulations of the Isolation Valve or Vacuum Breaker occurred prior to the Reactor Start-Up on May 28, 1983 and no further checks were required by the start-ups conducted on June 2, June 7, June 8, and June 14, 1983. On June 21, 1983 at 11:30 a.m., a Technical Staff Engineer found 1PC003D unlocked and closed.

C Through E

The Corrective actions taken to prevent a recurrence of this event, the corrective actions taken to avoid further violations, and the date when full compliance will be achieved, have been addressed in the broad scope response to Violation A of this document. It should be noted that at no time following the May 28, 1983 Reactor Start-up was there a requirement or necessity to check the valve line-up on the Vacuum Breakers.

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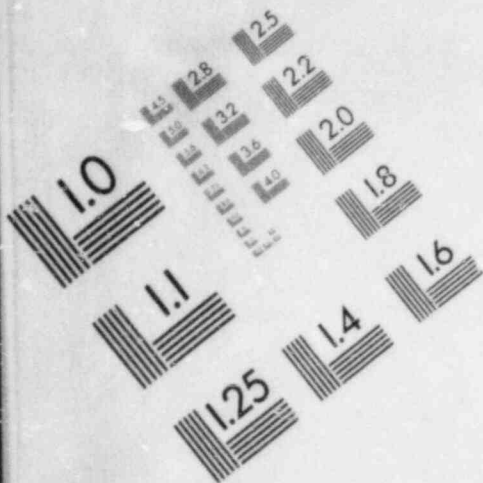
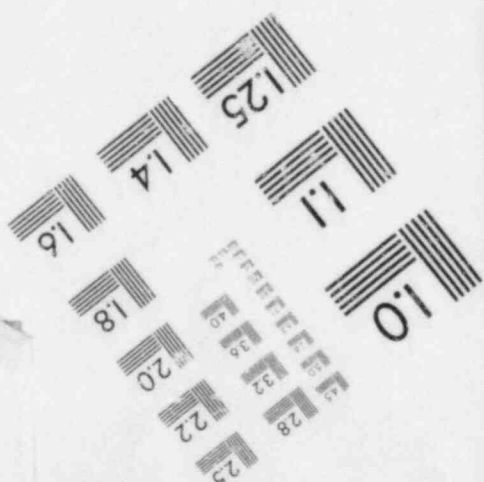
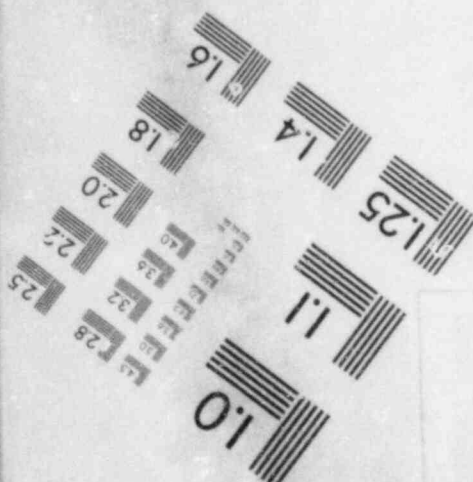
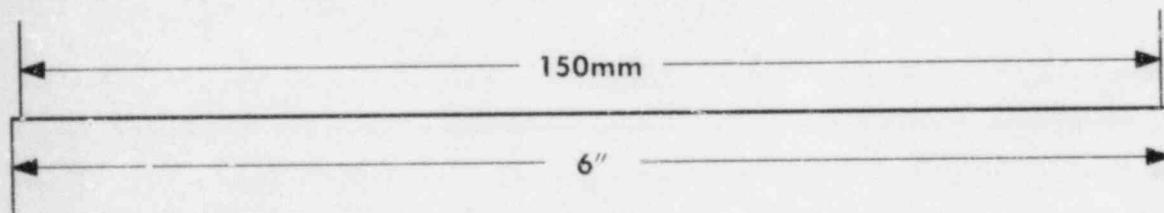
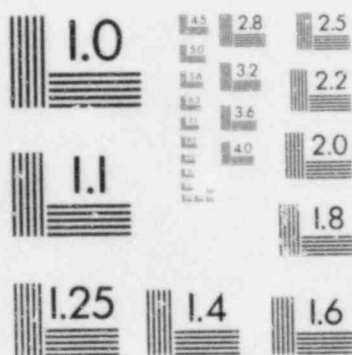
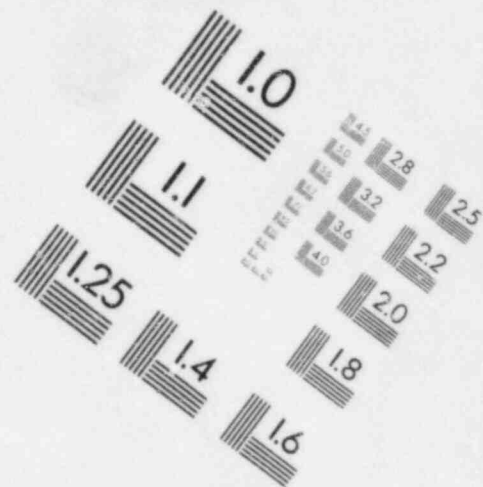
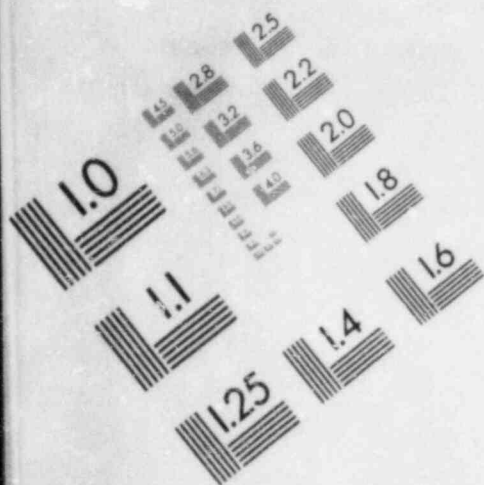


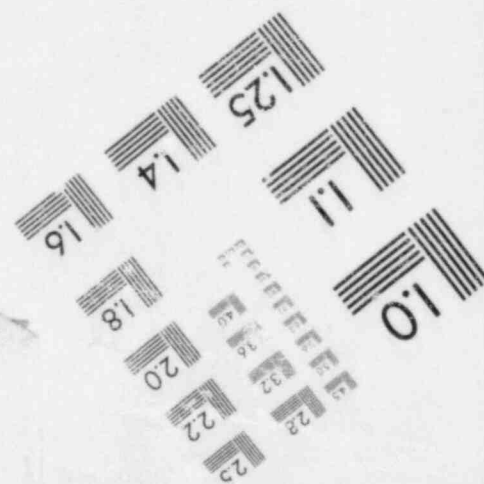
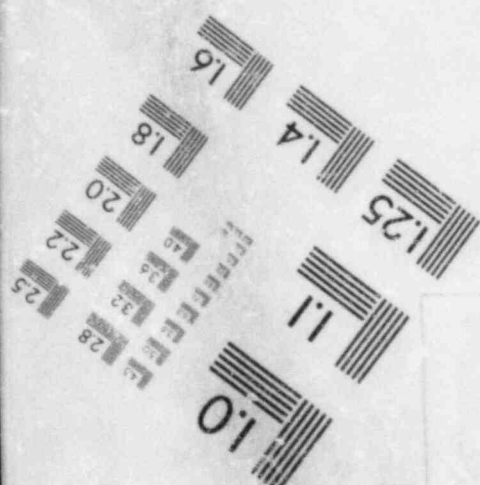
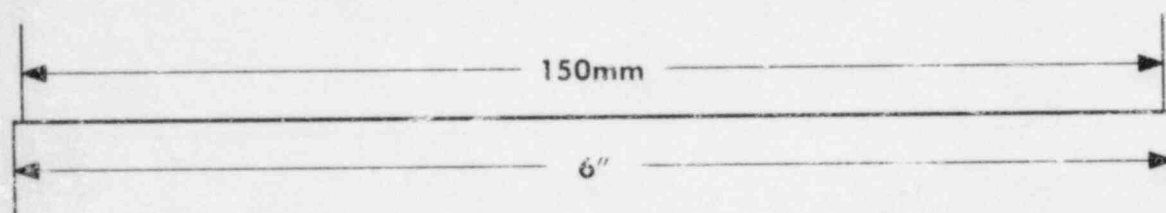
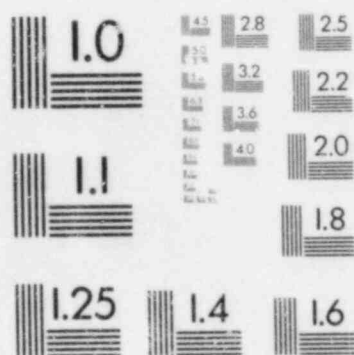
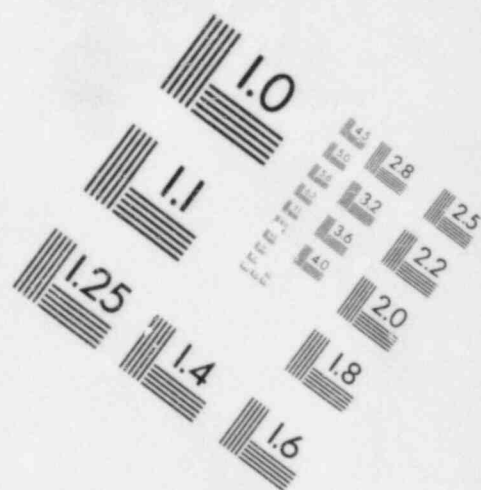
IMAGE EVALUATION  
TEST TARGET (MT-3)







# IMAGE EVALUATION TEST TARGET (MT-3)



VIOLATION C (373/83-2C-03 (DPRP))

LaSalle County Technical Specification 6.6.B.1.b requires that the director or the appropriate regional office or his designee be notified as expeditiously as possible but within 24 hours and confirmed by telegraph, mailgram, or facsimile transmission, no later than the first working day following any event involving operation of the unit or affected system when any parameter or operation subject to a limiting condition is less conservative than the least conservative aspect of the limiting condition for operation established in the Technical Specifications. The NRC finds that contrary to this commitment, the licensee discovered that the unit was operated in a condition less conservative than the least conservative aspect of the Limiting Condition for Operation established in Technical Specification 3.6.4 on June 21, 1983. Technical Specification 3.6.4 requires that all suppression pool to drywell vacuum breakers be operable during hot shutdown, start-up and power operation. The unit was operated with the "D" suppression pool to drywell vacuum breaker isolated and inoperable and this condition was not reported to the NRC Region III until June 24, 1983.

DISCUSSION

A. Commonwealth Edison Admits Violation C.

B. The reasons for the violation are summarized as follows:

1. On June 21, at 11:30 A.M. the LPC003D, "D" Suppression Pool Vacuum Breaker Suppression Pool Side Isolation Valve was discovered unlocked closed. This rendered the "D" Suppression Pool to Drywell Vacuum Breaker inoperable. The valve was immediately repositioned and locked open.

The Licensee referred to Technical Specification 6.6.B.1.f. This item then referenced Technical Specification 6.6.B.2.c. As a result of this, a 30 day reportable occurrence was classified and the Senior Resident Inspector was informed.

While it was recognized that the "D" Vacuum Breaker had been inoperable for a period of time exceeding the limit in the Technical Specification 3.6.4, immediate action had been taken to realign the system to a safe operating condition. Since the principal cause of the event was determined to be procedural inadequacy, the event was initially classified in accordance with Technical Specification 6.6.B.2.c.

On the morning of June 24, 1983, following discussions with the Senior Resident Inspector, the event was reclassified per Technical Specification Section 6.6.B.1.b.

C. Corrective Actions Taken and the Results Achieved:

1. On June 24, 1983 at 1315, the NRC Red Phone notification was made.
2. On June 24, 1983 at 1449, the 24 hour NRC Region III telephone notification was made.
3. On June 24, 1983 at 1535, the NRC Region III Regional Director was telecopied the confirmation.
4. On July 5, 1983 the completed Licensee Event Report was distributed.

D. Corrective Actions Taken to Avoid Further Violations:

1. Standard practice for classification of events at LaSalle includes the discussion and agreement by at least two Senior Reactor Operators as to the proper classification. The Administrative Controls section of Technical Specifications as well as LSP-1310-1, Notifications, are used as references. Notifications as deemed necessary are then initiated. For all notifications, a courtesy call is made to the NRC Resident Inspector.

After reviewing this event, the response by LaSalle Station is that the present practice is satisfactory for the timely and proper classification of events. This incident, which was difficult to categorize, resulted in a violation of reporting requirements. Once recognized, all notifications were made in an expeditious and proper manner.

The problem in classifying this event is considered another example of how the complexity and difficulty in interpreting the Technical Specifications can result in the differences of opinion.

It should be noted that this is the first occurrence of an incorrect classification of a License Event Report at LaSalle Station.

2. Classification of occurrences and interpretation of Technical Specifications are a continuous item of emphasis in the station. Problems encountered at LaSalle and throughout the industry are brought to the attention of those concerned in the following manner:
  - a) "For Your Information" items are transmitted to all cognizant individuals by the Operating Engineer, Operating Assistant Superintendent, or Station Superintendent.



- b) Assorted Experience Items are covered in the regular training modules for all licensed individuals.
- c) Experience in classification is also provided in the Annual Generating Station Emergency Training.

E. Date When Full Compliance Will Be Achieved:

Full Compliance with corrective actions is complete at this time.

7227N



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

NOV 9 1983

Docket No. 50-373  
License No. NFP-11  
EA 83-59

Commonwealth Edison Company  
ATTN: Mr. James J. O'Connor  
President  
Post Office Box 767  
Chicago, IL 60690

Gentlemen:

This acknowledges receipt of your letter dated September 6, 1983 in response to the Notice of Violation and Proposed Imposition of Civil Penalties sent to you with our letter dated August 9, 1983. The Notice of Violation concerned violations found during a special inspection conducted at LaSalle County Nuclear Station Unit 1 during the period June 21 through July 1, 1983 and proposed civil penalties in the amount of \$60,000 for those violations.

After careful consideration of your response, and for the reasons given in the enclosed Order and its Appendix, we have concluded that the violations did occur as set forth in the Notice of Violation and Proposed Imposition of Civil Penalties. No adequate reasons have been provided for not imposing the civil penalties proposed for the violations. Accordingly, we hereby serve the enclosed Order on Commonwealth Edison Company imposing civil penalties in the amount of Sixty Thousand Dollars (\$60,000).

In accordance with Section 2.790 of the NRC's "Rules of Practice", 10 CFR Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosures will be placed in the NRC's Public Document Room.

Sincerely,

A handwritten signature in cursive script, reading "Richard C. DeYoung".

Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Enclosure:  
Order Imposing Civil  
Monetary Penalties

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

UNITED STATES  
NUCLEAR REGULATORY COMMISSION

In the Matter of

COMMONWEALTH EDISON COMPANY  
(LaSalle County Nuclear Station  
Unit 1)

)  
)  
)  
)  
)  
)

Docket No. 50-373  
License No. NPF-11  
EA 83-59

ORDER IMPOSING CIVIL MONETARY PENALTIES

I

Commonwealth Edison Company (the "licensee") is the holder of Operating License No. NPF-11 issued by the Nuclear Regulatory Commission (the "Commission") which authorizes the licensee to operate the LaSalle County Nuclear Station, Unit 1, in accordance with the conditions specified therein. The license was issued on August 13, 1982.

II

A special inspection of the licensee's activities under the license was conducted during the period June 21 through July 1, 1983. As a result of this inspection, it appears that the licensee has not conducted its activities in full compliance with the conditions of its license. A written Notice of Violation and Proposed Imposition of Civil Penalties was served upon the licensee by letter dated August 9, 1983. The Notice states the nature of the violations, requirements of the Commission that the licensee had violated, and the amount of civil penalty proposed for each violation. An answer dated



September 6, 1983 to the Notice of Violation and Proposed Imposition of Civil Penalties was received from the licensee.

### III

Upon consideration of Commonwealth Edison Company's response and the statements of fact, explanation, and argument contained therein, as set forth in the Appendix to this Order, the Director of the Office of Inspection and Enforcement has determined that the penalties proposed for the violations designated in the Notice of Violation and Proposed Imposition of Civil Penalties should be imposed.

### IV

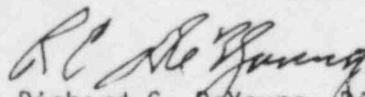
In view of the foregoing and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2282, PL 96-295), and 10 CFR 2.205, IT IS HEREBY ORDERED THAT:

The licensee pay civil penalties in the amount of Sixty Thousand Dollars (\$60,000) within thirty days of the date of this Order, by check, draft, or money order, payable to the Treasurer of the United States and mailed to the Director of the Office of Inspection and Enforcement, USNRC, Washington, D.C. 20555.

The licensee may, within thirty days of the date of this Order, request a hearing. A request for a hearing shall be addressed to the Director, Office of Inspection and Enforcement. A copy of the hearing request shall also be sent to the Executive Legal Director, USNRC, Washington, D.C. 20555. If a hearing is requested, the Commission will issue an Order designating the time and place of hearing. If the licensee fails to request a hearing within thirty days of the date of this Order, the provisions of this Order shall be effective without further proceedings and, if payment has not been made by that time, the matter may be referred to the Attorney General for collection. In the event the licensee requests a hearing as provided above, the issues to be considered at such hearing shall be:

- (a) whether the licensee was in violation of the Commission's requirements as set forth in the Notice of Violation and Proposed Imposition of Civil Penalties referenced in Section II above, and
- (b) whether on the basis of such violations this Order should be sustained.

FOR THE NUCLEAR REGULATORY COMMISSION



Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Dated at Bethesda, Maryland  
this 30<sup>th</sup> day of November 1983

## APPENDIX

### EVALUATIONS AND CONCLUSIONS

The violations and associated civil penalties are identified in the Notice of Violation and Proposed Imposition of Civil Penalties dated August 9, 1983. The Office of Inspection and Enforcement's evaluation and conclusions regarding the licensee's response dated September 6, 1983 are presented.

In its response, the licensee admits that each violation occurred as described in the Notice of Violation. However, the licensee contends that, after discovery of the event, unusually prompt and extensive corrective actions were taken. Additionally, the licensee contends that NRC made an inaccurate assertion concerning the lack of effective preventive actions taken following prior similar events. The licensee does not believe that the prior events were similar or that the preventive actions were ineffective. NRC evaluation of these contentions is presented below, followed by conclusions regarding the proposed civil penalty.

#### I. Corrective Actions

##### A. Evaluation of Licensee's Corrective Actions

The General Policy and Procedure for NRC Enforcement Actions, 10 CFR Part 2, Appendix C, Section IV.B.2 (Enforcement Policy), allows civil penalty mitigation for unusually prompt and extensive corrective action. The licensee's corrective actions for this event are described below along with NRC's evaluation of those actions.

##### 1. Immediate Action Taken By Licensee

- a. Upon discovery of the isolated vacuum breaker, the isolation valve was locked open and all other vacuum breaker isolation valves were checked to be in the correct locked position.
- b. An investigation was immediately initiated to determine the cause of the event.
- c. The NRC Senior Resident Inspector was notified.
- d. A re-verification of flow path "locked closed" valves in accordance with procedure LAP-240-01 was initiated.



NRC Evaluation

These are expected responses for this type of an event. Failure to provide such responses would have provided justification for increasing the civil penalty.

2. Licensee Action Following Professional Investigation

An investigation that was commenced immediately to identify the primary causal factors was completed 3 days later, and resulted in the Operating Assistant Superintendent and the Shift Engineers conducting training sessions on the circumstances leading to this event with each crew as it reported on site. Also, prompt action was taken to revise the Equipment Out-of-Service Procedure to correct the deficiency which contributed directly to this event.

NRC Evaluation

Three days is not unusually prompt for completion of such an investigation; however, the action to conduct training sessions is viewed as unusually prompt. The deficiency in the Equipment Out-of-Service Procedure had not been identified by the licensee. It was identified by the NRC as contributing to this event. It was not until six days after the event that the procedure was revised. This is not viewed as unusually prompt.

3. Licensee Action to Improve Administrative Control of Equipment

a. Licensee Action

The locked valve procedure and unit master startup checklist were revised to clarify valve locking requirements and to require that locked valve checklists be current prior to startup.

NRC Evaluation

These revisions were accomplished two months following the event.

b. Licensee Action

A Quality Control Surveillance of the Equipment Out-of-Service Procedure was conducted to identify chronic problems.

NRC Evaluation

The NRC initially identified the procedural weaknesses and implementation errors in this procedure. The licensee's actions are of the type considered to be normal and expected.

c. Licensee Action

Locked Valve Position Procedure, LOS-LV-SR1, allows for changing a locked valve position when the operation is not covered by an approved procedure on the Out-of-Service Checklist. A revision was made to limit the use of this procedure, in such circumstances, to occasions when the operator is in continuous attendance.

NRC Evaluation

This procedure was prepared in response to previous NRC concerns on locked valve control. The licensee, in response to the more recent event, determined that it afforded too much leeway when unlocking valves. The licensee's identification and correction of this deficiency is considered a normal response to the more recent event.

d. Licensee Action

Plant technical and surveillance procedures were revised to require locking, verification, and documentation of the final position of any locked valves affected by the procedures.

NRC Evaluation

This action, while laudable, took two months to complete, and is therefore not particularly prompt.

e. Licensee Action

An outage coordinator position was established to aid in the coordination between operations and maintenance during outages. One of the tasks of the outage coordinator is to interface with the Shift Engineer and the Operating Engineer to ensure necessary mechanical and electrical checklists are completed.

NRC Evaluation

At least one other Commonwealth Edison Company nuclear station has had such a position for at least two years. However, the position was not established at the LaSalle Station until repeated deficiencies in outage control occurred. The NRC does not consider that the delayed establishment of this position at the LaSalle Station warrants mitigation.

f. Licensee Action

Classroom training has been scheduled for all operating crews to cover this event, its causes, and its corrective action.

NRC Evaluation

This training is scheduled to occur two to three months after the event, and is therefore not particularly prompt.

B. Conclusion

Only one of the licensee's corrective actions is viewed as unusually prompt: onshift training. The remainder appear to have taken an amount of time to complete that is beyond that considered to be unusually prompt. None of the corrective actions is viewed as unusually extensive. Rather, the actions are those necessary to correct identified weaknesses. The licensee has not provided a sufficient basis for mitigation of the civil penalties proposed.

II. Failure to Take Effective Preventive Action Following Earlier Similar Events

The licensee argues that the facts do not support an increase in the amount of the civil penalty for failure on the part of the licensee to take effective preventive action following earlier similar events.

A. Evaluation of Prior Events

The Enforcement Policy, 10 CFR Part 2, Appendix C, Section IV.B.4, allows escalation of a civil penalty where effective preventive actions were not implemented following prior notice of similar events. The two prior events at issue are discussed below along with an NRC analysis of the relationship between those events and the event which is set out in the Notice of Violation.



As a result of inspection activities documented in Inspection Report 50-373/83-01, the licensee received a citation for an event in which a Standby Liquid Control System valve which was required to be locked was not properly controlled during performance of an operating procedure. The corrective action taken for this event is documented in a licensee letter dated March 30, 1983 from D. L. Farrar to J. G. Keppler. In that letter, the licensee stated that Standby Liquid Control System procedures were being revised to ensure that those procedures required valves to be restored to their correct position and locked and that system mechanical checklists were being revised to make them consistent with the locked valve checklist. Although a problem in controlling locked valves was identified by this event, no other operating, testing, or surveillance procedures were reviewed to ensure proper control of locked valves. Thus, the licensee's preventive actions regarding potential procedural inadequacies leading to a locked valve being improperly controlled were narrow in scope. As a result, a procedural deficiency regarding control of a locked valve, specifically the vacuum breaker isolation valve, was not identified.

On February 21, 1983, an NRC inspector discovered two normally locked suppression pool vacuum breaker test connection valves unlocked. The licensee was informed and immediately verified that the valves were in their correct position. Locks were placed on the valves. The fact that these valves were required to be locked in Procedure LAP 240-1, yet were unlocked, was viewed as a procedure violation and was an item of noncompliance documented in Inspection Report 50-373/83-05. While reviewing this event, it was discovered that the individual system valve lineup checklist did not require the valves to be locked; however, Administrative Procedure LAP 240-1, "Use of Locked Valves," did require the valves to be locked. Based on this procedural discrepancy, the licensee performed those portions of LAP 240-1 applicable to systems outside the drywell and found seven additional valves which, while required to be locked, were unlocked. All seven valves were in their required positions when found unlocked. Further review revealed that three of the seven valves found unlocked were required to be locked by both LAP 240-1 and their individual system valve lineup checklists. The remaining four valves were required to be locked in LAP 240-1 but not in their individual system checklists. The licensee committed to review and revise system checklists as appropriate to establish consistency with the locked valve checklist. However, broad scope preventive actions were not initiated to analyze locked valve administrative controls for potentially generic programmatic deficiencies.

B. Conclusion

Two problems had been discovered in the control of locked valves and equipment lineup prior to this event. The licensee failed to vigorously pursue the issue and broad scope preventive actions were not initiated. The civil penalty was properly increased based on this consideration.



**Commonwealth Edison**  
One First National Plaza, Chicago, Illinois  
Address Reply to: Post Office Box 767  
Chicago, Illinois 60690

December 20, 1983

Mr. Richard C. DeYoung, Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Subject: LaSalle County Station Unit 1  
Order Imposing Civil  
Monitoring Penalties, EA 83-59  
NRC Docket No. 50-373

- References (a): J. G. Keppler letter to J. J. O'Connor  
dated August 9, 1983.
- (b): Cordell Reed letter to J. G. Keppler  
dated September 6, 1983.
- (c): R. C. DeYoung letter to J. J. O'Connor  
dated November 30, 1983.

Dear Mr. DeYoung:

Reference (a) provided a written "Notice of Violation and Proposed Imposition of Civil Penalties." Reference (b) provided the Commonwealth Edison Company response and request for mitigation of the Civil Penalties. Reference (c) denied mitigation and stated, in part, "In view of the foregoing and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2282, PL 96-295), and 10 CFR 2.205, IT IS HEREBY ORDERED THAT:

The licensee pay civil penalties in the amount of Sixty Thousand Dollars (\$60,000) within thirty days of the date of this Order, by check, draft, or money order, payable to the Treasurer of the United States and mailed to the Director of the Office of Inspection and Enforcement, USNRC, Washington D.C. 20555."

Enclosed please find a check in the amount of \$60,000.00 payable to the Treasurer of the United States, as ordered.

Very truly yours,

*C. W. Schroeder* 12/19/83

C. W. Schroeder  
Nuclear Licensing Administrator

lm

cc: Mr. J. G. Keppler - Region III  
NRC Resident Inspector - LSCS  
P. P. Steptoe, IL&B

7835N





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

AUG 24 1983

Docket Nos. 50-295  
50-304  
EA 83-72

Commonwealth Edison Company  
ATTN: Mr. James J. O'Connor  
President  
Post Office Box 767  
Chicago, IL 60690

Gentlemen:

This refers to the special safeguards inspection conducted by Ms. G. M. Christoffer and Mr. B. W. Stapleton of the Region III staff on June 20, 1983, of activities at the Zion Nuclear Power Station, Units 1 and 2, authorized by NRC Operating Licenses No. DPR-39 and No. DPR-48. The results of this inspection were discussed on July 8, 1983, during an Enforcement Conference held at the NRC Region III office between Mr. C. Reed and other members of your staff and Mr. A. B. Davis and other members of the Region III staff.

We are concerned that the access control system in place at the time of the incident did not provide the level of protection described in your security plan, in that a visitor was unescorted in the protected area and a vital area, and was allowed to enter the vital area in an unauthorized manner.

To emphasize the need to ensure that the approved security plan and implementing procedures are followed and to be cognizant of the potentially serious consequences of an unauthorized entry and inadequate internal controls, we propose to impose a civil penalty for the violation set forth in the Notice of Violation and Proposed Imposition of Civil Penalty that is enclosed with this letter.

The violation has been categorized at the appropriate severity level as described in the General Policy and Procedure for NRC Enforcement Actions (Appendix C to 10 CFR Part 2). After consultation with the Director of the Office of Inspection and Enforcement, I have been authorized to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalty in the amount of Forty Thousand Dollars.

In your response to this letter, please follow the instructions in the Notice. Your response should specifically address corrective actions you have taken or plan to take to improve the effectiveness for ensuring that personnel access control requirements are met.

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AUG 24 1983

Your written reply to this letter and the Notice of Violation and the findings of our continuing inspections of your activities will be considered in determining whether further enforcement action is appropriate.

Areas examined during this inspection concern a subject matter which is exempt from disclosure according to Section 73.21(c)(2) of Title 10, Code of Federal Regulations. This information must be handled and protected in accordance with the provisions of 10 CFR 73.21. Consequently, our report of this inspection and the Notice of Violation will not be placed in the Public Document Room. In your reply to the Notice of Violation and Proposed Imposition of Civil Penalty, you should place all safeguards information, as defined in 10 CFR 73.21, only in enclosures so as to allow your letter to be placed in the Public Document Room.

The response directed by this letter and the enclosed Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,

  
James G. Keppler  
Regional Administrator

Enclosures:

1. Notice of Violation and  
Proposed Imposition of  
Civil Penalty
  2. Inspection Report  
No. 50-295/83-12(DRMSP);  
No. 50-304/83-12(DRMSP)
- (UNCLASSIFIED SAFEGUARDS INFORMATION)



**Commonwealth Edison**  
One First National Plaza, Chicago, Illinois  
Address Reply to: Post Office Box 767  
Chicago, Illinois 60690

September 23, 1983

Mr. Richard C. DeYoung, Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
799 Roosevelt Road - Region III  
Glen Ellyn, IL 60137

Subject: Zion Station Units 1 and 2  
Response to Inspection Report Nos.  
50-295/83-12 and 50-304/83-12  
NRC Docket Nos. 50-295 and 50-304

Reference (a): August 24, 1983, letter from J. G.  
Keppler to J. J. O'Connor.

Dear Mr. DeYoung:

This letter is in response to the inspection conducted by Ms. G. M. Christoffer and Mr. B. W. Stapleton on June 20, 1983, of activities at Zion Station. Reference (a) indicated that certain activities appeared to be in noncompliance with NRC requirements. The Commonwealth Edison Company response to the Notice of Violation and Proposed Imposition of Civil Penalty is provided in the enclosure.

In accordance with 10 CFR 2.205, Commonwealth Edison is requesting full mitigation of the proposed penalty, based on certain extenuating circumstances surrounding this event and our prompt reporting and corrective action. Additional details including a discussion which addresses the factors contained in Section IV(B) of 10 CFR Part 2, Appendix C, is provided in the enclosure.

This document contains information regarding the security plan for a nuclear generating station and must be safeguarded accordingly while in your possession or destroyed in such a manner as to preclude the information from reaching individuals who do not have a need to know.

To the best of my knowledge and belief the statements contained herein and in the attachment are true and correct. In some respects these statements are not based upon my personal knowledge but upon information furnished by other Commonwealth Edison employees. Such information has been reviewed in accordance with Company practice and I believe it to be reliable.



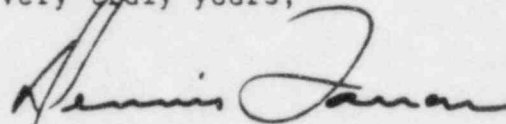
R. C. DeYoung

- 2 -

September 23, 1983

If you have any further questions on this matter, please direct them to this office.

Very truly yours,



O. L. Farrar  
Director of Nuclear Licensing

Attachment

cc: J. G. Keppler, Region III

SUBSCRIBED AND SWORN to  
before me this 23rd day  
of September, 1983.

  
Notary Public

7361N



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

NOV 09 1983

Docket No. 50-295  
50-304  
EA 83-72

Commonwealth Edison Company  
ATTN: Mr. Cordell Reed  
Vice President  
Post Office Box 767  
Chicago, IL 60690

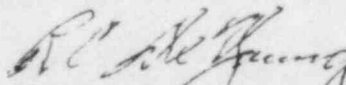
Gentlemen:

This refers to the letter dated September 23, 1983 from Commonwealth Edison Company in response to the Notice of Violation and Proposed Imposition of Civil Penalty sent to you with our letter dated August 24, 1983. Our letter concerned the violation examined during a special inspection conducted on June 20, 1983 at the Zion Nuclear Power Station.

We have carefully considered your response and note that you admit the violation occurred as described in the Notice of Violation and Proposed Imposition of Civil Penalty. We have also given careful consideration to your request for mitigation of the proposed civil penalty and have concluded, for the reasons given in the enclosed Order and its Appendix, that mitigation of the penalty is not warranted. Accordingly, I am issuing the enclosed Order Imposing Civil Monetary Penalty in the amount of Forty Thousand Dollars (\$40,000).

The items discussed in the Appendix to the Order contain information which is exempt from disclosure according to Section 73.21(c)(2) of Title 10, Code of Federal Regulations. This information must be handled and protected in accordance with the provisions of 10 CFR 73.21. Consequently, the Appendix and the attachment to your response will not be placed in the NRC's Public Document Room.

Sincerely,

  
Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Enclosures:  
Order Imposing Civil Monetary Penalty

cc w/encls:  
D.L. Farrar, Director of  
Nuclear Licensing  
K. L. Graesser, Station Superintendent

UNITED STATES  
NUCLEAR REGULATORY COMMISSION

In the matter of

COMMONWEALTH EDISON COMPANY  
(Zion Nuclear Power Station)

)  
)  
)  
)  
)

Docket No. 50-295  
50-305  
EA 83-72

ORDER IMPOSING CIVIL MONETARY PENALTY

I

Commonwealth Edison Company (the "licensee") is the holder of Operating Licenses DPR-39 and DPR-48 (the "licenses") issued by the Nuclear Regulatory Commission (the "Commission") which authorize the licensee to operate the Zion Nuclear Power Station in accordance with the conditions specified therein. The licenses were issued on December 31, 1973 and September 17, 1974, respectively.

II

A special inspection of the licensee's activities under the licenses was conducted on June 20, 1983. As a result of this inspection, it appears that the licensee has not conducted its activities in full compliance with the conditions of its licenses. A written Notice of Violation and Proposed Imposition of Civil Penalty was served upon the licensee by letter dated August 24, 1983. The Notice states the nature of the violation, the requirements of the Commission that the licensee had violated, and the amount of the civil penalty proposed. An answer dated September 23, 1983 to the Notice of Violation and Proposed Imposition of Civil Penalty was received from the licensee.



## III

Upon consideration of Commonwealth Edison Company's response and the statements of fact, explanation, and argument for mitigation contained therein, as set forth in the Appendix to this Order, the Director of the Office of Inspection and Enforcement has determined that the penalty proposed for the violation designated in the Notice of Violation and Proposed Imposition of Civil Penalty should be imposed.

## IV

In view of the foregoing and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2282, PL 96-295), and 10 CFR 2.205, IT IS HEREBY ORDERED THAT:

The licensee pay a civil penalty in the amount of Forty Thousand Dollars (\$40,000) within thirty days of the date of this Order, by check, draft, or money order, payable to the Treasurer of the United States and mailed to the Director of the Office of Inspection and Enforcement, USNRC, Washington, D.C. 20555.

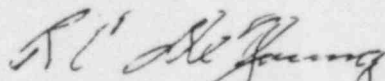
## V

The licensee may, within thirty days of the date of this Order, request a hearing. A request for a hearing shall be addressed to the Director, Office

of Inspection and Enforcement. A copy of the hearing request shall also be sent to the Executive Legal Director, USNRC, Washington, D.C. 20555. If a hearing is requested, the Commission will issue an Order designating the time and place of hearing. If the licensee fails to request a hearing within thirty days of the date of this Order, the provisions of this Order shall be effective without further proceedings and, if payment has not been made by that time, the matter may be referred to the Attorney General for collection. In the event the licensee requests a hearing as provided above, the issues to be considered at such hearing shall be:

- (a) Whether the licensee was in violation of the Commission's requirements as set forth in the Notice of Violation and Proposed Imposition of Civil Penalty referenced in Section II above, and
- (b) Whether on the basis of such violations this Order should be sustained.

FOR THE NUCLEAR REGULATORY COMMISSION



Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Dated at Bethesda, Maryland  
this 9<sup>th</sup> day of November 1983

SAFEGUARDS INFORMATION WITHHELD



Licensee's Response

The licensee admits that the violation occurred because the contractor did not fully understand and properly implement the responsibilities for visitor escort. However, the licensee argued that the civil penalty should not be imposed for the following reasons:

- (a) The contractor visitor posed no real threat to the facility. He had been processed in the morning of the event as a valid visitor. This included search, identification, and the fact that he was escorted to his work area. This individual later satisfied all requirements for unescorted access and was issued a picture badge.
- (b) The contractor visitor was unescorted for only a short period of time and in a limited area of the plant. He was accompanied by picture-badged individuals on his return to the elevator leading to the Radiation Protection Office, which was by a direct path through the Turbine Building. His return to the vital area access door, while unescorted, was also by a direct path and took only a few moments.
- (c) The violation existed a few minutes prior to being discovered by a security guard. The incident was promptly reported within 24 hours per the requirements of 10 CFR 73.71(c). Immediate action taken upon discovery was that the visitor was placed under escort control of the guard.
- (d) Prompt and extensive corrective action was taken as indicated in our response to 10 CFR 2.201. These actions have been focused broadly to the general area of concern. The new policies impact on all personnel.
- (e) As indicated in the Notice, similar (although not repeated items) incidents were identified in inspections in July 1981, December 1982, and March 1983. Although related to access control, these previous incidents did not involve unescorted visitor access. All corrective action for these prior events were in place at the time of this incident. To our knowledge our past corrective actions have been acceptable to the NRC, and could not reasonably have been expected to prevent the subject violation.
- (f) This was an isolated occurrence of short duration.

Evaluation of Licensee Response

The staff has determined that the reasons given above do not provide an adequate basis for remission or mitigation of the civil penalty. Evaluation of the licensee's reasons follow:

- (a) The licensee permitted an unauthorized individual to enter the protected area and a vital area. It is irrelevant that the individual later satisfied all requirements for unescorted access and was issued a picture badge. The staff does not agree that this later and fortuitous development provides any justification for mitigating the proposed civil penalty.
- (b) The contractor visitor was unescorted for a period of time in both a protected and a vital area of the plant. The time that the individual was unescorted was sufficient to allow the individual to pose a threat to the facility. Although the visitor was at times accompanied by a picture badged individual, the badged individual was not acting as an escort and did not remain with the visitor the entire time the visitor was in a vital area.
- (c) The unescorted visitor telephonically contacted security to inform them of the violation. It was not discovered by the security guard and therefore cannot be considered licensee identified. Although you did report the violation, because the event was not licensee-identified mitigation for this factor is not warranted.
- (d) The staff does not agree that the corrective actions taken by the licensee were unusually prompt and extensive. The corrective actions taken in response to the violation were limited to correcting the specific deficiencies which the violation revealed. Such corrective action is expected for all violations and does not constitute extensive corrective action for which mitigation of a civil penalty is warranted.
- (e) The civil penalty was not escalated because of previous similar violations nor were any such incidents referenced in the Notice. The enforcement policy does not provide for mitigation on the basis of the absence of previous similar events.
- (f) The violation of security requirements in this instance is itself of sufficient seriousness to warrant imposition of the full civil penalty proposed.

### Conclusion

After carefully reviewing the licensee's request for mitigation of the proposed civil penalty, we find no reasonable basis for modification of the enforcement action.



**Commonwealth Edison**  
One First National Plaza, Chicago, Illinois  
Address Reply to Post Office Box 767  
Chicago, Illinois 60690

December 7, 1983

Mr. R. C. DeYoung, Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Subject: Zion Station Units 1 and 2  
Response to I.E. Inspection Report  
Nos. 50-295/83-12 and 50-304/83-12  
NRC Docket Nos. 50-295 and 50-304

References (a): November 9, 1983, letter from R. C.  
DeYoung to Cordell Reed.

(b): August 24, 1983, letter from J. G.  
Keppler to J. J. O'Connor.

Dear Mr. DeYoung:

In accordance with the Order of reference (a), Commonwealth Edison Company hereby remits the amount of forty thousand dollars (\$40,000) for the Civil Penalty imposed in connection with the subject Inspection Report.

Please address any questions you may have regarding this matter to this office.

Very truly yours,

D. L. Farrar  
Director of Nuclear Licensing

FGL/lm

cc: J. G. Keppler

7738N





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA ST., N.W., SUITE 3100  
ATLANTA, GEORGIA 30303

JUN 2 1983

Duke Power Company  
ATTN: Mr. H. B. Tucker, Vice President  
Nuclear Production Department  
422 South Church Street  
Charlotte, NC 28242

Gentlemen:

SUBJECT: PROPOSED CIVIL PENALTIES: EA 83-41  
(REFERENCE INSPECTION REPORT NOS. 50-269/83-11, 50-270/83-11, AND  
50-287/83-11)

A special inspection was conducted by NRC Region II inspectors on March 17-28, 1983, to determine the circumstances leading to two apparent violations of Technical Specification (TS) Limiting Conditions for Operation (LCO). The findings from this inspection were discussed at an Enforcement Conference held in the Region II office on March 23, 1983. At that meeting, the Regional Administrator related NRC safety concerns to Duke Power Company management. The chronology of events and the violation identified are presented in the enclosed Notice of Violation and Proposed Imposition of Civil Penalties.

The inspection findings indicate that on March 17, 1983, a test valve on the Oconee Unit 3 reactor building emergency air lock was found to have been left open, apparently after the performance of an NRC required surveillance conducted on December 17, 1982. The test valve should have been closed when the surveillance was completed. This failure, combined with a leaking equalization valve for the inner hatch, provided a pathway for air flow from the reactor building to the environment. Meticulous attention to maintaining the operability of the containment system is both necessary and required. The integrity of containment systems is a vital part of the engineered safety systems designed to protect the public in event of an accident. NUREG-0737 suggests that one means of ensuring operability of engineered safety systems is to provide independent verification of operability by persons other than those who performed work on such a system. In this case, this check of operability was not performed nor was it required as a part of the procedure.

The inspection findings also indicate that the Oconee facility's compliance with the requirements of an NRC Confirmatory Order dated July 10, 1981, was inadequate. That Confirmatory Order confirmed a Duke Power Company (DPC) commitment to review and revise procedures to ensure operability of systems after performance of maintenance. A similar failure, involving inadequate restoration of containment integrity in March 1982, due to the lack of procedures requiring

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independent verification of operability, led to the imposition of a civil penalty by NRC Order dated October 12, 1982. In the letter transmitting that Order, the Director, Office of Inspection and Enforcement, asked DPC to reexamine its program for independent verification of correct performance of operating activities to ensure that verifications were performed in accordance with paragraph I.C.6 of NUREG-0737. Duke Power Company's actions in response to this request to reexamine its commitments to the NRC failed to prevent the violations of containment integrity addressed in the enclosed Notice of Violation.

In addition to the March 17, 1983 event, on March 21, 1983, the emergency air lock inner door on Oconee Unit 1 was found to be cracked open. In this case, however, no direct leakage pathway existed for air to flow from the reactor containment to the environment. It appears that inadequate training and poor communications between the personnel involved contributed to this second example of a breach of containment integrity. The procedure that applied to this situation was inadequate in that, despite local and remote (control room) indication that the inner door was open, operating and maintenance personnel failed to recognize the unsatisfactory condition. It appears, once again, that the basic cause was a failure to provide a satisfactory method of verifying operability of the system after maintenance.

The NRC attaches importance to comprehensive licensee programs for detection, correction, and reporting of problems that may constitute, or lead to, violation of regulatory requirements. We are concerned about the violations themselves; however, the violations take on more significance because: (1) you have a prior history of similar violations with the same causal factor; (2) you had prior notice of problems of a similar nature and failed to take effective actions to avoid future occurrences; and (3) you clearly had sufficient information available so you should have known these violations existed. The violations have been categorized as Severity Level III (Supplement I) pursuant to the NRC Enforcement Policy published in the Federal Register, 47 FR 9987 (March 9, 1982).

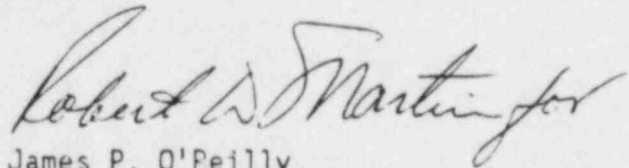
For the reasons stated in the Notice of Violation and Proposed Imposition of Civil Penalties, we have concluded that a total penalty of One Hundred and Eighty Thousand Dollars should be assessed. Each Severity Level III base penalty has been increased by 25 percent for failure to adequately implement corrective action for a prior similar problem. An additional 25 percent has been applied because prior notice of this problem had been given to DPC by NUREG-0737, at an enforcement conference on May 21, 1982, and in our Order Imposing Civil Monetary Penalties dated October 12, 1982. The resultant penalty for each violation is, therefore, Sixty Thousand Dollars.

After consultation with the Director of the Office of Inspection and Enforcement, I have been authorized to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalties in the cumulative amount of One Hundred and Eighty Thousand Dollars as set forth in the Notice enclosed with this letter. You are required to respond to the Notice and should follow the instructions specified therein when preparing your response. Your reply to this letter and the results of future inspections will be considered in determining whether further action is appropriate.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice" Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosure will be placed in the NRC's Public Document Room.

The responses directed by this letter and the enclosure are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,



James P. O'Peilly  
Regional Administrator

Enclosure:  
Notice of Violation and  
Proposed Imposition of Civil Penalties

cc w/encl:  
J. Ed Smith, Station Manager



NOTICE OF VIOLATION  
AND  
PROPOSED IMPOSITION OF CIVIL PENALTIES

Duke Power Company  
Oconee Units 1 and 3

Docket Nos. 50-269 & 50-287  
License Nos. DPR-38 & DPR-55  
EA 83-41

On March 17, 1983, the licensee initiated a periodic test procedure to perform the quarterly surveillance of the Unit 3 reactor building emergency air lock. During a pre-surveillance radiation survey, an alert Radiation Protection Technician detected an odor he recognized as typical of the inside of the reactor building. Subsequently, it was discovered that the source of the odor was a 3/4-inch test line on which the isolation valve was found to be open. This valve, in conjunction with a leaking inner hatch equalizing valve, provided a flowpath from the containment to the outside atmosphere. The valve had apparently been open since the leak rate surveillance had last been performed on December 17, 1982. The shift supervisor promptly closed the valve when informed of the improper condition.

On March 21, 1983, oncoming shift control room personnel noticed an "open" indicator light was on for the inner hatch of the Unit 1 emergency air lock. This condition was visually checked at the hatch and the inner door was found to be partly open, and was promptly closed. Subsequent investigation indicated that it had been left cracked open after the performance of a surveillance procedure on March 17, 1983. No pathway existed to the environment in this second event.

Both of these violations of NRC requirements can be attributed to inadequate procedures to ensure that systems were restored to operability after maintenance or other activities affecting the system were performed.

In the first case, on Unit 3, the procedure ended without the instructions for aligning system valves to the proper position. In the event involving the Unit 1 emergency air lock, inadequate instructions were provided to personnel performing the work. The operation of the door mechanism was not clearly understood by those manipulating it and the significance of the indicating light, both at the door itself and at the remote indicator in the control room, was not understood.

The need for independent verification has been brought to the attention of Duke Power Company (DPC) by the NRC in NUREG-0585 and NUREG-0737, issued in November 1979 and November 1980, respectively, as a result of lessons learned from the Three Mile Island accident. Both recommended that licensee's procedures "be reviewed and revised, as necessary, to assure an effective system of verifying the correct performance of operating activities is provided as a means of reducing human errors." Both documents specifically referred to "human verification of operations and maintenance independent of the people performing the activity" (emphasis added).

These provisions have been the subject of extensive NRC/licensee correspondence over the past two and one-half years and of a Confirmatory Order issued on July 10, 1981.

On October 12, 1982, the NRC issued an order imposing a civil penalty of Forty-Four Thousand Dollars for a similar event involving a breach of containment integrity. The attention of DPC was directed at that time to a review of procedures to ensure safe operation and restoration of operability after the performance of maintenance.

The NRC inspection, conducted by the Resident Inspectors on March 17-28, 1983, confirmed the violations in items A and B below. These violations show that the licensee, despite prior notice and previous similar violations, has failed to provide an effective means of verification of operability of important safety systems as required.

To emphasize the need for significant improvements with respect to the adequacy of procedures and verification of safety system operability, the Nuclear Regulatory Commission proposes to impose civil penalties in the cumulative amount of One Hundred and Eighty Thousand Dollars for this matter. In accordance with the NRC Enforcement Policy, 47 FR 9987 (10 CFR Part 2, Appendix C) (March 9, 1982), and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended ("Act"), 42 U.S.C. 2282, PL 96-295, and 10 CFR 2.205, the particular violations and associated civil penalties are set forth below:

- A. Technical Specification 3.6.1 requires that containment integrity be maintained whenever reactor coolant system (RCS) pressure is greater than 300 psig and temperature is greater than 200°F.

Technical Specification 3.7.a defines containment integrity, as related to the emergency hatch, to exist only when both doors are closed and sealed except during refueling or personnel passage through the hatch.

1. Contrary to the above, on March 17, 1983, a test valve was open on Unit 3 emergency hatch, effectively defeating the closing and seal of the outer hatch door. The unit was operating with reactor coolant pressure at greater than 500 psig and temperature greater than 200°F.

This is a Severity Level III violation (Supplement I)  
(Civil Penalty - \$60,000)

2. Contrary to the above, on March 21, 1983, the inner door on Unit 1 emergency hatch was open. The unit was operating with reactor coolant system pressure greater than 300 psig and temperature greater than 200°F.

This is a Severity Level III violation (Supplement I)  
(Civil Penalty - \$60,000).

- B. The licensee was issued an immediately effective order confirming licensee commitments on post-TMI related issues dated July 10, 1981. This Order stated,

"It is hereby ordered effective immediately that the licensee shall comply with the following conditions:

The licensee shall satisfy the specific requirements described in the attachment to this order (as appropriate to the licensee's facilities) as early as practicable but no later than 30 days after the effective date of the Order."

The Order referred to and incorporated the licensee's submittal dated December 15, 1980, which committed to complete each of the actions specified in the Attachment to the Order. Attachment Item I.C.6, Correct Performance of Operating Activities, states that procedures would be reviewed and revised to verify correct performance of operating activities by January 1, 1981.

Contrary to the above, after January 1, 1981, procedures had not been reviewed and revised to assure the correct performance of operating activities as evidenced by the violations of required containment integrity on Oconee Units 1 and 3 as described in Item A of this notice.

This is a Severity Level III Violation (Supplement I)  
(Civil Penalty - \$60,000).

Pursuant to the provisions of 10 CFR 2.201, Duke Power Company is hereby required to submit to the Director, Office of Inspection and Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555, and a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region II, within 30 days of the date of this Notice, a written statement or explanation including for each alleged violation: (1) admission or denial of the alleged violation; (2) the reasons for the violation, if admitted; (3) the corrective steps which have been taken and the results achieved; (4) the corrective steps which will be taken to avoid further violations; and (5) the date when full compliance will be achieved. Consideration may be given to extending the response time for good cause shown. Under the authority of Section 182 of the Act, 42 U.S.C. 2232, this response shall be submitted under oath or affirmation.

Within the same time as provided for the response required above under 10 CFR 2.201, Duke Power Company may pay the civil penalties in the cumulative amount of \$180,000 or may protest imposition of the civil penalties in whole or in part by a written answer. Should Duke Power Company fail to answer within the time specified, the Director, Office of Inspection and Enforcement, will issue an Order imposing the civil penalties proposed above. Should Duke Power Company elect to file an answer in accordance with 10 CFR 2.205 protesting the civil penalties, such answer may: (1) deny the violations listed in the Notice, in

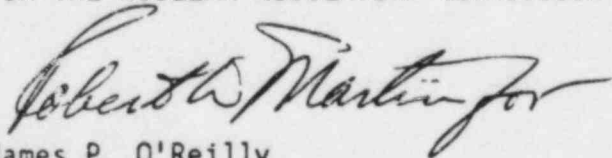


whole or in part; (2) demonstrate extenuating circumstances; (3) show error in this Notice; or (4) show other reasons why the penalties

should not be imposed. In addition to protesting the civil penalties, in whole or in part, such answer may request remission or mitigation of the penalties. In requesting mitigation of the proposed penalties, the five factors contained in Section IV(B) of 10 CFR Part 2, Appendix C should be addressed. Any written answer in accordance with 10 CFR 2.205 should be set forth separately from the statement or explanation in reply pursuant to 10 CFR 2.201, but may incorporate statements or explanations by specific reference (e.g., citing page and paragraph numbers) to avoid repetition. Duke Power Company's attention is directed to the other provisions of 10 CFR 2.205, regarding the procedures for imposing a civil penalty.

Upon failure to pay any civil penalty due, which has been subsequently determined in accordance with the applicable provisions of 10 CFR 2.205, this matter may be referred to the Attorney General, and the penalty unless compromised, remitted, or mitigated, may be collected by civil action pursuant to Section 234c of the Act, 42 U.S.C. 2282.

FOR THE NUCLEAR REGULATORY COMMISSION



James P. O'Reilly  
Regional Administrator

Dated in Atlanta, Georgia  
this 2 day of June 1983

# DUKE POWER COMPANY

P.O. BOX 33189  
CHARLOTTE, N.C. 28242

HAL B. TUCKER  
VICE PRESIDENT  
NUCLEAR PRODUCTION

TELEPHONE  
(704) 373-4531

July 1, 1983

Director  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Subject: Oconee Nuclear Station  
Docket Nos. 50-269, -270, -287

Dear Sir:

By letter dated June 2, 1983, the NRC transmitted a Notice of Violation and Proposed Imposition of Civil Penalties for violations reported in Inspection Reports 50-269/83-11, 50-270/83-11, and 50-287/83-11. This letter contains the Duke Power Company response to both of these documents. A summary response to the Notice of Violation is provided in the following paragraphs with additional details provided in Attachment 1. Also included herein is a summary discussion of the corrective actions that Duke took following the air lock incidents with additional details provided in Attachments 2 and 3. Duke is also providing comment on the manner in which the Enforcement Policy has been implemented by the NRC in this matter. Finally, Duke is providing a response to the proposed civil penalty with additional details in Attachment 4.

Within the Notice of Violation, the NRC asserts in Violation A that two incidents related to containment air locks occurred which were the result of failure to implement the requirements of NUREG-0737, Item I.C.6, "Guidance on Procedures for Verifying Correct Performance of Operating Activities", into procedures. Duke Power admits that the incidents occurred; however, Duke denies that their occurrence was caused by a lack of implementation of independent verification as asserted by the Staff. The first incident was caused by an inadequate test procedure which failed to contain instructions to close the test valve upon completion of the test. The second incident was caused by inadequate procedures and instructions on the operation of the air lock doors and failure of Control Room personnel to effectively evaluate the alarm. These two incidents were unrelated to independent verification of the actions taken. Furthermore, these incidents were only violations of the Technical Specification definition of containment integrity and did not constitute physical breach of containment.

The NRC asserts in Item B of the Notice of Violation that Duke Power had not reviewed procedures to assure correct performance of operating activities as required by NUREG-0737, Item I.C.6 and NRC Confirmatory Order dated July 10, 1981. Duke maintains that the record in this area does not support the NRC assertion and denies this violation in total. As early as May 1979, Oconee personnel recognized the need for independent verification and started then to implement a program. The station directive which implements independent verification was initially established in February 1980. The NRC in Inspection Report 50-269/81-10, 50-270/81-10 and 50-287/81-10 dated May 10, 1981 and in an NRC letter dated November 2, 1981 reviewed and found this program to be

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acceptable for implementation of I.C.6. To assert now that this program is not in compliance is wholly unjustified. Details supporting our position on these violations are provided in Attachment 1.

Following these two air lock incidents, Duke took prompt and aggressive action in several areas. These actions were discussed in detail with the NRC Staff, and detailed written information was provided to the NRC Staff well before the Notice was issued. However, the Notice fails to acknowledge either the actions taken or the communications. These corrective actions were designed to address the specific causes of each incident as well as to review operating activities at Oconee. The review of procedures was expanded from those affecting only containment to include operating activities of the entire station. Further, the process by which station modifications are designed and processed was reviewed. Also, station directives were reviewed to assure compliance with applicable regulations and corporate requirements. Finally, Duke established a Management Audit Team to specifically review operational activities at all of our nuclear stations. Additional discussions of these areas are provided in Attachment 2 and in a copy of our letter dated April 29, 1983 (Attachment 3).

The Staff alludes to an incident which occurred in March 1982 for which a previous civil penalty was imposed. That incident was a result of a personnel error in that a test-tee cap was not replaced on an instrument line following surveillance. Although the surveillance program had been very successful in the Instrumentation and Electrical (I&E) area in returning thousands of components successfully back to service, a personnel error created the incident wherein an instrument test-tee cap on a Reactor Building pressure switch was not reinstalled following testing. This resulted in procedural upgrades to properly identify those specific items required to be executed and verified to assure proper return to service of the components. Following a Station Manager requested QA audit in mid-1982, additional procedural improvements were made. These included minor clarifications of actions necessary to assure proper removal or return to service. The corrective actions recently taken are different than those that were indicated necessary by this earlier incident.

The NRC letter of June 2, 1983 proposing civil penalty asserts that these actions were insufficient in that actions should have been taken that would have prevented the two incidents related to the containment air locks. On the contrary, based on the fact that the program Duke had in place to implement independent verification had been found by the NRC to be acceptable, the fact that the test-tee cap incident was limited to testing of instrumentation, and that all other mechanical and electrical systems were being independently verified, no further corrective actions were warranted. In fact, the review of procedures that was conducted following the air lock incidents identified only nine procedures of approximately 2,500 in place on January 1, 1981 where implementation of independent verification appeared to be deficient. The three operations procedures relate to electrical power distribution. Five of the six performance procedures relate to containment air locks; the sixth dealt with electrical penetrations. These procedures were

not originally considered to be covered by our interpretation of independent verification as confirmed by NRC acceptance of Station Directive 4.2.5. The original station directive addressing independent verification, which was reviewed and found acceptable by the NRC, did not include operations associated with air lock doors. Considering the number of procedures involved and the fact that only nine procedures warranted changes, and that the causal factors in none of the incidents resulted from lack of independent verification, Duke does not consider that the Staff assertion of insufficient corrective actions is justified.

Duke believes that a misunderstanding of the facts exists and NRC has reached incorrect conclusions as a result. However, even assuming the facts were as the NRC represents them to be, the NRC has misapplied its Enforcement Policy with respect to the facts. First, the Staff has deviated significantly from its past practice of identifying the underlying cause of an alleged violation and assessing a civil penalty based on that underlying cause. Second, the Staff improperly increased the base civil penalties in this case. Third, the alleged violations were miscategorized as Severity Level III. Lastly, the civil penalty proposed in this enforcement action is inconsistent with that proposed in a previous analogous enforcement action. Therefore, we respectfully urge that the proposed civil penalty be mitigated as set forth in Attachment 4 to this letter.

The Enforcement Policy is designed to assure that the Staff and licensee focus on the underlying causes of alleged violations. In this regard, the Policy states as follows:

[T]o emphasize the focus on the fundamental underlying causes of a problem for which enforcement action appears to be warranted, the cumulative total for all violations which contributed to or were unavoidable consequences of that problem will generally be based on the amount shown in [the Table of Base Civil Penalties], as adjusted.<sup>1</sup>

In previous enforcement actions the Staff has generally applied this provision by identifying the underlying area of concern (e.g., failure to follow procedures, management weakness, or programmatic weakness), identifying the alleged violations of NRC requirements resulting from the underlying area of concern, and proposing a cumulative civil penalty derived from Table 1A and 1B of the Enforcement Policy. Importantly, the cumulative civil penalty has been distributed among each of the specific violations linked to the specific area of concern.

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<sup>1</sup> 47 Federal Register at 9992.



For example, on March 29, 1983, the Staff proposed a \$40,000 civil penalty against Philadelphia Electric for alleged violations of three plant Technical Specifications governing radiation protection at Peach Bottom. The Staff identified seven specific alleged violations of plant procedures, all of which according to the NRC stemmed from the same problem area, viz., the need for increased management attention in the implementation of the licensee's radiation protection program and an apparent lack of commitment by station personnel to adherence to radiation protection requirements. Because the alleged violations stemmed from the same problem area, a single civil penalty of \$40,000 (derived from Table 1A and Table 1B) was assessed for all seven of the alleged violations.<sup>2</sup>

Similarly, in another enforcement action involving the Nebraska Public Power District, the NRC Staff imposed a single civil penalty for three alleged material false statements (as opposed to imposing a separate civil penalty for each of three material false statements) upon concluding that the three statements were the result of a single underlying problem. In doing so, the Staff expressly recognized that the Enforcement Policy "provides that a single cumulative civil penalty will generally be assessed for similar violations stemming from the same fundamental cause."<sup>3</sup>

The civil penalty proposed against Duke in this case is inconsistent with these prior enforcement actions and with the Enforcement Policy itself. First, the NRC Staff identified (erroneously we believe) a single underlying cause for both violations, viz., failure to provide a satisfactory method of verifying operability of a system after maintenance. However rather than proposing a single cumulative civil penalty for the two violations stemming from this underlying problem, it proposed a single civil penalty for each of the violations. Moreover, it then proposed a separate, additional civil penalty for the underlying problem itself. At bottom, this treatment of the alleged violations marks a radical departure from prior applications of the Enforcement Policy and is inconsistent with the overall thrust of that policy.

Second, Duke Power Company believes that the NRC Staff improperly increased the base civil penalty for each of the three alleged violations it identified. Specifically, the Enforcement Policy provides that a base civil penalty may be increased by 25 percent for failure to implement previous corrective action and for prior notice of similar events. While we recognize that the Staff believes (again erroneously) that Duke failed to implement corrective action, the NRC did far more than increase the base civil penalty by 25 percent for each

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<sup>2</sup> See Philadelphia Electric Co. (Peach Bottom Atomic Power Station, Units 2 and 3); Docket Nos. 50-277, 50-278; EA No. 82-7; March 29, 1983 Notice of Violation and Proposed Imposition of Civil Penalties.

<sup>3</sup> February 18, 1983 letter from Richard C. DeYoung, Office of Inspection and Enforcement, U. S. Nuclear Regulatory Commission to Mr. C. Jones, Assistant General Manager, Nebraska Public Power District at 1.

of the alleged violations in this case. It also proposed an entirely separate civil penalty for Duke's alleged failure to implement such action. No basis is given in the Notice of Violation of Proposed Imposition of Civil Penalties to justify what amounts to this double escalation of the base civil penalty for each of the alleged violations.

Similarly, no justification is provided for increasing the base civil penalty for each of the alleged violations by an additional 25 percent for prior notice of similar events. First, the Enforcement Policy defines prior notice of similar events as "prior knowledge of a problem as a result of a licensee audit, or specific NRC or industry notification, and [failure] to take effective preventive steps." Two of the three bases relied upon by the Staff in its proposed action against Duke clearly fall outside this definition. They include the enforcement conference and the Order Imposing Civil Monetary Penalties referenced in the Staff's June 2, 1983 letter, both of which (if relevant to this enforcement action) should fall within enforcement history and not prior notice of similar events.

Second, the Staff has not justified its reliance on NUREG-0737 as a basis for applying the additional 25 percent step-up for prior notice of similar events. As indicated above, an entirely separate civil penalty was proposed for what the Staff believed was Duke's failure to satisfy TMI-related issues. Again, no basis is given to justify this multiple increase in the proposed civil penalty.

Duke next believes that the Staff mischaracterized the alleged violations in this case as Severity Level III. In fact, the alleged violations should have been characterized as Severity Level IV in that they have minimal, if not minor, safety significance. The basis of this conclusion is provided in the attachments of this letter.

Finally, the proposed civil penalty in this case is simply inconsistent with another civil penalty proposed only eleven days later by Region I against Philadelphia Electric. In that proceeding, the Staff proposed a \$40,000 civil penalty for a three day breach of containment. The alleged violation occurred following the alleged failure of a technician to properly implement surveillance test procedure, thereby negating an administrative control in that procedure which required an independent verification to assure that affected equipment was returned to normal configuration. As the Staff recognized, this was the second failure of Philadelphia Electric to maintain primary containment integrity resulting from a failure to follow procedures, and it was the second civil penalty since March 29, 1983 proposed as a result.

We can find nothing in the record to justify the totally inconsistent approaches towards virtually identical alleged violations of NRC requirements in these two cases. We recognize that every enforcement action depends on the factual allegations raised by the Staff and that the Staff has the discretion to tailor

its proposed enforcement action to the facts in each case. However, Duke believes that in its case the Staff has adopted an enforcement posture totally at odds with both its past practices and the express language of the Enforcement Policy. Our view, we believe, is confirmed by the June 13 enforcement action taken against Philadelphia Electric. Accordingly, as a matter of law, we respectfully request that the proposed civil penalty be mitigated as set forth in Attachment 4.

In addition to the previous concerns stated, Duke would like to address the tone and character of the NRC letter proposing the civil penalty. The purpose of our conference on April 19, 1983 with the NRC and our submittal of April 29, 1983 was to present all the relevant facts. In this case, the NRC simply did not acknowledge these actions that were taken. Duke considers itself to be one of the most responsive and capable nuclear utilities in the country, and as such, is most disturbed by the NRC charges of failure to meet commitments and to take effective corrective action. The NRC has stated:

1. [Y]ou have a prior history of similar violations with the same causal factor.
2. [Y]ou had prior notice of problems of a similar nature and failed to take effective actions to avoid future occurrences.
3. [Y]ou clearly had sufficient information available so you should have known these violations existed.

The incident related to a missing test-tee cap which resulted in a civil penalty in 1982 was not at all related to the recent emergency air lock incidents. They were the results of different causes and required different corrective actions to prevent recurrence. To characterize these events under the umbrella requirement of independent verification is totally unfounded and indicative of a lack of cogent definition of acceptable independent verification by the NRC. It, taken together with the proposed enforcement action against Philadelphia Electric, also is another example of the lack of consistency in the NRC's application of its Enforcement Policy.

Duke would like to specifically address three points made by the NRC on page 2 of the letter proposing civil penalty. First, contrary to the NRC's assertions, the histories of containment violations were not results of the same causal factor. A detailed investigation of each incident resulted in different corrective actions. In the March 1982 event, specific steps were added to instrument procedures to assure complete restoration. At the time of the incident, a total review of all station procedures was not considered warranted. Following the first air lock incident, procedures for dissemination of completed modification information were revised to provide a broader scope of procedure review. In the second air lock incident, the controlling procedures for all air lock surveillance were revised. The causal factor here was inadequate personnel training. Independent

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verification by the other personnel at the air lock and by Control Room operators was ineffective. Based on a review of approximately 2,500 station procedures, a total of only nine required some change to incorporate independent verification.

Second, with respect to the prior notice of problems of a similar nature, Duke's position is that the prior incidents alluded to by the Staff were not of a similar nature. Each was responded to in an aggressive manner that addressed the specific causes of each incident. In view of the acceptable reviews that had been previously completed by both Duke and the NRC, no other actions beyond review of instrument procedures were considered necessary.

And third, contrary to the NRC's allegations, sufficient information was not available to know that these violations existed prior to their discoveries. Air lock testing is conducted routinely every three months on all three units. The personnel involved in these two incidents had previously completed the testing satisfactorily several times and the routine testing has been reviewed by the NRC Resident Inspector. In the first incident, the valve that was open has no remote indication and is only operated during test. In the second incident, the Control Room indications were considered to be invalid as door "open" indications were noted during a 60 psi air test when the doors were known to be shut. A work request was written to check the indication and the alarm was tagged out of service. As soon as the incidents were discovered by Duke personnel, prompt and aggressive actions were taken. The results of the reviews conducted indicated that these incidents were isolated events and were not indicative of programmatic failures. Duke would also point out that these points were specifically addressed in the enforcement conference and in our April 29, 1983 letter. Based on the above discussion, Duke believes that the specific language quoted above is not justified.

In this proposed civil penalty the NRC is regulating by reviewing adequacy of implementation after the fact, and has essentially stated that all previous reviews of independent verification and applicable station documents are invalid because incidents occurred that should have been prevented by proper implementation of independent verification. The stated intended purpose of Action Plan Item I.C.6 is to reduce human error and to improve the quality of normal operations. It was never intended, and in a practical manner it is impossible, to achieve zero human errors. To propose a civil penalty in this case based on two incidents of minimal safety significance and alleged improper implementation of independent verification is wholly unjustified and is not based on explicit review of the pertinent events.

In conclusion, Duke discovered each incident, took immediate corrective measures, and developed and executed a multi-point program to determine fundamental causes. Duke Power admits alleged Violation A, but denies that bases exist for the escalation of both items of Violation A and denies wholly Violation B and its escalation. Duke Power considers that the incidents that occurred were of

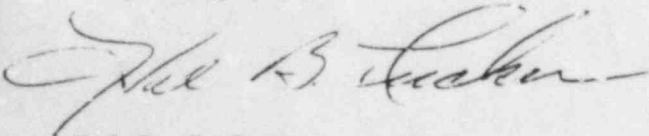


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minimal safety significance and were not the result of lack of independent verification. Duke also considers that the requirements of Action Plan Item I.C.6 were correctly implemented and previously found acceptable by the NRC.

Finally, Duke considers that detailed information on prompt aggressive corrective actions taken by Duke and presented to Region II on April 19, 1983 and by letter dated April 29, 1983 was not included in the NRC review associated with these alleged violations. Duke objects to the proposed civil penalty on the basis that it is unjustified. Duke also objects to the NRC characterization of the actions that have been taken in response to these and other incidents and recommends that the NRC statements be revised or modified to eliminate inappropriate interpretation of the facts and to accurately reflect all information relevant in this matter. This relevant information includes at a minimum the previous NRC approval of the Oconee independent verification program as well as the significant actions that were properly taken following the March 1983 air lock incidents. Duke requests that the proposed civil penalty be fully rescinded.

Very truly yours,



Hal B. Tucker

RLG/php

Attachments (4)

cc: Mr. James P. O'Reilly, Regional Administrator  
U. S. Nuclear Regulatory Commission  
Region II  
101 Marietta Street, NW, Suite 2900  
Atlanta, Georgia 30303

Mr. J. C. Bryant  
NRC Resident Inspector  
Oconee Nuclear Station

Mr. John F. Suermann  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Attachment 1

Duke Power Company  
Oconee Nuclear Station  
Response to Notice of Violation  
IE Inspection Report 50-269/83-11, 50-270/83-11, 50-287/83-11

Violation A. Technical Specification 3.6.1 requires that containment integrity be maintained whenever reactor coolant system (RCS) pressure is greater than 300 psig and temperature is greater than 200°F.

Technical Specification 1.7.a defines containment integrity, as related to the emergency hatch, to exist only when both doors are closed and sealed except during refueling or personnel passage through the hatch.

1. Contrary to the above, on March 17, 1983, a test valve was open on Unit 3 emergency hatch, effectively defeating the closing and seal of the outer hatch door. The unit was operating with reactor coolant pressure at greater than 500 psig and temperature greater than 200°F.

This is a Severity Level III violation (Supplement I)  
(Civil Penalty - \$60,000)

2. Contrary to the above, on March 21, 1983, the inner door on Unit 1 emergency hatch was open. The unit was operating with reactor coolant system pressure greater than 300 psig and temperature greater than 200°F.

This is a Severity Level III violation (Supplement I)  
(Civil Penalty - \$60,000)

Response to Violation A1

- 1) The alleged violation is admitted.
- 2) The reasons for the violation were as reported in Licensee Event Report RO-287/83-04 dated April 15, 1983 and in a supplemental letter from H. B. Tucker (Duke Power Company) to J. P. O'Reilly (NRC/Region II) dated April 29, 1983.

On March 17, 1983 at 0200, while preparing to perform the quarterly Reactor Building (RB) Emergency Lock Leak Rate Test, Oconee personnel discovered that air was leaking from the Unit 3 RB Emergency Personnel Air Lock Hatch (EPAL) pressurization connection valve. The valve does not connect into the Reactor Building but into the EPAL. The valve is a containment isolation valve but was found to be open. The cause of this occurrence was personnel error. In July 1981, a modification added the subject

valve on the 3/4 inch line extending from the Emergency Air Lock outside end. In the process of modification review, one step is to check for necessary procedure changes. The procedure for the Leak Rate Test on the EPAL was not changed to specifically include the valve. The procedure stated to "pressurize the hatch volume", requiring the pressurization valve to be opened. The procedure stated "remove test equipment", for which in past tests the pressurization valve was closed. In this case, the valve was left open.

The cause of this event was the failure to review and revise the controlling test procedure following the modification to add the pressurization connection valve. This conclusion on cause is consistent with that reported by the NRC Resident Inspector in Inspection Report 50-269/83-11, 50-270/83-11, 50-287/83-11. While it is agreed that a violation of the Technical Specification addressing containment integrity occurred, the safety significance was minimal. The NRC's conclusion that independent verification on the procedure would have prevented the incident is unjustified. Unless the specific valve was listed on the procedures, independent verification would not have prevented the incident.

- 3) Upon discovery, the pressurization valve was closed. The RB Emergency Lock Leak Rate Test was successfully completed on March 17, 1983. Units 1 and 2 pressurization valves were verified closed. Revisions have been made to the procedures for the Leak Rate Test and the O-ring Test for emergency and personnel hatches. These changes require a procedural step to close the pressurization valve upon test completion and to independently verify the valve closed. Personnel involved have been counseled concerning their errors.

Additional corrective actions taken included the review of procedures affecting activities of the entire station; the review of the process by which station modifications are designed and processed; the review of station directives to assure compliance with applicable regulations and corporate requirements. Additionally, a Management Audit Team was established to specifically review operational activities at all of our nuclear stations. Details of these additional actions are provided in Attachment 2.

- 4) No further corrective actions are deemed necessary.
- 5) Full compliance was achieved March 17, 1983 upon closure of the pressurization valve at the completion of the test.

Response to Violation A2

- 1) The alleged violation is admitted.
- 2) The reasons for the violation were as reported in Licensee Event Report RO-269/83-10 dated April 15, 1983 and in a supplemental letter from H. B. Tucker (Duke Power Company) to J. P. O'Reilly (NRC, Region II) dated April 29, 1983.

The Unit 1 incident occurred when plant technicians entered the Emergency Personnel Air Lock through the outer door to perform the Reactor Building Emergency Local Leak Rate Test. After completing testing and leaving the emergency hatch area through the outer door, the outer hatch door was closed and due to personnel error the inner hatch door was inadvertently opened. During the performance of the test as well as after, the emergency hatch inner/outer door open statalarm in the Control Room was actuated. At the time of the incident, the statalarm was considered by the Control Room operators to be inoperable because the statalarm was on when both doors were known to be closed and the hatch was pressurized to approximately 60 psig. Therefore, a work request was written to have it checked. As a result, upon completion of the Air Lock Test, the operators did not acknowledge that the air lock had not been returned to normal. They failed to effectively follow up on the indication even though a substantial amount of trouble-shooting was conducted by maintenance personnel. At approximately 0930 on March 21, 1983 operations personnel visually verified that the inner door was open approximately 6 to 10 inches. The cause of this incident has been classified as a personnel error due to inadequate training and/or instructions. The person involved in the closing of the hatch door positioned the pointer on the handwheel outside the "both doors closed and latched" indication marks. The procedure used to perform the Leak Rate Test did not include a step to close the outer door. The individuals involved were not properly trained on the operation of the air lock doors nor was sufficient instruction provided locally at the air lock. The independent verification that could have been made by the operators in the Control Room was ineffective because these operators had determined, in error, that the Control Room indications were defective.



- 3) The immediate corrective action taken was to close the inner door and to verify that the emergency hatch doors and the personnel hatch doors on all three units were properly closed. The Reactor Building Emergency Hatch Leak Rate Test procedure has been changed to include steps to properly close the emergency hatch doors. The procedure was revised to require that an independent verification be performed to assure that both hatch doors are properly closed. The analogous changes have also been made to the Leak Rate Test procedure for the personnel hatch. The local indicator lights located outside the outer hatch door for all three units were repaired. The remote indicator lights located in the Control Room and associated circuitry for all three units were verified to be functioning properly. The personnel involved in this incident have been counseled. Performance personnel who conduct air lock testing have been trained and are responsible to assure that the entire air lock is properly restored following test. Operators have received additional guidance to assure prompt and effective evaluation of alarm indicators. A sign has been installed at each air lock providing detailed instructions on their operation. Additional corrective actions were taken in the areas discussed in response to Violation A1 and as detailed in Attachment 2.
- 4) No further corrective actions are deemed necessary.
- 5) Full compliance was achieved March 21, 1983 upon closure of the inner door.

With both these incidents, although the Technical Specifications were violated with respect to containment integrity, the Bases of Specification 3.6 state that "operation with a personnel or emergency hatch inoperable does not impair containment integrity since either door meets the design specifications for structural integrity and leak rate". Thus, these incidents are truly minimal in safety significance. Furthermore, the fact that independent verification was not explicitly contained in these procedures would have had no effect on prevention of the incidents.

The NRC, as part of its regulatory inspection program, routinely inspects surveillance testing at nuclear stations. The surveillance tests are analyzed and/or witnessed by the inspector to ascertain procedural and performance adequacy. The completed test procedures examined are analyzed for embodiment of the necessary test prerequisites, preparations, instructions, acceptance criteria and sufficiency of technical content. The selected tests witnessed are examined to ascertain that current written approved procedures are available and in use, that test equipment in use is calibrated, that test prerequisites

are met, system restoration is completed and test results are adequate. The selected procedures are perused for conformance with applicable Technical Specifications, for the required administrative review, and for performance within the surveillance frequency prescribed. The inspector employs one or more of the following acceptance criteria for evaluating the above items:

10 CFR  
ANSI N18.7  
Oconee Technical Specifications  
Oconee Station Directive  
Duke Administrative Policy Manual

An extensive NRC review of procedures is performed--a review which is over and above that which is routinely conducted by station personnel. In 1982, on at least three documented occasions, the NRC Resident Inspector reviewed procedures related to personnel hatch surveillance and in all cases reported that within the areas inspected, no items of noncompliance or deviations were identified. The point here is that several previous reviews by both Oconee and the NRC Resident Inspector did not identify the need for independent verification.

In view of the foregoing discussions, Duke considers that this NRC proposed civil penalty of Violation A is not justified and the category of the violation should be Severity Level IV. There was no loss of safety function of the containment. Although a degraded condition did exist, sufficient information was not present to alert the operators that they were in an action statement. Finally, the containment was able to perform its intended functions even though degraded, and there was no release of radioactivity off-site greater than the Technical Specifications limit.

Violation B. The licensee was issued an immediately effective Order confirming commitments on post-TMI related issues dated July 10, 1981. This Order stated,

"It is hereby ordered effective immediately that the licensee shall comply with the following conditions:

The licensee shall satisfy the specific requirements described in the attachment to this Order (as appropriate to the licensee's facilities) as early as practicable but no later than 30 days after the effective date of the Order."

The Order referred to and incorporated the licensee's submittal dated December 15, 1980, which committed to complete each of the actions specified in the Attachment to the Order. Attachment Item I.C.6, Correct Performance of Operating Activities, states that procedures would be reviewed and revised to verify correct performance of operating activities by January 1, 1981.

Contrary to the above, after January 1, 1981, procedures had not been reviewed and revised to assure the correct performance of operating activities as evidenced by the violations of required containment integrity on Oconee Units 1 and 3 as described in Item A of this notice.

This is a Severity Level III Violation (Supplement I)  
(Civil Penalty - \$60,000).

Response to Violation B

- 1) The alleged violation is denied.
- 2) Duke denies the violation on the basis of a thorough review of the relevant history. This history was reviewed with NRC Region III management on April 19, 1983 and provided in a letter submitted April 29, 1983. This review confirmed that Duke had in fact implemented the concept of independent verification prior to the issuance of NUREG-0737 and was in compliance with NUREG-0737 when issued.

In early May 1979, directives from station management required that independent verification be applied to activities associated with removal and restoration of safety-related systems. Throughout 1979 and 1980, the program to implement the concept of independent verification was established and refined as necessary. Station Directive 4.2.5, "Independent Verification Requirement", was initially issued in February 1980. Independent verification was implemented in procedures controlled by Operations, Maintenance, Performance, and other station groups as necessary, such that by January 1, 1981, the program was effectively implemented. This program covered operating activities related to test and

maintenance of safety-related systems and components and required two individuals to verify that the equipment had been properly returned to service.

By letter dated July 10, 1981, the NRC issued a Confirmatory Order which, among other items, states that procedures would be reviewed and revised to verify correct performance of operating activities by January 1, 1981. The NRC had reviewed the implementation of this item with favorable results. During a routine safety inspection conducted from May 10, 1981 through June 10, 1981 and documented in Inspection Reports 50-269/81-10, 50-270/81-10, and 50-287/81-10, the NRC Oconee Resident Inspector provided the results of his review of the Oconee implementation of this action plan item. The inspector specifically reported:

Item I.C.6. Guidance on Procedures for Verifying  
Correct Performance of Operating Activities

The licensee responded to Item I.C.6. in a December 15, 1980 letter to NRC committing themselves to be in conformance to the above position by January 1, 1981.

The inspector employed Station Directive 4.2.5 "Procedure for Implementing Independent Verification Requirement" and ANSI N18.7 as guidance for reviewing the double verification practices at Oconee for verifying correct performance of Operating Activities.

The inspectors review on a daily basis the Removal and Restoration Procedure, OP/O/a/1102/06, the administrative mechanism through which station equipment is removed from service. Additionally, during monthly reviews of station surveillance and maintenance activities and procedures, the presence of double verification is constantly surveyed. In these areas inspected, the incorporation of double verification appears to be adequate.

Later in the year, in a letter dated November 2, 1981, the NRC provided the results of their review of three TMI items, one of which was Item I.C.6. This letter states:

Item I.C.6 - Guidance on Procedures for Verifying Correct  
Performance of Operating Activities

Item I.C.6 requires a procedure review, and revision if needed, to assure that an effective system is provided to reduce human errors and improving the quality of normal operations. By letter dated December 15, 1980, Duke stated that procedures would be reviewed and revised as necessary. ONS Directive 4.2.5 was issued which described



These implementing measures and addressed interim measures. Our review of this Directive has concluded that this Item has been acceptably addressed, and subject to inspector verification, has been resolved.

The relationship of independent verification to the two air lock incidents has been previously described. The station directive addressing independent verifications which had been found adequate by the NRC did not include independent verification of air lock doors. Thus, they were not in the air lock surveillance procedures. The first air lock incident was caused by a failure to revise procedures following a plant modification. The cause of the second air lock incident was inadequate procedures and instructions.

This scope of implementation of independent verification is not unique to Oconee. The NRC Safety Evaluation Reports for McGuire and Catawba, in the section addressing Action Plan Item I.C.6 - Independent Verification, do not include any reference to containment air locks. Limited reviews of other NRC SERs issued since 1981 have also determined that independent verification requirements are not explicitly required for containment air locks.

Duke considers that the NRC had previously found the implementation of procedures to meet Item I.C.6 to be acceptable and now to find that Duke is not in compliance is wholly unjustified.

- 3) No corrective action as a result of this violations is warranted.
- 4) No future corrective action to avoid further violation is warranted.
- 5) Full compliance was considered to be achieved January 1, 1981.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

DEC 20 1983

Docket Nos: 50-269  
50-270  
50-287

EA 83-41

Duke Power Company  
ATTN: Mr. H. B. Tucker  
Vice President  
422 South Church Street  
Charlotte, NC 28242

Gentlemen:

This refers to the letter dated July 1, 1983 from the Duke Power Company in response to our letter dated June 2, 1983. Our letter of June 2, 1983 concerned the apparent violations examined during a special inspection conducted during March 17-28, 1983 at the Oconee Nuclear Station and enclosed a Notice of Violation and Proposed Imposition of Civil Penalties.

We have carefully considered the information contained in your response. You admitted two of the violations and denied the third. You also urged reassessment of the severity levels of the violations admitted and argued that the civil penalties should be rescinded entirely. For the reasons given in the enclosed Appendix, I have concluded that the violations occurred as stated in the Notice of Violation but, based on an evaluation of their overall safety significance, these violations should have been categorized as Severity Level IV rather than Severity Level III. I have also concluded that the imposition of civil penalties for these Severity Level IV violations, although permitted by our policy, does not seem appropriate in this particular case.

Although I have accepted your arguments concerning the severity levels and have decided that the NRC will not impose civil penalties for the specific Severity Level IV violations identified during the subject inspection, I wish to note that I view Severity Level IV violations to be serious matters and I remain concerned that Duke Power Company continues to experience difficulties with independent verification. I support Region II's past and continuing efforts to encourage you to develop an effective program for independent verification and know that Region II will closely monitor your progress.

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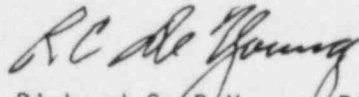
DEC 20 1983

Duke Power Company

- 2 -

In accordance with Section 2.790, Title 10, Code of Federal Regulations, a copy of this letter and the Appendix, and your letters will be placed in the NRC's Public Document Room.

Sincerely,

A handwritten signature in cursive script, appearing to read "R C DeYoung".

Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Enclosure:  
Appendix

## APPENDIX

### EVALUATIONS AND CONCLUSIONS

On June 2, 1983 the NRC issued a Notice of Violation and Proposed Imposition of Civil Penalties to the Duke Power Company (DPC) for violations identified at the Oconee Nuclear Station. DPC's response to the proposed civil penalties dated July 1, 1983 has been reviewed by the NRC staff. The items of non-compliance contained in the NRC's June 2, 1983 Notice and an evaluation of DPC's July 1, 1983 response are presented below.

#### Violation A - Original Statement of Noncompliance

Technical Specification 3.6.1 requires that containment integrity be maintained whenever reactor coolant system (RCS) pressure is greater than 300 psig and temperature is greater than 200°F.

1. Contrary to the above, on March 17, 1983, a test valve was open on Unit 3 emergency hatch, effectively defeating the closing and sealing of the outer hatch door. The unit was operating with reactor coolant pressure at greater than 500 psig and temperature greater than 200°F.

This is a Severity Level III Violation (Supplement I).  
Civil Penalty \$60,000

2. Contrary to the above, on March 21, 1983, the inner door on Unit 1 emergency hatch was open. The unit was operating with reactor coolant system pressure greater than 300 psig and temperature greater than 200°F.

This is a Severity Level III Violation (Supplement I).  
Civil Penalty - \$60,000

#### Violation A - Evaluation and Conclusion

##### I. Violation

The licensee admits that containment integrity was not maintained as required by Technical Specifications both on March 17, 1983, and March 21, 1983. Consequently, the violations as originally stated in the Notice of Violation are correct.

##### II. Evaluation

The licensee maintains that both violations A.1 and A.2 should have been categorized at a Severity Level IV because the basis of Technical Specification 3.6 states that operation with one of two personnel hatches inoperable does not impair containment integrity since either door meets design specifications for structural integrity and leak rate.



The licensee is correct that, as stated in the basis of Technical Specification 3.6, containment integrity was not impaired by these violations to the degree that they adversely affected the health and safety of the public. As violations A.1 and A.2 did not measurably impair containment integrity, they were not of substantial safety significance. The staff concludes that Violation A was a failure to meet regulatory requirements that has more than minor safety significance and, as such, should have been classified as a Severity Level IV violation under the Enforcement Policy.

The NRC could assess a civil penalty for a repetitious Severity Level IV violation that could have been prevented by corrective action for a previous violation. The NRC's original proposal to increase the penalties focused on the past history at Oconee of containment integrity failures. While such failures have occurred, their causes have been varied and the present violations would not necessarily have been prevented by corrective actions for the previous violations.

Our evaluation concludes that Violation A.1 was primarily caused by a failure to modify plant procedures in accordance with plant modifications. Violation A.2 was primarily caused by inadequate training and instructions in the operation of emergency hatchways and by the failure of control room personnel to properly evaluate the alarm indicating an open hatchway. Although an argument can be made that a broader review of previous events could have caused corrective actions to be taken that would have prevented the violations, we conclude these problems were sufficiently different from the types of problems which led to the earlier containment integrity violations and that a civil penalty is not warranted.

### III. Conclusion

The severity level of these violations is reduced to Severity Level IV. A civil penalty is not imposed for either of these violations.

### Violation B - Original Statement of Noncompliance

The licensee was issued an immediately effective Order confirming licensee commitments on post-TMI related issues dated July 10, 1981. This Order stated,

"It is hereby ordered effective immediately that the licensee shall comply with the following conditions:

The licensee shall satisfy the specific requirements described in the attachment to this Order (as appropriate to the licensee's facilities) as early as practicable but no later than 30 days after the effective dates of the Order."

The Order referred to the licensee's submittal dated December 15, 1980, in which DPC committed to complete each of the actions specified in the Attachment to the Order. Attachment Item I.C.6, Correct Performance of Operation Activities, states that procedures would be reviewed and revised to verify correct performance of operating activities by January 1, 1981. Contrary to the above, after January 1, 1981, procedures had not been reviewed and revised to assure the correct performance of operating activities as evidenced by the violations of required containment integrity on Oconee Units 1 and 3 as described in Item A of this Notice.

This is a Severity Level III Violation (Supplement I)  
Civil Penalty \$60,000

#### Violation B - Evaluation and Conclusion

##### I. Violation

DPC denied this violation and asserted that actions to implement a program of independent verification began at the Oconee Nuclear Station in 1979. DPC asserted that this program was reviewed during previous NRC inspections and no problems were identified.

##### II. Evaluation

DPC asserted that Violation A.1 and A.2, contrary to the NRC's June 2, 1983 letter, would not have been prevented by a program of independent verification.

That staff agrees to the degree that Violation A.1 would not necessarily have been prevented by independent verification since the procedure did not contain a step which stated that the valve must be shut following completion of the surveillance. However, the procedure should have required independent verification. The staff also notes that DPC conducted an extensive review of procedures following the air lock incidents and identified approximately nine out of 2,500 procedures where implementation of independent verification appeared to be deficient. These deficiencies have subsequently been remedied by the licensee. With respect to Violation A.2, the staff notes that NUREG-0737, Item I.C.6, provides that an automatic monitor can provide independent verification. The air lock door had such a monitor but the door's position was not properly verified when the monitor in the control room indicated that the airlock door was open. Accordingly, Violation B is categorized at Severity Level IV.

##### III. Conclusion

The staff concludes that the Violation B occurred but that the degree of DPC's failure to meet the intent of NUREG-0737, while of more than minor safety significance, did not merit a civil penalty. The proposal for a civil penalty for Item B is withdrawn.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

REGION I  
631 PARK AVENUE  
KING OF PRUSSIA, PENNSYLVANIA 19406

OCT 6 1983

Docket No. 50-220  
EA No. 83-84

Niagara Mohawk Power Corp.  
ATTN: Mr. Gerald K. Rhode  
Senior Vice President  
System Project Management  
c/o Miss Catherine R. Seibert  
300 Erie Boulevard West  
Syracuse, New York 13202

Gentlemen:

Reference: Notice of Violation (NRC Inspection Report Nos. 50-220/83-16  
and 50-220/83-17)

This refers to NRC inspections conducted June 7-24, and July 5, 1983 (Inspection No. 83-14), July 12-15, 1983 (Inspection No. 83-16), and July 18-22, 1983 (Inspection No. 83-17) at the Nine Mile Point Nuclear Station, Unit 1, Oswego, New York of activities authorized by NRC License No. DPR-63. The report of Inspection No. 83-14 was forwarded to you on August 23, 1983. The other two reports were forwarded to you by separate correspondence on August 3, 1983. During these inspections, five violations of NRC requirements were identified. Two of the violations, involving inadequate control of a design change after completion, were described in a Notice of Violation sent to you with one of our August 3, 1983 letters. Three other violations are described in the enclosed Notice. On August 10, 1983, an enforcement conference was held with you and other members of your staff, during which four of these violations, their causes, and your corrective actions were discussed.

The three violations described in the enclosed Notice were identified by the NRC senior resident inspector. One of the violations identified by the inspector during his review of control room indicators and logs involved the failure to place a main steam line high radiation trip system in a tripped condition as required by a technical specification limiting condition for operation once sufficient information existed to indicate that both channels in that system were inoperable. The inoperability of both channels of this system, one of two systems which function together to shut down the reactor and close the main steam isolation valves whenever a high radiation condition exists in the main steam lines, was caused by the inoperability of the two radiation monitors which provide input into the respective channels.

Although the readings on the other two radiation monitors which provide signals for the channels in the other trip system were significantly different

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RETURN RECEIPT REQUESTED

than the readings on the two inoperable monitors, operations personnel did not recognize this difference when recording the readings in the shift log, nor did shift supervisors promptly recognize the difference during review of the shift logs. Although a shift supervisor recognized a problem during the evening shift on July 17, 1983 and issued a work request during the morning shift on July 18 to calibrate one of the channels, he did not recognize channel inoperability and did not take action to trip the respective channels until informed by the NRC inspector that such action was required by the technical specification. The performance of licensed personnel involved in this violation was below that which is expected by NRC.

After consultation with the Director of the Office of Inspection and Enforcement, I have been authorized to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalty in the amount of \$40,000 to emphasize the need for you to improve the performance of licensed personnel when monitoring plant parameters, reviewing control room logs, and demonstrating a more thorough understanding of plant technical specifications. The violations in the Notice have been categorized in accordance with the NRC Enforcement Policy, 10 CFR Part 2, Appendix C.

The other two violations described in the enclosed Notice have been classified at Severity Level IV. One violation involved the loss of Reactor Building (RB) integrity, because an inner track bay door was opened and the outer door was not sealed. Although the period of time RB integrity was lost was not in excess of the technical specification limiting condition for operation action statement, the violation of plant procedures demonstrates the need for improved control of plant activities. The other violation involved a circuit breaker for a core spray isolation valve being open, but not locked in the open position as required by technical specifications.

You are required to respond to the enclosed Notice and should follow the instructions specified therein when preparing your response. In your response, you should address the specific actions taken or planned to improve personnel performance in (1) monitoring plant parameters, (2) reviewing control room logs and indicators, (3) demonstrating an understanding of plant technical specifications, and (4) controlling plant activities.

In accordance with Section 2.790 of the NRC's "Rules and Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and its enclosure will be placed in the NRC Public Document Room.

The responses directed by this letter and the attached Notice are not subject to the clearance procedures of the Office of Management and Budget, otherwise required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,

Original Signed By:

Thomas E. Murley  
Regional Administrator



NOTICE OF VIOLATION  
AND  
PROPOSED IMPOSITION OF CIVIL PENALTY

Niagara Mohawk Power Corporation  
Nine Mile Point Nuclear Station  
Unit 1

Docket No. 50-220  
License No. DPR-63  
EA No. 83-84

During NRC inspections conducted June 7-24 and July 5, 1983, July 12-15, 1983, and July 18-22, 1983, three violations of NRC requirements were identified. One violation involved failure to adhere to a procedure for maintaining reactor building integrity. Another involved a circuit breaker being off, but not locked in the off position as required. Each of these violations is classified at Severity Level IV. The other violation involving a failure to maintain two operable main steam line high radiation trip systems is classified at Severity Level III.

With regard to the Severity Level III violation, on July 18, 1983, during a control room inspection, the resident inspector observed that readings on main steam line radiation monitors No. 111 and No. 121 were indicating approximately 700 mrem/hr, whereas monitor No. 112 was indicating 200 mrem/hr and monitor No. 122 was indicating approximately 60 mrem/hr. The expected value should have been approximately 700 mrem/hr. A review of the computerized hourly log for July 17, 1983 showed that while reactor power was increased from 70% at 9:00 a.m. to 83% at midnight, the readings on monitors No. 111 and No. 121 increased but the readings on monitors No. 112 and No. 122 decreased. The inspector informed the Operations Supervisor that the monitors appeared to be inoperable and that as a result, their associated trip system would be considered inoperable. Since both monitors, No. 112 and No. 122, are inputs to the No. 12 Reactor Protection System logic, the Operations Supervisor ordered that it be tripped and a complete calibration be performed on each monitor.

Analysis of the calibration results indicated that monitor No. 112 would not have tripped until the actual radiation level in the main steam lines was approximately three times the trip setpoint, and that monitor No. 122 would not have tripped until the actual radiation level was approximately 250 times the trip setpoint.

Although all four monitors had been successfully tested at 3:35 a.m. on July 18 in accordance with test procedures, the surveillance test was performed using a test signal inserted in the instrument drawer and did not check for proper operation of the radiation detector.

Proper review of shift checks of the radiation monitors on July 17 and 18, 1983 should have indicated there was a problem with monitors No. 112 and No. 122, but the problem was not recognized by the operators and proper action was not taken. These shift checks were reviewed by the shift supervisor, but the detector

failure was not recognized. During the review of the weekly surveillance test ST-W4, "Main Steam Line High Radiation Instrument Channel Test," the shift supervisor noted that the No. 122 monitor was reading low and issued a Work Request at 4:15 a.m. on July 18. However, the significance of the reading was not recognized until the NRC inspector discussed his findings with the Operations Supervisor at about 11:45 a.m. on July 18. The inadequate review of the shift checks delayed the tripping of the trip systems as required by technical specifications. The performance of the operators and shift supervisors involved in this violation was below the level expected by the NRC.

To emphasize the need for you to improve the performance of licensed personnel when monitoring plant parameters, reviewing control room logs, and demonstrating a more thorough understanding of plant technical specifications, the Nuclear Regulatory Commission proposes to impose a civil penalty in the amount of \$40,000. In accordance with the NRC Enforcement Policy (10 CFR Part 2, Appendix C), 47 FR 9987 (March 9, 1982), and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended ("Act"), 42 U.S.C. 2282, PL 96-295 and 10 CFR 2.205, the particular violations, and the civil penalty are set forth below:

#### Violation Assessed A Civil Penalty

Technical Specification Limiting Condition for Operation Table 3.6.2a, "Instrumentation That Initiates Scram" and Table 3.6.2B, "Instrumentation That Initiates Primary Coolant System or Containment Isolation" require that for main steam line radiation monitors, there be two operable instrument channels per operable trip system, and two operable or tripped trip systems.

Contrary to the above, between July 17 and 18, 1983, one of the two main steam line high radiation trip systems was inoperable in that radiation monitors Nos. 112 and 122, which provide signals to the two channels in that trip system, were inoperable in that they were reading low, and that trip system was not tripped. The failure to adequately perform a surveillance requirement contributed to this violation, as evidenced below:

Technical Specifications Surveillance Requirements Table 4.6.2a and Table 4.6.2.1 require that for main steam line radiation monitors, a sensor check be performed once per shift. Technical Specification 1.5 defines a sensor check as "a qualitative determination of acceptable operability by observation of sensor behavior during operation. This determination shall include where possible, comparison of the sensor with other independent sensors measuring the same variable."

However, between July 17 and 18, 1983, adequate sensor checks of the four main steam line radiation monitors were not performed by shift operating personnel and shift supervisors in that the readings of monitors No. 112 and No. 122 were significantly different from the

readings of monitors No. 111 and No. 121, as shown in the following table, yet no action was taken to determine the cause of the discrepancy.

PERIOD	111	MONITOR NO.		122
		121	112	
July 17 1st shift	400	400	500	1000
July 17 2nd shift	550	550	300	120
July 17 3rd shift	650	650	225	60
July 18 1st shift	650	650	200	60

This is Severity Level III violation. (Supplement I)  
Civil Penalty - \$40,000

#### Violations Not Assessed A Civil Penalty

- A. Technical Specification 6.8.1 requires that procedures be established, implemented, and maintained that meet or exceed the requirements of Appendix "A" of Regulatory Guide 1.33. Operating Procedure OP-52, "Reactor Building Track Bay Doors No. 198 and D-39," Rev. 0, January 12, 1983 requires that outer Track Bay Door D-39 be locked and sealed when inner Track Bay Door D-198 is opened.

Contrary to the above, on July 21, 1983, Operating Procedure OP-52 was not properly implemented in that Door-198 was opened when Door D-39 was not sealed.

This is a Severity Level IV violation. (Supplement I)

- B. Technical Specification limiting condition for operation 3.1.4.g requires that during reactor operation, except during core spray system surveillance testing, core spray isolation valves 40-02 and 40-12 shall be in the open position and the associated valve motor starter circuit breakers for these valves shall be locked in the off position.

Contrary to the above, on June 10, 1983, during reactor operation, when core spray system surveillance testing was not being performed, the motor starter circuit breaker for core spray isolation valve 40-12 was in the off position. but this circuit breaker was not locked in that position.

This is a Severity Level IV violation. (Supplement I)

Pursuant to the provisions of 10 CFR 2.201, Niagara Mohawk Power Corporation is hereby required to submit to the Director, Office of Inspection and Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555, and a copy to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region I, 631 Park Avenue, King of Prussia, PA 19406, within 30 days of the date of this Notice, a written statement or explanation, including for each alleged violation: (1) admission or denial of the alleged violation; (2) the reasons for the violation, if admitted; (3) the corrective steps which have been taken and the results achieved; (4) the corrective steps which will be taken to avoid further violations; (5) the date when full compliance will be achieved. Consideration may be given to extending the response time for good cause shown. Under the authority of Section 182 of the Act, 42 U.S.C. 2232, this response shall be submitted under oath or affirmation.

Within the same time as provided for the response required above under 10 CFR 2.201, Niagara Mohawk Power Corporation may pay the civil penalty in the amount of \$40,000 or may protest imposition of the civil penalty, in whole or in part, by a written answer. Should Niagara Mohawk Power Corporation fail to answer within the time specified, the Director, Office of Inspection and Enforcement will issue an order imposing the civil penalty proposed above. Should Niagara Mohawk Power Corporation elect to file an answer in accordance with 10 CFR 2.205 protesting the civil penalty, such answer may: (1) deny the violation listed in this Notice in whole or in part; (2) demonstrate extenuating circumstances; (3) show error in this Notice; or (4) show other reasons why the penalty should not be imposed. In addition to protesting the civil penalty, in whole or in part, such answer may request remission or mitigation of the penalty. In requesting mitigation of the proposed penalty, the five factors contained in Section IV(B) of 10 CFR Part 2, Appendix C should be addressed. Any written answer in accordance with 10 CFR 2.205 should be set forth separately from the statement or explanation in reply pursuant to 10 CFR 2.201, but may incorporate statements or explanations by specific reference (e.g., citing page and paragraph numbers) to avoid repetition. Niagara Mohawk Power Corporation's attention is directed to the other provisions of 10 CFR 2.205, regarding the procedures for imposing a civil penalty.

Upon failure to pay any civil penalty due, which has been subsequently determined in accordance with the applicable provisions of 10 CFR 2.205, this matter may be referred to the Attorney General, and the penalty unless compromised, remitted, or mitigated, may be collected by civil action pursuant to Section 234c of the Act, 42 U.S.C. 2282.

FOR THE NUCLEAR REGULATORY COMMISSION

Original Signed By:

Thomas E. Murley  
Regional Administrator

Date at King of Prussia, Pennsylvania  
this 6<sup>th</sup> day of October 1983



November 1, 1983

Dr. Thomas E. Murley  
Regional Administrator  
United States Nuclear Regulatory Commission  
Region I  
631 Park Avenue  
King of Prussia, Pennsylvania 19406

Re: Docket No. 50-220  
Notice of Violation (NRC Inspection Report Nos. 50-220/83-16  
and 50-220/83-17)

Dear Dr. Murley,

This refers to NRC Inspections conducted June 7-24, and July 5, 1983 (Inspection No. 83-14), July 12-15, 1983 (Inspection No. 83-16) and July 18-22, 1983 (Inspection No. 83-17) at the Nine Mile Point Nuclear Station, Unit 1, Oswego, New York, of activities authorized by NRC License No. DPR-63.

Item A

1. Technical Specification Limiting Condition for Operation Table 3.6.2.a, "Instrumentation That Initiates Scram" and Table 3.6.2.b, "Instrumentation That Initiates Primary Coolant System or Containment Isolation" require that for main steam line radiation monitors there be two operable instrument channels per operable trip system, and two operable or tripped systems.

Contrary to the above, between July 17 and 18, 1983, one of the two main steam line high radiation trip systems was inoperable in that radiation monitors Nos. 112 and 122, which provide signals to the two channels in that trip system, were inoperable in that they were reading low, and that trip system was not tripped. The failure to adequately perform a surveillance requirement contributed to this violation, as evidenced on the following pages.

Item A (continued)

2. Technical Specifications Surveillance Requirements Table 4.6.2.a and Table 4.6.2.1 require that for main steam line radiation monitors, a sensor check be performed once per shift. Technical Specification 1.5 defines a sensor check as "a qualitative determination of acceptable operability by observation of sensor behavior during operation. This determination shall include where possible comparison of the sensor with other independent sensors measuring the same variable."

Contrary to the above, between July 17 and 18, 1983, adequate sensor check of the four main steam line radiation monitors were not performed by shift operating personnel and shift supervisors in that the readings of monitors No. 112 and No. 122 were significantly different from the readings of monitors No. 111 and No. 121, yet no action was taken to determine the cause of the discrepancy.

Item B

Technical Specification 6.8.1 requires that procedures be established, implemented and maintained that meet or exceed the requirements of Appendix "A" of Regulatory Guide 1.33. Operating Procedure OP-52, "Reactor Building Track Bay Doors No. 198 and D-39", Rev. 0, January 12, 1983 requires that outer Track Bay Door D-39 be locked and sealed when inner Track Bay Door D-198 is opened.

Contrary to the above, on July 21, 1983, Operating Procedure OP-52 was not properly implemented in that Door 198 was opened when Door D-39 was not sealed.

Item C

Technical Specification limiting condition for operation 3.1.4.g requires that during reactor operation, except during core spray system surveillance testing, core spray isolation valves 40-02 and 40-12 shall be in the open position and the associated valve motor starter circuit breakers for these valves shall be locked in the off position.

Contrary to the above, on June 10, 1983, during reactor operation, when core spray surveillance testing was not being performed, the motor starter circuit breaker for core spray isolation valve 40-12 was in the off position, but this circuit breaker was not locked in that position.

Response

Niagara Mohawk Power Corporation admits to the violations described above as Items A, B and C.

Item A

The reasons for the violation described above as Item A can be classified under the following categories:

1. Lack of attention to normal parameters during operation, specifically instrumentation required by Technical Specifications.
2. Failure on the part of the Licensed Shift Operators, Assistant Station Shift Supervisors and Station Shift Supervisors to adequately review the Control Room Logs and shift turnover sheets.
3. Misinterpretation of the definition of the term "Inoperable" with respect to Technical Specifications.
4. Failure to recognize the requirement that an instrument must be declared inoperative and action taken to provide the protective function during troubleshooting/calibration.

Immediately following the discovery of the violations, identified as Items A, B and C, the following corrective actions were taken:

1. The Operations Supervisor met with all Operations shift personnel and discussed:
  - a. Events leading up to the violations
  - b. Proper actions which should have been taken to preclude the violations
  - c. The importance of thoroughly reviewing shift checklists in order to discover as early as possible an impending problem
  - d. The importance of following Operating Procedures in performing shift duties
  - e. The responsibilities of the SSS, ASSS in performing thorough Tech. Spec. review and use of the Equipment Status Log to document when equipment is removed from service
  - f. Recommendations or suggestions from operating personnel with regard to preventing reoccurrences.

The discussion stressed the importance of a conservative interpretation of the Tech. Specs., i.e., inoperable until proven operable vs operable until proven inoperable. Also, the Operations Supervisor stressed that all evolutions shall be performed in accordance with Operating Procedures by personnel that are thoroughly familiar with the evolution they are about to perform. This familiarity shall include adherence to Tech. Specs, affect on plant operation and potential pitfalls that could lead to problems.

2. A thorough review was performed of the current policies and method of implementation concerning the shift check lists. The existing policy and method of implementation were found to be within the guidelines required by TMI Action Plan I.C.2 (NUREG 0737 Item I.C.2, NUREG 0578 Item 2.2.1.C).

The results achieved by the actions described were:

- a. The seriousness of the violations and the need for greater attention to detail in the performance of duties was impressed on all operations personnel at Nine Mile Point Unit 1.
- b. The existing shift turnover procedure and checklists showed that Nine Mile Point Nuclear Station Unit #1 currently has adequate procedures and policies.

The following subsequent actions are being taken:

1. A special training program outline has been developed and specific lesson plans are being written for a combined group of licensed operators, I&C Technicians and Chemistry Technicians to:
  - a. Review the requirements contained in Title 10 of the Code of Federal Regulations concerning Tech. Specs., Significant Events and Operator Licensing.
  - b. Provide an organized presentation of the purpose and functional organization of Tech. Specs. including Safety Limits, Limiting Safety System Settings, Limiting Conditions for Operation, Surveillance Requirements and specific attention to definitions (operable, surveillance, etc.).
  - c. Establish a time period where specific Tech. Spec. problems are addressed, and an interactive discussion is encouraged to identify contributing factors and possible solutions.
  - d. Review recent Tech. Spec. violations including causes, Tech. Spec. requirements and corrective actions.
  - e. Emphasize the importance of communications regarding abnormal conditions, both departmental and inter-departmental.
  - f. Provide examples of the proper utilization/interpretation of the Tech. Specs. for typical evolutions.



2. Superintendent's Meetings

During these training sessions the Station Superintendent will meet with all personnel involved. The primary purpose of these meetings will be to promote improved performance in all aspects of station operation, maintenance and testing. The importance of strict attention to detail by all personnel involved in a particular evolution will be stressed. The discussions will also cover the need for all personnel to fully understand Technical Specification requirements prior to, during and upon completion of each work assignment.

It is felt that by including all departments concerned in both the training and discussion sessions a better understanding of the causes of Technical Specification violations will be attained. Also, by providing employees with such a discussion forum it is felt that personnel will be more positively motivated toward improving personal performance. NMPC feels that employees will respond more positively to ideas and solutions which they have had a hand in developing, and in this way a more thorough and lasting improvement should be attainable.

3. A new control room access policy will be established effective November 8, 1983, during the first part of day shift to limit unnecessary personnel in the control room/SSS office. During the time that access will be restricted, the Operations Supervisor will meet with the day shift SSS and ASSS to discuss what work has been planned, who and what will be affected by it, and what additional requirements will be placed on operations from a support point of view. This discussion will specifically address Technical Specification requirements of all work being done.

The training sessions and meetings with the Station Superintendent are scheduled to begin December 2, 1983. This training program will be implemented during the normal five week Licensed Operator Training cycle. The first cycle of this program will be completed by January 6, 1983. The need for continuing the program will be re-evaluated following the completion of the first cycle.

ITEM B

The causes of the violation described as Item B above concerning the Reactor Building Track Bay Doors are:

1. Personnel error on the part of an operations department person during entry and exit of the Reactor Building.

2. Design of the Reactor Building Track Bay outer door seal. This seal must be removed from the door area during egress of heavy vehicles to prevent damage. The seal was removed prior to equipment movement, but was not reinstalled prior to opening the inner door.

The reactor building track bay door seal was immediately replaced, re-establishing Reactor Building integrity. As described in the response to Item A, meetings were held by the Operations Supervisor to discuss the importance of Primary and Secondary Containment Integrity, conformance to Operating Procedures and conformance to Technical Specifications.

The subsequent actions described in the response to Item A will also be used to ensure that events of a similar nature do not happen in the future.

Item C

The reason for the violation described as Item C concerning the core spray valve circuit breaker is personnel error.

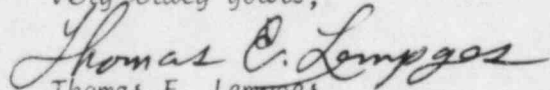
Following the discovery of the violation, the necessary lock was installed on the circuit breaker for core spray IV 40-12. The meetings held as described in the response to Item A addressed the seriousness and implications of the violation concerning the core spray IV 40-12 circuit breaker.

The subsequent actions described in the response to Item A will also be used to ensure that events of a similar nature do not happen in the future.

Enclosed along with this response (labeled Attachment A) is technical background information concerning the safety significance of the violation described as Item A. As discussed at the enforcement conference, the actual safety significance of the inoperative main steam line radiation monitors while operating at power levels above 20% was very low.

Enclosed is Niagara Mohawk Power Corporation's check in the amount of \$40,000.00, made payable to the Treasurer of the United States of America, representing payment in full of the imposed civil penalty.

Very truly yours,



Thomas E. Lempges  
Vice President, Nuclear Generation

TEL/HB/jm  
Attachment

## Technical Background

The Main Steam Line Radiation Monitor provides both indication of main steam line radioactivity transport, and automatic protective actions (trips) such as Scram, Main Steam Line Isolation Valve (MSIV) closure, and mechanical vacuum pump trip and isolation. These automatic protective functions provide barriers that are part of a Defense in Depth approach so that events and/or accidents which involve fission product transport from the reactor coolant system to the environment through the path of the main steam lines do not jeopardize the health and safety of the public.

The events that involve the Main Steam Line Radiation monitors fall into two basic categories:

1. The Control Rod Drop Accident
2. Gross fuel failures due to other operational problems

In the case of the Control Rod Drop Accident, the functioning of the Main Steam Line Radiation Monitors is only one of many elements in the defense in depth approach. These elements include a wide spectrum of safeguards, ranging from engineered safeguards such as the control rod velocity limiter, to procedural and/or administrative controls such as rod withdrawal sequences, banked rod withdrawal, reduced notch worth procedure and control rod drive coupling integrity check.

The severity of rod drop accident is highly dependent upon the initial reactor power level, and the operational configuration (ie., MSIVs open with the reactor steaming, mechanical vacuum pumps operating, etc.). As stated in the FSAR, for power levels "above 20 percent of rated design power, inherent feedback mechanisms, primarily in the form of steam voids, limit the control rod worth to such an extent that the control rod drop accident need not be considered". For the case of the reactor in hot standby, the radiological impact of the rod drop is at its maximum, if it is assumed that the MSIVs are open and the mechanical vacuum pumps are operating. The accident analysis assumes that the power transient is mitigated by the fuel Doppler Temperature coefficient. As added conservatism, reactor scram signals would be generated due to Main Steam Line High Radiation, MSIV closure and Neutron Flux. Although the scrams due to Main Steam Line High Radiation and MSIV closure are both initiated by the same instrument, a redundant and diverse trip system (Nuclear Instruments) is provided to ensure accomplishment of the scram.

The scenario used in the analysis for the hot standby condition is not one that would normally exist for any appreciable time. At Nine Mile Point, the mechanical vacuum pumps are not normally used once there is sufficient steam pressure to supply the Steam Jet Air Ejectors (SJAE). As a general rule, the Mechanical Vacuum Pumps are not used with reactor pressure above 600 psig.

## Technical Background (cont'd.)

In the case of the gross fuel failure, while the reactor is at significant power, a multiple barrier type defense in depth approach also exists. The first indication of fuel element failure would be an increase in the off-gas system radiation monitors. These monitors will respond considerably more rapidly to small changes in the activity release rate than the main steam line radiation monitors. This is primarily due to the fact that there is sufficient hold up time for the short lived isotopes (primarily N-16) to have decayed prior to reaching the off-gas monitors. The off-gas monitors will initiate isolation of the off-gas to the stack at a level that will prevent the instantaneous release rate from the stack from exceeding Technical Specification limits. The main steam line radiation monitors provide a redundant and diverse barrier in that they will also initiate isolation of the release path by initiating isolation of the main steam lines. In addition to the instruments listed above, the actual release rate in the case of gross fuel failure would be reduced dramatically by the absorption action of the off-gas pre-absorbers and charcoal columns. As a final check, the operator would become aware of the condition by the annunciation and alarms associated with the stack gas monitors.

The severity of gross fuel failures is reduced by the initiation of a scram from either the main steam line radiation monitors or the loss of vacuum due to the isolation of the off-gas system. Therefore, redundant and diverse systems exist to reduce the severity of the activity release.

Based on the information presented above concerning both the Control Rod Drop Accident and Gross Fuel Failures, the actual significance of having the main steam line radiation monitors inoperative while at a power level greater than 20 percent of rated, was very low. In the case of the Control Rod Drop Accident, the accident is not severe enough to cause significant fuel damage while at the power level that existed at the time of the inoperative monitors. In the case of the Gross Fuel Failure, redundant protective functions existed to ensure that the transient would have been controlled.





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

NOV 23 1983

Docket No. 50-263  
License No. DPR-22  
EA 83-125

Northern States Power Company  
ATTN: Mr. C. E. Larson  
Director of Nuclear Generation  
414 Nicollet Mall  
Minneapolis, MN 55401

Gentlemen:

This refers to the inspection conducted by Mr. W. B. Grant of this office on October 11-12, 1983, of activities at the Monticello Nuclear Generating Plant, authorized by NRC Operating License No. DPR-22 and to the Enforcement Conference that was held by telephone on October 19, 1983, with Mr. C. Larson and others of Northern States Power Company and Mr. J. A. Hind and others of the NRC Region III staff.

The inspection included a review of findings from an inspection conducted on September 19, 1983 by a representative of the Department of Health and Environmental Control, South Carolina, of a radioactive shipment from Monticello Nuclear Generating Plant upon arrival of the shipment at Chem-Nuclear's Mobile Operations Division, Barnwell, South Carolina. The inspection showed that the radioactive material shipment was not packaged as required by Department of Transportation regulations and had external radiation levels in excess of regulatory limits upon its arrival at the Barnwell, South Carolina facility.

Although the event had limited public health and safety impact, we are concerned that you did not take adequate care in packing the material to prevent the loss of package integrity and to limit radiation levels from the package. To emphasize the importance of properly packaging materials for shipment, I have been authorized, after consultation with the Director, Office of Inspection and Enforcement, to issue the attached Notice of Violation and Proposed Imposition of Civil Penalties in the amount of Two Thousand Five Hundred Dollars for the violations set forth in the Notice. The violations have been categorized in the aggregate as a Severity Level III problem in accordance with the General Policy and Procedure for NRC Enforcement Actions, 10 CFR Part 2, Appendix C.

You are required to respond to the Notice of Violation and in preparing your response you should follow the instructions in the Notice. You should give particular attention to those actions designed to ensure continuing compliance with NRC requirements. Your written reply to this letter, and the results of

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RETURN RECEIPT REQUESTED

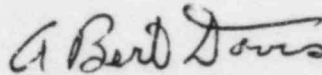
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
future inspections, will be considered in determining whether further enforcement action is appropriate.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosure will be placed in the NRC Public Document Room.

The responses directed by this letter and the enclosed Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,



 James G. Keppler  
Regional Administrator

Enclosure: Notice of Violation  
and Proposed Imposition of  
Civil Penalties

cc w/encl:

W. A. Shamla, Plant Manager  
DMB/Document Control Desk (RIDS)  
Resident Inspector, RIII Monticello  
Resident Inspector, RIII Prairie Island  
John W. Ferman, Ph.D., Nuclear  
Engineer, MPCA

NOTICE OF VIOLATION

AND

PROPOSED IMPOSITION OF CIVIL PENALTIES

Northern States Power Company  
Monticello Nuclear Generating Plant

Docket No. 50-263  
License No. DPR-22  
EA 83-125

As a result of the inspection conducted at the Monticello Nuclear Generating Plant on October 11-12, 1983, it appears that violations of NRC requirements occurred. The violations relate to the failure to properly package licensed materials for shipment and to assure that radiation levels from packages were within regulatory limits. To emphasize the importance of these matters, the Nuclear Regulatory Commission proposes to impose civil penalties in the cumulative amount of \$2,500. In accordance with the General Policy and Procedure for NRC Enforcement Actions (10 CFR Part 2, Appendix C), and pursuant to section 234 of the Atomic Energy Act of 1954, as amended ("Act"), 42 U.S.C 2282, PL 96-295, and 10 CFR 2.205, the particular violations and associated civil penalties are set forth below:

10 CFR 71.5 prohibits transport of any licensed material outside the confines of a plant or other place of use, or delivery of licensed material to a carrier for transport, unless the licensee complies with applicable regulations of the Department of Transportation in 49 CFR Parts 170-189.

- A. 49 CFR 173.425(b)(1) requires that shipments of low specific activity (LSA) materials transported in exclusive-use vehicles must be packaged in strong, tight packages so that there will be no leakage of radioactive material under conditions normally incident to transportation.

Contrary to the above, a metal box containing an LSA material, specifically a radioactively contaminated filler head, shipped from Monticello Nuclear Generating Plant in an exclusive-use shipment, was not in a strong tight package upon arrival at Chem-Nuclear's Mobile Operations Division, Barnwell, South Carolina on September 19, 1983, as evidenced by a hole in the bottom of the box.

- B. 49 CFR 173.441(b)(1) limits the radiation level at any accessible external surface of a package of radioactive material offered for transportation as an exclusive-use shipment to 1000 mR/hr at all times during transportation.

Contrary to the above, a radiation level of 1500 mR/hr was measured by a State of South Carolina inspector on the bottom external surface of a metal box, containing a radioactively contaminated filler head, upon arrival at Chem-Nuclear's Mobile Operations Division, Barnwell, South Carolina on September 19, 1983, in an exclusive-use shipment from Monticello Nuclear Generating Plant.

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Collectively, the above two violations have been evaluated as a Severity Level III problem (Supplement V).

(Cumulative Civil Penalties - \$2,500 - assessed equally between the two violations).

Pursuant to the provisions of 10 CFR 2.201, Northern States Power Company is hereby required to submit to the Director, Office of Inspection and Enforcement, USNRC, Washington, DC 20555, with a copy to the Regional Administrator, USNRC, Region III, 799 Roosevelt Road, Glen Ellyn, Illinois 60137, within 30 days of the date of this Notice, a written statement of explanation in reply, including for each alleged violation: (1) admission or denial of the alleged violation; (2) the reasons for the violation, if admitted; (3) the corrective steps that will be 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. Consideration may be given to extending the response time for good cause shown. Under the authority of Section 182 of the Act, 42 U.S.C. 2232, this response shall be submitted under oath or affirmation.

Within the same time as provided for the response required above under 10 CFR 2.201, Northern States Power Company may pay the civil penalties in the cumulative amount of Two Thousand Five Hundred Dollars or may protest imposition of the civil penalties in whole or in part by a written answer. Should Northern States Power Company fail to answer within the time specified, the Director, Office of Inspection and Enforcement, will issue an order imposing the civil penalties in the amount proposed above. Should Northern States Power Company elect to file an answer in accordance with 10 CFR 2.205 protesting the civil penalties, such answer may: (1) deny the violations listed in this Notice, in whole or in part; (2) demonstrate extenuating circumstances; (3) show error in this Notice; or (4) show other reasons why the penalties should not be imposed. In addition to protesting the civil penalties, in whole or in part, such answer may request remission or mitigation of the penalties. In requesting mitigation of the proposed penalties, the five factors contained in Section IV.B of 10 CFR Part 2, Appendix C should be addressed. Any written answer in accordance with 10 CFR 2.205 should be set forth separately from the statement or explanation in reply pursuant to 10 CFR 2.201, but may incorporate by specific reference (e.g., citing page and paragraph numbers) to avoid repetition. The attention of Northern States Power Company is directed to the other provisions of 10 CFR 2.205 regarding the procedure for imposing a civil penalty.

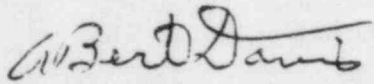
Upon failure to pay any civil penalty due, which has been subsequently determined in accordance with the applicable provisions of 10 CFR 2.205, this matter



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may be referred to the Attorney General, and the penalties, unless compromised, remitted, or mitigated, may be collected by civil action pursuant to Section 234c of the Act, 42 U.S.C. 2282.

FOR THE NUCLEAR REGULATORY COMMISSION

  
for James G. Keppler  
Regional Administrator

Dated at Glen Ellyn, Illinois  
this 15 day of November 1983



Northern States Power Company

414 Nicollet Mall  
Minneapolis, Minnesota 55401  
Telephone (612) 330-5500

December 16, 1983

Mr Richard C DeYoung, Director  
Office of Inspection and Enforcement  
U S Nuclear Regulatory Commission  
Washington, D C 20555

MONTICELLO NUCLEAR GENERATING PLANT  
Docket No. 50-263 License No. DPR-22

Response to NRC Enforcement Letter Dated November 22, 1983

This refers to the notice of violation and proposed imposition of civil penalties issued by the Director of Office of Inspection and Enforcement, NRC, to Mr C E Larson, NSP, dated November 22, 1983. Two alleged violations were referenced in this report. Pursuant to 10CFR2.201 and 10CFR2.205, the following report is herewith submitted.

In response to the violation designated as A in the notice of violation report: NSP agrees that 49CFR 173.245(b)(1) was violated.

Description of the Event

In May of 1983, the fill-head for the Chem-Nuclear mobile solidification unit had become contaminated to the extent that it was an external exposure hazard to personnel in the area. Decontamination failed and a new fill-head was obtained to replace the contaminated equipment.

Because of the exposure rates on the contaminated fill-head, it had to be made inaccessible to personnel. By placing it into a steel LSA box and positioning the box within a high radiation area, accessible whole body dose rates greater than 1000 mr/hr were prevented and the requirement to lock the area was negated. The fill-head remained as described for several months, for it was Chem-Nuclear's intention to have the equipment returned to Barnwell for refurbishing.

On September 15th, the Chem-Nuclear operator stationed at Monticello notified the radioactive material shipping coordinator that a shielded van was enroute to Monticello to retrieve the contaminated fill-head. The truck arrived on the following morning.

## NORTHERN STATES POWER COMPANY

Director, I&E  
December 16, 1983  
Page 2

The normal shipping process was initiated to handle the shipment. Two procedures were identified to provide instructions: #8110, MASTER RADIOACTIVE MATERIAL SHIPPING PROCEDURE, and #8077, RADIOACTIVE MATERIALS SHIPMENT-LSA-NOT EXCEEDING A TYPE "A" QUANTITY IN EXCLUSIVE USE VEHICLE.

Upon arrival of the shipment at Barnwell Waste Management Facility, a routine receipt inspection revealed a hole in the bottom of the box. Compliance personnel of the Chem-Nuclear organization at Barnwell subsequently notified the Monticello shipping coordinator by telephone. Even though NSP was not required to report this event, the U.S. Nuclear Regulatory Commission, Region III, was notified by NSP in accordance with the policy set forth in Section IV.A, paragraph (3), of 10CFR Part 2, Appendix C. Northern States Power offered to immediately send a representative to Barnwell to assist the site personnel with assessment or any cleanup that might be required. Because of the inconsequential nature and insignificance of the event, Chem-Nuclear stated that NSP presence was not necessary. Even so, Northern States Power did elect to send the Supervisor of Radiation Services at Chem-Nuclear's earliest convenience to inspect the LSA box, its contents and discuss the matter with site personnel.

### Cause of Violation

The box was punctured during transportation by a tie-down tab on the fill-head. There are four welded tie-down appendages extending radially from the upper part of the fill-head. When the fill-head was placed on its side in the box, two of the protruding tie-down tabs were supporting one end of the head. It is believed that the concentrated weight, combined with the vibrations associated with truck transportation, produced a puncture between the supporting skids on the bottom of the box.

In accordance with 49CFR 173.425(b)(1) which requires that shipments of low specific activity (LSA) materials transported in exclusive use vehicles must be packaged in strong, tight packages so that there will be no leakage of radioactive material under conditions normally incident to transportation, the fill-head was in a strong tight container when it left the Monticello Nuclear Plant. It was believed at that time by radwaste shipping personnel that there would be no breach of package integrity under conditions normally incident to transportation. It should also be noted that the fill-head was not removed from the LSA box for obvious ALARA concerns in regard to exposure but was braced to prevent any lateral movement.

### Immediate Corrective Steps Taken

Because of the nature of this event, there was no immediate corrective action available. The radioactive material was safely in the hands of another licensee and there was nothing that could undo or ameliorate the situation.

### Corrective Steps Taken To Avoid Further Violations

To prevent repetition of this event, several actions were taken. First, the problem was discussed with the personnel involved in the specific shipment, plus those who may be involved in future shipments, to ensure that the cause and possible preventive measures for this event are understood.

## NORTHERN STATES POWER COMPANY

Director, T&E  
December 16, 1983  
Page 3

Secondly, a representative traveled to Barnwell to take advantage of anything which could be learned from inspecting the box and contents or from talking to site personnel.

Finally, procedures #8077 (previously referenced) and #8089 (Radioactive Material Shipment - Type A Quantity, Fissile Exempt) were revised to include a step for the radioactive material shipping coordinator to inspect all packages, except compacted waste which is inspected prior to compaction, specifically to identify problems which could develop enroute.

### Date When Full Compliance Will Be Achieved

The procedures referenced, #8089 and #8077, were revised and approved October 6, 1983, only 20 days after the event was identified in accordance with the policy set forth in Section IV.A of 10CFR Part 2, Appendix C.

In response to the Violation designated as B in the Notice of Violation Report: NSP agrees that 49CFR173.441(b)(a) was violated.

### Description of the Event

Upon arrival of the LSA shipment containing the contaminated fill-head, previously discussed, at the Barnwell Waste Management Facility a routine receipt inspection revealed dose rates on contact with the bottom of the package in excess of 1000 mr/hr.

Compliance personnel of the Chem-Nuclear organization at Barnwell subsequently notified the Monticello shipping coordinator by telephone. In turn, the U.S. Nuclear Regulatory Commission, Region III was notified by NSP in accordance with the policy set forth in Section IV.A, paragraph 3, of 10CFR Part 2, Appendix C.

### Cause of Violation

Procedure #8077 used in conjunction with shipping operations at Monticello did not reflect the recent change, as of July 1, 1983, to the shipping regulations. This was an over-sight on the part of the Radiation Protection personnel who reviewed the rules revisions. It should be noted that as of July 1, 1983, there were substantial changes to the shipping regulations made by D.O.T. and if the shipment was made prior to that date there would not have been a violation.

### Immediate Corrective Steps Taken

Because of the nature of this event, there was no immediate corrective action available. The radioactive material was safely in the hands of another licensee and there was nothing that could undo or ameliorate the situation.

### Corrective Steps Taken To Avoid Further Violations

To prevent repetition of this event, shipping procedures #8077 and #8089 were revised to include the new exposure dose rate limit. Also, the problem was



## NORTHERN STATES POWER COMPANY

Director, I&E  
December 16, 1983  
Page 4

discussed with the personnel involved in the specific shipment, plus those who may be involved in future shipments to ensure that the cause and possible preventive measures for this event are understood.

### Date When Full Compliance Will Be Achieved

The shipping procedures #8089 and #8077 were revised and approved October 6, 1983, only 20 days after the event was identified in accordance with the policy set forth in Section IV.A of 10CFR Part 2, Appendix C.

With respect to the analysis of the event, the following is offered:

This event did not result in a release of radioactive material to the environment and did not present radiation exposure hazards for the general public in excess of allowable limits.

The hole did permit a small amount of radioactive material to escape the shipping package even though the majority of the contamination was fixed; however, the contamination was confined to a small area directly below the box on the bed of the enclosed trailer. (Chem-Nuclear surveys indicated  $\leq 4000$  dpm/100 cm<sup>2</sup>, within applicable limits.) Chem-Nuclear personnel attended to this matter and safely disposed of the material.

The exposure rates on the box did exceed the limits for the mode of transport, but the exposure rates measured on the accessible surfaces of the vehicle were within the limits established for all radioactive shipments. Since this was an exclusive use shipment, there was no occasion for the driver or other member of the general public to enter the trailer and be exposed to the excessive dose rates.

Section I of 10CFR Part 2 states "the purpose of the NRC enforcement program is to promote and protect the radiological health and safety of the public, including employees' health and safety, the common defense and security, and the environment ..." and "each enforcement action is dependent on the circumstances of the case and requires the exercise of the discretion after consideration of these policies and procedures."

It should be noted as addressed in Section III of 10CFR Part 2, Appendix C that the examples given in Supplement V (Transportation) of 10CFR Part 2, Appendix C do not create new requirements. They are neither exhaustive nor controlling. It states that, "in each case, the severity of a violation will be characterized at the level best suited to the significance of the particular violation", therefore to assess the violation as a Severity Level III merely because it appears as an example implies a mechanistic approach to the determination of severity levels, which is contradictory to Section VI of 10CFR Part 2, Appendix C.

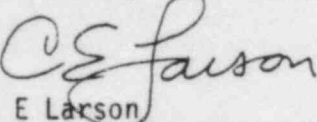
Based on the extenuating circumstances addressed above, Northern States Power respectfully requests that the violation be reconsidered as a Severity Level V and the enclosed \$2500 be remitted. We would also like to state, that Northern States Power is fully aware of its responsibilities to the health and safety of the public and recognizes the importance of properly packaging materials for shipment. This was demonstrated by NSP's prompt attention to the

NORTHERN STATES POWER COMPANY

Director, I&E  
December 16, 1983  
Page 5

aforementioned event. Therefore, to emphasize importance through an elevated enforcement action is unnecessary and contradictory to the policies and philosophies delineated in 10CFR Part 2.

Enclosed is a check for \$2,500. pending your disposition of the protested civil penalties, which is the amount specified in the NRC Enforcement Letter.

  
C E Larson  
Director of Nuclear Generation

cc: J G Keppler  
NRC Resident Inspector  
NRC NRR Project Manager

Enclosure



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

May 5, 1983

Docket Nos. 50-272  
50-311  
EA 83-24

Public Service Electric and Gas Company  
ATTN: Mr. Robert Smith  
Chairman of the Board  
Mail Code T15A  
P.O. Box 570  
Newark, New Jersey 07101

Gentlemen:

On February 25, 1983 at Salem Unit 1, a low-low water level condition in one of the four steam generators initiated a reactor trip signal in the Reactor Protection System (RPS). Both reactor trip circuit breakers failed to open in response to the RPS signal and hence, the reactor failed to automatically shut down (trip). About 25 seconds later, operators manually initiated a reactor trip from the Control Room which opened the reactor trip breakers and shut down the reactor.

On February 26, 1983 in response to NRC inquiries, Public Service Electric and Gas Company (PSE&G) personnel reviewed the computer sequence of events printout for a reactor trip event on February 22, and determined that the reactor trip breakers had similarly failed to open in response to a valid RPS signal on February 22. Although PSE&G personnel had previously reviewed the February 22 event prior to restart of the reactor on February 23, they did not recognize at that time that the reactor trip breakers had failed to automatically open. As a result, the reactor was restarted on February 23, 1983 and operated until the event of February 25, 1983 even though the RPS could not be considered operable.

An NRC fact-finding task force was at the Salem site on March 2-6, 1983, and they conducted a review of the circumstances surrounding the February 22 and 25 events. The results of this review were published as NUREG-0977, dated March 1983. This and other NRC and PSE&G efforts revealed significant deficiencies which contributed to the inoperability of the reactor trip breakers. These deficiencies involved 1) failure to adequately investigate previous failures to identify and correct conditions adverse to quality; 2) failure to correctly include the breakers on the Master Equipment List (MEL); 3) failure to properly implement procurement procedures; 4) failure to properly implement, control, and distribute the MEL which contributed to inadequate quality assurance review of procurement and maintenance; 5) failure to identify and control safety-

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

related components; and 6) failure to implement surveillance testing requirements. PSE&G efforts to correct these deficiencies are addressed in the Salem Restart Safety Evaluation Report. In addition, you have failed to promptly report, as required, certain events to the NRC.

We view the events of February 22 and 25, 1983 as very serious matters. On February 22, the reactor trip breakers failed to open automatically upon demand, apparently because of the deficiencies described in Item II of the Notice of Violation. You failed to recognize, prior to restart of the reactor on February 23, that the reactor trip breakers had failed to open automatically on February 22. As a result, the reactor was operated for three additional days during which time the reactor protection system could not be considered operable. Accordingly, each day from February 22 through February 25 has been considered a separate violation for purposes of assessing a civil penalty.

The deficiencies identified above as contributing causes to these events are of as great a concern to the Commission as the events themselves. The Commission has concluded that these contributors to the events of February 22 and 25 are the result of insufficient management involvement in establishing a safety perspective, in requiring attention to detail, and in ensuring procedural adherence. You are responsible for the safe operation of the facility and are responsible for ensuring that full attention is given to safety considerations, including ensuring that adequate procedures exist for the conduct of plant operations, maintenance, procurement and quality assurance review, and ensuring that procedures are properly implemented and adhered to.

We are proposing extraordinary regulatory actions to assure that you will fully implement lasting corrective actions that address the violations described in the enclosed Notice. Accordingly, I have been authorized, after consultation with the Commission, to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalties in the amount of Eight Hundred and Fifty Thousand Dollars (\$850,000) for the violations set forth in the enclosed Notice. These violations have been categorized in accordance with the NRC Enforcement Policy (10 CFR 2, Appendix C) published in the Federal Register 47 FR 9987 (March 9, 1982). Item I is classified as a Severity Level I violation. Because of the seriousness of the events on February 22 and 25, the NRC is applying its full civil penalty authority in determining the civil penalty for each day the reactor was operated with inoperable trip breakers. Item II is comprised of six separate violations which, in the aggregate, have been classified as Severity Level II. The Commission has determined that these contributors to the events of February 22 and 25 are as significant as the events themselves and should be assessed a cumulative civil penalty equivalent to the amount assessed for Item I. Item III is classified at Severity Level III and the civil penalty has been increased 25% because of multiple occurrences of reporting failures and because these reporting failures were discussed with you prior to the February 25 event.

You are required to respond to the Notice. In preparing your response, you should follow the instructions specified in the Notice. In addition, your response should include your specific actions and implementation plans for each violation cited as well as addressing your plans and actions to correct



Public Service Electric  
and Gas Company

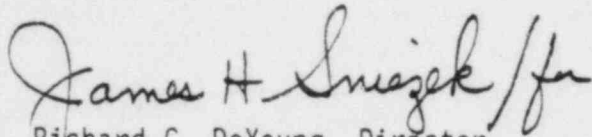
- 3 -

the problems identified in this letter. Your written reply to this letter and the results of future inspections will be considered in determining whether further enforcement action is appropriate.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosure will be placed in the NRC's Public Document Room.

The responses directed by this letter and the accompanying Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,

A handwritten signature in dark ink, appearing to read "James H. Sniezek / for". The signature is fluid and cursive, with a large initial "J" and a stylized "S".

Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Enclosure:  
Notice of Violation and Proposed  
Imposition of Civil Penalties

NOTICE OF VIOLATION  
AND  
PROPOSED IMPOSITION OF CIVIL PENALTIES

Public Service Electric and Gas Company  
Salem Nuclear Generating Station, Units 1 & 2

Docket Nos. 50-272, 50-311  
License Nos. DPR-70, DPR-75  
EA 83-24

A special NRC review was conducted at the Salem site on February 25 and 26, 1983 in response to an event that occurred on February 25, 1983 at Unit 1, when the reactor trip breakers failed to automatically open following receipt of a valid trip signal from the Reactor Protection System (RPS). As a result of NRC inquiries, Public Service Electric and Gas Company (PSE&G) determined on February 26, 1983 that both reactor trip circuit breakers had similarly failed to open upon receipt of a valid trip signal on February 22, 1983. The failure of the reactor to automatically trip on February 22 was not recognized by the licensee during the post-trip review. Subsequent reexamination on February 26, 1983 of the computer printout of the sequence of events (SOE) resulted in recognition of the February 22, 1983 failure. On March 1, 1983 an NRC Region I Task Force was established to conduct a fact-finding and data collection review of the February 22 and 25 events. This review was performed on March 2-6, 1983 and the results of the review are documented in NUREG 0977, "NRC Fact-Finding Task Force Report on the ATWS Events at Salem Nuclear Generating Station Unit 1, on February 22 and 25, 1983," dated March 1983.

The event of February 22 involved a transient initiated by a loss of the IF 4-kV group bus during a transfer of the bus to the auxiliary power transformer. Loss of this bus resulted in the loss of a reactor coolant pump, loss of control and indication for the only operating main feed pump, and loss of a substantial amount of non-safety-related instrumentation and other equipment. Loss of feed pump control caused steam generator levels to drop resulting in a low-low steam generator level in No. 13 steam generator which generated a RPS trip signal. At about the same time, the shift supervisor ordered a manual reactor trip because of the degrading plant conditions.

A review of the February 22 event was conducted by Public Service Electric and Gas Company personnel prior to startup on February 23. Among other things, the sequence of events printout was examined during this review and it revealed that the automatic trip signal preceded the manual trip signal. This led the reviewers to conclude that the automatic trip signal had actually tripped the reactor. As noted above, the more detailed review on February 26, 1983 of the SOE printout revealed that the reactor was in fact tripped (reactor trip breakers opened) by the manual trip signal which occurred 3.6 seconds after the automatic trip signal. Consequently, it should have been evident that both reactor trip breakers had failed to open in response to a valid RPS signal. As a result of the lack of recognition that the reactor trip breakers had failed to automatically open on

February 22, the reactor was restarted on February 23, 1983 although the RPS could not be considered operable.

The failure of the reactor trip breakers to automatically open was caused by a malfunction of the undervoltage (UV) trip attachments in both reactor trip circuit breakers. These UV trip attachments translate the electrical signal from the RPS to a mechanical action that opens the circuit breaker.

Failure of the RPS to automatically shut down the reactor when it receives a valid trip signal is of great concern to the NRC. The violations identified below as contributing causes to this event are of equal concern to the Commission.

To assure that PSE&G will fully implement lasting corrective actions that address the violations identified in this Notice, the Nuclear Regulatory Commission proposes to impose a civil penalty of Eight Hundred and Fifty Thousand Dollars (\$850,000) for this matter. In accordance with the NRC Enforcement Policy (10 CFR Part 2, Appendix C) 47 FR 9987 (March 9, 1982), and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended ("Act"), 42 U.S.C. 2282, PL 96-295, and 10 CFR 2.205, the particular violations and their associated penalties are set forth below:

- I. Technical Specification 3.3.1.1 and Table 3.3-1 require two Reactor Trip Breakers be operable when the reactor is operated in Modes 1 and 2. With one breaker inoperable, and consequently one channel inoperable, the reactor is required to be in Hot Standby within six hours.

Contrary to the above, the Salem Unit 1 plant was operated in Modes 1 and 2 on February 22, 1983 with both RPS reactor trip breakers inoperable in that both RPS reactor trip breakers failed to operate automatically upon receipt of a valid trip signal caused by low-low steam generator level. The reactor was manually tripped from the control room. During the post-trip review of the events by Public Service Electric & Gas Company personnel, the failure of the reactor to automatically shut down was not recognized and, as a result, the reactor was taken critical on February 23, 1983 without the circumstances surrounding the February 22, 1983 event being properly evaluated in accordance with the Salem Station Administrative Procedures. Consequently, the Salem Unit 1 plant was again operated in Modes 1 and 2 with both reactor trip breakers inoperable from February 23, 1983 until approximately 12:21 a.m. on February 25, 1983 when both RPS reactor trip breakers again failed to operate upon receipt of a valid trip signal caused by low-low steam generator level. Each day the reactor operated with inoperable trip breakers constitutes a separate violation for which a civil penalty of \$100,000 is proposed.

This is a Severity Level I violation (Supplement I)  
Civil Penalty - \$400,000

- II. 10 CFR Part 50, Appendix B, requires the licensee to establish a quality assurance program.

Public Service Electric and Gas Company implements a quality assurance program through its Quality Assurance Manual, dated April 28, 1977.

However, as described below, the licensee did not properly implement certain aspects of its quality assurance program. This contributed to the reactor trip breakers being inoperable as described in Item I.

- A. Criterion XVI of 10 CFR, Part 50, Appendix B, requires in part, that "Measures shall be established to assure that conditions adverse to quality such as failures, malfunctions . . . are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition."

Contrary to the above,

Following the breaker failures at Unit 2 on August 20, 1982 and January 6, 1983, the licensee failed to adequately investigate the cause of the breaker failures, and failed to take corrective action with regard to the failed breakers and to inspect and service all of the reactor trip breakers on Units 1 and 2.

This is a Violation.  
Civil Penalty - \$100,000

- B. Criterion II of 10 CFR 50, Appendix B, requires in part, that "The applicant shall identify the structures, systems, and components to be covered by the quality assurance program..." The station issued the MEL in July, 1981 by incorporation in AP-9, "Control of Station Maintenance", to be used to classify components included in the Salem Q list as contained in QAI 2.1, Attachment 1, and UFSAR Table 17.2-1, which lists the items to which the operational QA program applies.

Contrary to the above, the licensee did not establish adequate control over the MEL. As a result,

1. The reactor trip breakers and the reactor protection system, which are safety-related, were not listed on the Master Equipment List (MEL), issued in July, 1981.
2. Administrative Procedure AP-19 (Revision 4, September 18, 1980) describes the MEL as containing a list of Salem items and appropriate safety, seismic and QA-required ("QA") classification; however, the MEL was not issued as a controlled document by the originating Engineering Department and provisions for incorporating additional classifications or updating of the MEL were never implemented.

This is a violation.  
Civil Penalty - \$80,000 I.A-146



- C. Criterion IV of 10 CFR 50, Appendix B, requires in part, that "Measures be established to assure that applicable regulatory requirements, design bases, and other requirements which are necessary to assure adequate quality are suitably included or referenced in the documents for procurement of material, equipment and services...."

Administrative Procedure AP-19, Revision 4, describes procurement as a two-step process in which (1) the item is identified and classified and the applicable quality requirements are established utilizing the Material Order/Item Classification Form (MO/IC), and (2) the MO/IC is formalized, administrative review is obtained, and approval is obtained in accordance with the appropriate Quality Assurance Instruction (QAI) utilizing the Material Request and Receiving Record (MR/RR).

Contrary to the above,

1. On January 27, 1982 Purchase Order No. 839270 was issued to purchase items identified in MO/IC 9944 issued on June 1, 1981 for a DB-50 type A circuit breaker and separate components (except UV attachment), without following this process in that:
  - (a) MO/IC 9944 incorrectly classified the DB-50 Type A circuit breaker and separate components (except the UV attachment) as Seismic Category 2. Under the Updated Final Safety Analysis Report (UFSAR), Section 3.2, the reactor protection system is Seismic Class 1.
  - (b) MO/IC 9944 was neither reviewed by the Station Quality Assurance Engineer (SQAE) nor the Sponsoring Engineer contrary to QAI 4-1 and QAI 4-3.
2. Notwithstanding Section 4.4.3 of AP-19 which provides that an item cannot be classified as a Commercial Catalog Item (CCI) if it is not on a document which identifies it as an authorized replacement for the original or existing item, on August 27, 1982 MO/IC 20299 and MR/RR 7518 for Purchase Order 866077, classified undervoltage (UV) trip attachments for the reactor trip circuit breakers, components of the RPS, as CCI even though no document existed which identified the UV trip attachments ordered as authorized replacements.
3. Notwithstanding the requirement of Section 4.4.3 of AP-19 stated above, on February 25, 1983, MO/IC 28445 was issued for eight UV trip attachment components for the reactor protection system. These components were classified as CCI even though a document did not exist which identified the UV trip attachment as authorized replacements for the original or existing items. These components were received onsite per MR/RR 1644-M, and

receiving inspection was not performed for these delivered components prior to providing them to the requesting department, contrary to AP-19 requirements.

This is a violation.  
Civil Penalty - \$60,000

- D. Criterion V of 10 CFR 50 Appendix B, requires in part, that "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished."

Contrary to the above,

1. Administrative Procedure AP-9, "Control of Station Maintenance", requires the Master Equipment List (MEL) to be used for equipment classification. However, maintenance department personnel were not using the MEL. Consequently on January 10, 1983 Work Order No. 925774 was issued to perform the following work: disassemble, inspect and clean, reassemble and test the Unit 1 reactor trip breakers. The maintenance department used Project Directive 7 (PD-7) instead of the MEL and was unable to locate the reactor trip breakers on the PD-7 (although they were listed and properly classified on PD-7) to determine the safety classification. As a consequence, Work Order 925774 was classified as non-safety-related.
2. Administrative Procedure AP-9, "Control of Station Maintenance," requires notification of the QA staff prior to performing safety-related work and a QA review of completed safety-related work orders. For all safety-related work orders on the reactor trip and bypass breakers, prior notification was made; however, work orders TM-0053 (for Unit 2 prior to receipt of operating license), 902975, 917753, and 936238 did not receive QA review after work was completed.
3. From initial operation in December 1976 of Unit 1, and from August, 1980 for Unit 2, until January 1983, the licensee did not perform preventive maintenance on reactor trip and bypass breakers. For the maintenance performed in January 1983, the maintenance was conducted without an appropriate procedure although the reactor trip breakers are safety-related.

This is a violation.  
Civil Penalty - \$60,000

- E. Criterion VIII of 10 CFR 50, Appendix B, requires in part, that "Measures shall be established for the identification and control of materials....These measures shall assure that identification...is maintained...or records traceable to the item, as required throughout...use of the item."

Contrary to the above,

As of February 25, 1983 the licensee had not maintained a system to trace breaker location (i.e., which breaker is in which location). However, the reactor trip breakers were switched with the bypass breakers and with reactor trip breakers in the other Unit. Any of the eight breakers involved (four for each Unit), could be interchanged.

This is a violation.  
Civil Penalty - \$50,000

- F. Technical Specification Table 4.3-1 (21), Reactor Trip Instrumentation Surveillance Requirements, requires that each reactor trip breaker be functionally tested bi-monthly and within 7 days prior to startup.

Contrary to the above,

On February 22, 1983, the "B" reactor trip bypass breaker was placed in service as the "B" reactor trip breaker, even though the breaker should have been considered inoperable because the bypass trip breaker was not functionally tested prior to startup on February 22, 1983 to determine its ability to trip automatically on undervoltage.

This is a violation.  
Civil Penalty - \$50,000

Violations A through F, when viewed in the aggregate, have been categorized at a Severity Level II (Supplement I). The Commission has determined that these contributors to the events of February 22 and 25 are as significant as the events themselves and should be assessed a cumulative civil penalty equivalent to the amount assessed for Item I. The amount assessed for each violation is based on the relative significance of each violation to the other violations included in this Item.

Cumulative Civil Penalty - \$400,000

- III. 10 CFR 50.72 requires, in part, that each licensee notify the NRC Operations Center as soon as possible, and in all cases within one hour of (1) any event resulting in manual automatic actuation of Engineering Safety Features, including the RPS, and (2) any event that results in the nuclear power plant not being in an expected condition while operating or shut down.

Contrary to the above,

The NRC Operations Center was not notified within one hour of events which required such notification in accordance with 10 CFR 50.72 as evidenced by the following:

Notice of Violation

- 7 -

- A. On January 30, 1983 at approximately 5:50 p.m., a safety injection occurred during cooldown of the reactor and the NRC Operations Center was not notified until 7:27 p.m.
- B. On February 22, 1983 at approximately 9:56 p.m., the plant was shut down because of not being in an expected condition (loss of a reactor coolant pump, loss of a main feed pump, loss of a substantial amount of nonsafety instrumentation indication, and steam generator levels dropping rapidly), and the NRC Operations Center was not notified until 11:34 p.m. Also, although there was a safety injection and the PORVs lifted at 10:11 p.m., this was not reported to the NRC until February 23, 1983 at 12:12 a.m.
- C. On February 25, 1983, at 12:22 a.m., the plant was shut down manually, 25 seconds after it failed to shut down automatically upon receipt of a valid shutdown signal, and the NRC Operations Center was not notified of this unexpected condition until 1:46 a.m.

This is a Severity Level III violation (Supplement I)  
Civil Penalty - \$50,000

Pursuant to the provisions of 10 CFR 2.201, Public Service Electric and Gas Company is hereby required to submit to the Director, Office of Inspection and Enforcement, USNRC, Washington, DC 20555 and a copy to the Regional Administrator USNRC, Region I within thirty days of the date of this Notice a written statement or explanation in reply, including for each violation: (1) admission or denial of the alleged violation; (2) the reasons for the violation if admitted; (3) the corrective steps which have been taken and the results achieved; (4) the corrective steps which will be taken to avoid further violations; and (5) the date when full compliance will be achieved. Consideration may be given to extending the response time for good cause shown. Under the authority of Section 182 of the Act, 42 U.S.C. 2232, this response shall be submitted under oath or affirmation.

Within the same time as provided for the response required above under 10 CFR 2.201, Public Service Electric and Gas Company may pay the civil penalty of Eight Hundred and Fifty Thousand Dollars (\$850,000) or may protest imposition of the civil penalty in whole or in part by a written answer. Should Public Service Electric and Gas Company fail to answer within the time specified, this office will issue an order imposing the civil penalty in the amount proposed above. Should Public Service Electric and Gas Company elect to file an answer in accordance with 10 CFR 2.205 protesting the civil penalty such answer may: (1) deny the violation presented in this Notice in whole or in part; (2) demonstrate extenuating circumstances; (3) show error in this Notice; or (4) show other reasons why the penalty should not be imposed.

In addition to protesting the civil penalty in whole or in part, such answer may request remission or mitigation of the penalty. Any written answer in accordance with 10 CFR 2.205 should be set forth separately from the statement or explanation in reply pursuant to 10 CFR 2.201, but may incorporate by specific reference (e.g., citing page and paragraph numbers) to avoid repetition.



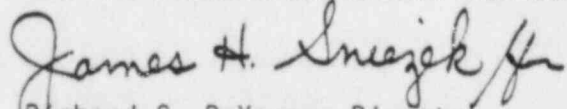
Notice of Violation

- 8 -

In requesting mitigation of the proposed penalty, the five factors contained in Section IV.B of 10 CFR Part 2, Appendix C should be addressed. Public Service Electric and Gas Company's attention is directed to the other provisions of 10 CFR 2.205, regarding the procedure for imposing a civil penalty.

Upon failure to pay any civil penalty due, which has been subsequently determined in accordance with the applicable provisions of 10 CFR 2.205, this matter may be referred to the Attorney General, and the penalty unless compromised, remitted, or mitigated, may be collected by civil action pursuant to Section 234c of the Act, 42 U.S.C. 2282.

FOR THE NUCLEAR REGULATORY COMMISSION

A handwritten signature in dark ink, appearing to read "James H. Smejck" followed by a stylized flourish.

Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Dated at Bethesda, Maryland  
this 5th day of May 1983

Public Service  
Electric and Gas  
Company

**R. Edwin Selover**

Vice President and  
General Counsel

80 Park Plaza, Newark, NJ 07101 201-430-6450 Mailing Address: P.O. Box 570, Newark, NJ 07101

July 6, 1983

Mr. Richard C. DeYoung, Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Re: Notice of Violation and Proposed Imposition  
of Civil Penalties  
Docket Nos. 50-272, 50-311,  
License Nos. DPR-70, DPR-75  
EA 83-24

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Dear Mr. DeYoung:

Public Service Electric and Gas Company (the "Company") is in receipt of your letter dated May 5, 1983, and the Notice of Violation and Proposed Imposition of Civil Penalties (the "Notice of Violation") attached thereto. On June 9, 1983, the NRC extended until July 6, 1983 the date by which the Company could respond. This letter constitutes the Company's response to the Notice of Violation.

The Company is well aware of the significance of the events which occurred on February 22 and February 25, 1983 at Salem Generating Station ("Salem") Unit 1. As indicated on page 1-1 of Volume 1 of NUREG-1000 (Generic Implications of the ATWS Events at the Salem Nuclear Power Plant), although the conditions leading to the demand for both of such trips and the rapid manual shutdown of the reactor by the operators turned these events into little

more than routine reactor shutdowns, we agree that the implications of such events, in terms of reactor trip system reliability in particular, and of adherence to procedures in general, are both significant and far-reaching for the Company and for the entire nuclear industry.

However, we believe that those events, and their contributing factors, do not justify imposition of a civil penalty of the magnitude proposed by the NRC. The significant generic implications should not be allowed to obscure either the relatively benign nature of the actual events or what constitutes an appropriate enforcement action based on the facts in this case.

The February 22 and 25, 1983 incidents at Salem have been carefully scrutinized by the Commission. Every past action of the Company has been placed under a microscope, dissected and analyzed. As you are aware, top management of the Company has been intimately involved in the investigation of the incidents. Management has also actively taken part in proposing remedial steps to assure that lasting corrective actions will be taken, both with regard to the failure of the trip breakers themselves and to adherence to procedures at Salem.

There seems to be little point in attempting to re-review the events which are the subject of the Notice of

Violation. They have been the subject of numerous meetings with the Staff, letters, reports and formal Commission meetings. The essential facts are not in dispute. The short-term actions have already been completed and the longer term matters are the subject of the NRC's Order Modifying License Effective Immediately dated May 6, 1983, and are being actively pursued. We wish to merely emphasize a few points related to these incidents to give a perspective which was perhaps previously lacking and which is relevant to the amount of any civil penalty.

A careful analysis of events leading to and involving the occurrences on February 22 and February 25, 1983, indicates that the Company's maintenance practices were consistent with the instructions supplied to the Company by Westinghouse, the vendor that supplied the reactor trip breakers. In addition, in the most recent SALP Report for Salem (January 11, 1983), the NRC Staff rated maintenance in Category 1, reflecting: "Licensee management attention and involvement are aggressive and oriented toward nuclear safety; licensee resources are ample and effectively used such that a high level of performance with respect to operational safety or construction is being achieved." The record also reflects that prompt and comprehensive remedial action was taken by Company management to assure that these



events do not recur and that all necessary improvements were made or committed to. The Company is further engaged in a test program to determine the life cycle and replacement interval for the undervoltage trip attachments and to verify the adequacy of the Company's new maintenance and surveillance procedures used on the reactor trip circuit breakers. The benefits of this program will certainly be industry-wide.

The Company is not at this juncture requesting a formal hearing on the proposed factual findings set forth in the Notice of Violation. We take specific note in this regard of the meticulous attention to detail and the high standard of compliance the NRC expects of its licensees (10 C.F.R. Part 2, Appendix C, General Policy and Procedure for NRC Enforcement Actions ("Enforcement Policy") at I). We further recognize that this standard imposes a very high level of conduct on the Company, a standard which we believe is necessarily more stringent than virtually every other standard of conduct imposed by other regulatory schemes, whether under federal or state law.

While we recognize that there are areas involving procedures and procedure adherence which can be strengthened with respect to our nuclear operations, we continue to believe, as previously discussed with the

Commission, that corporate management in general has been involved in taking actions to assure a strong nuclear organization and that on-site management capability is the equal of any in the country. Further, since the Salem events, we have implemented new operating, maintenance and quality assurance (QA) procedures. We have also instructed personnel in these procedures and in the importance that they be strictly adhered to, and we are carefully monitoring performance so as to assure improvement in station operation. Finally, we are working diligently to properly identify any further areas for improvement, both on our own and with the assistance of Management Analysis Company ("MAC"), and we will make whatever changes may be required so as to strengthen overall performance.

Accordingly, it is the Company's position that the civil penalty as proposed in this case is not warranted based on the undisputed factual record and, therefore, that the penalty should be mitigated as a result.

I. Mitigation of the Proposed Penalty  
is Warranted in Light of  
the Company's Corrective Actions

It is beyond dispute that Section 234 of the

Atomic Energy Act authorizes the NRC to impose only civil penalties. The legislative history of that provision states "The penalties authorized [in that section] are civil only and are remedial in nature as opposed to punitive" (S. Rep. No. 91-553, 91st Cong., 1st Sess., Reprinted in (1969) U.S.Code Cong. Admin. News 1607, 1622). Recent amendments to Section 234 increasing the statutory maximum of civil penalties to \$100,000 per violation with no upper limit do not change the nature of these penalties.

The Enforcement Policy reflects this statutory requirement and states at IV. B. "Civil penalties are designed to emphasize the need for lasting remedial action and to deter future violations." Because Section 234 requires that civil penalties be remedial in purpose, and because the Commission recognizes the need to relate such civil penalties to potential improvement of conduct, it follows that an adequate factual basis must exist for the NRC to believe that the proposed civil penalty in this case will serve a remedial purpose.

Simply stated, we believe the NRC has no basis upon which to conclude that the imposition of a large civil penalty in this proceeding will serve any remedial purpose. The proposed penalty is unnecessary in that the significant, corrective actions described below were either completed or

were committed to as a comprehensive remedial program prior to the issuance of the Notice of Violation. Thus, imposition of the civil penalty will not contribute in any meaningful way towards achieving compliance with NRC regulations.

As indicated in the April 29, 1983 letter from the NRC Staff authorizing the restart of Salem 1, the program of corrective actions which the Company implemented is documented in its letters to the NRC dated March 1, 8, 14, 18, 23 and April 4, 7, 11, 22, 27, and 28, 1983. Such corrective actions include the following:

1. A new detailed maintenance procedure, M3Q-2, "Reactor Trip and Bypass ACB Inspection and Test," was developed and approved by the Company. This procedure, which applies to the circuit breakers, including the undervoltage trip attachments, is based upon and refers to current Westinghouse procedures. It encompasses electrical testing of the breakers, notification of the Technical Department of the need for post-maintenance testing and appropriate QA inspection hold points. A Caution Notice has been placed on the switchgear cabinets directing personnel to



adhere to procedure M3Q-2 for all trip breaker maintenance.

2. New undervoltage trip attachments were obtained, tested and installed in each of the four Salem 1 breakers prior to restart. Similar actions have been taken with respect to Salem 2 prior to its restart scheduled in July 1983.
3. Surveillance/maintenance procedures associated with the Solid State Protection System were revised to increase the frequency of surveillance testing of the reactor trip breakers from every other month to once a month. Also, the main breakers will be functionally tested within 24 hours prior to startup, instead of within 7 days prior to startup. Further, every six months, the main and bypass breakers will be surveillance tested and maintained. This will include: response time testing; trip bar lift force measurements; undervoltage trip attachment output force measurement; drop out voltage check; and servicing, maintenance and adjustments.

4. Emergency Instruction I-4.3, Reactor Trip, for Salem 1 and 2, was revised to include the requirement to manually trip the reactor trip breakers on all reactor trips.
5. Formal reactor trip/safety injection post trip review procedures were developed to specify the requirements and criteria that must be met prior to start-up. Under these procedures, the Station Operations Manager may authorize restart following a reactor trip or safety injection provided that the Post Trip Review has been completed, evaluated, and reviewed with the Operations Manager, and the evaluation clearly indicates the cause of the event, and that all equipment and systems functioned as designed. These procedures require that if the cause of the event has not been clearly determined, or there is a question concerning the proper performance of equipment or systems during the event, an investigation will be conducted and the results reviewed by the Station Operations Review Committee, which shall make recommendations to the General Manager - Salem

Operations on reactor start-up. The review of the sequence of events printouts will be conducted by senior reactor operator licensed personnel familiar with the various control room recorders and alarm printouts. Training on the interpretation of the sequence of events recorder printouts has been conducted, and additional training will follow. Prior to completion of the additional training, an individual supervisor knowledgeable on the sequence of events recorder and who understands expected equipment response times will review sequence of events printouts for all reactor trips or safety injections prior to restarting the plant.

6. Licensee Event Reports, deficiency reports, maintenance work sheets and work orders are being reviewed to identify items requiring preventative maintenance. The preventative maintenance program will then incorporate the results of this review.
7. Reactor trip and bypass breaker traceability has been established by recording the location of each breaker by serial number on a

documentation sheet which has been incorporated into the M3Q-2 Maintenance Procedure.

8. All Westinghouse technical bulletins, manuals, and other documents, pertaining to Westinghouse safety equipment utilized at Salem have been obtained on a controlled document basis and reviewed.
9. The administrative procedure for the control of station maintenance has been revised to include QA review of all work orders designated non-safety related prior to performing the work in order to assure proper classification.
10. The importance of adhering to the reporting requirements of 10 CFR 50.72 has been re-emphasized to operating personnel, and the appropriate procedures, personnel training and communications methods were revised to assure that notifications are made within the required time periods.
11. Additional training was conducted prior to start-up to re-emphasize and strengthen the operators' understanding of the Solid State



Protection System and the significance of associated alarms and indicators. Such training was in addition to the regular requalification training program which has itself been revised to emphasize these subjects.

12. The Master Equipment List (MEL) has been updated and re-issued as a controlled document. Appropriate personnel were indoctrinated in the purpose and use of the MEL.
13. The Nuclear Review Board was reconstituted prior to the February events to strengthen its operations.
14. A member of the Safety Review Group is being assigned to the Station Operations Review Committee.
15. The Company had authorized an independent assessment of the QA program prior to the February events, which will be submitted to the NRC in July 1983.
16. The Company has undertaken an independent management diagnostic study of the structure, management systems and staffing of the Nuclear

Department by Management Analysis Company. The report, including an Action Plan recommended by MAC, was submitted to the Company which forwarded it to the NRC on June 29, 1983. The Company is evaluating the MAC recommendations and will report thereon to the NRC by August 29, 1983.

17. The Company committed to establish a Nuclear Oversight Committee reporting directly to its Board of Directors to provide an independent basis for evaluating the effectiveness of plant operations in terms of nuclear safety.
18. The Company has committed to a test program to determine the life cycle and replacement interval for undervoltage trip attachments and to verify the adequacy of new maintenance and surveillance programs used on reactor trip circuit breakers. This program is scheduled to be completed by October 1983, and the results will be made available to the NRC and the nuclear industry generally.
19. Additional training has been provided to all operators concerning those procedures which were revised following the February events

prior to start-up. Testing was administered to assure satisfactory comprehension.

20. The procurement procedure has been reviewed and an interim procedure to strengthen the procurement program was established. A final procedure will be implemented in July 1983. This procedure will include requirements and responsibilities for proper classification of items and control of the procurement process. Appropriate personnel will be instructed in the use of this procedure.
21. A system has been instituted whereby all vendor technical documents are received by nuclear engineering for evaluation and determination of applicability for Salem.
22. A program has been instituted covering all safety-related equipment included on the Salem Master Equipment List to provide verification that all equipment manuals are under a document control system.
23. The Company committed to expedite the staffing the Nuclear Assurance and Regulation Department so as to be completed by January 1984.

24. A complete managed maintenance program for all safety-related systems will be implemented by January 1984.

In view of these extensive corrective actions, a number of which will result in beneficial information or model procedures for the entire nuclear industry, the Company submits that no valid regulatory purpose will be served by the imposition of a large civil penalty in this case. The NRC Staff itself has stated that the civil penalty in this case was proposed "to assure that PSE&G will fully implement lasting corrective actions that address the violations identified in [the Notice of Violation]." The corrective actions described above clearly demonstrate that this goal has been accomplished without civil penalty. Therefore, mitigation of the proposed civil penalty is warranted.

Three of the four goals of the NRC Enforcement Policy have already been achieved. Through this enforcement action and the Company's extensive commitments outlined above, the NRC Staff has acted to ensure compliance with NRC regulations and license conditions, to obtain prompt correction of noncompliance and to deter future non-compliance. By mitigating the proposed civil penalty, it



will accomplish the fourth goal of that policy: viz., encouraging improvement of licensee performance, and by example, that of the industry. We believe that this fourth goal is critical and should not be ignored. NUREG-1000 (Abstract, p. iii) states "regulatory and programmatic changes will be incorporated into the Regulations, Standard Review Plan, manual chapters, and other documents as necessary to assure continued attention to the lessons learned from the Salem Unit 1 ATWS events." We believe that this is a far better approach towards achieving the goal of improvement in overall licensee performance throughout the industry than by isolating a single facility and imposing a large civil penalty.

II. Conditions Surrounding the February 22  
Event Obscured the Breaker Failures and  
Should be Considered in Mitigation

The circumstances surrounding the February 22, 1983 event at Salem should be considered in understanding why the related post-trip review did not uncover the failure of the automatic trip at that time. Although we recognize that licensees must correctly determine the cause of a plant shutdown prior to restart, we believe the three points below should be considered in determining the amount of any civil penalty. The NRC Region I Inspection Report

No. 50-272/83-06, 50-311/83-05 issued April 11, 1983 briefly describes (pages 12 and 13) this event as follows:

"Following repairs to the Control Rod Drive power supplies, the reactor was critical at 3:16 p.m. and the unit synchronized at 8:36 p.m. on February 22. At 9:55 p.m. on February 22, 1983, with the reactor at 20% power, the operators were transferring the 4KV Group Buses from Station Power Transformers to the Auxiliary Power Transformers. When the operator attempted to transfer the 1F 4KV bus, the infeed breaker from the Auxiliary Power Transformer failed to close, de-energizing the bus resulting in the loss of the 13 reactor coolant pump (RCP) and a loss of control power and indication for the 12 main feed pump (MFP) which began to coast down. At 9:56 p.m., the reactor was tripped. An automatic trip signal on 13 low-low steam generator level occurred at about the same time that the operator manually actuated the trip switch because he had lost feedwater control and indication and had decreasing steam generator level.

"The reactor trip/turbine trip started the automatic transfer of the group buses from the Auxiliary Power Transformers to the Station Power Transformers. This resulted in the Station Power Transformer infeed breaker to the 1F 4KV Group Bus closing, re-energizing the bus, simultaneously starting all the loads still connected, thus causing an undervoltage condition on the transformer. This undervoltage condition caused the 1B 4KV Vital Bus to transfer to the 12 Station Power Transformer. The 13 RCP locked rotor protection tripped the 13 RCP breaker. All auxiliary feedwater pumps started automatically on the low-low steam generator level. Since steam generators 11 and 13 provide steam to the turbine driven auxiliary feed pump and since there was no reactor coolant flow through the 13 steam generator because of the de-energized 13 RCP, a 100 psi differential pressure developed between main steam line 13 and other steamlines. The protection system sensed that as a steam line break and initiated a safety injection at 10:04

p.m. Pressurizer level decreased to 1% before safety injection flow started increasing level. At 10:06 p.m. it was noted that the 11 RCP had tripped (reason unknown).

"With both the 11 and 13 RCP's tripped, no spray flow was available to limit pressurizer pressure. As pressurizer level increased from safety injection flow, pressure also increased to the PORV setpoint and actuated the PORV's which remained open relieving to the pressure Relief Tank until the safety injection was terminated at 10:11 p.m., by operators, when pressurizer level reached 22%. Both PORV's then closed, placing the plant in a stable condition in Mode 3 (Hot Standby). At 11:34 p.m. the operators made the required notification to the NRC Operations Center concerning the trip. At 3:00 a.m. on February 23, the 13 RCP was returned to service. The 11 RCP was returned to service at 11:17 a.m. after inspection and testing of the RCP breaker failed to identify any malfunction. At 6:28 a.m. the block valve for PORV PR-2 was closed because of seat leakage on PR-2.

"The inspectors began a followup review of this event at 7:00 a.m. on February 23. The inspectors were provided with the licensee's internal report of the analysis of the event. The report included a cover memo from the Operations Engineer to the Plant Manager which stated that a detailed investigation had been completed which showed that the reactor had tripped automatically about 1 second before the manual trip was initiated by the operator."

During these events, numerous alarms were sounding in the control room because of the plant condition, and normal control room lighting was lost for a short period of time.

First, in reviewing the events to determine the cause of the reactor trip, there were various significant problems to evaluate. As indicated in the discussion

regarding the generic implications of post-trip review in NUREG 1000 (page 2-8):

"...some events are very hard to unravel, particularly those involving perturbations from loss of lighting, loss of feedwater, safety injection, PORV openings or numerous alarms. Important failures and system anomalies can be obscured or ignored unless there is a documented and systematic evaluation of the event and its implications. Many operating events are so complex that a proper interpretation can only be achieved by a detailed examination of a complete listing of the sequence and timing of events that includes important system parameters.

"Task Force meetings with the four Regulatory Response Groups (RRGs) identified only one utility, although there may be others, which clearly extends a top management safety philosophy down to the level of post-trip reviews. ..."

All of the anomalies referred to above were present in the February 22 event. The post-trip review therefore involved a number of complex significant problems about which plant personnel were justifiably concerned and upon which they were concentrating.

Second, a principal reason why the failure of the reactor trip breakers to open automatically was not recognized was that the operators acted promptly in manually shutting down the unit. The decision to manually trip the reactor occurred about 23 seconds from the time the 1F bus de-energized and plant conditions began to degrade, but the actual trip occurred only 3.6 seconds after the



low-low steam generator level demand signal from the solid state protection system should have caused an automatic trip. In the NRC Staff's Salem Restart Evaluation dated April 11, 1983, it is concluded at page 18: "In the February 22 event, the operators' response was prompt and fully satisfactory from the time the transient started until the time the reactor was manually tripped."

Third, it is only because of the fact that the Company took the initiative and installed the type of sequence of events recorder which is at Salem that it is possible to accurately reconstruct the February 22 event. It is not presently required that each nuclear plant in the United States have such a sequence of events recorder. Not all plants are so equipped. NUREG-1000 states the following at page 2-9 with respect to the importance of sequence of events recorders:

"The importance and role of plant computers in event reconstruction deserves more attention at operating plants. Currently, the computers are not required to be operable for power operation and often are powered by nonvital buses. As a result, they are not available for certain events and transients, including loss of power. There have been a number of occasions (e.g., TMI-2 and the Ginna steam generator tube rupture event) where analysis of operational events at nuclear power plants have suffered because the plant computers were not operational to record the sequence of events and the associated alarms. In these cases it was difficult, if not impossible, to accurately reconstruct the events."

The Company should not be unduly penalized for its initiative.

Notwithstanding these points, we are quite concerned that the personnel involved did not recognize what had in fact occurred on February 22. We recognize our responsibility in this matter, and, as discussed above, we have instituted a formal post-trip review procedure to assure that such will not happen again. However, we believe that the February 22 post-trip review should be considered in the perspective of these three points in determining the amount of any civil penalty.

### III. Other Mitigating Factors

There are a number of additional facts which the Commission should consider with regard to mitigation. There were a number of matters beyond the control of the Company related to these incidents which contributed to the failures of the undervoltage relays. The Company recognizes and accepts its responsibility for safe operation of the facility. However, the additional facts set forth below should be considered in terms of mitigation. As stated in the NRC's Enforcement Policy at IV.A.:

"Licensees are not ordinarily cited for violations resulting from matters not within their control, such as equipment failures that were not avoidable

by reasonable licensee quality assurance measures or management controls."

Since these factors have been well documented during the Company's and the NRC's investigations of this matter, we shall discuss them only briefly in response to the Notice of Violation.

It is apparent that the design of the breakers contributed substantially to the events. First, the analysis presented to the NRC by its own consultant, the Franklin Research Center ("FRC"), indicates that the life of the undervoltage trip attachment devices cannot be assumed for more than a "reasonable" period, which in FRC's opinion was six months as a minimum, assuming personnel are prevented from interfering with the device and instructed in how to perform the minimum maintenance required (Transcript of NRC meeting held April 26, 1983, page 44, line 14, testimony of Dr. Zenons Zudans, Vice President of Franklin Research Center). Neither the Company, the nuclear industry nor the NRC was aware of this limited life.

Second, FRC's final report of initial investigation (Appendix E to the NRC's Appendix A to the Salem Restart Report dated April 11, 1983) contains the following conclusions and recommendations with respect to the manufacturing by the vendor, and use by licensees, of

the undervoltage trip attachments:

"FRC believes that in the as-manufactured 'new' condition, the 1983 UVT attachment will properly trip a circuit breaker that has a trip bar force requirement that is within the design limit of 31 ounces, and would probably consistently trip a circuit breaker with as-found trip bar force requirement of up to 38 ounces. However, sufficient evidence has not been presented to show that current manufacturing processes for the UVT attachment when coupled with maintenance will eliminate long-term failures that appear to be mechanical, age-related phenomena. The variations from device to device cause concern. The fact that honing is a hand operation indicates that variations in the surfaces of the latch will remain even though no extreme roughness should be expected.

"In addition, the lack of quantitative acceptance criteria adds concern that impending failures might be missed during inspection and maintenance.

"On March 18, 1983, Westinghouse Switchgear Division personnel also indicated that the UVT attachment must be replaced some time during the life of the plant. Criteria for determining when to replace the UVT attachment do not appear to be available.

"FRC recommends the following actions:

1. Acceptance criteria be set for parameters affecting correct operation of the UVT attachment.
2. Testing methodology for acceptance tests be prepared for factory and Licensee use.
3. Uniformity of construction be instituted or sufficient testing be performed showing that the variations in the devices are of no consequence to reliable operation.



4. Testing of the UVT attachment be performed to show that the device can successfully operate for the intended lifetime with proper maintenance.
5. Criteria be developed to determine a replacement interval for the UVT attachment such that replacement occurs significantly before the possibility of failure.

"Data and information provided to date indicate that the long-term reliability of the UVT attachment has not been proven to be adequate. The reliability of the UVT attachment appears to be significantly below that of the DB-50 circuit breaker to which it is mated." (Emphasis added.)

Again, neither the Company, the nuclear industry nor the NRC knew of such infirmities of the undervoltage trip attachments prior to the Salem events. This is clearly demonstrated by the NRC Scaff's investigation into the phenomenon known as anticipated transients without scram (ATWS) being conducted for over fourteen years prior to the Salem events, in addition to the efforts of a task force involving twenty-two utilities (including the Company). Throughout these investigations the components, such as reactor trip breakers, or subcomponents such as undervoltage trip attachments, were not emphasized as requiring special attention as to their performance or reliability.

Further, NUREG-1000 states the following at page 3-24 with respect to the potential for a warning of the Salem events:

"Routine statistical analysis of single failures and failure rate data would probably not have suggested a high potential for common cause failure resulting in multiple, simultaneous breaker failures. However, with hindsight it appears that proper identification of root causes with common mode failure potential coupled with a detailed engineering understanding and careful review of LERs [Licensee Event Report] might have given an advance warning of the Salem failures. Complete narrative descriptions reporting the failures and indepth engineering review would be necessary to identify the potential common cause failures. Future reporting requirements associated with the proposed LER Rule should result in improved reporting of significant events such that engineering analyses can address the generic implication of failures. Component failures must be better reported under an improved NPRDS [Nuclear Plant Reliability Data System] (see Section 3.2.4)."

It was also concluded that the performance failures of reactor trip system breakers was comparable with the rate computed in the "Reactor Safety Study" (WASH 1400), and thus did not generate concern for reactor breakers reliability based upon operating experience. (Id. at 3-23). It seems incongruous that these conclusions can be made in NUREG-1000 while the NRC proceeds to impose a civil penalty because of the very events under consideration in NUREG-1000.

The knowledge about, and the expected reliability of, the undervoltage trip attachment were summarized by Dr. Zudans, as follows:

"There is really basically nothing wrong with

the device other than the people who are exposed to it did not know what they should do or should not do.

"The other fact that we found out is that the device, as the device deteriorates, it is detectable. In other words, it will let you know it is hurting. All you have to do is follow simple procedures. You should never repair the device, you should never repair it. You just throw it away and replace it with another device." (Transcript of NRC Meeting held April 26, 1983, pages 44-45.)

The NRC has recognized that these quality concerns are such that a diverse automatic trip should now, because of the Salem events, be considered for all Westinghouse pressurized water reactors. As stated at page 5-8 in NUREG-1000:

"As indicated in the draft ATWS Rule in Table 5.2, Item 2, only the plants designed by Combustion Engineering and Babcock & Wilcox would be required to install an additional diverse scram system (including power interruption to the rods). No preventive measures, such as a diverse scram train, were initially recommended for the Westinghouse plants because the mitigative measures (diverse turbine trip and automatic auxiliary feedwater actuation) were believed to be sufficient, based on the initial value/impact analysis. Because of the effect of the Salem events on the estimated failure rate of the Westinghouse reactor scram system, and the fact that other potential common-cause failure modes exist (see Section 3.1), a diverse scram system should be proposed through rulemaking for the Westinghouse plants as well. This is consistent with our regulatory objective of defense in depth and the need for high reliability in the reactor trip system which is challenged on the average of ten times per year. This diversity would be aimed at minimizing the potential for failure of the Westinghouse trip system. Implementation of such

a preventive measure, and those identified in Table 5.2, must not be construed as a basis for relaxing, in future designs, the present capability for the different plant types to mitigate an ATWS event." (Emphasis added.)

Third, in addition to the limited life and infirmities associated with the undervoltage trip attachment device itself as indicated above, the necessary proper maintenance instruction referred to in Dr. Zudans' testimony had not been provided to the Company and certain other licensees.

The Instruction Manual issued by Westinghouse Electric Corporation with respect to the reactor trip breakers (I.B. 33-850-3D, effective May 1970) indicates the following at page 5:

"NOTE: It is not advisable to lubricate any parts of the breaker. The lubrication supplied during factory assembly is sufficient for years of service. The lubricant is of a special form which is used sparingly. The addition of oil will only promote the accumulation of dust and dirt."

Further, the specific instructions in the Instruction Manual with respect to the undervoltage trip attachment are silent with respect to maintenance being required, although the Manual does specify maintenance for other breaker parts.

Subsequent to the issuance of this manual, Westinghouse issued a Technical Bulletin (NSD-TB-74-1) on January 11, 1974. The Company has no record or other evidence that this bulletin was ever received, nor has



Westinghouse been able to produce proof that it was in fact delivered to the Company. Bulletin 74-1 notes that a malfunctioning undervoltage trip device was "corrected by cleaning the entire breaker, and lubricating the faces of the vertical-travelling latch in the undervoltage device linkage. A molybdenum disulfide lubricant such as Molykote G is recommended."

On February 19, 1974, one month later, Westinghouse issued NSD letter 74-2 which superseded and cancelled the information in Technical Bulletin NSD-TB-74-1. Again, the Company has no record or other evidence that this letter was sent to or received by the Company. Letter 74-2 states with respect to lubricants:

"6. Lubricants. Although the Instruction Manual (page 5) cautions against any re-lubrication in the field, the manufacturers have agreed that the reliability of the breaker is improved by lightly lubricating the linkage of the undervoltage device occasionally. However, the lubricant should be applied only sparingly to the front and back faces of the vertical-traveling latch (interfacing with the flat copper-alloy spring).

"A dry or near-dry molybdenum disulfide lubricant should be used. Technical Bulletin NSD-TB-74-1 indicated Molykote G as a possible choice. That information is incorrect and is hereby rescinded. Molykote G uses a thickened mineral oil as a vehicle, which would tend to collect foreign material. A better choice would be Molykote M-88, or Spray-kote. Both are commercially available Dow Corning products." (Bold face emphasis added.)

We believe that if the information in Bulletins 74-1 and 74-

2 had been sent to the Company, it would have been incorporated as a preventative maintenance item for the breakers.

Importantly, the Company is not the only licensee which failed to receive this information, a fact recognized on several occasions by the NRC. For example, IE Information Notice No. 83-18 issued by the NRC on April 1, 1983, indicates that 7 of the 28 plants using Westinghouse DB-50 type breakers had not been maintaining the breakers per the recommendations in Westinghouse NSD Data Letter 74-2. This suggests that letter 74-2 had not been sent to plants other than Salem. In addition, NUREG-1000 states on pages 2-17 and 2-18, as follows:

"...INPO evaluation findings and informal discussions indicate that control of vendor maintenance instructions is frequently inadequate in operating plants. Other safety-related components have been identified for which technical manuals are not available.

"Responses to IE Bulletin 83-01 disclosed that seven other plants with Westinghouse NSSSs were performing maintenance on DB-50 breakers in the reactor trip system at variance with NSD-74-1 and -2. This may indicate that some of these plants had not received NSD-74-1 and 2. The possible failure of a number of plants to have these service bulletins, coupled with the failure of Salem to receive NSD-74-1 and -2, and of Westinghouse to be aware of this, indicates a general problem rather than an isolated occurrence. Likewise, the Westinghouse letter of March 21, 1983 to R. Mattson of NRC describing its information dissemination procedures raises many questions about the adequacy

of those procedures. Finally, information from NRC regional offices and from the headquarters licensing staff indicates that vendor-licensee relationship problems are not unusual and not limited to Westinghouse.

"Westinghouse has stated it will provide a review of, and upgrade where necessary, its current methods for distribution of technical information within Westinghouse and to utilities. Westinghouse will provide to the Westinghouse Owners Group a list of active Westinghouse technical information and recommendations for safety-related equipment. Salem has committed to a program to update existing documentation on all its safety-related equipment and to ensure that vendor documentation is controlled.

"Based on all the above, it is prudent to assume the problem involves other plants, other equipment supplied by Westinghouse, and equipment supplied by other vendors." (Emphasis added.)

Once again neither the Company, the nuclear industry nor the NRC had fully appreciated the industry-wide problem of vendor-licensee communications prior to the Salem events. We assume that the recommendations as a result of NUREG-1000 will address this issue, and we would expect that the suggested remedies will be somewhat patterned after the Company's corrective actions at Salem.

Fourth, notwithstanding the failure of Westinghouse to provide needed information on breaker maintenance, the Company took the initiative and called Westinghouse to request the support of a Technical Service Representative in inspecting and cleaning the breakers.

Although this service was performed pursuant to purchase and work orders which were erroneously classified as non-safety related, certain points should be made in mitigation. At the outset, we reconfirm with the Commission that we view the misclassifications seriously and have taken action to assure that they do not recur. However, the misclassifications were an isolated event. In the investigation which preceded the NRC's authorization to restart Salem 1, the Company made an exhaustive study of approximately 15,000 non-safety related work orders. It discovered approximately 35 other misclassified work orders but in each instance the affected system was appropriately tested. Thus, of these 35 improperly classified orders, which represent an error in the order of only 2/10ths of one percent, absolutely none affected safety.

Also, the Westinghouse service representative so retained was at the Salem site for four full days and four hours of overtime (January 13, 14, 17 and 18, 1983) for breaker servicing. The representative serviced one of the reactor trip breakers while demonstrating the procedure for Company personnel who did the servicing of the other trip breaker at the same time. The bypass breakers were later serviced by Company personnel, pursuant to the



representative's instructions. Nevertheless, the breakers failed less than two months later. At no time during such servicing at Salem was reference made to NSD Data letter 74-2, the then current Westinghouse maintenance instruction.

The Company's actions in this regard appear to be similar to the industry practice. As stated in NUREG-1000 at page 5-7:

"A review of failures of the undervoltage trip attachments at all PWRs [pressurized water reactors] (see Section 3.2) indicates recurring failures whose root causes were not being identified or corrected. The affected utilities have, on occasion, utilized a manufacturer's representative to aid in trouble shooting, apparently with limited success. There has not been any indication that the utilities contemplated more extensive action to improve the reliability of the scram breaker portion of the reactor trip system prior to the Salem event. No one appears to be systematically accumulating and analyzing industry-wide experience with scram systems or components."

We believe that these items indicate both that mitigation is appropriate and that the best method for addressing the generic implications thereof to encourage improvement in licensee performance is through new or revised industry requirements, in part patterned after the Company's corrective actions.

#### IV. Specific Responses to Notice of Violation

As indicated above, the facts surrounding the occurrences on February 22 and February 25 are essentially not in dispute. The Company's position in this matter is extensively documented by its letters to the NRC dated March 1, 8, 14, 18, 23 and April 4, 7, 11, 13, 22, 27 and 28, 1983, which are incorporated herein by reference. Except for Items otherwise discussed below, in these letters, the Company has for each Item in the Notice of Violation stated an admission or denial, the reasons for these occurrences, the corrective actions which have been taken and those which are underway and the steps that it is taking to avoid further occurrences. Attachment 1 to the Company's April 28, 1983 letter contains a summary listing of the short and long-term actions and completion schedules. The short-term items have been completed. The long-term items will be completed as indicated, all in compliance with the NRC's restart authorization dated April 29, 1983 and the Order dated May 6 1983 modifying the Salem licenses to incorporate therein the items specified in the Company's April 28, 1983 letter.

Because of the comprehensive discussion of these

matters in the Company's various submittals already in the record, the following responses relate to only those areas of the Notice of Violation warranting further comment.

With respect to Item 1 of the Notice of Violation, the Company believes that it is unreasonable to assess a civil penalty for four days of violation. The total elapsed time from the February 22, 1983 event at 9:56 p.m. to the second event at 12:21 a.m. on February 25, 1983 is less than 51 hours. It therefore would be a closer reflection of the actual events to consider the matters set forth in Item 1 of the Notice of Violation to encompass two days, or a maximum, unmitigated penalty for Item 1 of \$200,000.

Further with respect to Item 1, we have examined the two Salem incidents designated as Severity Level I under 10 C.F.R. Part 2, Appendix C, General Policy and Procedure for NRC Enforcement Actions, against the very significant violations which are set forth by example. In our opinion, the Salem events have not been properly categorized. The result of the two occurrences is far less severe than an accidental criticality, a release of radioactivity offsite greater than ten times the Technical Specifications limit, or a safety limit being exceeded. The operators acted quickly and correctly in each case. Even had operator intervention not occurred for some time thereafter, no

significant impact would have occurred. While not denying the significance of the two incidents, we submit a lesser severity level would be appropriate.

Further, it does not appear that the remaining example violation included in the Enforcement Policy under Severity Level I is applicable to the February 22 and 25 Salem events, i.e. "A system <sup>6/</sup> designed to prevent or mitigate a serious safety event not being able to perform its intended safety function <sup>7/</sup> when actually called upon to work." Footnote 7 indicates:

"<sup>7/</sup>Intended safety function' means the total safety function, and is not directed toward the loss of redundancy. For example, considering a BWR's [boiling water reactor] high pressure ECCS [emergency core cooling system] capability, the violation must result in complete invalidation of both HPCI [high pressure coolant injection] and ADS [Automatic Depressurization System] subsystems. A loss of one subsystem does not defeat the intended safety function as long as the other system is operable."

In the Salem events, the reactor trip breakers failed to automatically open following receipt of a valid trip signal from the Solid State Protection System. However, it does not appear that there was a total failure of the Reactor Trip System as contemplated by footnote 7 quoted above, because the breakers were in each case opened by the manual trip signal. The ability to manually trip the unit is required, and provides a redundant method to trip the



reactor if the automatic method fails. The manual trip actuates both the undervoltage trip attachment and a shunt trip attachment to shut down the reactor. This part of the Reactor Trip System did not fail.

A somewhat similar event apparently occurred at Haddam Neck in 1971 during surveillance testing. As stated by the NRC in NUREG-1000 at page 3-21:

"...Failures of the DB-50 were first reported at H. B. Robinson and Haddam Neck in 1971. These events were of particular concern because Haddam Neck experienced simultaneous failures of the undervoltage trip attachment in two reactor trip system breakers when an RPS trip signal was initiated during a surveillance test. Since the shunt attachments on both breakers were determined to be operable, this event did not constitute a complete failure of the trip system. As a result, the Atomic Energy Commission (AEC) issued the first of 34 Bulletins and other notices (listed in Table 3.3) concerning various types of circuit breakers and relay failures in reactor safety system. Four of these documents related to failures in the reactor trip system." (Emphasis added.)

Although it is our understanding that the shunt trip at Haddam Neck was a part of the automatic trip mechanism, the previous AEC action indicates the diverse tripping mechanisms should be considered as separate subsystems.

The facts of the February Salem events therefore are not appropriate for classification as Severity Level I under the NRC's Enforcement Policy.

The Notice of Violation states the following as

Item 2A:

"Criterion XVI of 10 CFR, Part 50, Appendix B, requires in part, that 'Measures shall be established to assure that conditions adverse to quality such as failures, malfunctions... are promptly identified and corrected. In case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition.'

"Contrary to the above,

"Following the breaker failures at Unit 2 on August 20, 1982 and January 6, 1983, the licensee failed to adequately investigate the cause of the breaker failures, and failed to take corrective action with regard to the failed breakers and to inspect and service all of the reactor trip breakers on Units 1 and 2."

The Company questions the imposition of any civil penalty for this alleged violation. On August 20, 1982, the 2B reactor trip breaker on Unit 2 failed to operate during surveillance testing. It was replaced with the 2A reactor trip bypass breaker from Unit 2. The undervoltage coil on 2B reactor trip breaker was replaced, and it was reinstalled. A functional test of the undervoltage trip attachment was performed and was documented by a completed surveillance test.

On January 6, 1983, during routine operation, 2A reactor trip breaker on Unit 2 failed to open in response to a trip signal generated due to a steam generator low level.

It was replaced with the 1A reactor trip breaker from Unit 1. The 2A breaker relay was cleaned, lubricated, and readjusted. A manual trip test was satisfactorily performed, and the breaker was installed in Unit 1. Thereafter, all the reactor trip and bypass breakers in Unit 1, which was at that time out of service for refueling and maintenance, were maintained either by a Westinghouse service representative or by Station personnel pursuant to directions given by the representative as to the correct maintenance procedure. Although the Unit 1 breakers subsequently failed in February 1983, it has only been as a result of such failures that the entire industry has been made aware of the inherent unreliability of the undervoltage trip attachment parts which failed. Indeed, given the Franklin Research Center's refusal to recommend a term of life for the breakers in its post-event study (Salem Restart Report, April 11, 1983, Appendix E to Appendix A), the recently discovered need for the undervoltage trip attachments to be subject to a 100% quality control inspection of ten critical parts and a post-assembly acceptance test of 25 operations without failure, and the 26 other failures of Westinghouse DB-50 breakers to date in the industry, it is questionable whether any quality assurance program could have determined the cause of the

condition. In fact, as discussed above, NUREG-1000 indicates at page 3-24 that such may have required "hindsight" and that future Licensee Event Report requirements will be designed to assist the industry in the recognition of generic implications of failures. With respect to Unit 2, it was out of service at the time of the February events, and all the Salem 2 breakers have been inspected, serviced and tested in accordance with the new procedures developed as a result of the Salem 1 events prior to the scheduled restart of Salem 2. Therefore, we believe any penalty with respect to Item 2A is inappropriate.

With respect to Item 2D3, preventive maintenance was not performed on reactor trip and bypass breakers from December 1976 for Unit 1, and from August 1980 for Unit 2, until January 1983 because of specific instructions contained in the manual for the breakers, and because the vendor failed to update the maintenance procedures for the breakers. The maintenance performed in January 1983 was done pursuant to the direction and supervision of a representative of the vendor of the breakers. Mitigation of the penalty for this item is appropriate under these circumstances.

With respect to Item 2E, a system was not in effect which was capable of tracing breaker location.



However, Criterion VIII of 10 CFR 50, Appendix B, states that such identification and control measures shall be designed to prevent the use of incorrect or defective material, parts and components. The Company, the nuclear industry and the NRC did not have an indication of the limited life of, or infirmities associated with, the undervoltage trip attachments prior to the Salem events. Moreover, the Salem events demonstrate that the item for which traceability is critical is the undervoltage trip attachment, much more so than the entire circuit breaker. The problem of traceability of the breakers, and particularly the undervoltage trip attachment, is recognized in NUREG-1000 at page 2-27 as one which the vendor must address:

"Westinghouse provided no means by which undervoltage trip attachments having the design modifications delineated in NDC-Elec-18 could be unequivocally identified. This was the case for undervoltage trip attachments which were modified in the field as well as for undervoltage trip attachments originally manufactured with the modifications."

NUREG-1000 also states at page 3-30:

"The DB-50 breaker is a special order unit; there is no inventory. Inspection of a few units to date indicates a certain amount of variability exists among units with regard to assembly. There is at least one unit obtained from the Salem plant that appears not to have the 1973 modification which was to hand polish the latch surfaces where machining or cutting took place. There is no positive way to

identify a unit to determine whether it incorporates all the latest design modifications and recommendations without performing a detailed inspection of the internals of the unit. Westinghouse made a commitment to investigate this problem." (Emphasis added.)

Further, NUREG-1000, at page 2-28, indicates the following with respect to the section of the NRC's regulations under which the penalty in Item 2E is sought to be imposed:

"Our regulations at 10 CFR Part 50, Appendix B, Item VIII, 'Identification and Control of Materials, Parts, and Components' require a method for identification of safety-related parts such as DB-50 circuit breaker undervoltage trip attachments having the design modifications delineated in NDC-Elec-18. The fact that this was not accomplished on the UV trip attachments that failed at Salem may be indicative of problems with the identification provided for other safety-related components to distinguish components with specific modifications from components not having the modifications."

It appears that full compliance with Item 2E is, and will continue to be, virtually impossible without corrective action by the vendor. Thus, the imposition of a civil penalty is improper under this item.

The Notice of Violation indicates that the NRC has determined that the violations in Item 2 are as serious as the February 22 and 25 events and should result in a civil penalty equivalent to that proposed for Item 1. The Company strongly objects to this position. As noted above, we

question whether any penalty is appropriate for certain matters in Item 2, and we believe that there are strong mitigating factors which must be considered for this Item. Further, as mentioned, in reviewing other work orders for Salem following the February events, it was found that approximately 35 of 15,000 non-safety related work orders were misclassified but that such work orders had no impact on safety. This indicates an error rate of approximately .2%. We view these misclassifications seriously and have implemented corrective procedures. However, in light of the results of the work order review, they were isolated occurrences.

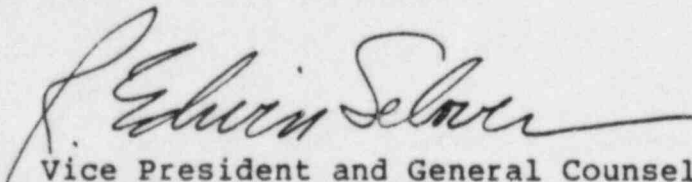
To assess a \$400,000 civil penalty under Item 2 in light of these facts would be unduly harsh and punitive, especially given the Company's extensive prior commitments to institute both long-term and short-term corrective actions to improve Salem operations. In any event, as indicated above, the Company believes that imposition of a \$400,000 civil penalty for Item 1 is not warranted. To the extent the Staff mitigates that penalty, the proposed penalty for Item 2 should also be mitigated but to a greater extent than Item 1.

V. Conclusion

We are deeply concerned about the events which occurred at Salem in February 1983. We believe that the generic causes and implications of the events further emphasize the need for this concern and that they also demonstrate that it is inappropriate and unnecessary to impose civil penalties in the proposed magnitude to assure compliance. Irrespective of any civil penalties, this Company has taken and will diligently follow through on strong remedial measures with respect to the equipment responsible for the February failures, the related operating and maintenance procedures, and the execution of such procedures by personnel.

We believe the Company has acted in good faith with the NRC in connection with this matter. A civil penalty of the magnitude proposed by the NRC will further no regulatory purpose. Accordingly, we urge that the penalty be mitigated.

Respectfully submitted,

  
Vice President and General Counsel



STATE OF NEW JERSEY            )  
  SS.  
COUNTY OF ESSEX                )

RICHARD A. UDERITZ, being duly sworn according to law  
deposes and says:

I am a Vice President of Public Service Electric and Gas  
Company, and as such, I find the matters set forth in the  
attached response to the NRC's Notice of Violation and  
Proposed Imposition of Civil Penalties, Docket Nos. 50-272,  
50-311, License Nos. DPR-70, DPR-75, EA83-24, are true to  
the best of my knowledge, information and belief.

  
RICHARD A. UDERITZ

Subscribed and sworn to before me  
this 6th day of July, 1983.

  
Notary Public of New Jersey

My Commission expires \_\_\_\_\_

PAULA A. NATALIZIO  
NOTARY PUBLIC OF NEW JERSEY  
My Commission Expires Feb. 3, 1987

Public Service  
Electric and Gas  
Company

**R. Edwin Selover**  
Vice President and  
General Counsel

80 Park Plaza, Newark, NJ 07101 201-430-6450 Mailing Address: P.O. Box 570, Newark, NJ 07101

July 22, 1983

Mr. Richard C. DeYoung, Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
EW/W359  
Washington, D. C. 20555

Re: Notice of Violation and Proposed  
Imposition of Civil Penalties  
Docket Nos. 50-272, 50-311,  
License Nos. DPR-70, DPR-75  
EA 83-24

Dear Mr. DeYoung:

This is to supplement the Company's July 6, 1983 response to the letter from the NRC dated May 5, 1983 transmitting a Notice of Violation and Proposed Imposition of Civil Penalties in the aggregate amount of \$850,000, relating to events which occurred on February 22 and February 25, 1983 at Unit No. 1 of the Salem Generating Station.

We respectfully submit that the NRC's Generic Letter 83-28, dated July 8, 1983, entitled "Required Actions Based on Generic Implications of Salem ATWS Events" reinforces the appropriateness of the relief requested in the Company's July 6, 1983 letter, in several respects:

1. Generic Letter 83-28 reconfirms that the

major items dealt with in the Notice of Violation are industry-wide; indeed, it requires all holders of operating licenses to take remedial measures to deal with such matters.

2. All the major elements of the Action Program set forth in Generic Letter 83-28 had already been taken or committed to by the Company prior to the issuance of the Notice of Violation, so that the proposed civil penalty is not necessary to accomplish its stated purpose, namely, "to assure that PSE&G will fully implement lasting corrective actions that address the violations identified in [the Notice of Violation]".

3. Many elements of the Action Program set forth in Generic Letter 83-28 were either developed by the Company alone or by the Company and the NRC Staff together, demonstrating the Company's initiative in this regard.

4. The comprehensiveness of PSE&G's responses to the Salem incident is demonstrated by the fact that the Action Program set forth in Generic Letter 83-28 does not include any major item applicable to the Salem units which has not already been taken or committed to

by the Company. We are undertaking a detailed review of Generic Letter 83-28 to determine what, if any, further action may be required by the Company in response thereto. However, the principal requirements have been addressed, and the NRC's safety evaluation for the restart of Salem 1 (NUREG-0995) specifically adopts the Company's corrective action plan as the basis for permitting the plant to be restarted, which seems to confirm the adequacy of the Company's plan in addressing these issues.

5. The promptness of the Company's response to the Salem incidents is demonstrated by the fact that the Company is able to provide an initial response to Generic Letter 83-28 within two weeks of its date, rather than within 120 days (or possibly later) as contemplated by Generic Letter 83-28.

Specifically, and as more fully discussed in the Company's response to the Notice of Violation, including the Company's letters to the NRC submitted in conjunction with the restart of Salem 1 after the February events which are incorporated by reference in such response and which form the basis for our preliminary reply to Generic Letter 83-28 for Salem (copy attached), the Company has taken or



committed to the following actions, which address virtually all of the requirements of Generic Letter 83-28. References to the Company's letters incorporated by reference in the original response to the Notice of Violation are indicated where applicable. In addition, the Company's letter to the NRC dated April 8, 1983 in conjunction with the restart of Salem 1 is referred to below. Reference to such letter and to the Company's letter dated April 13, 1983, was inadvertently omitted from our original response, and such letters are hereby also incorporated by reference in this matter.

1. The Company has established a formal post trip review procedure. See the Company's letters to the NRC dated March 8 and 14 and April 7, 8 and 28, 1983. (Action 1.1 of Generic Letter 83-28.)

2. The Company has a sequence of events recorder installed at Salem 1 which is capable of correctly sequencing and timing plant events leading to unscheduled reactor trips and indicating the proper actuation of safety-related equipment. The recorder is driven by the plant computer and powered from a vital bus. A report describing the data and information capability for unscheduled reactor shutdowns will be

submitted to the NRC not later than November 7, 1983, in compliance with Generic Letter 83-28. (Action 1.2.)

3. The Company has reviewed those components whose functioning is required to trip the reactor, has verified that they are identified as safety-related on the Master Equipment List, which is used in classification of work orders and procurement documents, and is implementing a continuing program to insure that vendor information relating to the reactor trip system components is complete and maintained on a controlled-document basis. See the Company's letters to the NRC dated March 8, 14 and 23 and April 7, 8 and 28, 1983. (Action 2.1.)

4. The Company has committed to a program to assure that components of safety-related systems are so identified on the Master Equipment List. The Company is also implementing a continuing program to assure that vendor information for safety-related components is complete, current and maintained on a controlled-document basis. See the Company's letters to the NRC dated March 8, 14 and 23 and April 7, 8 and 28, 1983. (Action 2.2.)

5. The Company has strengthened its program with

respect to post-maintenance operability testing of safety-related components in the reactor trip system so as to assure that the equipment is capable of performing its safety functions before being returned to service. These procedures include current applicable vendor and engineering recommendations. Related Technical Specification changes were submitted for NRC approval on June 20, 1983. The Company is also engaged in a test program to determine the life cycle and replacement interval for the undervoltage trip attachments. See the Company's letters dated March 8 and 14 and April 7, 8 and 28, 1983. (Action 3.1.)

6. The Company is establishing a program to extend its test and maintenance procedures to assure post-maintenance operability testing of safety-related equipment, consistent with vendor and engineering recommendations. See the Company's letters dated March 8 and 14 and April 7, 8 and 28, 1983. (Action 3.2.)

7. The Company has obtained new undervoltage trip attachments from Westinghouse which have been verified as including all current modifications. See the Company's letters dated April 7, 8 and 28, 1983. (Action 4.1.)

8. The Company has implemented a comprehensive preventative maintenance and surveillance program to assure reliable reactor trip breaker operation. See the Company's letters dated March 8 and 14 and April 7, 8 and 28, 1983. The life testing program for the reactor trip breakers is described in a letter to the NRC dated May 31, 1983. (Action 4.2.)

9. The Company has committed, by a letter to the NRC dated July 15, 1983, to incorporate the shunt trip attachments to the reactor trip breakers into the automatic trip system. (Action 4.3.)

10. Action 4.4 applies only to B&W reactors and is therefore inapplicable.

11. The Company has strengthened its on-line testing procedures for the reactor trip system. See the Company's letters to the NRC dated March 8 and 14 and April 7, 8 and 28, 1983, and License Change Request, LCR 83-08, submitted June 20, 1983. (Action 4.5.)

In all of the above matters involving station procedures, personnel have been re-educated in the importance of strict adherence thereto to assure that the procedures accomplish their intended results. Upon completion of our review of



Generic Letter 83-28, we will advise the NRC of further actions, if any, which may be necessary or appropriate with respect to Salem. However, as mentioned above, it is apparent that the Company's corrective action program comprehensively addresses the matters in Generic Letter 83-28, which is relevant to the determination of the amount of any civil penalties.

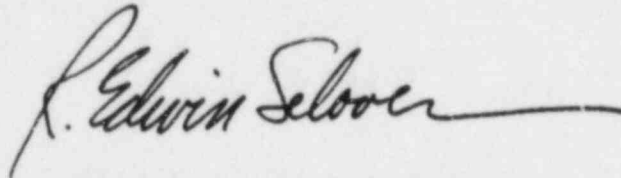
In the light of this record of prompt, comprehensive response to what the Commission has repeatedly characterized as a generic problem, and the adoption by the Company of a program before the issuance of the Notice of Violation that is now virtually embodied in the Commission's Generic Letter 83-28, we submit that the imposition of the proposed civil penalties cannot reasonably be viewed as serving a remedial purpose.

We again confirm to the Commission our commitment to safe nuclear operations and our dedication to strong remedial measures with respect to the equipment responsible for the February failures, the related operating and maintenance procedures, and the execution of such procedures by personnel. For the reasons set forth above and in our July 6, 1983 response, we respectfully request that the

- 9 -

proposed civil penalties in the Notice of Violation be eliminated or mitigated substantially.

Respectfully submitted,

A handwritten signature in dark ink, reading "R. Edwin Slover", followed by a long horizontal flourish line.

Vice President and General Counsel

cc: Dr. Thomas E. Murley, Regional Administrator  
U. S. Nuclear Regulatory Commission  
631 Park Avenue  
King of Prussia, Pa. 19406

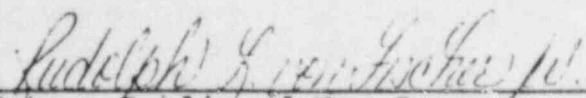
STATE OF NEW JERSEY                    )  
  ) SS.  
COUNTY OF SALEM                    )

RICHARD A. UDERITZ, being duly sworn according to law  
deposes and says:

I am a Vice President of Public Service Electric and Gas  
Company, and as such, I find the matters set forth in the  
attached supplemental response to the NRC's Notice of  
Violation and Proposed Imposition of Civil Penalties, Docket  
Nos. 50-272, 50-311, License Nos. DPR-70, DPR-75, EA83-24,  
are true to the best of my knowledge, information and  
belief.

  
\_\_\_\_\_  
RICHARD A. UDERITZ

Subscribed and sworn to before me  
this 22nd day of July, 1983.

  
\_\_\_\_\_  
Notary Public of New Jersey

My Commission expires \_\_\_\_\_



Public Service Electric and Gas Company P.O. Box 236 Hancocks Bridge, New Jersey 08038

Nuclear Department

July 22, 1983

Director of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission.  
7920 Norfolk Avenue  
Bethesda, Maryland 20014

Attention: Mr. Steven A. Varga, Chief  
Operating Reactors Branch 1  
Division of Licensing

Gentlemen:

RESPONSE TO GENERIC LETTER 83-28  
NO. 1 AND 2 UNITS  
SALEM GENERATING STATION  
DOCKET NOS. 50-272 AND 50-311

PSE&G hereby submits its response with respect to Salem Generating Station, to Generic Letter 83-28, dated July 8, 1983, concerning required actions based on generic implications of the Salem reactor trip breaker failures on February 22 and February 25, 1983.

1.1 POST-TRIP REVIEW (PROGRAM DESCRIPTION & PROCEDURES)

The Salem post-trip review program is described in our letters to the NRC of March 8, 14 and April 7 and 8, 1983, submitted in conjunction with the restart of Salem 1 after the February events. The detailed instructions are provided in Administrative Directive AD-16, which was submitted with our letter of March 14, 1983. The latest revision of AD-16 is enclosed.

1.2 POST-TRIP REVIEW (DATA & INFORMATION CAPABILITY)

The Salem units have an existing sequence of events recorder installed which is capable of correctly sequencing and timing plant events leading to unscheduled reactor trips, and indicating the proper actuation of safety related equipment. The sequence of events recorder is driven by the plant computer and powered from a vital bus.



2.1 EQUIPMENT CLASSIFICATION & VENDOR INTERFACE  
(REACTOR TRIP SYSTEM COMPONENTS)

Equipment classification and vendor interface programs are described in our letters of March 8, 14, 23 and April 7 and 8, 1983.

2.2 EQUIPMENT CLASSIFICATION & VENDOR INTERFACE  
(PROGRAMS FOR ALL SAFETY-RELATED COMPONENTS)

Equipment classification and vendor interface programs are described in our letters of March 8, 14, 23 and April 7 and 8, 1983.

3.1 POST-MAINTENANCE TESTING (REACTOR TRIP SYSTEM COMPONENTS)

Actions 3.1.1 and 3.1.2 of this position have been implemented as described in our letters of March 8, 14, and April 7 and 8, 1983.

3.2 POST-MAINTENANCE TESTING (ALL OTHER SAFETY RELATED COMPONENTS)

Actions 3.2.1 and 3.2.2 of this position have been implemented as described in our letters of March 8, 14 and April 7 and 8, 1983.

4.1 REACTOR TRIP SYSTEM RELIABILITY (VENDOR-RELATED MODIFICATIONS)

Vendor-recommended reactor trip breaker modifications have been implemented as described in our letters of April 7 and 8, 1983.

4.2 REACTOR TRIP SYSTEM RELIABILITY (PREVENTATIVE MAINTENANCE AND SURVEILLANCE PROGRAM FOR REACTOR TRIP BREAKERS)

Descriptions of the Salem preventative maintenance and surveillance programs have been provided in our letters of March 8, 14 and April 7 and 8, 1983. The life testing program for the reactor trip breakers is described in our letter of May 31, 1983.

4.3 REACTOR TRIP SYSTEM RELIABILITY (AUTOMATIC ACTUATION OF SHUNT TRIP ATTACHMENT FOR WESTINGHOUSE AND B&W PLANTS)

This item is addressed in our letter of July 15, 1983 (attached).

7/22/83

4.4 REACTOR TRIP SYSTEM RELIABILITY (IMPROVEMENTS IN  
MAINTENANCE AND TEST PROCEDURES FOR B&W PLANTS)

This item does not apply to Salem.

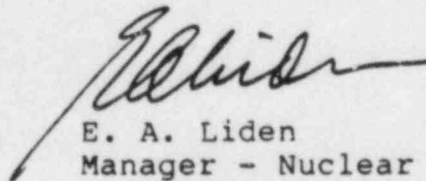
4.5 REACTOR TRIP SYSTEM RELIABILITY (SYSTEM FUNCTIONAL  
TESTING)

On-line functional testing is described in our letters of March 8, 14 and April 7 and 8, 1983, and in our License Change Request, LCR 83-08, submitted on June 20, 1983.

This response provides our current status of conformance with the positions described in Generic Letter 83-28. Acceptance of our corrective action program is documented in your safety evaluation (NUREG-0995), transmitted with your letter of April 29, 1983, authorizing restart of the Salem units. We are undertaking a detailed review of Generic Letter 33-28 to determine what, if any, further actions may be required. The results of this review will be submitted for your review no later than November 7, 1983.

Should you have any questions, do not hesitate to contact us.

Sincerely,



E. A. Liden  
Manager - Nuclear  
Licensing and Regulation

Attachments


CC: Mr. Donald C. Fischer  
Licensing Project Manager

Mr. Leif Norrholm  
Senior Resident Inspector

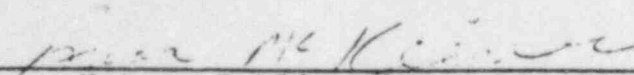
STATE OF NEW JERSEY   )  
                                  )    SS.  
COUNTY OF SALEM       )

RICHARD A. UDERITZ, being duly sworn according to law deposes  
and says:

I am a Vice President of Public Service Electric and Gas  
Company, and as such, I find the matters set forth in our  
response to Generic Letter 83-28, dated July 22, 1983,  
concerning generic implications of the Salem ATWS events,  
are true to the best of my knowledge, information and belief.

  
\_\_\_\_\_  
RICHARD A. UDERITZ

Subscribed and sworn to before me  
this 22 day of July, 1983

  
\_\_\_\_\_  
Notary Public of New Jersey

My Commission expires on January 2, 1985



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SEP 29 1983

Docket Nos. 50-272  
50-311  
License Nos. DPR-70  
DPR-75  
EA 83-24

Public Service Electric and Gas Company  
ATTN: Mr. Richard A. Uderitz  
Vice President - Nuclear  
P. O. Box 236  
Hancocks Bridge, New Jersey 08038

Gentlemen:

This refers to your letters dated July 6, 1983 and July 22, 1983, in response to the Notice of Violation and Proposed Imposition of Civil Penalties sent to you with our letter dated May 5, 1983. Our letter and Notice described violations identified during NRC review of the anticipated transient without scram (ATWS) events which occurred on February 22 and 25, 1983 at the Salem Station, Unit 1.

After careful consideration of your response, we have concluded for the reasons given in the enclosed Order and Appendix that a sufficient basis for mitigation of the proposed penalty was not provided in your response.

Accordingly, we hereby serve the enclosed Order on Public Service Electric and Gas Company imposing a civil penalty in the amount of Eight Hundred and Fifty Thousand Dollars.

We will review the effectiveness of your corrective actions already taken, and those proposed, during a subsequent inspection.

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED



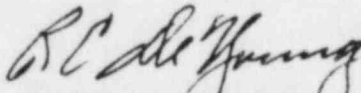
Public Service Electric and  
Gas Company

2

SEP 29 1983

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosure will be placed in the NRC's Public Document Room.

Sincerely,



Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Enclosures:

1. Order Imposing Civil Monetary Penalties
2. Appendix - Evaluations and Conclusion

cc w/encl:

R. L. Mittl, General Manager - Nuclear Assurance and Regulation  
J. M. Zupko, Jr., General Manager - Salem Operations  
E. A. Liden, Manager - Nuclear Licensing and Regulation  
C. P. Johnson, Assistant to Vice President - Nuclear  
Armand Nassman, Manager, Quality Assurance - Nuclear Operations  
R. Fryling, Jr., Esquire  
Public Document Room (PDR)  
Local Public Document Room (LPDR)  
Nuclear Safety Information Center (NSIC)  
NRC Resident Inspector  
State of New Jersey  
State of Delaware

UNITED STATES  
NUCLEAR REGULATORY COMMISSION

In the Matter of

PUBLIC SERVICE ELECTRIC AND GAS COMPANY )  
(Salem Nuclear Generating Station, )  
Units 1 & 2) )

Docket Nos. 50-272  
50-311  
License Nos. DPR-70  
DPR-75  
EA 83-24

ORDER IMPOSING CIVIL MONETARY PENALTIES

I

Public Service Electric and Gas Company, 80 Park Plaza, Newark, New Jersey 07101 (the "licensee") is the holder of License Nos. DPR-70 and DPR-75 (the "licenses") issued by the Nuclear Regulatory Commission (the "Commission" or "NRC") which authorizes the licensee to operate the Salem Nuclear Generating Station, Units 1 and 2, at Hancocks Bridge, New Jersey, in accordance with the conditions specified therein. License No. DPR-70 was issued on August 13, 1976 and has an expiration date of September 25, 2008. License No. DPR-75 was issued on May 20, 1981 and also has an expiration date of September 25, 2008.

II

An NRC review of the licensee's activities under the license was conducted between March 2 and March 6, 1983 to review the circumstances associated with the two anticipated transient without scram (ATWS) events that occurred at Unit 1 on February 22 and 25, 1983. As a result of the review, it appears that the licensee had not conducted its activities in full compliance with NRC requirements. A written Notice of Violation and Proposed Imposition of

Civil Penalties was served upon the licensee by letter dated May 5, 1983. The Notice states the nature of the violations, the provisions of the Nuclear Regulatory Commission requirements that the licensee had violated, and the amount of civil penalty proposed for each violation. Answers dated July 6, 1983 and July 22, 1983 to the Notice of Violation and Proposed Imposition of Civil Penalties were received from the licensee.

### III

Upon consideration of the answers received and the statements of fact, explanation, and argument for remission or mitigation of the proposed civil penalties contained therein, and as set forth in the Appendix to this Order, the Director of the Office of Inspection and Enforcement has determined that the penalties proposed for the violations designated in the Notice of Violation and Proposed Imposition of Civil Penalties should be imposed.

### IV

In view of the foregoing and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2282, PL 96-295), and 10 CFR 2.205, IT IS HEREBY ORDERED THAT:

The licensee pay civil penalties in the amount of Eight Hundred and Fifty Thousand Dollars (\$850,000) within thirty days of the date of this Order, by check, draft, or money order, payable to the Treasurer of the United States and mailed to the Director of the Office of Inspection and Enforcement, USNRC, Washington, D.C. 20555.

## V

The licensee may, within thirty days of the date of this Order, request a hearing. A request for a hearing shall be addressed to the Director, Office of Inspection and Enforcement. A copy of the hearing request shall also be sent to the Executive Legal Director, USNRC, Washington, D.C. 20555. If a hearing is requested, the Commission will issue an Order designating the time and place of hearing. Upon failure of the licensee to request a hearing within thirty days of the date of this Order, the provisions of this Order shall be effective without further proceedings and, if payment has not been made by that time, the matter may be referred to the Attorney General for collection.

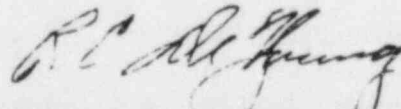
## VI

In the event the licensee requests a hearing as provided above, the issues to be considered at such hearing shall be:



- (a) whether the licensee violated NRC requirements as set forth in the Notice of Violation and Proposed Imposition of Civil Penalties; and
- (b) whether, on the basis of such violations, this Order should be sustained.

FOR THE NUCLEAR REGULATORY COMMISSION



Richard C. DeYoung, Director

Office of Inspection and Enforcement

ated at Bethesda, Maryland  
this 29 day of September 1983

## APPENDIX

### EVALUATIONS AND CONCLUSION

Although the licensee essentially admits the violations, the licensee's July 6, 1983 and July 22, 1983 responses to the Notice of Violation and Proposed Imposition of Civil Penalties for Salem Nuclear Generating Station, Units 1 and 2, dated May 5, 1983, state that civil penalties were not appropriate in this case, request mitigation of the amount of the civil penalties, and provide the reasons why the licensee believes mitigation of the penalties is appropriate. Provided below are (1) restatement of each violation, (2) the licensee's assertions in support of mitigation, and (3) the NRC response to each of the licensee's assertions.

#### Restatement of Violations:

- I. Technical Specification 3.3.1.1 and Table 3.3-1 require two Reactor Trip Breakers be operable when the reactor is operated in Modes 1 and 2. With one breaker inoperable, and consequently one channel inoperable, the reactor is required to be in Hot Standby within six hours.

Contrary to the above, the Salem Unit 1 plant was operated in Modes 1 and 2 on February 22, 1983 with both RPS reactor trip breakers inoperable in that both RPS reactor trip breakers failed to operate automatically upon receipt of a valid trip signal caused by low-low steam generator level. The reactor was manually tripped from the control room. During the post-trip review of the events by Public Service Electric & Gas Company personnel, the failure of the reactor to automatically shutdown was not recognized and, as a result, the reactor was taken critical on February 23, 1983 without the circumstances surrounding the February 22, 1983 event being properly evaluated in accordance with the Salem Station Administrative Procedures. Consequently, the Salem Unit 1 plant was again operated in Modes 1 and 2 with both reactor trip breakers inoperable from February 23, 1983 until approximately 12:21 a.m. on February 25, 1983 when both RPS reactor trip breakers again failed to operate upon receipt of a valid trip signal caused by low-low steam generator level. Each day the reactor operated with inoperable trip breakers constitutes a separate violation for which a civil penalty of \$100,000 is proposed.

This is a Severity Level I violation (Supplement I)  
Civil Penalty - \$400,000

- II. 10 CFR Part 50, Appendix B, requires the licensee to establish a quality assurance program.

Public Service Electric and Gas Company implements a quality assurance program through its Quality Assurance Manual, dated April 28, 1977.

However, as described below, the licensee did not properly implement certain aspects of its quality assurance program. This contributed to the reactor trip breakers being inoperable as described in Item I.

- A. Criterion XVI of 10 CFR, Part 50, Appendix B, requires in part, that "Measures shall be established to assure that conditions adverse to quality such as failures, malfunctions . . . are promptly identified and corrected. In the case of significant conditions adverse to quality, the measures shall assure that the cause of the condition is determined and corrective action taken to preclude repetition."

Contrary to the above,

Following the breaker failures at Unit 2 on August 20, 1982 and January 6, 1983, the licensee failed to adequately investigate the cause of the breaker failures, and failed to take corrective action with regard to the failed breakers and to inspect and service all of the reactor trip breakers on Units 1 and 2.

This is a Violation.  
Civil Penalty - \$100,000

- B. Criterion II of 10 CFR 50, Appendix B, requires in part, that "The applicant shall identify the structures, systems, and components to be covered by the quality assurance program..." The station issued the MEL in July, 1981 by incorporation in AP-9, "Control of Station Maintenance," to be used to classify components included in the Salem Q list as contained in QAI 2.1, Attachment 1, and UFSAR Table 17.2-1, which lists the items to which the operational QA program applies.

Contrary to the above, the licensee did not establish adequate control over the MEL. As a result,

1. The reactor trip breakers and the reactor protection system, which are safety-related, were not listed on the Master Equipment List (MEL), issued in July, 1981.
2. Administrative Procedure AP-19 (Revision 4, September 18, 1980) describes the MEL as containing a list of Salem items and appropriate safety, seismic and QA-required ("QA") classification, however the MEL was not issued as a controlled document by the originating Engineering Department and provisions for incorporating additional classifications or updating of the MEL were never implemented.

This is a violation.  
Civil Penalty - \$80,000

- C. Criterion IV of 10 CFR 50, Appendix B, requires in part that "Measures be established to assure that applicable regulatory requirements, design bases, and other requirements which are necessary to assure adequate quality are suitably included or referenced in the documents for procurement of material, equipment and services...."

Administrative Procedure AP-19, Revision 4, describes procurement as a two-step process in which (1) the item is identified and classified and the applicable quality requirements are established utilizing the Material Order/Item Classification Form (MO/IC), and (2) the MO/IC is formalized, administrative review is obtained, and approval is obtained in accordance with the appropriate Quality Assurance Instruction (QAI) utilizing the Material Request and Receiving Record (MR/RR).

Contrary to the above,

1. On January 27, 1982 Purchase Order No. 839270 was issued to purchase items identified in MO/IC 9944 issued on June 1, 1981 for a DB-50 type A circuit breaker and separate components (except UV attachment), without following this process in that:
  - (a) MO/IC 9944 incorrectly classified the DB-50 Type A circuit breaker and separate components (except the UV attachment) as Seismic Category 2. Because under the Updated Final Safety Analysis Report (UFSAR), Section 3.2, the reactor protection system is Seismic Class 1.
  - (b) MO/IC 9944 was neither reviewed by the Station Quality Assurance Engineer (SQAE) nor the Sponsoring Engineer contrary to QAI 4-1 and QAI 4-3.
2. Notwithstanding Section 4.4.3 of AP-19 which provides that an item cannot be classified as a Commercial Catalog Item (CCI) if it is not on a document which identifies it as an authorized replacement for the original or existing item, on August 27, 1982 MO/IC 20299 and MR/RR 7518 for Purchase Order 866077, classified undervoltage (UV) trip attachments for the reactor trip circuit breakers, components of the RPS, as CCI even though no document existed which identified the UV trip attachments ordered as authorized replacements.
3. Notwithstanding the requirement of Section 4.4.3 of AP-19 stated above, on February 25, 1983, MO/IC 28445 was issued for eight UV trip attachment components for the reactor protection system. These components were classified as CCI even though a document did not exist which identified the UV trip attachment as authorized replacements for the original or existing items. These components were received onsite per MR/RR 1644-M, and



receiving inspection was not performed for these delivered components prior to providing them to the requesting department, contrary to AP-19 requirements.

This is a violation.  
Civil Penalty - \$60,000

- D. Criterion V of 10 CFR 50 Appendix B, requires in part, that "Activities affecting quality shall be prescribed by documented instructions, procedures, or drawings, of a type appropriate to the circumstances and shall be accomplished in accordance with these instructions, procedures, or drawings. Instructions, procedures, or drawings shall include appropriate quantitative or qualitative acceptance criteria for determining that important activities have been satisfactorily accomplished."

Contrary to the above,

1. Administrative Procedure AP-9, "Control of Station Maintenance," requires the Master Equipment List (MEL) to be used for equipment classification. However, maintenance department personnel were not using the MEL. Consequently on January 10, 1983 Work Order No. 925774 was issued to perform the following work: disassemble, inspect and clean, reassemble and test the Unit 1 reactor trip breakers. The maintenance department used Project Directive 7 (PD-7) instead of the MEL and was unable to locate the reactor trip breakers on the PD-7 (although they were listed and properly classified on PD-7) to determine the safety classification. As a consequence, Work Order 925774 was classified as non-safety-related.
2. Administrative Procedure AP-9, "Control of Station Maintenance," requires notification of the QA staff prior to performing safety-related work and a QA review of completed safety-related work orders. For all safety-related work orders on the reactor trip and bypass breakers, prior notification was made; however, work orders TM-0053 (for Unit 2 prior to receipt of operating license), 902975, 917753, and 936238 did not receive QA review after work was completed.
3. From initial operation in December 1976 of Unit 1, and from August, 1980 for Unit 2 until January 1983, the licensee did not perform preventive maintenance on reactor trip and bypass breakers. For the maintenance performed in January 1983 the maintenance was conducted without an appropriate procedure, although the reactor trip breakers are safety-related.

This is a violation.  
Civil Penalty - \$60,000

- E. Criterion VIII of 10 CFR 50, Appendix B, requires in part, that "Measures shall be established for the identification and control of materials....These measures shall assure that identification...is maintained...or records traceable to the item, as required throughout...use of the item."

Contrary to the above,

As of February 25, 1983 the licensee had not maintained a system to trace breaker location (i.e., which breaker is in which location). However, the reactor trip breakers were switched with the bypass breakers and with reactor trip breakers in the other Unit. Any of the eight breakers involved (four for each Unit), could be interchanged.

This is a violation.  
Civil Penalty - \$50,000

- F. Technical Specification Table 4.3-1 (21), Reactor Trip Instrumentation Surveillance Requirements, requires that each reactor trip breaker be functionally tested bi-monthly and within 7 days prior to startup.

Contrary to the above,

On February 22, 1983, the "B" reactor trip bypass breaker was placed in service as the "B" reactor trip breaker, even though the breaker should have been considered inoperable because the bypass trip breaker was not functionally tested prior to startup on February 22, 1983 to determine its ability to trip automatically on undervoltage.

This is a violation.  
Civil Penalty - \$50,000

Violations A through F, when viewed in the aggregate, have been categorized at a Severity Level II (Supplement I). The Commission has determined that these contributors to the events of February 22 and 25 are as significant as the events themselves and should be assessed a cumulative civil penalty equivalent to the amount assessed for Item I. The amount assessed for each violation is based on the relative significance of each violation to the other violations included in this Item.

Cumulative Civil Penalty - \$400,000

- III. 10 CFR 50.72 requires, in part, that each licensee notify the NRC Operations Center as soon as possible, and in all cases within one hour of (1) any event resulting in manual automatic actuation of Engineering Safety Features, including the RPS, and (2) any event that results in the nuclear power plant not being in an expected condition while operating or shut down.

Contrary to the above,

The NRC Operations Center was not notified within one hour of events which required such notification in accordance with 10 CFR 50.72 as evidenced by the following:

- A. On January 30, 1983 at approximately 5:50 p.m., a safety injection occurred during cooldown of the reactor and the NRC Operations Center was not notified until 7:27 p.m.
- B. On February 22, 1983 at approximately 9:56 p.m., the plant was shut down because of not being in an expected condition (loss of a reactor coolant pump, loss of a main feed pump, loss of a substantial amount of nonsafety instrumentation indication, and steam generator levels dropping rapidly), and the NRC Operations Center was not notified until 11:34 p.m. Also, although there was a safety injection and the PORVs lifted at 10:11 p.m., this was not reported to the NRC until February 23, 1983 at 12:12 a.m.
- C. On February 25, 1983 at 12:22 a.m., the plant was shut down manually, 25 seconds after it failed to shut down automatically upon receipt of a valid shutdown signal, and the NRC Operations Center was not notified of this unexpected condition until 1:46 a.m.

This is a Severity Level III violation (Supplement I)  
Civil Penalty - \$50,000

Licensee's Assertion: Given the "remedial" nature of civil penalties authorized by the Atomic Energy Act, the Commission must have an adequate factual basis upon which to conclude that the imposition of a large civil penalty will serve such a remedial purpose. In this case, the proposed penalty is unnecessary because significant corrective actions were either completed or committed to as part of a comprehensive remedial program prior to issuance of the Notice of Violation and Proposed Imposition of Civil Penalties. Thus, imposition of the civil penalties will not contribute to achieving compliance with NRC regulations.

NRC Response: The Commission addressed the remedial purpose of civil penalties in its decision in the Atlantic Research case, CLI-80-7, 11 NRC 413, 419-21 (1980). In that case, the licensee argued that any civil penalty was punitive and, therefore, beyond the Commission's authority because the licensee had promptly taken appropriate measures to avoid a repetition of the incident before imposition of the penalty. The Commission found that so long as the NRC can rationally relate the imposition of a civil penalty to potential improvement of conduct, either of the licensee or other persons in similar positions, in furthering the purposes of the Atomic Energy Act, then the penalty is within the authority of §234 of the Atomic Energy Act. The NRC proposed civil penalties in this case because it believes that such penalties will contribute to continued efforts toward long-term compliance with the Commission requirements by PSE&G and other licensees. Thus, imposition of civil penalties in this case is in accord with the Commission's statutory authority. Furthermore, although

many of the corrective actions enumerated in the licensee's response had already been completed when the civil penalty was issued, the Commission believed that a civil penalty was necessary to emphasize the significance that the NRC attaches to the events at Salem and to ensure sustained attention to implementation of long-term corrective actions necessary to prevent additional problems.

Licensee's Assertion: It is unreasonable for the Commission to assess a civil penalty for four days of violation for Item I. Although the licensee operated in violation of its Technical Specifications on four different calendar days, the total elapsed time of such operation was only approximately 51 hours.

NRC Response: Under its statutory authority, the Commission may impose a civil penalty of up to \$100,000 for each violation. The statute also provides that where a violation continues, each day of such violation shall constitute a separate violation for the purpose of computing a civil penalty. Although the term "day" is not defined, the Commission has consistently interpreted that term in the context of its enforcement cases as referring to calendar days. Such a reading of the statute is not unreasonable and in the circumstances of this case, the NRC staff believes it is appropriate to impose a separate penalty for each calendar day that the licensee operated in violation of its Technical Specifications.

Licensee's Assertion: Many of the problems that led to the ATWS events at Salem are generic as documented in NUREG-1000, "Generic Implications of ATWS Events at the Salem Nuclear Power Plant." The generic applicability of these problems is reinforced by the NRC's Generic Letter 83-28 dated July 8, 1983 which requires the industry to take certain actions based on the generic implications of the Salem incidents. PSE&G has already taken action on the major elements of Generic Letter 83-28 and hence, the imposition of the proposed civil penalties cannot reasonably be viewed as serving a remedial purpose.

NRC Response: The fact that many of the problems at Salem have generic implications focuses the need for the NRC and the industry to learn from the Salem incidents and establish and/or emphasize remedial actions which will prevent a similar occurrence. It does not dismiss the fact that many of the problems at Salem involved violations of NRC requirements which led to the reactor trip breaker failures. As noted above, the Commission believes that a civil penalty for violations of NRC requirements is necessary to emphasize the significance that the NRC attaches to the events at Salem and to ensure sustained attention to implementation of the long-term corrective actions.

Licensee's Assertion: There were numerous significant problems requiring evaluation after the February 22 incident, so the focus of individuals evaluating the incident was on resolving those problems. Additionally, the operators acted promptly to shut down the plant, thereby masking the trip breaker failures since the manual trip occurred only 3.6 seconds after the automatic trip signal. Finally the sequence-of-events (SOE) recorder which provided the only evidence available of the trip header failures, is not required equipment, nor is one installed at all plants.



NRC Response: All of the above information was revealed during the investigation of the incidents and was taken into consideration in determining the level of the civil penalty. The NRC staff recognizes the difficulty in resolving the problems associated with the February 22 event. However, the plant was restarted without a complete understanding of the incident although information was available to provide such understanding. Other activities associated with the event were also not explained. Based upon discussions with the operator who initiated the manual trip, it was his belief that his action had in fact caused the plant to trip. A proper evaluation of the SOE recorder subsequent to the February 25 event indicated that the plant had been tripped manually on February 22 and confirmed the operator's judgment. Additionally, the first-out panel was cleared without recognizing which first-out annunciator was lit. These facts should have prompted a more detailed investigation prior to plant restart. The fact that the SOE recorder is not required equipment does not mean that the licensee should be excused for its failure to use information provided by the recorder to analyze the causes of the February 22 event. The SOE was available to the licensee and should have been used to conduct the necessary review prior to restart.

Licensee's Assertion: The Enforcement Policy provides that licensees are not normally cited for violations resulting from matters not within their control, i.e., equipment failures, that were not avoidable by reasonable licensee quality assurance measures or management controls. PSE&G's position is that the breaker design contributed to its failures in that the short life span for undervoltage trip (UVT) attachment and the potential reliability problems were not previously known by the industry or NRC until the Salem events. Additionally, the vendor's technical manual did not address UVT attachment lubrication and Salem was not the only plant not maintaining the trip breakers in accordance with the Westinghouse Technical Bulletin and NSD Data Letter 74-2.

NRC Response: The NRC staff disagrees with the assertion that these equipment failures resulted from matters beyond licensee's control. As delineated in Item II of the Notice of Violation, there were many quality assurance problems related to the reactor trip breakers which contributed to the trip breaker failures. Additionally, there were previous undervoltage trip attachment failures in DB 50 breakers at Salem and other plants which indicated potential reliability problems with this device, yet no preventive maintenance program or other actions other than surveillance testing were instituted on the reactor trip breakers from initial operation until January 1983. In particular, the UVT attachment failures in August 1982 were not fully investigated so as to develop effective remedial measures.

Licensee's Assertion: Item I of the Notice of Violation should be classified as Severity Level II because the manual reactor trip worked and, therefore, there was not a total loss of safety function. The manual trip is required and it actuates the shunt trip device as well as the UVT attachment. This situation is similar to the Haddam Neck case in which the UVT attachments failed but the shunt attachments on both breakers were determined to be operable, and hence that event did not constitute a complete failure of the trip system.

NRC Response: The Salem ATWS events (Item I) are properly classified as Severity Level I. There was a complete failure of the automatic reactor trip system to perform its intended safety function when called upon to work. The automatic reactor trip system is a safety-grade system relied upon to prevent core damage in the event of design-basis accidents as discussed in the Final Safety Analysis Report. The manual trip at Salem provides an additional means to trip the plant, but it cannot fulfill the same safety functions as the automatic reactor trip system, and hence, it is not redundant to the automatic trip system. In addition, the automatic trip system at Salem actuates only the UVT attachment, whereas the manual trip actuates both a shunt trip attachment and the UVT attachment. As noted in the PSE&G submittal, the shunt trip attachments are part of the Haddam Neck automatic reactor trip system, and hence, there was not a total failure of the automatic trip system at Haddam Neck.

Licensee's Assertion: PSE&G objects to the NRC position that the violations in Item II of the Notice of Violation are as serious as the Item I violations and argues that the Item II violations should not result in a civil penalty equivalent to that proposed for Item I. PSE&G questions whether any penalty is appropriate for certain violations in Item II and further argues that there are strong mitigating factors which must be considered for the Item II violations.

NRC Response: The problems related to reactor trip breaker maintenance, procurement and testing which are delineated in Item II of the Notice, in our view, significantly contributed to the reactor trip breaker failures. Since the Commission considers the cause of the ATWS events to be as significant as the events themselves, the penalties for Item II were made equal to those proposed for Item I. For the reasons provided in this response, we disagree with the licensee's assertions that mitigation is warranted for the specific parts of Item II which were addressed in the licensee's response. Hence, the licensee has provided insufficient justification for mitigation of the Item II penalties.

Licensee's Assertion: Item II.A, concerning failure to adequately investigate the cause of the breaker failures and failure to take corrective action with regard to the failed breakers, should not result in a civil penalty. Actions to correct the specific breaker failures of August 20, 1982 and January 6, 1983 were taken. Following the January 6 failure, all Unit 1 trip breakers and bypass breakers were serviced either by a Westinghouse representative or pursuant to his direction. The reactor trip breakers on Unit 2 were subsequently serviced during the Unit 2 outage.

NRC Response: The January 6, 1983 reactor trip breaker failure was the third failure of a UVT attachment at Salem (the first was February 1979 in startup testing), yet no comprehensive investigation as to the cause of the failures was undertaken. Even after the January 6 failure, Unit 2 remained in operation

with no inspection or servicing of the remaining trip breakers. Given the significance of reactor trip breakers, insufficient actions were taken, in the staff's view, to comply with Appendix B Criterion XVI with respect to the trip breakers.

Licensee's Assertion: With respect to Item II.D.3, preventive maintenance was not performed on reactor trip and bypass breakers because of specific instructions in the manual and because the vendor failed to update maintenance procedures for the breakers.

NRC Response: PSE&G as the licensee is responsible for all activities affecting quality at the Salem station. Even though work may be delegated to contractors and vendors, PSE&G retains responsibility for the quality of their activities.

Licensee's Assertion: With respect to Item II.E, which concerns breaker traceability, the Salem events demonstrate that the item for which traceability is critical is the UVT attachment. However, the vendor provided no means by which UVT attachments which incorporate all design modifications could be distinguished.

NRC Response: The PSE&G practice of switching reactor trip breakers with bypass breakers and with trip and bypass breakers of the other unit, probably resulted in placing untested or only partially tested breakers into reactor trip breaker positions which would make the breaker technically inoperable according to technical specifications. Without documentation to determine breaker position at any particular time, it would not be possible to determine if the breakers were fully tested to ensure operability. The functional testing conducted after breaker switching was not sufficient to test all aspects of breaker operability. In particular, no testing was done to ascertain the operability of the UVT attachment. It is this aspect of traceability that is the basis for this violation.

### Conclusion

The violations occurred as originally stated. The licensee has not provided sufficient basis for mitigation of the proposed penalty of \$850,000. The NRC staff concludes that an \$850,000 civil penalty should be imposed.

Public Service  
Electric and Gas  
Company

**R. Edwin Selover**  
Vice President and  
General Counsel

80 Park Plaza, Newark, NJ 07101 201-430-6450 Mailing Address: P.O. Box 570, Newark, NJ 07101

October 28, 1983

Mr. Richard C. DeYoung, Director  
Office of Inspection and Enforcement  
U. S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Re: Notice of Violation and Proposed Imposition  
of Civil Penalties  
Docket Nos. 50-272, 50-311,  
License Nos. DPR-70, DPR-75  
EA 83-24

Dear Mr. DeYoung:

Public Service Electric and Gas Company (the "Company") is in receipt of your letter dated September 29, 1983, and the Order Imposing Civil Monetary Penalties (the "Order") and Appendix attached thereto (the "Appendix"). Said Order requires payment of civil penalties in the amount of \$850,000 by October 29, 1983 or a formal request for hearing addressed to the NRC.

After consideration of the costs which would be involved in pursuing this matter further, especially in light of the considerable deference which would be paid to the NRC's position in any appeal, we are enclosing a check for such amount as evidence of our good faith, notwithstanding the differences which remain in respect of the May 5, 1983 Notice of Violation and Proposed Imposition



of Civil Penalties (the "Notice") in this matter. In determining not to formally pursue this matter further, we also recognize, as we have indicated before, that the standard expected by the NRC of its licensees is more stringent than virtually every other standard of conduct imposed by other regulatory schemes, whether under federal or state law. Thus, this settlement of the matter, subject to any further review which you may deem appropriate as a result of the comments below, will have no application in other forums.

As indicated in the Appendix, the NRC proposed the civil penalties in this case on the belief that they would contribute to continued efforts toward long-term compliance with Commission requirements by the Company and other licensees, i.e. that there is a rational nexus between the imposition of such civil penalties and the potential improvement of conduct, either of the licensee or other persons in similar positions. The penalties are further thought by the NRC to be necessary to emphasize the significance that it attaches to the Salem events.

As indicated previously, we are fully aware that the events which occurred on February 22 and 25, 1983 at Salem Generating Station ("Salem") Unit No. 1 are both significant and far-reaching for the Company and the entire

nuclear industry. Irrespective of any civil penalties, and in advance of their proposed imposition, the Company undertook and will diligently follow through on strong corrective actions with respect to the equipment responsible for the February failures, the related operating and maintenance procedures, and the execution of such procedures by personnel. It is apparent, as recognized by the Commission<sup>1/</sup>, that the Company's actions will serve as a guideline to the nuclear industry in responding to the generic implications of the Salem events.

We cannot comment on the effect that the civil penalties will have on other licensees, but the principal effect of the civil penalty on our nuclear operations was demoralization. The Company's corrective action program was not adopted in response to the Notice, and our commitment to the highest performance standards exists irrespective of NRC enforcement actions. We respectfully suggest that the Commission reconsider its overall enforcement policy with a view toward making it an effective regulatory tool for inducing innovative solutions to the industry's problems.

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<sup>1/</sup> See e.g. NRC Generic Letter 83-28 dated July 8, 1983 entitled "Required Actions Based on Generic Implications of Salem ATWS Events."

In its present form, it serves only as a club. Rather than a civil penalty payable to the United States Treasury, one direction which might be considered would be to permit a licensee to expend an equivalent amount towards accomplishing a desired goal for the nuclear industry and make the results of the program generally available.

Our more specific comments with respect to the Appendix follow.

As stated in the Appendix, the reactor trip system did not automatically perform its intended safety function when called upon to work. However, the manual trip provides an additional means to shut down the plant. As indicated by the NRC in the Federal Register of September 28, 1983 at page 44288:

"...The RTS [Reactor Trip System] is designed to initiate automatically the reactivity control system (control rods) to shut down the reactor, thereby assuring that acceptable fuel design limits are not exceeded, and is designed to failsafe for most internal component failures. The RTS can also be actuated manually by operator action.

....

"...Safe control of anticipated operating transients is strongly dependent on the reliable and fast operation of reactor trip, either automatically or manually." [Emphasis added.]

Our operators acted promptly in response to both February

events (despite very complex plant conditions in the case of February 22), thereby demonstrating the importance of the manual reactor trip function as an equally valid part of the reactor trip system. This action resulted in a prompt, safe plant shutdown in both cases, despite a type of common mode failure which was not anticipated by the NRC, the nuclear industry or the Company. In fact, the NRC has indicated that advance warning of the Salem events may have required "hindsight" and that future Licensee Event Report requirements will be designed to assist the industry in the recognition of the generic implications of failures.<sup>2/</sup>

The Appendix claims that the January 6, 1983 reactor trip breaker failure at Salem 2 was the third failure of an undervoltage trip attachment at Salem, yet no comprehensive investigation as to the cause of the failures was undertaken. As recognized, the first failure was in February 1979 in start-up testing of Unit 2, before the circuit breaker had been declared operable. During any shake-down of a major generating unit, numerous problems occur and must be resolved prior to declaring a unit operable. Although these occurrences are not taken lightly,

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<sup>2/</sup> NUREG 1000, "Generic Implications of the ATWS Events at the Salem Nuclear Power Plant", Volume 1, at page 3-24.



their validity in establishing any trend of failures is questionable.<sup>3/</sup>

Thus, the failure in August 1982 (which was the second failure, but only the first after commercial operation), was treated as an isolated event.<sup>4/</sup> Because the January 6, 1983 failure was the second in less than six months, the Company was quite concerned and promptly requested Westinghouse, on a priority basis, to provide

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<sup>3/</sup> The fact that the Company was concerned about such matters even prior to start-up testing may be illustrated by the fact that when the Atomic Energy Commission ("AEC") notified the Company by letter in December 1971 that failures had occurred at two operating plants using Westinghouse-type DB-50 circuit breakers (the AEC sent the body of IE Bulletin No. 71-2 to utilities with nuclear units under construction), the Company promptly wrote to Westinghouse and indicated that since Salem would also use DB-50 breakers, Westinghouse should advise if the problems related by the NRC still exist and are applicable to Salem, notwithstanding the fact that the letter from the AEC indicated that no action was required on the Company's part. The Company also requested Westinghouse to inform as to what information had been transmitted to the AEC on the matter, as well as any changes anticipated for the Salem plant if a problem still existed. Westinghouse responded by sending NCD-Elec-18 to the Company and indicated in a letter dated January 26, 1972 that a Westinghouse Nuclear Energy Systems engineer would supervise the replacement of all eight undervoltage trip attachments on Salem 1 and 2 as a result.

<sup>4/</sup> The August 1982 failure was also on Unit 2. The Company had been operating Unit 1 commercially since June 1977 and Unit 2 since November 1981 without any failures of the undervoltage trip attachments.

maintenance assistance on all of the breakers on Salem 1 (which was at that time out of service for refueling) and requested the Westinghouse representative to provide an appropriate preventive maintenance procedure. Salem 2 was scheduled to be taken out of service about two weeks later, and it was intended that such preventive maintenance on the Salem 2 breakers would be performed during said outage.

The fact that the Company recognized the need for such a preventive maintenance program was confirmed in the NRC Region I Inspection Report dated February 15, 1983 indicating that the Company had not closed its consideration of this matter.<sup>5/</sup> Further, it is clear that the vendor's maintenance instructions for the undervoltage trip attachments which were in existence at the time of the Salem events (but which had not been supplied to the Company) were inadequate. A comparison of Westinghouse Data Letter 74-2 dated February 19, 1974 with the current detailed six page Technical Bulletin 83-02, Revision 1, dated September 13, 1983, providing recommendations for the servicing of DB-50 reactor trip breakers in general, and their undervoltage trip attachments in particular, vividly demonstrates such lack of proper instruction.

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<sup>5/</sup> Combined Inspection Report Nos. 50-272/82-36, 50-311/82-33, dated February 15, 1983, at page 13.

The Appendix claims that the equipment failures at Salem 1 in February 1983 did not result from matters beyond the Company's control and that even though work may be delegated to contractors and vendors, the Company retains responsibility for the quality of their activities for NRC purposes. On the other hand, the NRC has stated the following with respect to causes of the Salem failure relating to vendor performance:

"Problems with the interface between Westinghouse and PSE&G related to equipment information are discussed in Section 2.3.2.2. There are several issues, however, which appear to be the primary responsibility of the NSSS vendor.

"Westinghouse provided no means by which undervoltage trip attachments having the design modifications delineated in NDC-Elec-18 could be unequivocally identified. This was the case for undervoltage trip attachments which were modified in the field as well as for undervoltage trip attachments originally manufactured with the modifications.

"There are significant questions concerning the lifetime of the undervoltage trip attachments which properly should have been addressed when the circuit breakers were specified for use in the reactor trip system by the NSSS vendor. Sufficient verification through circuit breaker testing was not specified by the NSSS vendor to determine that the breakers (and trip attachments) were capable of lasting through the entire life of the plant. Furthermore, the NSSS vendor did not specify tests to be performed periodically by the utility for detecting breaker degradation and, thus, the need for breaker or trip attachment replacement." [Emphasis added.]<sup>6/</sup>

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<sup>6/</sup> NUREG 1000, Volume 1, at page 2-27.

As we have stated previously, the Company recognizes and accepts its responsibility for safe operation of Salem. We respectfully question, however, whether there can be any meaning left at all to the statement in the NRC Enforcement Policy that "[l]icensees are not ordinarily cited for violations resulting from matters not within their control, such as equipment failures that were not avoidable by reasonable licensee quality assurance measures or management controls."<sup>7/</sup>

While the Company had experienced two failures of the reactor trip breakers after the completion of start-up testing, this experience was not in any way atypical in the utility industry. In fact, six other nuclear plants had experienced more than one failure of a Westinghouse reactor trip breaker through 1982, and there had been a total of 20 reported such failures in the industry to that point.<sup>8/</sup> We do not believe the Company's actions differed materially from those of other utilities with similar experience.

In conclusion, we wish to again confirm with the Commission our commitment to diligently follow through on

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<sup>7/</sup> General Policy and Procedure for NRC Enforcement Actions, 10 C.F.R. Part 2, Appendix C, at IV.A.

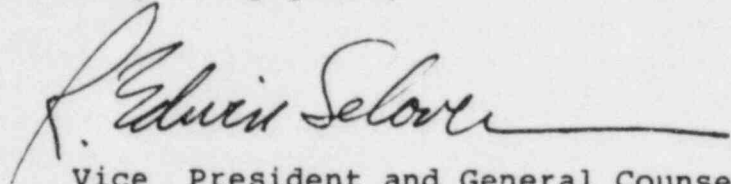
<sup>8/</sup> NUREG 1000, Volume 1, at pages 3-45 through 3-47.



- 10 -

strong corrective actions with respect to the equipment responsible for the February failures, the related operating and maintenance procedures, and the execution of such procedures by personnel.

Very truly yours,

A handwritten signature in cursive script, reading "R. Edwin Selove", followed by a horizontal line.

Vice President and General Counsel



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA STREET, N.W.  
ATLANTA, GEORGIA 30303

OCT 6 1983

University of Virginia  
ATTN: Mr. J. S. Brenizer, Director  
Reactor Facility  
Charlottesville, Virginia 22901

Gentlemen:

SUBJECT: PROPOSED IMPOSITION OF CIVIL PENALTY EA 83-90  
REFERENCE: INSPECTION REPORT NO. 50-062/83-02

An inspection was conducted by NRC inspectors on June 2-3, 1983 and July 6-8, 1983, in response to the incident in May 1983 at the University of Virginia Reactor (UVAR) facility resulting in an inadequate reactor shutdown margin. This inspection included a review of the UVAR facility regarding the adequacy of your administrative and managerial controls to assure that adequate procedures are being properly implemented. The findings of the inspection were discussed with facility management at the conclusion of the inspection and are contained in the enclosed inspection report (Inspection Report No. 50-062/83-02). NRC concerns were discussed by the Deputy Regional Administrator of Region II with senior facility and University management at an enforcement conference held at the facility on July 14, 1983.

The inspection findings demonstrate that an adequate system for determining and controlling shutdown margin did not exist at the UVAR facility. This resulted in the violation of facility Technical Specifications. Additionally, adherence to established fuel handling procedures was not maintained. We do note that, once the magnitude of the problem became apparent to facility management, appropriate near-term corrective action was initiated.

The NRC attaches importance to comprehensive licensee programs for detection, correction, and reporting of problems that may constitute or lead to violations of regulatory requirements. In this case, your programs did not detect the inadequacies discussed above. Comprehensive programs to ensure proper performance of safety-related activities require meticulous and continuing attention by both management and technically qualified personnel. In this case, we are convinced that such attention was not provided.

Accordingly, to emphasize the need for the University of Virginia to maintain proper managerial and procedural control over all aspects of safety-related activities and to operate the UVAR facility in accordance with Technical Specifications, and after consultation with the Director of the Office of Inspection and Enforcement, I have been authorized to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalty in the amount of \$1,000. The violation is classified at Severity Level III (Supplement I) pursuant to the NRC Enforcement Policy, 10 CFR Part 2, Appendix C. As discussed in the NRC Enforcement

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

OCT 6 1983

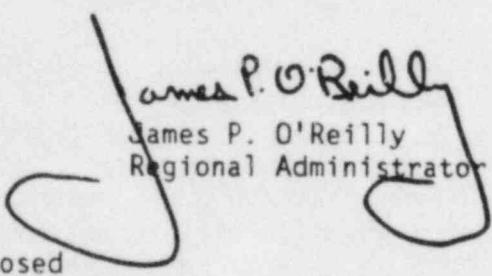
Policy, the base civil penalty for a Severity Level III problem is \$2,500. The NRC Enforcement Policy provides that civil penalty amounts may be mitigated after consideration of relevant circumstances. In accordance with the NRC Enforcement Policy, the base amount of the proposed civil penalty has been mitigated 20% based upon your actions in reporting this event. Your reporting was prompt and included an evaluation of the event. Further mitigation based upon prompt identification and reporting is not warranted because your evaluation was not sufficiently thorough in that it did not examine the extent of the violation. The civil penalty has been mitigated an additional 40% based upon the corrective actions you have initiated. Your near-term actions were prompt and extensive. Further mitigation based upon corrective actions to prevent recurrence is not warranted because your long-term actions were not aggressively pursued. However, following discussions with the NRC, an aggressive schedule for long-term corrective action was initiated.

You are required to respond to the enclosed Notice and should follow the instructions specified therein when preparing your responses. We request that you include in your response corrective measures that you may take relating to the planning process and the conduct of independent audits following completion of work related to nuclear safety. Your reply to this letter and the results of future inspections will be considered in determining whether further action is appropriate. Also, we believe it would be constructive for you to consider the desirability of conducting a "lessons learned" program for senior operators involved with the planning of core and experimental configurations.

In accordance with 10 CFR 2.790 of the NRC's "Rule of Practice", Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosure will be placed in the NRC's Public Document Room.

The responses directed by this letter and the enclosures are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,



James P. O'Reilly  
Regional Administrator

Enclosures:

1. Notice of Violation and Proposed Imposition of Civil Penalty
2. Inspection Report 50-062/83-02

cc w/encls:

T. G. Williamson, Chairman  
Department Nuclear Engineering  
and Engineering Physics  
University of Virginia

NOTICE OF VIOLATION  
AND  
PROPOSED IMPOSITION OF CIVIL PENALTY

University of Virginia  
Charlottesville, Virginia 22901

Docket No. 50-062  
License No. R-66  
EA 83-90

On May 30, 1983 operators at the University of Virginia Reactor (UVAR) discovered that the shutdown margin at the facility was apparently 0.35% delta k/k, which was less than the 0.4% delta k/k required by Technical Specification 3.1(1). The first phase of the NRC inspection of this event was performed on June 2-3, 1983. Among the findings were the observations that the control rods had not been calibrated for the core configuration in use at that time and that the licensee had no reactivity balance procedure. It was also determined that fuel had been added to the core without following the refueling procedures. Subsequent to this initial review, the licensee substantially revised the standard operating procedures for the facility and performed a series of control rod calibrations for some of the configurations used since the control rods had last been calibrated. Those revisions and test results were reviewed in the second phase of the inspection on July 6-8, 1983. The licensee chose not to reestablish the core configuration of May 30, 1983 because of increased evidence that the shutdown margin requirement could not be satisfied. Using control rod worth curves for a core configuration similar to the one of concern, evaluations by both the licensee and the inspectors led to the conclusion that the core, during the period from May 25-30, 1983, would have been supercritical by more than 0.2% delta k/k in the xenon-free state with the highest worth rod stuck out. The evaluations also revealed that, for the period May 18-25, 1983, the shutdown margin was less than 0.4% delta k/k, but that some margin did exist.

To emphasize the need for the University of Virginia to maintain proper managerial and procedural control over all aspects of safety-related activities and to operate the UVAR facility in accordance with Technical Specifications, the Nuclear Regulatory Commission proposes to impose a civil penalty in the amount of \$1,000 for this Severity Level III problem.

The NRC Enforcement Policy provides that civil penalty amounts may be mitigated after consideration of relevant circumstances. In accordance with the NRC Enforcement Policy, the base amount of the proposed civil penalty has been mitigated 20% based upon your actions in reporting this event. Your reporting was prompt and included an evaluation of the event. Further mitigation based upon prompt identification and reporting is not warranted because your evaluation was not sufficiently thorough in that it did not examine the extent of the violation. The civil penalty has been mitigated an additional 40% based upon the corrective actions you have initiated. Your near-term actions were prompt and extensive. Further mitigation based upon corrective actions to prevent recurrence is not warranted because your long-term actions were not aggressively pursued. However, following discussions with the NRC an aggressive schedule for long-term corrective action was initiated.



In accordance with the NRC Enforcement Policy, 10 CFR Part 2, Appendix C, and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended ("Act"), 42 USC 2282, PL-96-295, and 10 CFR 2.205, the particular violations and associated civil penalty is set forth below:

- A. Technical Specification 3.1(1) requires that reactor not be operated above 1kw unless the minimum shutdown margin is greater than 0.4% delta k/k.

Contrary to the above, the reactor was operated at a power greater than 1kw during the period May 25-30, 1983 without the required shutdown margin.

- B. Technical Specification 4.1 (2) requires that shim rod reactivity worths be measured whenever the rods are installed in a new core configuration. SOP 5.7 requires rod worth measurements be performed following core configuration changes.

Contrary to the above, a new core configuration existed resulting from core alterations made on May 20, but the required shim rod reactivity worth measurements were not made.

- C. Technical Specification 6.3 requires that written approved procedures shall be in effect and followed for start-up, operation, and shutdown of the reactor and for the handling of fuel and experiments.

Contrary to the above, the licensee did not have written approved procedures for determining reactor shutdown margin by accounting for changes in shutdown margin as a function of fuel manipulation, experiment manipulation, burnup, xenon concentration, or for calculating an estimated critical position.

Collectively, the above violations have been evaluated as a Severity Level III problem. (Supplement I).

Cumulative Civil Penalty - \$1,000 assessed equally among the violations.

Pursuant to the provisions of 10 CFR 2.201, the University of Virginia is hereby required to submit to the Director, Office of Inspection and Enforcement, U. S. Nuclear Regulatory Commission, Washington, DC 20555, and a copy to the Regional Administrator, U. S. Nuclear Regulatory Commission, Region II, within 30 days of the date of this Notice a written statement or explanation in reply, including for each alleged violation: (1) admission or denial of the alleged violation; (2) the reasons for the violation if admitted; (3) the corrective steps which have been taken and the results achieved; (4) the corrective steps which will be taken to avoid further violations; and (5) the date when full compliance will be achieved. Consideration may be given to extending the response time for good cause shown. Under the authority of Section 182 of the Act, 42 U.S.C. 2232, this response shall be submitted under oath or affirmation.

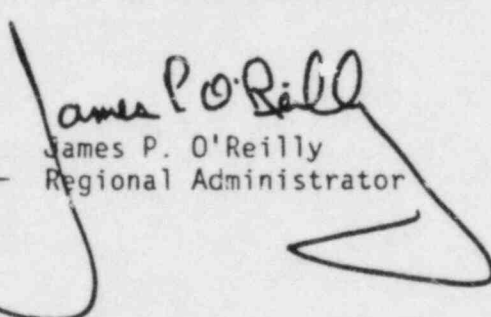
Within the same time as provided for the response required above under 10 CFR 2.201, the University of Virginia may pay the civil penalty in the amount

of \$1,000 or may protest imposition of the civil penalty in whole or in part by a written answer. Should the University of Virginia fail to answer within the time specified, the Director, Office of Inspection and Enforcement will issue an Order imposing the civil penalty proposed above. Should the University of Virginia elect to file an answer in accordance with 10 CFR 2.205 protesting the civil penalty, such answer may: (1) deny the violation presented in this Notice in whole or in part; (2) demonstrate extenuating circumstances; (3) show error in this Notice; or (4) show other reasons why the penalty should not be imposed. If requesting mitigation of the proposed penalty, the five factors contained in Section IV(B) of 10 CFR Part 2, Appendix C should be addressed. Any written answer in accordance with 10 CFR 2.205 should be set forth separately from the statement or explanation in reply pursuant to 10 CFR 2.201, but may incorporate statements or explanations by specific reference (e.g., citing page and paragraph numbers) to avoid repetition.

The University of Virginia's attention is directed to the other provisions of 10 CFR 2.205, regarding the procedures for imposing a civil penalty.

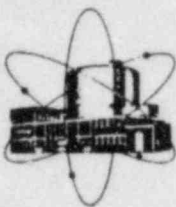
Upon failure to pay any civil penalty due, which has been subsequently determined in accordance with the applicable provisions of 10 CFR 2.205, this matter may be referred to the Attorney General, and the penalty, unless compromised, remitted, or mitigated, may be collected by civil action pursuant to Section 234c of the Act 42 U.S.C. 2282.

FOR THE NUCLEAR REGULATORY COMMISSION



James P. O'Reilly  
Regional Administrator

Dated at Atlanta, Georgia  
this 6 day of October 1983



UNIVERSITY OF VIRGINIA  
SCHOOL OF ENGINEERING AND APPLIED SCIENCE  
CHARLOTTESVILLE, 22901

DEPARTMENT OF NUCLEAR ENGINEERING AND ENGINEERING PHYSICS  
REACTOR FACILITY

TELEPHONE: 804-924-7136

November 3, 1983

Director, Office of Inspection and  
Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, D. C. 20555

Subject: Response to Notice of Violation and Proposed Imposition of  
Civil Penalty EA 83-90  
Reference: Inspection Report No. 50-062-02

Dear Sir:

Attached is the University of Virginia Reactor (License No. R-66)  
Facility's response to the Notice of Violation and Proposed Imposition  
of Civil Penalty (EA 83-90) as required by that notice. Also attached is  
a check (Check No. 105680) for \$1000.00 to pay the imposed civil penalty.

Although we have decided not protest the civil penalty, we would  
like to note that we do not agree with all of the violations stated in  
the Notice (EA 83-90) and to emphasize our belief that, in this particular  
situation, the imposition of a civil penalty was excessive and not  
required to obtain management's attention and action. We would like to  
suggest that the NRC review the policy of imposing civil penalties on  
University licensees, to determine if such penalties serve the purpose  
of enhancing reactor safety.

Sincerely,

Sworn to and subscribed before me this 3rd

day of November, 1983

Witnessing

Delores E. Van Notary Public

My Commission Expires October 14, 1985

T. G. Williamson  
T. G. Williamson, Chairman  
Dept. of Nuclear Engineering  
and Engineering Physics

J. S. Brenizer  
J. S. Brenizer, Director  
Nuclear Reactor Facility

cc: J. P. O'Reilly, Regional Administrator  
NRC, Region II  
Reactor Safety Committee

Response to Notice of Violation and Proposed Imposition  
of Civil Penalty

Docket No. 50-062  
License No. R-66  
EA 83-90

I. Response to particular violations

A. Technical Specification 3.1(1) requires that reactor not be operated above 1kw unless the minimum shutdown margin is greater than 0.4% delta k/k.

Contrary to the above, the reactor was operated at a power greater than 1kw during the period May 25-30, 1983 without the required shutdown margin.

Response:

1) We admit that the reactor was operated at a power greater than 1kw during the period May 25-30, 1983 without the required shutdown margin.

2) The violation occurred because the reactivity worth of a fuel element had not been measured properly after its insertion into the core, control rod worths were not required to be measured at specific intervals and a core configuration change was not quantitatively defined.

3) New procedures have been implemented which require proper measurement of the shutdown margin when changes are made in the core. The revised procedures specifically define a core configuration change.

4) The revised procedures have been implemented and have been incorporated in the training and requalification program. All senior operators were actively involved in the development of the new procedures. New reactor operator trainees this summer were trained specifically on the importance of reactivity control.

5) Full compliance was achieved by implementation of procedures concerning reactivity measurements (Section 5 SOP) and incorporation of procedural changes into the operator requalification program. These changes were implemented by July 5, 1983.

B. Technical Specification 4.1(2) requires that shim rod reactivity worths be measured whenever the rods are installed in a new core configuration. SOP 5.7 requires rod worth measurements be performed following core configuration changes.

Contrary to the above, a new core configuration existed resulting from core alterations made on May 20, but the required shim rod reactivity worth measurements were not made.

Response:

1) We admit that shim rod reactivity worth measurements were not made



after core alterations on May 20.

2) The reasons rod reactivity worth measurements were not made was because, in our interpretation of the procedures in effect at that time, the core alterations on May 20 did not constitute a new core configuration.

3) We recognize the deficiency in the previous procedures which did not require that shim rod reactivity worth measurements be made at defined intervals. A core configuration change is now specifically and quantitatively defined in the procedures and rod calibrations are performed when the core configuration is changed. In addition, the procedures now specify a time period for control rod recalibration based on the number of MW-days of operation.

4) The revised procedures now define a core configuration change and require rod calibrations when such change occurs.

5) Full compliance was achieved by July 5, 1983 by implementation of procedures concerning reactivity measurements (Section 5 SOP) and incorporation of procedural changes into the operator training and requalification program.

C. Technical Specification 6.3 requires that written approved procedures shall be in effect and followed for start-up, operation, and shutdown of the reactor and for the handling of fuel and experiments.

Contrary to the above, the licensee did not have written approved procedures for determining reactor shutdown margin by accounting for changes in shutdown margin as a function of fuel manipulation, experiment manipulation, burnup, xenon concentration, or for calculating an estimated critical position.

Response:

1) We admit that we did not have written approved procedures specifically for determining reactor shutdown margin and for calculating estimated critical position. We deny that this is a violation of Technical Specification 6.3 because we had in place written approved procedures for start-up, operation, and shutdown of the reactor and for handling of the fuel and experiments. These procedures did require the determination of both the shutdown margin and the estimated critical position. We believe the difference is a matter of interpretation by the inspectors as to the detail which must be covered by procedures. We believe that a perceived inadequacy of the procedures to cover in detail each particular operation is a judgement that should be the subject of discussion between the inspectors and the facility staff and is a matter which should be resolved without escalation to the category of a violation.

2) We deny that we violated our technical specification.

- 3) In spite of the fact that we believe we did not violate Technical Specification 6.3, the startup, operation, and shutdown procedures have been revised to include suggestions made by the inspectors. Specifically, the procedures now specify the method of determining and documenting the shutdown margin determination.
- 4) The revised procedures have been implemented and have been incorporated in the training and requalification program.
- 5) Revised procedures concerning startup, operation and shutdown of the reactor were incorporated by July 5, 1983.

## II. Response to other items covered in the notice of violation.

A. We protest the statement "Further mitigation based upon corrective actions to prevent recurrence is not warranted because your long term actions were not aggressively pursued". The principal corrective actions to prevent recurrence was the revision of those section of the Standard Operating Procedures (SOP) relating to reactivity control, specifically section 5. This section was rewritten, reviewed by the safety committee, and in place by July 5, 1983. We also agreed to review and revise the entire SOP. During the enforcement conference held at our facility on July 14, 1983, we agreed to have this completed by the end of 1983. We believe that completion by that date constitutes an aggressive schedule in light of the magnitude of the job and the limits of staff time. We also note that the schedule agreed to by the NRC (Report No. 50-062/83-03) includes a completion date of revision of the SOP of December 31, 1983. The only difference between agreed upon schedule and the one we suggested at the enforcement conference is the details of completion dates for individual sections. We do not agree that this detailed schedule constitutes an act of aggressiveness which was lacking in our proposed schedule.

We also stated at the enforcement conference that we would rewrite the Safety Analysis Report (SAR) by July 1984. After discussion with the NRC staff it was agreed that a complete rewrite and resubmission of the SAR was not necessary. We did agree to the creation of an SAR like document with information in SAR Chapter 9 updated to include existing curved plate fuel analysis by October 31, 1983. We believe this to be an aggressive schedule.

B. We agree that the violation can be classified as Severity III by Section 4 "changes in reactor parameters which cause unanticipated reductions in margins of safety". We do not agree that our situation warrants a civil penalty. The basis for our contention is that at no time was the public health and safety compromised by this incident. At no time was there any possibility of the reactor being super-critical as we were always able to insert all rods to shutdown the reactor. Our procedures, which were in place at the time, require that the operator note that the rods and their followers be fully

inserted upon shutdown. At no time during the duration of the violation was the reactor shutdown without assurance that all rods were inserted. Further, we know of no evidence of solid blade type control rods, such as are in the UVAR, sticking in a research reactor core which has been in operation. Because the reactor was under control at all times and there was no realistic opportunity for an inadvertent supercriticality we believe that the imposition of a civil penalty magnifies the violation beyond its true significance.

III. Response to Items Noted in Letter from J. P. O'Reilly to J. S. Brenizer  
October 6, 1983; Subject: Proposed Imposition of Civil Penalty EA 83-90.

A. "We request that you include in your response corrective measures that you may take relating to the planning process and the conduct of independent audits following completion of work related to nuclear safety."

Response:

The reactor safety committee is an independent group which is charged with conducting periodic audits and is involved in the planning process. We will request the reactor safety committee to consider further measures in this area. We also are examining our staff organization to determine if planning and management efficiency can be improved.

B. "We believe it would be constructive for you to consider the desirability of conducting a "lessons learned" program for senior operators involved with the planning of core and experimental configurations."

Response:

Since we have only six senior operators and all have been involved in the rewriting of procedures during the past several months, and all were involved in the evaluation of the violations, all are familiar with the "lessons learned" from this incident. We have already included a "lessons learned" session in the training program for new reactor operators and have held two requalification lectures with all reactor operators and senior reactor operators. We will consider "lessons learned" programs in the future.

IV. Response to Inspection Report No. 50-062/83-02

A. In the first paragraph of section 8, Corrective Action, the inspection report refers to minimum permissible critical rod position and predicted critical position and states that the licensee agreed to have a xenon worth curve developed and in use by August 11, 1983.

Response:

We do not believe that we agreed to have a xenon worth curve developed

and in use by August 11, 1983 and have no record of such agreement. Specifically, the revised procedures which were reviewed by the inspectors during the July 6-8, 1983 inspection, do not use the conception, or wording, of predicted (estimated) critical position. Without the requirement of a predicted critical position, a xenon worth curve is not required for startup. In the revised procedures two reactor startup conditions are included. If the reactor is to be started from a shutdown condition with a constant source count rate, the procedures now require determining minimum permissible critical rod positions by adding the minimum shutdown margin ( $0.4\% \Delta k/k$ ) to the total worth of the highest worth rod and determining from the current rod worth curves the rod positions needed to remove this amount of reactivity from the shutdown xenon-free core. Note that if the core is not xenon-free these positions become more conservative. The minimum critical rod position is used as a reference point to check for subcritical multiplication and in transient response, and to preclude operating at powers greater than 1 with a core which has an unacceptable shutdown margin. The second condition is to start up the reactor from a shutdown condition with a decreasing source count rate. In this case, the positions of the shim rods at the time the reactor was last shutdown are used as the reference point for determining the presence of subcritical multiplication. The condition of a decreasing source count rate after shutdown persists for only about 1 hour after extended 2 MW operation while the xenon reactivity worth does not peak until approximately 7.5 hours after shutdown from extended 2 MW operation.

We have generated a xenon worth curve to determine the time after shutdown to the xenon free core, by August 11, 1983, however it was generated by solving the xenon equations for our reactor and had not been verified experimentally. The curves were experimentally measured on 10-10-83. Work is currently underway to develop a computer program to generate xenon worth curves for each new core configuration.

We are particularly disturbed to see the phases predicted critical position and estimated critical position in the report because we spent considerable time discussing this with the inspectors during both the June 2-3 and the July 6-8 meetings and were under the impression that our use of the concept of a minimum permissible control rod position, rather than a predicted critical position, was agreed by all and that a xenon worth curve would not be required for startup.

B. On page 5 is included a schedule of corrective actions.

Response:

The schedule of revisions of the SOP, page 5, differs slightly from ours but we believe both meet the intent of having all revised procedures in place by December 31, 1983. Note, however, that the reactor safety committee is an independent body and thus, we have agreed only to have the reactor safety committee review the procedures by the proposed date. It is possible that the committee could request additional changes and rewriting before granting their final approval.



I.B. REACTOR LICENSEES, SEVERITY LEVEL III VIOLATIONS,  
NO CIVIL PENALTY



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
631 PARK AVENUE  
KING OF PRUSSIA, PENNSYLVANIA 19406

NOV 30 1983

Docket No. 50-317  
50-318

Baltimore Gas and Electric Company  
ATTN: Mr. A. E. Lundvall, Jr.  
Vice President, Supply  
P. O. Box 1475  
Baltimore, Maryland 21203

Gentlemen:

Subject: Inspection Nos. 50-317/83-28; 50-318/83-28

This refers to an inspection conducted by a representative of the State of Washington, Department of Social and Health Services on July 27, 1983, of a shipment of radioactive waste from the Calvert Cliffs Nuclear Power Plant. The shipment was inspected upon its arrival at the U.S. Ecology, Inc. burial site at Richland, Washington.

Areas examined during this inspection are described in a report by a representative of the State of Washington, Department of Social and Health Services, which is attached to the NRC Region I Inspection Report enclosed with this letter. The inspection consisted of a review of shipping papers, placarding, marking and labeling, radiation measurements, selective contamination surveys, and an examination of the packages and the tractor-trailer.

Based on the results of this inspection, it appears that one of your activities was not conducted in full compliance with NRC requirements, as set forth in the Notice of Violation enclosed herewith as Appendix A. The violation has been categorized by severity level in accordance with the NRC Enforcement Policy (10 CFR 2, Appendix C) published in the Federal Register (47 FR 9987) on March 9, 1982. You are required to respond to this letter and in preparing your response, you should follow the instructions in Appendix A.

The violation for which you have been cited has already been the subject of a letter from the State of Washington. On August 1, 1983, you were advised to take corrective action to assure that further activities will be in compliance with all applicable state and federal regulations.

In view of the circumstances surrounding this matter, we have decided to issue at this time the enclosed Notice of Violation and not issue a Civil Penalty.

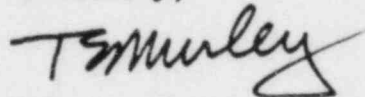
After reviewing your response to this Notice of Violation and your proposed corrective actions, the NRC will determine whether further action is necessary in order to ensure compliance with regulatory requirements.

NOV 30 1983

In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosures will be placed in the NRC Public Document Room, unless you notify this office, by telephone, within ten days of the date of this letter and submit written application to withhold information contained therein within thirty days of the date of this letter. Such application must be consistent with the requirements of 2.790(b)(1).

The responses directed by this letter and the accompanying Notice are not subject to the clearance procedures of the Office of Management and Budget, as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,



Thomas E. Murley  
Regional Administrator

Enclosure: NRC Inspection Report

cc w/encl:

R. M. Douglass, Manager, Quality Assurance  
L. B. Russell, Plant Superintendent  
S. M. Davis, General Supervisor, Operations QA  
Thomas Magette, Administrator, Nuclear Evaluations  
R. C. L. Olson, Principal Engineer  
J. A. Tiernan, Manager, Nuclear Power  
R. E. Denton, General Supervisor, Training and Technical Services  
Public Document Room (PDR)  
Local Public Document Room (LPDR)  
Nuclear Safety Information Center (NSIC)  
NRC Resident Inspector  
State of Maryland (2)

APPENDIX A

NOTICE OF VIOLATION

Baltimore Gas and Electric Company  
Calvert Cliffs Nuclear Power Plant,  
Units 1 and 2

Docket Nos.	50-317/83-28
	50-318/83-28
License Nos	DPR-53
	DPR-69

As a result of the inspection conducted on July 27, 1983, and in accordance with the NRC Enforcement Policy (10 CFR 2, Appendix C), the following violation was identified:

10 CFR 71.5 prohibits delivery of licensed material to a carrier for transport, unless the licensee complies with applicable regulations of the Department of Transportation in 49 CFR, Parts 170-189. 49 CFR 173.425(b)(3) states that external radiation levels must comply with 49 CFR 173.441. 49 CFR 173.441(b)(1)(i) states that the radiation level on the accessible external surface of a package transported in a closed transport vehicle cannot exceed 1000 millirems per hour.

Contrary to the above, on July 18, 1983, the licensee delivered two packages, containing licensed material to a carrier for transport in a closed transport vehicle, and the radiation level on the accessible external surface of each package exceeded 1000 millirems per hours. Specifically, the radiation level on the external surface of Package No. 555, containing approximately 70 millicuries of licensed material, was 3,500 millirems per hour. The radiation level on the external surface of Package No. 556, containing approximately 10 millicuries of licensed material, was 2,000 millirems per hour.

This is a Severity Level III violation (Supplement V).

Pursuant to the provisions of 10 CFR 2.201, the Baltimore Gas and Electric Company is hereby required to submit to this office within thirty days of the date of the letter which transmitted this Notice, a written statement or explanation in reply, including: (1) the corrective steps which have been taken and the results achieved; (2) corrective steps which will be taken to avoid further violations; and (3) the date when full compliance will be achieved. Where good cause is shown, consideration will be given to extending this response time.





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
631 PARK AVENUE  
KING OF PRUSSIA, PENNSYLVANIA 19406

OCT 11 1983

Docket No. 50-334  
EA 83-93

Duquesne Light Company  
ATTN: Mr. J. J. Carey  
Vice President  
Nuclear Division  
Post Office Box 4  
Shippingport, Pennsylvania 15077

Gentlemen:

Subject: Notice of Violation (Inspection No. 50-334/83-15)

This refers to the special NRC safety inspection conducted on August 5, 1983 at the Beaver Valley Nuclear Station, Unit No. 1, Shippingport, Pennsylvania of activities authorized by NRC License No. DPR-66. The report of the inspection was forwarded to you on August 19, 1983. The inspection was conducted to review the circumstances associated with an unplanned occupational radiation exposure to one of your employees. The unplanned exposure, which was identified and promptly reported to the NRC by your staff on August 4, 1983, and two violations identified during the inspection, were discussed at an enforcement conference held with you and members of your staff on September 1, 1983. At that conference, the cause of the violations and your corrective actions were also discussed.

Although the unplanned occupational radiation exposure received by the individual was not in excess of regulatory limits, the violations, which are described in the enclosed Notice, are of concern to the NRC because adequate radiological controls over the performance of the work activity were not implemented, thereby creating a substantial potential for a radiation exposure in excess of regulatory limits. Specifically, a Radiological Controls Technician did not provide appropriate health physics coverage of the work activity in that he did not properly implement radiation protection policies covering such a work activity. Also, the assigned Radiological Controls Foreman was not aware of the work activity until after it had been completed and the unplanned exposure had occurred. Furthermore, the Operator who received the exposure and the Operations Foreman who supervised the work activity did not ensure that a timely radiation survey had been conducted in the cubicle.

These violations have been categorized in the aggregate as a Severity Level III event in accordance with the NRC Enforcement Policy (10 CFR 2, Appendix C). Normally, a civil penalty is proposed for a Severity Level III violation or event. However, we have exercised our discretion, after consultation with the Director of the Office of Inspection and Enforcement, and have decided not to

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

OCT 11 1983

Duquesne Light Company

2

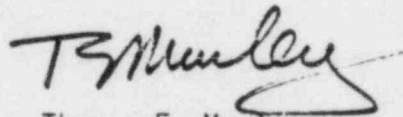
propose a civil penalty in this case. In making this decision, we have considered the facts that (1) you promptly reported the event to the NRC; (2) your corrective actions were prompt and comprehensive, including disciplinary action against the responsible Radiological Controls Technician, retraining of radiation protection personnel, and the planned retraining of operations and maintenance personnel; and, (3) the violations which caused the event appear to be isolated occurrences rather than indications of a program weakness (performance in the radiological controls area was rated to be Category 1 in the last two NRC Systematic Assessments of Licensee Performance conducted for your facility). Similar violations in the future may, of course, result in additional enforcement action.

You are required to respond to the enclosed Notice and should follow the instructions specified therein when preparing your response. Your written reply to this letter and the results of future inspections will be considered in determining whether further enforcement action is appropriate.

In accordance with 10 CFR 2.790, a copy of this letter and its enclosure will be placed in the NRC Public Document Room.

The responses directed by this letter and the enclosed Notice are not subject to the clearance procedures of the Office of Management and Budget, otherwise required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,



Thomas E. Murley  
Regional Administrator

Enclosure:  
Notice of Violation

cc w/encl:  
F. Bissert, Manager, Nuclear Support Services  
C. E. Ewing, QA Manager  
W. S. Lacey, Station Superintendent  
Chief Engineer  
R. Martin, Nuclear Engineer  
J. Sieber, Manager, Nuclear Safety and Licensing  
T. D. Jones, Manager, Nuclear Operations  
R. M. Mafrice, Nuclear Engineer  
N. R. Tonet, Manager, Nuclear Engineering  
Public Document Room (PDR)  
Local Public Document Room (LPDR)  
Nuclear Safety Information Center (NSIC)  
NRC Resident Inspector  
Commonwealth of Pennsylvania

## NOTICE OF VIOLATION

Duquesne Light Company  
Beaver Valley Nuclear Station  
Unit 1

Docket No. 50-334  
License No. DPR-66  
EA 83-93

On August 5, 1983, an NRC special safety inspection was conducted to review the circumstances associated with an unplanned occupational radiation exposure of 1.7 rems to an operator during the performance of a work activity. The radiation exposure occurred, was identified by the licensee, and was reported to the NRC, all on August 4, 1983.

On August 4, 1983, the operator made an entry into a cubicle in the solid waste disposal area of the Primary Auxiliary Building to ascertain a vendor part number on a dewatering valve on a resin waste hold tank. A radiological survey of the cubicle area had been conducted two days earlier on August 2, 1983, which indicated that interior cubicle radiation levels were between 0.2 and 0.5 R/hr. However, a radioactive resin transfer activity had occurred since that survey and, as a result, radiation levels near the dewatering valve on August 4, 1983 were actually between 50 and 350 R/hr. An adequate radiation survey was not conducted on August 4, 1983, until after the cubicle entry had been made and the unplanned exposure received.

A Radiological Controls Technician was assigned to provide continuous coverage for work in the solid waste disposal area. However, the technician did not adequately survey the cubicle radiation levels prior to the entry and also did not provide positive control with respect to radiological practices for the entry. After the operator had entered the cubicle, the technician attempted to monitor interior cubicle radiation levels from a shield wall outside the cubicle by extending a Teletector probe up and over the cubicle wall. Although the radiation measurements above the cubicle were much higher than expected (as high as 2 R/hr), no effective action was taken to evacuate the cubicle, other than to tell the operator to "hurry up." At the time of the entry, the radiation fields over the cubicle were as much as two orders of magnitude less than interior fields, due to source geometries and equipment shielding.

When the operator exited the disposal area and observed that his self-reading dosimeter was offscale, he informed the Radiological Controls Foreman who immediately had a survey performed of the cubicle area, at which time radiation levels as high as 350 R/hr were observed.

These events demonstrate the importance of implementation of established radiological controls over activities performed within the facility. In accordance with the NRC Enforcement Policy (10 CFR 2, Appendix C), the particular violations associated with these events are set forth below:

## VIOLATIONS ASSOCIATED WITH AN UNPLANNED OCCUPATION RADIATION DOSE OF 1.7 REM

- A. 10 CFR 20.201(b) requires that such surveys be conducted as are reasonable under the circumstances to evaluate the extent of radiation hazards which may be present. 10 CFR 20.201(a) defines a survey, in part, as an evaluation of radiation hazards including measurements of radiation levels.

Contrary to the above, on August 4, 1983, an operator entered a cubicle containing waste hold tank SW-TK-2 in the solid waste disposal area of the Primary Auxiliary Building but prior to that entry, surveys were not conducted which were reasonable under the circumstances to adequately evaluate the radiation hazards in the cubicle in that the licensee was not aware that radiation fields as high as 350 R/hr (6 R/min) existed in the cubicle.

- B. Technical Specification 6.12 requires that individuals who enter areas with radiation fields greater than 100 mrem/hr must either have a radiation monitoring device which continuously indicates area radiation dose rate, an alarming radiation dose rate device, or be accompanied by an individual who is equipped with a radiation monitoring device which continuously indicates area radiation dose rate and will provide positive control over activities within the area.

Contrary to the above, although the licensee expected the cubicle radiation levels to be greater than 100 mrem/hr during the entry on August 4, the operator did not have a radiation monitoring device which continuously indicated area radiation dose rate or an alarming radiation dose device, nor was he accompanied by an individual who was equipped with a radiation monitoring device which continuously indicated area radiation dose rate and who provided positive control over activities within the cubicle.

These violations have been classified in the aggregate as a Severity Level III event (Supplement IV).

Pursuant to 10 CFR 2.201, Duquesne Light Company is hereby required to submit to this office, within 30 days of the date of the letter transmitting this Notice, a written statement or explanation, including for each alleged violation: (1) admission or denial of the alleged violation; (2) the reasons for the violation if admitted; (3) the corrective steps which have been taken and the results achieved; (4) the corrective steps which will be taken to avoid further violations; and (5) the date when full compliance will be achieved. Consideration may be given to extending the response time for good cause shown.





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
621 PARK AVENUE  
KING OF PRUSSIA, PENNSYLVANIA 19406

December 14, 1983

Docket No. 50-320

GPU Nuclear Corporation  
ATTN: Mr. Phillip R. Clark  
President  
P. O. Box 480  
Middletown, Pennsylvania 17057

Gentlemen:

Subject: Notice of Violation and Enforcement Conference Report (50-289/83-104  
and 50-320/83-104)

This refers to the letter dated September 21, 1983, from GPU Nuclear Corporation to Region I describing a violation of NRC physical protection requirements which occurred at Three Mile Island Unit 2 and which was identified by GPU Nuclear Corporation on September 11, 1983. The violation was previously discussed with Mr. J. S. Wiebe, Senior Resident Inspector, and Messrs. G. Smith and W. Madden of the NRC Region I Office on September 12 and 13, 1983 by Mr. Robert Swartzwelder of your staff. On December 5, 1983, we held an enforcement conference with members of your staff during which this violation, its cause, and your corrective actions were discussed. A copy of the enforcement conference report is enclosed.

This violation, which is described in the enclosed Notice, involves Safeguards Information being left unattended and not stored in an approved locked security storage container for approximately three days. This violation, which has been classified at Severity Level III in accordance with Supplement III of the NRC Enforcement Policy (10 CFR 2, Appendix C), is similar to a violation which occurred at Unit 1 and which was described in an NRC Region I letter to GPU Nuclear Corporation dated August 12, 1983. Civil penalties are normally issued for Severity Level III violations, particularly for recurrent violations. However, after careful consideration of the factors involved in this instance, including the facts that (1) the violation was identified by you and promptly reported to the NRC, even though such reporting was not required; (2) there is no indication that the Safeguards Information was transferred to an unauthorized individual, or otherwise exploited; (3) GPU Nuclear Corporation acted promptly and responded fully in taking corrective actions to prevent recurrence of the problem at the location it occurred; and, (4) the two violations occurred at different units, we have exercised our discretion under the NRC Enforcement Policy and have decided not to propose a civil penalty in this case. Similar violations of this type at either unit in the future may result in additional enforcement action.

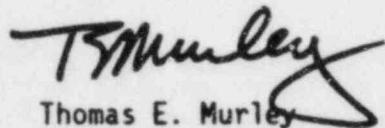
You are required to respond to the enclosed Notice and should follow the instructions specified therein when preparing your response. We note that a partial response was submitted with your September 21, 1983 letter; however, the corrective action stated therein addresses only your Programs Control Department. In addition, your response should also describe the specific actions taken or planned to assure that the procedures for handling Safeguards Information exist

and are adequate, and such procedures are understood and implemented throughout the GPUN organization. Your written reply to this letter and the results of future inspections will be considered in determining whether further enforcement action is appropriate.

In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosure will be placed in the NRC Public Document Room unless you notify this office, by telephone within ten days of the date of this letter and submit written application to withhold information contained therein within thirty days of the date of this letter. Such application must be consistent with the requirements of 10 CFR 2.790(b)(1).

The responses directed by this letter and the enclosed Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,



Thomas E. Murley  
Regional Administrator

Enclosures:  
Notice of Violation  
Enforcement Conference Report

cc w/encl:

J. J. Barton, Deputy Director, TMI-2  
J. E. Larson, Licensing and Nuclear Safety Director  
J. J. Byrne, Manager, TMI-2 Licensing  
E. G. Wallace, Manager, FWR Licensing  
J. W. Thiesing, Manager, Recovery Programs  
J. J. Chwastyk, Manager, Plant Operations  
J. B. Liberman, Esquire  
G. F. Trowbridge, Esquire  
Public Document Room (PDR)  
Local Public Document Room (LPDR)  
Nuclear Safety Information Center (NSIC)  
NRC Resident Inspector  
Commonwealth of Pennsylvania  
Ms. Mary V. Southard, Co-Chairman, Citizens for a Safe Environment  
(Without Report)

### NOTICE OF VIOLATION

GPU Nuclear Corporation  
Three Mile Island, Unit 2

Docket No. 50-320  
License No. DPR-50

On September 11, 1983, GPU Nuclear Corporation discovered that two draft copies of the Three Mile Island (TMI) Unit 2 Operations Plan for Civil Disorder had been left unattended and unsecured for approximately three days. GPU Nuclear Corporation reported this occurrence to the NRC on September 12, 1983. The drafts, which contain Safeguards Information, were left unattended on a desk which was not a locked security storage container. This occurrence constitutes a violation of NRC requirements, and in accordance with the NRC Enforcement Policy (10 CFR 2, Appendix C), the violation is set forth below.

10 CFR 73.21(d)(2) requires that matter containing Safeguards Information, if unattended, be stored in a locked security storage container.

Contrary to the above, from September 8 until September 11, 1983, two draft copies of the TMI-2 Operations Plan for Civil Disorder, containing Safeguards Information, were not stored in locked security storage container, but rather were left unattended on a desk in the Unit 2 Administration Building.

This is a Severity Level III violation (Supplement III).

Pursuant to 10 CFR 2.201, GPU Nuclear Corporation is hereby required to submit to this office, within 30 days of the date of the letter transmitting this Notice, a written statement or explanation, including (1) admission or denial of the alleged violation; (2) the reasons for the violation if admitted; (3) the corrective steps which have been taken and the results achieved; (4) the corrective steps which will be taken to avoid further violations; and (5) the date when full compliance will be achieved. Consideration may be given to extending the response time for good cause shown.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
631 PARK AVENUE  
KING OF PRUSSIA, PENNSYLVANIA 19406

16 NOV 1983

Docket No. 50-336  
License No. DPR-65  
EA No. 83-114

Northeast Nuclear Energy Company  
ATTN: Mr. W. G. Council  
Senior Vice President - Nuclear  
Engineering and Operations Group  
P. O. Box 270  
Hartford, Connecticut 06101

Gentlemen:

Subject: Notice of Violation (Inspection No. 83-19)

This refers to the special physical protection inspection conducted on August 8-12, 1983 of activities authorized by NRC License No. DPR-65. The report of the inspection was forwarded to you August 26, 1983. The inspection was conducted to review the circumstances associated with a violation of NRC physical protection requirements which was identified by you and promptly reported to the NRC. On September 8, 1983, an enforcement conference was held in Region I with Mr. J. Opeka and other members of your staff, during which these violations, their causes, and your corrective actions were discussed.

The violations are described in the enclosed Notice of Violation. One of the violations involved degradation of a vital area barrier for a period of approximately 12 days, because of a design change which caused an opening in the barrier. Another violation was the inadequate evaluation by a plant engineer and an Engineering Supervisor of the effect of the implementation of the design change on the security program, thereby resulting in the failure to recognize that the change process would temporarily degrade a vital area barrier. Of additional concern is the fact that another plant engineer performed a design verification, and the Plant Operations Review Committee also reviewed the design change, but they did not recognize its impact on security. A third violation involved the failure by both operations and security personnel to recognize the degradation during their routine security surveillances. Although adequate compensatory measures were taken when the degradation was finally recognized by a member of your security force, these measures were not maintained and the degradation occurred again on the next day for approximately 45 minutes because of a lack of effective communication between the security force and onsite construction personnel working in the area.

These violations have been categorized in the aggregate as a Severity Level III problem in accordance with the NRC Enforcement Policy (10 CFR 2, Appendix C). Normally, a civil penalty is proposed for a Severity Level III violation or problem. However, in this case, a civil penalty will not be proposed because the violation was promptly reported to the NRC when identified, and comprehensive corrective actions, as described in Appendix B, were taken by management. We emphasize that similar violations in the future may result in additional enforcement action.



16 NOV 1983

You are required to respond to the enclosed Notice and you should follow the instructions specified therein when preparing your response. In your response, you should confirm the schedules for completion of the corrective actions as stated in Appendix B. In your response, you should place all Safeguards Information (as defined in 10 CFR 73.21) and all commercial or financial information (as defined in 10 CFR 9.5(a)(4)) in enclosures, so as to allow your letter (without enclosures) to be placed in the Public Document Room.

The enclosed Appendices contain details of your security program that have been determined to be exempt from public disclosure in accordance with 10 CFR 73.21 (Safeguards Information). Therefore, the Appendices will not be placed in the Public Document Room and will receive limited distribution.

The responses directed by this letter and the enclosed Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction of 1980, PL 96-511.

Your cooperation with us in this matter is appreciated.

Sincerely,

Original signed by

Thomas E. Murley

Thomas E. Murley  
Regional Administrator

Enclosures:

1. Appendix A, Notice of Violation  
(Contains Safeguards Information)
2. Appendix B, Corrective Actions  
(Contains Safeguards Information)

cc w/o Safeguards Information:

J. F. Opeka, Vice President, Nuclear Operations  
E. J. Mroczka, Station Superintendent  
D. O. Nordquist, Manager of Quality Assurance  
R. T. Laudenat, Manager, Generation Facilities Licensing  
Gerald Garfield, Esquire  
Public Document Room (PDR)  
Local Public Document Room (LPDR)  
Nuclear Safety Information Center (NSIC)  
NRC Resident Inspector (w/encl w/Safeguards Information)  
State of Connecticut



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION V

1450 MARIA LANE, SUITE 210  
WALNUT CREEK, CALIFORNIA 94596

OCT 27 1983

Docket Nos. 50-206  
50-361  
50-362

EA 83-116

Southern California Edison Company  
2244 Walnut Grove Avenue  
Rosemead, California 91770

Attention: Mr. C. B. McCarthy, Vice President  
Advanced Engineering

Gentlemen:

Subject: NRC Inspection - San Onofre Units 1, 2 and 3

This refers to the routine inspection conducted by Mr. G. P. Yuhas of this office on September 26-30, 1983 and subsequent telephone discussion on October 11, 1983 of activities authorized by NRC License Nos. DPR-13, NPF-10, NPF-15 and to the discussion of our findings held by Mr. Yuhas with Mr. H. B. Ray and other members of your staff at the conclusion of the inspection.

Areas examined during this inspection are described in the enclosed inspection report. Within these areas, the inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Based on the results of this inspection, it appears that certain of your activities were not conducted in full compliance with NRC requirements, in that tools and equipment contaminated with licensed radioactive material were released for unrestricted use from Unit 1 more than two years ago. The number of items recovered indicate that programmatic weaknesses existed in your radiation control program. This problem has been previously brought to your attention through the NRC Health Physics Appraisal Program, several Enforcement Conferences, and numerous inspection activities. We recognize that you have made significant improvements in your radiation control program over the past several years and have expended considerable resources to identify and recover these contaminated items which were previously released.

These violations have been categorized as Severity Level III violations in accordance with the NRC Enforcement Policy (10 CFR 2, Appendix C). Normally, a civil penalty is proposed for Severity Level III violations. However, we have exercised our discretion after consultation with the Director of the Office of Inspection and Enforcement, and have decided not to propose a civil penalty in this case. In making this decision, we have considered the facts that your corrective actions to date have been comprehensive and extensive in identifying and recovering the contaminated material. Similar violations in the future may, however, result in escalated enforcement action.

OCT 27 1983


Your response to this notice is to be submitted in accordance with the provisions of 10 CFR 2.201 as stated in Appendix A, Notice of Violation. In your response, please include a statement describing the scope of your followup efforts to locate the potentially contaminated material; the status of completion and estimated schedule; a tabulation of contaminated material discovered outside the restricted area by item, location, estimated activity and dispersibility (include methodology); and a radiological evaluation of potential exposure to members of the public which could have resulted from the release of licensed material of this nature from the site.

In accordance with 10 CFR 2.790(a), a copy of this letter and the enclosures will be placed in the NRC Public Document Room unless you notify this office, by telephone, within ten days of the date of this letter and submit written application to withhold information contained therein within thirty days of the date of this letter. Such application must be consistent with the requirements of 2.790(b)(1).

Should you have any questions concerning this inspection, we will be glad to discuss them with you.

The responses directed by this letter and the accompanying Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,

  
for John B. Martin  
Regional Administrator

Enclosures:

1. IE Inspection Report Nos.  
50-206/83-20, 50-361/83-31, 50-362/83-29
2. Appendix A - Notice of Violation

## APPENDIX A

### NOTICE OF VIOLATION

Southern California Edison Company  
P. O. Box 800  
2244 Walnut Grove Avenue  
Rosemead, California 91770

Docket No. 50-206  
License No. DPR-13  
EA 83-116

This Notice of Violation involves the release of tools and equipment for unrestricted use that were contaminated with licensed radioactive material. These contaminated materials were apparently released from Unit 1 more than two years ago. The number of items recovered indicate that programmatic weaknesses existed in your radiation control program. This problem has been previously brought to your attention through the NRC Health Physics Appraisal Program, several Enforcement Conferences, and numerous inspection activities. We recognize that you have made significant improvements in your radiation control program over the past several years and have expended considerable resources to identify and recover these contaminated items which were previously released. Accordingly, although civil penalties are usually imposed for violations of this type, after careful consideration of the circumstances and the corrective measures taken to preclude recurrence of similar violations, civil penalties are not proposed.

As a result of this inspection conducted September 26-30, 1983 and in accordance with NRC Enforcement Policy, 10 CFR 2, Appendix C, the following violations were identified.

- A. 10 CFR 20.301 and 10 CFR 30.41 state that no licensee shall transfer or dispose of licensed byproduct material except as authorized.

Contrary to the above requirements, during July, August and September 1983 surveys revealed that tools and equipment contaminated with quantities of licensed byproduct material had been transferred and disposed of in an unauthorized manner. Approximately sixty items, contaminated with up to a maximum of approximately 10 microcuries of Co-60 on a single item, were found in three locations outside the licensee's restricted area as defined in 10 CFR 20.

This is a Severity Level III violation (Supplement IV).

- B. 10 CFR 20.201(b) states in part that each licensee shall make or cause to be made such surveys as may be necessary for the licensee to comply with the regulations in this part.


Contrary to the above requirement, surveys to identify items contaminated with licensed byproduct material were not made as necessary to comply with 10 CFR 20.301 in that items contaminated with radioactive material were disposed of in an unauthorized manner.

This is a Severity Level III violation (Supplement IV).



Pursuant to the provisions of 10 CFR 2.20<sup>1</sup>, the Southern California Edison Company is hereby required to submit to this office within thirty days of the date of this Notice, a written statement or explanation in reply, including: (1) the corrective steps which have been taken and the results achieved; (2) corrective steps which will be taken to avoid further items of noncompliance; and (3) the date when full compliance will be achieved. Consideration may be given to extending your response time for good cause shown.

FOR THE NUCLEAR REGULATORY COMMISSION

  
John B. Martin  
Regional Administrator

Dated at Walnut Creek, California  
this      day of October 1983

OCT 27 1983

II.A. MATERIALS LICENSEES, CIVIL PENALTIES AND ORDERS



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

JUN 10 1983

License No. 43-12757-02  
EA 83-47

American Testing Laboratories, Inc.  
ATTN: Mr. Roger Shepherd  
2580 South West Temple  
Salt Lake City, UT 84115

SUBJECT: ORDER TO SHOW CAUSE AND ORDER TEMPORARILY SUSPENDING  
LICENSE (EFFECTIVE IMMEDIATELY)

Gentlemen:

Enclosed is an Order, effective immediately, suspending your byproduct material license and your authorization granted by 10 CFR Part 150 of the Commission regulations to operate in areas under NRC jurisdiction with any license issued by any Agreement State. The Order provides you an opportunity to show cause why your NRC license and the Part 150 authorization should not be revoked. The Commission is also considering whether further enforcement actions are appropriate.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed Order will be placed in the NRC's Public Document Room.

The responses directed by this letter and accompanying Order are not subject to the clearance procedures of the Office of Management and Budget, as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,

A handwritten signature in cursive script, appearing to read "R. C. DeYoung".

Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Enclosure:  
Order to Show Cause and Order Temporarily  
Suspending License (Effective Immediately)

cc: Utah Department of Health  
Radiation and Occupational Health Bureau

Idaho Division of Environmental Health  
Department of Health and Welfare

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

UNITED STATES OF AMERICA  
U.S. NUCLEAR REGULATORY COMMISSION

In the Matter of	)	License No. 43-12757-02
	)	EA 83-47
AMERICAN TESTING LABORATORIES, INC.	)	
2580 South West Temple	)	
Salt Lake City, Utah, 84115	)	

ORDER TO SHOW CAUSE  
AND ORDER TEMPORARILY SUSPENDING LICENSE

I

American Testing Laboratories, Inc., 2580 South West Temple, Salt Lake City, Utah, 84115 (the "Licensee") is the holder of a specific byproduct material license issued by the Nuclear Regulatory Commission (the "Commission") pursuant to 10 CFR 30. The license, issued on May 24, 1982, and due to expire on May 31, 1987, authorizes the use, storage, and transfer of byproduct material as stated in the Licensee's application dated March 30, 1982. American Testing Laboratories, Inc., is also the holder of a specific license (No. IDA-166) issued by the State of Idaho, an Agreement State, pursuant to the provisions of an agreement entered into with the Commission under section 274 of the Atomic Energy Act of 1954 as amended. Under the provisions of 10 CFR 150.20, the licensee is authorized to conduct the same activities authorized by its Agreement State license in non-Agreement States under certain conditions and for not more than 180 days in any calendar year.

II

In 1961, an investigation by the NRC of American Testing Laboratories, Inc. revealed that it had operated illegally in areas under NRC jurisdiction from



1979 to 1981 with an Idaho Agreement State license. This violated the reciprocity agreement (180 days) authorized by 10 CFR 150.20 for firms maintaining a state license in an Agreement State. After notification from the NRC that an NRC license was necessary to continue its operations in Utah, the Licensee applied for and was granted a specific NRC license on May 24, 1982. Included as conditions of this license were requirements for a film dosimetry program for personnel using licensed material, and for proper packaging and transport of radioactive material. Verification of adherence to these requirements was included in a routine safety inspection conducted on January 17, 1983.

During the January 17, 1983 inspection, the NRC inspector was informed by the Laboratory Manager that a film badge dosimetry program was not yet in place since moisture density gauges which would necessitate this program were in storage and not in use. An inspection of the Licensee's records revealed one gauge missing. The NRC inspector was informed by the Laboratory Manager that this gauge was out for repair. As a result of this inspection, the Licensee was issued a Notice of Violation for failure to maintain physical inventory records. Because the inspector was told orally at that time by the Laboratory Manager, first, that all gauges were in storage and not being used and, second, when the inspector discovered that the inventory of stored gauges was one short, that the missing gauge was out for repairs, the inspector did not inspect for the Licensee's compliance with license conditions governing use of materials.

### III

Following the January 17, 1983 inspection, the NRC Region IV office received allegations that, at the time of the inspection, the Licensee

was using three moisture density gauges without a film badge program and that a gauge had not been removed for repair as represented to the NRC inspector. As a consequence of these allegations, an investigation of the Licensee's facilities at Salt Lake City, Utah, was conducted May 23-25, 1983, by representatives of the NRC Office of Investigations Field Office in Region IV.

The results of this investigation indicated that at the time of the January inspection one of the gauges was in use and, in fact, from the time the NRC license was issued, the gauges had been used repeatedly in conducting licensed activities. Based on an initial review of the investigation, the following violations have been identified:

1. License Condition 14 requires, in part, that sealed sources shall be tested for leakage or contamination at intervals not to exceed six months and that leak test records shall be maintained.

Contrary to this requirement, the sealed sources in the Troxler gauges were not leak tested at six month intervals from May 24, 1982, to January 17, 1983.

2. License Condition 16 requires, in part, that the Licensee shall transport licensed material in accordance with Title 10, Code of Federal Regulations, Part 71, "Packaging of Radioactive Material for Transport and Transportation of Radioactive Material under Certain Conditions."

10 CFR 71.5(a) requires, in part, that no licensee shall transport any licensed material outside the confines of his plant or other place of use, or deliver any licensed material to a carrier for transport, unless the licensee complies with applicable requirements of the regulations appropriate to the mode of transport, of the Department of Transportation in 49 CFR Parts 170-189.

- a. 49 CFR 173.394(a) requires, in part, that Type A quantities of special form radioactive material be packaged and transported in DOT specification 7A containers.

Contrary to this requirement, the Licensee transported a Troxler Model 3401 surface moisture/density gauge containing special form radioactive material without packaging it in a specification 7A container on public highways in the state of Utah from May 24, 1982 until March 1983.

- b. 49 CFR 177.842(d) requires that packages must be so blocked and braced that they cannot change position during conditions normally incident to transportation.

Contrary to this requirement, appropriate blocking and bracing to prevent movement during transportation was not provided by the Licensee for a Troxler Model 3401 surface moisture/density gauge which was transported on public highways in the state of Utah between May 24, 1982 and January 17, 1983.

3. License Condition 17 requires, in part, that film badges shall be issued monthly to all personnel using the licensed material.

Contrary to this requirement, film badges were not issued by the Licensee to personnel from May 24, 1982 through March 1983. Although a film badge program was subsequently instituted, it was not properly implemented in that part time employees were not issued badges and at least one technician was allowed to store his badge in the Laboratory Manager's desk while using a gauge containing licensed material.

The investigation also found that: 1) from the time its NRC license was issued in May 1982, American Testing Laboratory, Inc. had willfully conducted its activities in violation of license conditions 16 and 17; and 2) on January 17, 1983 inaccurate information regarding the use of licensed material was willfully given by the Laboratory Manager to an NRC inspector during the course of a routine safety inspection.



IV.

Under Section 186 of the Atomic Energy Act of 1954, as amended, a license may be suspended or revoked for a material false statement or a finding which would warrant the Commission to refuse to grant a license on initial application. As stated above, false statements were willfully made to an NRC inspector. Had the inspector been provided with correct information, he would have discovered the violations described above and enforcement action requiring, at a minimum, correction of the license condition violations would have been taken. Therefore, the statements made concerning the use of the licensed gauges constitute material false statements within the meaning of section 186 of the Atomic Energy Act of 1954, as amended. Moreover, had the Commission known at the time the license was applied for that the Licensee would not implement its license conditions and would impede the Commission's ability to inspect for compliance with Commission requirements by providing inaccurate and misleading information to its inspectors, no license would have been issued. The Commission can no longer rely on this Licensee to comply with Commission requirements including the requirements for use of material in areas under its jurisdiction in accordance with 10 CFR 150.20, i.e., any operation in Utah under an Idaho license.

In sum, the Licensee's actions interfered with NRC inspections and demonstrated that it was unable and unwilling to comply with Commission requirements

including those associated with basic radiation safety requirements. Accordingly, the public health and safety requires issuance of an Order to Show Cause why the licensee's specific license and its authorization to use byproduct material under an agreement state license in areas subject to NRC's jurisdiction should not be revoked. NRC Enforcement Policy, 10 CFR Part 2, Appendix C, IV.C.

In view of the Licensee's willful noncompliance with the Commission's requirements and willful false statements I have determined that no prior notice is required and, pursuant to 10 CFR 2.202(f), License No. 43-12757-02 and the authorization under 10 CFR 150.20 should be suspended effective immediately pending further order.

V.

Accordingly, pursuant to sections 81, 161b and 186 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2, 30 and 150, IT IS HEREBY ORDERED THAT:

- A. Effective immediately, the Licensee's authorization under License No. 43-12757-02 and the provisions of 10 CFR 150.20, "Recognition of Agreement State Licensees," to receive or use byproduct material in areas under NRC jurisdiction is suspended, except as permitted in Condition B below;
- B. Effective immediately, the Licensee shall place all byproduct material in its possession in locked storage or transfer such material to a person authorized to receive the material; and

- C. The Licensee shall show cause, in the manner hereinafter provided, why License No. 43-12757-02 and the Licensee's authorization to conduct activities in a non-agreement state under the provisions of 10 CFR 150.20 should not be revoked.

VI.

The Licensee may show cause, within 25 days after issuance of this Order, as required by section V.C., above, by filing a written answer under oath or affirmation setting forth the matters of fact and law on which Licensee relies. The Licensee may answer, as provided in 10 CFR 2.202(d), by consenting to the entry of an order in substantially the form proposed in this Order to Show Cause. Upon failure of the Licensee to file an answer within the specified time, the Director, Office of Inspection and Enforcement may issue without further notice an order revoking the license and authorization as described in item V.C. above.

VII.

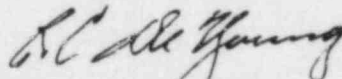
The Licensee may request a hearing within 25 days after issuance of this Order. Any answer to this Order or any request for hearing shall be submitted to the Director, Office of Inspection and Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C., 20555. Copies shall also be sent to the Executive Legal Director

at the same address and to the Regional Administrator. A REQUEST FOR HEARING SHALL NOT STAY THE IMMEDIATE EFFECTIVENESS OF SECTION V. OF THIS ORDER.

If a hearing is requested by the Licensee the Commission will issue an order designating the time and place of any hearing. If a hearing is held, the issue to be considered at such hearing shall be:

Whether, on the basis of the matters set forth in this Order, License No. 43-12757-02 and this Licensee's authorization under 10 CFR 150.20 should be revoked.

FOR THE NUCLEAR REGULATORY COMMISSION



Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Dated at Bethesda, Maryland  
this 16<sup>th</sup> day of June 1983.





## AMERICAN TESTING LABORATORIES INC.

2580 SOUTH WEST TEMPLE SALT LAKE CITY, UTAH 84115

(801) - 487-1333

June 23, 1983

Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

RE: Revocation License #43-12757-02  
ATTN: Mr. Richard C. DeYoung

Sir:

In reference to your "order to show cause" dated June 10, 1983, I will try to show cause step by step, as why our By Product License should not be permanently revoked.

1. Violation: Leak Tests

American Testing Laboratories has retained Tech/OPS of Burlington, Maryland for leak test service. Copies of our latest leak tests are enclosed.

As Radiation Safety Officer, I will personally supervise all leak tests on a six month basis.

Roger L. Shepherd  
Radiation Safety Officer

2. Violation: Transporting license materials

All licensed material will be transported in the rear of our vehicles in D.O.T. 7A containers. These containers will be chained and locked, and the proper signs attached to the containers. Inspection by company supervisor before leaving lab will be mandatory.

Roger L. Shepherd  
Radiation Safety Officer

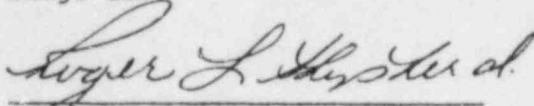
Bill Bedford  
Manager

SOIL ☆ CONCRETE ☆ STEEL ☆ X-RAY

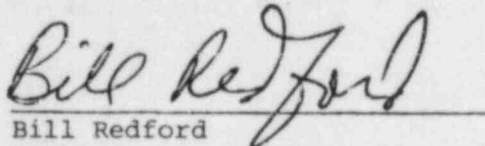
3. Violation: Film badge use

American Testing Laboratories has retained the R.S. Landauer Jr. & Co. to supply and process film badges. Copies of past exposure records are enclosed for your inspection.

As Radiation Safety Officer of American Testing Laboratories, I will personally contact each employee who will be using the licensed material, and instruct them on the importance of film badge use. I will also require them to sign a company notice to verify their willingness to obey the instructions in film badge use.



Roger L. Shepherd  
Radiation Safety Officer

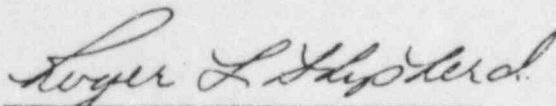


Bill Redford  
Manager

4. Violation: False statement to inspector

I have had meetings with all parties involved in this matter on the importance of honesty. We discussed in detail, the happenings at the January 17, 1983 inspection and the consequences of that false statement. We feel confident that everyone here at American Testing Laboratories, realizes that honesty is the way to go during N.R.C. inspections.

I cannot guarantee that my employees will be honest during inspection, but we will do everything in our power to insure it.



Roger L. Shepherd  
Radiation Safety Officer

Page Three

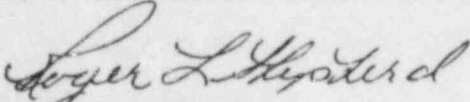
American Testing Laboratories, Inc.

Due to the temporary suspension of our license, we feel that our employees now more than ever, realize the importance of compliance with the N.R.C. license.

If you choose to reinstate our license, we will do everything possible to comply to its content. I have outlined the violation and the cure in the above letter, and I will personally guarantee the compliance. I have tried to transfer to my employees, the seriousness of this matter, and I think that I have succeeded.

Sincerely,

AMERICAN TESTING LABORATORY



Roger L. Shepherd  
Owner/General Manager

RLS/jp

cc: Executive Legan Director  
Regional Administrator



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

DEC 983

Docket No. 30-19685  
License No. 43-12757-02  
EA 83-47

American Testing Laboratories, Inc.  
ATTN: Mr. Roger Shepherd  
2580 South West Temple  
Salt Lake City, Utah 84115

Dear Mr. Shepherd:

On June 10, 1983, the Nuclear Regulatory Commission (NRC) issued an Order suspending your license, effective immediately, and an Order to Show Cause why your license should not be revoked. The Order was issued as a result of the findings of the special safety inspection and investigation conducted by Messrs. R. K. Herr, B. Griffin, and G. D. Brown of the Region IV office on May 23-25, 1983 of the activities authorized by NRC Byproduct Material License 43-12757-02.

During this inspection and investigation, it was determined that several willful violations of NRC requirements had occurred and that your laboratory manager had made material false statements to an NRC inspector during an inspection conducted on January 17, 1983. The circumstances and the violations are described in the enclosed Order. The violations were discussed with you during an enforcement conference on June 14, 1983.

You responded to the Order to Show Cause on June 23, 1983. We have examined your response and have concluded that because you willfully violated NRC requirements and deliberately concealed those violations from an NRC inspector, your license should be revoked. Willful violations of NRC requirements will not be tolerated. Furthermore, candor between the NRC and its licensees is fundamental to the regulatory process. Anything less than accurate and complete statements to the NRC will not be permitted.

Accordingly, I am issuing the enclosed Order Revoking License for the reasons set forth in the Order.

Sincerely,

A handwritten signature in dark ink, appearing to read "R. C. DeYoung", is written over the typed name.

Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Enclosure:  
Order Revoking License



UNITED STATES  
NUCLEAR REGULATORY COMMISSION

In the Matter of

AMERICAN TESTING LABORATORIES, INC.  
2580 South West Temple  
Salt Lake City, Utah 84115

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)

License No. 43-12757-02  
EA 83-47

ORDER REVOKING LICENSE

I

American Testing Laboratories, Inc., 2580 South West Temple, Salt Lake City, Utah 84115 (the "Licensee") is the holder of a specific byproduct material license issued by the Nuclear Regulatory Commission (the "Commission") pursuant to 10 CFR Part 30. The license, issued on May 24, 1982, and due to expire on May 31, 1987, authorizes the use, storage, and transfer of byproduct material as stated in the Licensee's application dated March 30, 1982.

II

An investigation and inspection of American Testing Laboratories, Inc., on May 23-25, 1983 revealed that the licensee had willfully violated the conditions of its license and the Commission's regulations in the following respects:

1. Sealed sources in the licensee's gauges were not leak-tested at six month intervals from May 24, 1982 to January 17, 1983.

2. The licensee transported gauges containing licensed radioactive material on public highways without the use of DOT-required packages and the use of proper blocking and bracing of packages to prevent movement.

3. The licensee failed to issue personnel dosimetry to individuals from May 24, 1982 to January 17, 1983.

In addition, licensee management made willful material false statements to an NRC inspector during an inspection of the licensee on January 17, 1983. Subsequently, an Order to Show Cause and Order Temporarily Suspending License (48 FR 28371) was issued to American Testing Laboratories, Inc., on June 10, 1983. The circumstances surrounding this matter are more fully described in the report of the Office of Investigations. An enforcement conference was held with licensee management at the NRC Region IV office in Arlington, Texas, on June 14, 1983.

The licensee responded to the Order to Show Cause on June 23, 1983. The licensee responded to each of the items of noncompliance cited in the Order and described corrective actions planned to preclude recurrence of the violations. An inspection of the licensee's premises on July 26, 1983, confirmed that licensed material had been secured and apparently had been stored in compliance with the Order Temporarily Suspending License.

## III

Notwithstanding the licensee's response to the Order to Show Cause, the Director of the Office of Inspection and Enforcement has determined that the license should be revoked. The licensee's President knew that licensed activities were being conducted in noncompliance with NRC requirements. Moreover, when an NRC inspector attempted to conduct an inspection of the licensee's activities, the laboratory manager knowingly gave the inspector false information concerning the licensee's use of radioactive material and thereby deliberately concealed violations of NRC requirements. Although the potential hazards posed by the radioactive material possessed under the license are relatively low, the conduct of management officials in this case is unacceptable and would be by responsible officials of any licensee. Circumstances indicating that a licensee has willfully failed to comply with NRC requirements and has knowingly provided false and misleading information to NRC inspectors constitute conditions which would cause the Commission to deny a license upon an initial application. Although the licensee states that it will comply with NRC requirements and will try to ensure that its employees deal honestly with NRC representatives, these promises of good future behavior are outweighed by the flagrant conduct of management that led to this enforcement action. In view of these circumstances, the Director has determined that there is no longer reasonable assurance that the licensee will comply with its license requirements and, therefore, the license should be revoked.

## IV

Accordingly, pursuant to sections 81, 161b and 186 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2, 30, and 150, IT IS HEREBY ORDERED THAT:

- A. Within 30 days of the effective date of this Order, American Testing Laboratories, Inc. shall transfer all licensed radioactive materials in its possession to a person authorized to receive such materials and shall notify the NRC Region IV office when such transfer has been made.
- B. Upon such transfer of the materials to a person authorized to receive them, Byproduct Material License No. 43-12757-02 and the authorization in 10 CFR 150.20 to receive or use byproduct material in areas under NRC jurisdiction is revoked.
- C. Pending the effectiveness of this Order Revoking License, the licensee shall maintain byproduct material in its possession in locked storage or transfer such material to a person authorized to receive the material as provided in section V.B of the Order to Show Cause and Order temporarily Suspending License issued on June 10, 1983.

## V

The licensee may request a hearing on this Order within 25 days of the date of its issuance. A request for hearing shall be submitted to the Director,

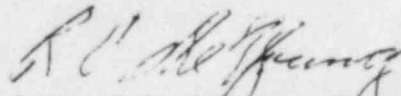


Office of Inspection and Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. Copies shall also be sent to the Executive Legal Director at the same address and to the Regional Administrator, NRC Region IV, 611 Ryan Plaza Drive, Suite 1000, Arlington, Texas 76011.

If a hearing is requested by the licensee the Commission will issue an Order designating the time and place of any hearing. If a hearing is held, the issue to be considered at such a hearing shall be whether, on the basis of the matters set forth in sections II and III of the Order, this Order should be sustained.

This Order Revoking License shall become effective upon the licensee's consent or upon expiration of the period within which the licensee may request a hearing or, if a hearing is requested, on the date specified in an order issued following further proceedings on this Order.

FOR THE NUCLEAR REGULATORY COMMISSION



Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Dated at Bethesda, Maryland  
this 16<sup>th</sup> day of December 1983



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
831 PARK AVENUE  
KING OF PRUSSIA, PENNSYLVANIA 19406

November 8, 1983

Docket No. 030-12239  
License No. 20-17131-01  
EA No. 83-97

Brigham and Women's Hospital  
ATTN: Mr. Henry Beltramini  
Assistant Vice President  
75 Francis Street  
Boston, Massachusetts 02115

Gentlemen:

This refers to the NRC safety inspection conducted on August 16-17, 1983 of activities authorized by NRC License No. 20-17131-01. The report of this inspection was forwarded to you on August 26, 1983. During the inspection, several apparent violations of NRC requirements were identified, one of which involved the transportation of a package containing radioactive materials with radiation levels in excess of ten times regulatory limits. This violation was caused by improper preparation of the package. On September 7, 1983, we held an Enforcement Conference with you during which these violations, their causes, and your corrective actions were discussed.

The NRC has two significant concerns with respect to the conduct of your activities. The first concern involves the inadequate preparation of a package prior to transport, resulting in radioactive material escaping from the protective shield within the package during transport, which resulted in excess radiation levels at the surface of the package. As a result, a substantial potential existed for radiation exposures in excess of regulatory limits. The second concern involves the number of additional apparent violations identified during our inspection. These additional violations represent a significant breakdown in management oversight and control of your safety program, particularly the program for packaging and shipment of radioactive materials. These violations demonstrate the need for improvement in the administration and control of the program to assure adherence to NRC requirements and safe performance of licensed activities. Specific improvements are required in your (1) procedures for the conduct of licensed activities, (2) training of technicians and supervisors in the use of procedures and the meaning of license conditions, (3) supervision of radiation safety activities and (4) surveillance of ongoing activities and audits of records to identify needed corrective actions to the radiation safety program. We are extremely concerned that your audit of licensed activities was conducted on July 26, 1983, but the violations noted in the attached Notice of Violations and Proposed Imposition of Civil Penalties were not identified until the NRC inspection conducted on August 16-17, 1983.

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

To emphasize the seriousness of the violations associated with the packaging incident and the importance of adequate management control of the radiation safety program, I have been authorized, after consultation with the Director, Office of Inspection and Enforcement, to issue the enclosed Notice of Violations and Proposed Imposition of Civil Penalties in the amount of One Thousand Eight Hundred Seventy-Five Dollars (\$1,875) for the violations set forth in Sections I and II of the enclosed Notice.

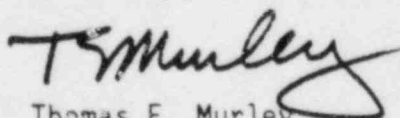
In accordance with the NRC Enforcement Policy (10 CFR Part 2, Appendix C), the violations in Section I have been categorized as a Severity Level I problem for which the base civil penalty is \$1,000. The violations in Section II have been categorized as a Severity Level III problem for which the base civil penalty is \$500. The base penalty for the Severity Level I problem has thus been increased 25% for failure to take prompt and effective corrective action. Specifically, although you were notified on August 9, 1983 of the excessive radiation levels by the recipient of the package, at the time of the NRC inspection on August 16, 1983, no corrective action had been taken to ensure that procedures relative to preparation and shipment of packages were being correctly adhered to. The base civil penalty for the Severity Level III problem has also been increased 25% because it involves multiple examples of violations of NRC requirements. Consequently, the Severity Level I and III problems have been increased to \$1,250 and \$625 respectively.

You are required to respond to the enclosed Notice and, in preparing your response, you should follow the instructions specified in the Notice. In your response, you should provide the specific details for improving management control of your licensed program, including the improvements in procedures, training, supervision, surveillance and audits. Where appropriate, reference may be made to the documents provided at the Enforcement Conference. Your reply to this letter and the results of future inspections will be considered in determining whether further enforcement action is appropriate.

In accordance with 10 CFR 2.750 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosure will be placed in the NRC's Public Document Room.

The responses directed by this letter and the enclosed Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,



Thomas E. Murley  
Regional Administrator

NOTICE OF VIOLATIONS  
AND  
PROPOSED IMPOSITION OF CIVIL PENALTIES

Brigham and Women's Hospital  
75 Francis Street  
Boston, Massachusetts 02115

Docket No. 30-12239  
License No. 20-17131-01  
EA 83-97

An NRC inspection of activities authorized under NRC License No. 20-17131-01 was conducted on August 16-17, 1983. During the inspection, eleven apparent violations of NRC requirements were identified. Three of the violations were associated with an event involving excessive radiation levels in transport. Specifically, the event involved a package that was not properly prepared, thereby resulting in radioactive material escaping from the protective shield within the package and creating radiation levels in excess of ten times regulatory limits at the surface of the package. These violations have been categorized in the aggregate as a Severity Level I problem, as described in Section I. Four other violations of transportation requirements have been categorized in the aggregate as a Severity Level III problem, as described in Section II.

The eleven violations represent a significant breakdown of management oversight and control of the radiation safety program. To emphasize the importance of adequate management control of this program, the Nuclear Regulatory Commission proposes the imposition of cumulative civil penalties in the amount of One Thousand Eight Hundred Seventy-Five Dollars (\$1,875) for violations described in Sections I and II of this Notice. In accordance with the NRC Enforcement Policy (10 CFR Part 2, Appendix C) 47 FR 9987 (March 9, 1982) and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended ("Act"), 42 U.S.C. 2282, PL 96-295, and 10 CFR 2.205, these particular violations and the associated civil penalties are set forth below:

I. VIOLATIONS ASSOCIATED WITH AN EVENT INVOLVING EXCESSIVE RADIATION LEVELS ON A TRANSPORTED PACKAGE

10 CFR 71.5(a) requires that no licensee deliver any licensed material to a carrier for transport without complying with the applicable requirements of the regulations of the Department of Transportation appropriate to the mode of transport as provided in 49 CFR Parts 170-189.

- A. 49 CFR 173.441(a) requires that each package of radioactive materials offered for transportation but not transported as an exclusive use shipment be prepared for shipment so that, under conditions normally incident to transportation, the radiation level does not exceed 200 millirem per hour at any point on the external surface of the package and the transport index (the radiation level at 3 feet from the package) does not exceed 10.



Contrary to the above, on August 3, 1983, a package not transported as an exclusive use shipment was inadequately prepared by the licensee for transport in that the lid on the lead radiation shield within the package was only loosely taped in place, and a molded styrofoam insert intended to hold the shielding in place was not used; as a result radioactive material escaped from the shield causing radiation levels of 4.3 rem per hour at the external surface of the package and the transport index for the package to exceed a factor of 10 under conditions normally incident to transportation.

- B. 49 CFR 173.475(e) requires that, prior to shipment of any package containing radioactive material, the shipper must ensure, by examination or appropriate tests, that each special instruction for filling, closing, and preparing the package for shipment has been followed.

Contrary to the above, on August 3, 1983, a package containing radioactive material was shipped by the licensee without prior examination or test to ensure special instructions for preparation of the packaging were followed. Specifically, the package was shipped without part of the packing material, an essential part of the packaging.

- C. 49 CFR 172.403(g) requires that each package of radioactive material bear a label which identifies the contents of the package.

Contrary to the above, on August 3, 1983, a package was shipped by the licensee which bore a label identifying the contents of the package as "gallium," a non-radioactive material, when the package actually contained technetium-99m, a radioactive material.

Collectively, these three violations have been evaluated as a Severity Level I problem (Supplements IV and V).

Cumulative Civil Penalty: \$1,250, assessed equally among the violations.

## II. VIOLATIONS OF OTHER TRANSPORTATION REQUIREMENTS

- A. 10 CFR 71.5(a) requires that no licensee deliver any licensed material to a carrier for transport without complying with the applicable requirements of the regulations of the Department of Transportation, appropriate to the mode of transport as provided in 49 CFR Parts 170-189.

1. 49 CFR 172.200(a) requires that each shipper of hazardous material describe the hazardous material in a shipping paper which accompanies the shipment.

Contrary to the above, as of August 17, 1983, no shipping papers meeting DOT requirements regarding the proper shipping name, hazard class, or identification number were provided with packages of hazardous material shipped by the licensee.

2. 49 CFR 173.415(a) requires that each shipper of a Specification 7A Type A package, the proper packaging for a Type A quantity of technetium-99m of less than 100 curies, maintain on file for at least one year after the latest shipment, complete documentation of tests and an engineering evaluation or comparative data showing that the packaging complies with that specification.

Contrary to the above, as of August 17, 1983, packages containing less than 100 curies of technetium-99m and bearing the marking "DOT Spec. 7A" had been routinely shipped by the licensee without documentation of file of tests and engineering evaluations or comparative data showing that the packages meet the "DOT Spec. 7A" specification.

3. 49 CFR 173.412(b) requires that the outside of each Type A package not shipped in exclusive use incorporate a feature, such as a seal, which is not readily breakable and which, while intact, will be evidence that the package has not been opened.

Contrary to the above, as of August 17, 1983, packages were routinely delivered for shipment not in exclusive use by the licensee which did not incorporate the required seal.

- B. Conditions 9.A through E of License No. 20-17131-01 require that radiopharmaceuticals be distributed in accordance with statements, representations and procedures contained in a letter from the licensee dated February 27, 1981.

Section 6.b of this letter requires that, when packages are transported via a delivery service, the delivery driver must receive a set of emergency instructions which will include procedures to be followed by the driver in case of accident, with appropriate names to contact and associated telephone numbers.

Contrary to the above, as of August 17, 1983, two cab drivers who routinely transported radiopharmaceuticals for the licensee had never received the required emergency instructions.

Collectively, these four violations have been evaluated as a Severity Level III problem (Supplements IV and V).

Cumulative Civil Penalty: \$625, assessed equally among the violations.

### III. VIOLATIONS OF NON-TRANSPORTATION REQUIREMENTS (NO CIVIL PENALTIES ASSESSED)

- A. Condition 27 of License No. 20-17131-01 requires that licensed material be possessed and used in accordance with the license statements, representations and procedures contained in application dated November 30, 1981.

Block 10 of this license application requires that dose calibrators be calibrated in accordance with procedures contained in Appendix D, Section 2, of Regulatory Guide 10.8.

1. Item A.1 of Appendix D, Section 2, requires that dose calibrator constancy be checked daily.

Contrary to the above on August 15, 16, and 17, 1983, the dose calibrator constancy was not checked by the licensee.

This is a Severity Level IV violation (Supplement VI).

2. Item A.3 of Appendix D, Section 2, requires that the dose calibrator linearity be determined at installation and during each calendar quarter thereafter.

Contrary to the above, as of August 17, 1983, dose calibrator linearity had not been determined by the licensee since February 1983, a period of more than a calendar quarter.

This is a Severity Level IV violation (Supplement VI).

3. Item C.7 of Appendix D, Section 2, requires that dose calibrators be checked daily with a long-lived standard radionuclide at all commonly used radionuclide settings.

Contrary to the above, as of August 17, 1983, the dose calibrator was not checked daily with a long-lived standard radionuclide (cesium-137) in that the push buttons were not checked daily for correct operation.

This is a Severity Level IV violation (Supplement VI).

- B. 10 CFR 35.14(b)(4)(ii) requires that technetium-99m separated from molybdenum-99 by elution from a molybdenum-99/technetium-99m generator be tested to determine either the total molybdenum-99 activity or the concentration of molybdenum-99 prior to administration to patients.

Contrary to the above, on August 17, 1983, technetium-99m eluted from a generator was not adequately tested for total molybdenum-99 activity or concentration in that the calculation of the total molybdenum-99 activity was performed incorrectly.

This is a Severity Level IV violation (Supplement VI).

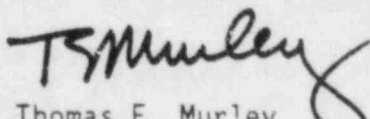


Pursuant to the provisions of 10 CFR 2.201, Brigham and Women's Hospital is hereby required to submit to the Director, Office of Inspection and Enforcement, USNRC, Washington, DC 20555, with a copy to this office, within 30 days of the date of this Notice, a written statement or explanation in reply, including for each alleged violation: (1) admission or denial of the alleged violation; (2) the reasons for the violation, if admitted; (3) the corrective steps that will be 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. Consideration may be given to extending the response time for good cause shown. Under the authority of Section 182 of the Act, 42 U.S.C. 2232, this response shall be submitted under oath or affirmation.

Within the same time as provided for the response required above under 10 CFR 2.201, Brigham and Women's Hospital may pay the civil penalties in the amount of One Thousand Eight Hundred and Seventy-Five Dollars (\$1,875) or may protest imposition of the civil penalties in whole or in part by a written answer. Should Brigham and Women's Hospital fail to answer within the time specified, the Director, Office of Inspection and Enforcement, will issue an order imposing the civil penalties in the amount proposed above. Should Brigham and Women's Hospital elect to file an answer in accordance with 10 CFR 2.205 protesting the civil penalties, such answer may: (1) deny the violations listed in this Notice in whole or in part; (2) demonstrate extenuating circumstances; (3) show error in this Notice; or (4) show other reasons why the penalties should not be imposed. In addition to protesting the civil penalties in whole or in part, such answer may request remission or mitigation of the penalty. In requesting mitigation of the proposed penalties, the five factors contained in Section IV.B of 10 CFR Part 2, Appendix C should be addressed. Any written answer in accordance with 10 CFR 2.205 should be set forth separately from the statement or explanation in reply pursuant to 10 CFR 2.201, but may incorporate by specific reference (e.g., citing page and paragraph numbers) to avoid repetition. The attention of Brigham and Women's Hospital is directed to the other provisions of 10 CFR 2.205 regarding the procedure for imposing a civil penalty.

Upon failure to pay any civil penalty due, which has been subsequently determined in accordance with the applicable provisions of 10 CFR 2.205, this matter may be referred to the Attorney General, and the penalties, unless compromised, remitted, or mitigated, may be collected by civil action pursuant to Section 234c of the Act, 42 U.S.C. 2282.

FOR THE NUCLEAR REGULATORY COMMISSION

  
Thomas E. Murley  
Regional Administrator

Dated at King of Prussia, Pennsylvania  
this 8<sup>th</sup> day of November 1983





# Brigham and Women's Hospital

A Teaching Affiliate of Harvard Medical School  
75 Francis Street, Boston, Massachusetts 02115  
(617) 732- 5056

November 30, 1983

Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555

Ref: Docket No. 030-12239 (Region I)  
License No. 20-17131-01  
EA No. 83-97

Sir:

In this letter the Brigham and Women's Hospital wishes to respond to the notice of violations and accompanying letter from the Region I administrator dated November 8, 1983. These refer to the radiopharmaceutical package event reported August 9, 1983, and your inspection conducted August 16-17, 1983.

We admit without prejudice the listed violations of NRC requirements, and we believe that a reinspection will reveal full compliance achieved as of December 5, 1983. The following statements present the reasons for each violation and corrective measures taken:

I. Excessive radiation levels around a transported package.

- A. 49 CFR 173.441(a) requires no surface exposure rate over 0.2 R/hr, but inadequate packaging resulting in an estimated surface exposure rate of 4.3 R/hr upon delivery by a nuclear medicine technologist.

Reason: Carelessness by an employee led to insufficiently firm taping of the lid to a lead shield. During transport, the vial containing a radiopharmaceutical escaped its shield.

Corrective measures:

- (1) Intensive instruction of all Radiopharmacy staff has insured secure lid attachment by tape.
- (2) Each shield is tightly contained within a heat-sealed plastic bag.
- (3) Complete foam padding is used to contain lead pigs tightly.  
(See I. B(2), below)
- (4) A fixed geometry area is dedicated for package surface measurements.

Future prevention:

- (1) Nuclear medicine technologists arriving to pick up packages are themselves required to verify by signature conformance of the package label with exposure measurements they themselves make. This will preclude transfer of any package with excessive surface exposure rates.

Boston Hospital for Women/Peter Bent Brigham Hospital/Robert B. Brigham Hospital/Brookside Park  
Family Life Center/Southern Jamaica Plain Health Center/Peter Bent Brigham School of Nursing

- (2) Detailed observation of the packaging procedure at unannounced quarterly audits by the Radiation Safety Office and quarterly inspection of packages delivered to nearby hospitals will provide close scrutiny of packaging adequacy.

B. 49 CFR 173.475(e) requires that special instructions for preparation of packages be followed, but a package was shipped with a portion of the styrofoam padding missing.

Reason: Carelessness by an employee operating not in accordance with explicit written packaging instructions.

Corrective measures:

- (1) Instructional sessions every two weeks for all personnel covering safe handling, packaging, transfer and shipping of packages containing radioisotopes.
- (2) New single-use fiberboard packages received (with certification) from Southwest Forest Industries have been fitted with matching foam inserts for all shipments by common carrier to the Faulkner and Mt. Auburn Hospitals. Two sizes of surplus U.S. Army ammunition boxes have been acquired, fitted with foam inserts, and tested for the engineering specifications of 49 CFR. These are used for transport of materials to Longwood area hospitals and laboratories. The explicit certifications for all three package types are enclosed.

Future prevention:

- (1) Instructional sessions every two weeks for all personnel preparing packages.
- (2) Quarterly direct written solicitation by the Radiation Safety Office of comments from recipients of the packages.
- (3) Closer supervision by the Radiopharmacy Director and/or Associate director.
- (4) Quarterly audits by the Radiation Safety Office.

C. 49 CFR 172.403(g) requires each package to bear a correct label. The package of August 3, 1983 was incorrectly labeled.

Reason: Carelessness by an employee in not following established packaging procedures.

Corrective measures:

- (1) Instructional sessions every two weeks.
- (2) Verification by signature of the matching of label and the daily order by each receiving technologist.

Future prevention:

- (1) Quarterly solicitation by the Radiation Safety Office of comments from recipients of the packages.
- (2) Quarterly inspection of packages at the point of destination by the Radiation Safety Office.

II. Other transportation requirements.

A. 10 CFR 71.5(a) requires conformance to 49 CFR Parts 170-189.

- (1) 49 CFR 172.200(a) requires proper shipping papers, which were not used on August 17, 1983.

Reason: Shipping papers used by the Radiopharmacy did not conform strictly to federal statutes.

Corrective measures:

- (a) New shipping papers conforming to federal standards have been acquired.
- (b) Immediate training sessions and closer supervision.
- (c) Model shipping papers are posted.

Future prevention:

- (a) All carriers performing pick-ups for transport are required to sign for required shipping papers.
  - (b) Solicitation of comments from package recipients by the Radiation Safety Office.
  - (c) Quarterly audit by the Radiation Safety Office focused on package preparation.
- (2) 49 CFR 173.415(a) requires on-site files of engineering tests documenting package characteristics. Such documents were not on file.

Reason: We were not aware of this requirement.

Corrective measures:

- (a) Documents characterizing the physical properties of the three package types now in use are on file.
- (b) Copies of 49 CFR are kept in the radiopharmacy. A subscription to periodic updates has been requested by mail.

Future prevention:

- (a) Descriptions of tests performed on the presently used packages are enclosed.
- (3) 49 CFR 173.412(b) requires an outside package seal. No seal was used on August 17, 1983.

Reason: We were not aware of this requirement.

Corrective measures:

- (a) Seals bearing individual code numbers are now put onto all packages shipped by common carrier.
- (b) Large nylon locking Cobe ties as seals are affixed to all packages picked up by local technologists.
- (c) Copies of 49 CFR are kept in the radiopharmacy. A subscription to periodic updates has been requested.

Future prevention:

- (a) Instructional sessions every two weeks for all Radiopharmacy personnel and closer supervision by the Director and Associate Director.
- (b) Quarterly audit by the Radiation Safety Office
- (c) Solicitation of comments from package recipients.

B. Contrary to conditions of our license, 20-17131-01, written emergency instructions were not given two cab drivers on August 17, 1983.

Reason: Carelessness by an employee. Copies of the emergency instructions were and have been available in the Radiopharmacy and on file with the common carriers.

Corrective measures:

- (1) Instructional sessions every two weeks for all Radiopharmacy personnel and closer supervision by the Director and Associate Director.

Future prevention:

- (1) Quarterly audit by the Radiation Safety Office.
- (2) Solicitation of comments from outside package recipients.

III. Operational variations from license conditions from Appendix D, Section 2, of Regulatory Guide 10.8.

A. Use of the radioisotope dose calibrator.

- (1) Item A.1: No constancy checks were made on August 15, 16 and 17, 1983.

Reason: Lack of attention to required procedures by an employee.

Corrective actions:

- (a) Instructional sessions every two weeks for all Radiopharmacy personnel and closer supervision by the Director and Associate Director.
- (b) Daily check of constancy parameters by the supervising radiopharmacist.

Future prevention:

- (a) Quarterly audit by the Radiation Safety Office.
- (b) Unannounced checks by the Radiopharmacy Director and Associate Director.
- (c) Weekly inspections of calibration records by the Radiation Safety Office.
- (2) Item A.3: Failure to perform and document a linearity check during the previous quarter.

Reason: Proper comparison of Calicheck and standard decay linearity tests were not performed.

Corrective action:

- (a) Linearity checks were performed and recorded in late August, 1983, and in November, 1983.
- (b) Instructional sessions every two weeks for all Radiopharmacy personnel and closer supervision by the Director and Associate Director.
- (c) Verification of Calicheck with the standard linearity check has been made in accord with Regulatory Guide 10.8.

Future prevention:

- (a) Quarterly audit.
- (b) Maintenance of linearity check data copies in the Radiation Safety Office.



- (3) Item C.7: Failure to check the long-lived standard radionuclide at all commonly used radionuclide pushbutton settings on August 17, 1983.

Reason: Misinterpretation of regulations.

Corrective action:

- (a) Calibration procedures now adhere to Regulatory Guide 10.8, Appendix D.
- (b) Instructional sessions every two weeks for all Radiopharmacy personnel and closer supervision by the Director and Associate Director.
- (c) Inspection of calibration log at weekly visits by the Radiation Safety Office.
- (d) Posting of calibration instructions.

Future prevention:

- (a) Quarterly audit inspection of the calibration log.

- B. 10 CFR 35.14(b)(4)(ii) requires that Tc-99m/Mo-99 generator eluates be tested for Mo-99. This was incorrectly done on August 17, 1983 in that the scaling multiplication factor was not used to modify the numerical value of the LED display.

Reason: Anxiety due to a stressful situation.

Corrective actions:

- (1) Instructional sessions every two weeks for all Radiopharmacy personnel and closer supervision by the Director and Associate Director.

Future prevention:

- (1) Testing of individual employees at the quarterly audit.

Because proper radiopharmaceutical packaging and characterization require persistent attention to detail, a greatly improved ongoing educational program for the radiopharmacists has been established. The person on duty when the defective package was prepared August 3, 1983 has terminated work voluntarily. Two additional radiopharmacists have been hired to assist in the early morning packaging operations.

All new employees of the Radiopharmacy must review their qualifications with the Radiation Safety Office prior to employment. A written exam on topics pertinent to their work will be administered.

One external auditor (certified by the American Board of Health Physics) will conduct an examination of the radiopharmacy shortly.

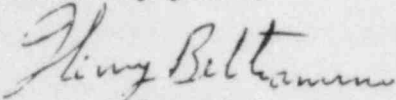
U.S. Nuclear Regulatory Commission  
Page Six  
November 30, 1983

We regret the concern caused the Nuclear Regulatory Commission by the events of last August. Review and refinement of our operations guarantee an improved performance both now and in the future. The interest and suggestions of your staff have been most helpful.

Please contact us if any items need clarification.

This letter is submitted under my oath.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Henry Beltramini".

Henry Beltramini  
Assistant Vice President  
Administrative Services  
Brigham and Women's Hospital

HL:JBM

cc: Mr. Thomas E. Murley, Region I



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
631 PARK AVENUE  
KING OF PRUSSIA, PENNSYLVANIA 19406

September 1, 1983

Docket Nos. 030-09049  
030-19445  
070-01795  
License Nos. 08-00216-22  
08-00216-23  
SNM-1499  
EA No. 83-73

The George Washington University Medical Center  
ATTN: Fred Leonard, Ph.D.  
Associate Dean of Research  
2300 Eye Street, N.W.  
Washington, D. C. 20037

Gentlemen:

Subject: NOTICE OF VIOLATION AND PROPOSED IMPOSITION OF CIVIL PENALTIES  
(NRC Inspection 83-01)

This refers to the NRC safety inspection conducted on June 1-2, 1983, of activities authorized by NRC License Nos. 08-00216-22, 08-00216-23, and SNM-1499. The report of this inspection was forwarded to you on June 30, 1983. During the inspection, twelve examples of failure to comply with NRC requirements were identified. On July 19, 1983, we held an enforcement conference with you during which these failures, their causes, and your corrective actions were discussed.

These examples, two of which are similar to violations identified during previous NRC inspections, are described in the enclosed Notice and they collectively represent a significant breakdown in management oversight and control of the radiation safety program. These examples demonstrate the need for improvement in the administration and control of the program to assure adherence to NRC requirements, and safe performance of licensed activities.

To emphasize the importance of adequate control of the radiation safety program, I have been authorized, after consultation with the Director, Office of Inspection and Enforcement, to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalties in the amount of Two Thousand Five Hundred Dollars (\$2,500) for the violations set forth in the enclosed Notice. The twelve violations have been categorized in the aggregate as a Severity Level III problem in accordance with the NRC Enforcement Policy (10 CFR 2, Appendix C, 47 FR 9987 (March 9, 1982)).

The base civil penalty for a Severity Level III problem is normally \$2,000. However, since corrective actions were not taken promptly when some of the

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

The George Washington University  
Medical Center

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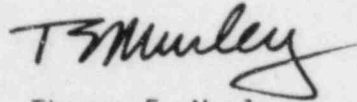
violations were identified previously, the proposed civil penalty has been increased to \$2,500 to further emphasize the importance of prompt and effective corrective action for identified deficiencies.

You are required to respond to the enclosed Notice and, in preparing your response, you should follow the instructions specified in the Notice. Your reply to this letter and the results of future inspections will be considered in determining whether further enforcement action is appropriate.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosure will be placed in the NRC's Public Document Room.

The responses directed by this letter and the enclosed Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,



Thomas E. Murley  
Regional Administrator

Enclosure:  
Notice of Violation and Proposed  
Imposition of Civil Penalties

cc:  
Public Document Room (PDR)  
Nuclear Safety Information Center (NSIC)  
District of Columbia

The George Washington University Medical Center  
ATTN: Dr. Mark Selikson  
Radiation Safety Officer  
Warwick Building  
2300 K Street, N.W.  
Washington, D.C. 20037



NOTICE OF VIOLATION  
AND  
PROPOSED IMPOSITION OF CIVIL PENALTIES

The George Washington University  
Medical Center  
2300 Eye Street, NW  
Washington, D.C. 20037

Docket Nos. 30-09049  
30-19445  
70-01795  
License Nos. 08-00216-22  
08-00216-23  
SNM-1499

EA 83-73

An NRC inspection of activities authorized under NRC License Nos. 08-00216-22, 08-00216-23, and SNM-1499 was conducted on June 1-2, 1983. During the inspection, multiple examples of failure to comply with NRC requirements were identified. Two of the examples, involving failure to wear TLD finger badges, and failure to dispose of radioactive waste in a designated container, were also identified during a previous NRC inspection in 1980. Collectively, these failures represent a significant breakdown in the management of the radiation safety program.

To emphasize the importance of adequate control of the radiation safety program, the Nuclear Regulatory Commission proposes the imposition of cumulative civil penalties in the amount of Two Thousand Five Hundred Dollars for this matter. In accordance with the NRC Enforcement Policy (10 CFR Part 2, Appendix C) 47 FR 9987 (March 9, 1982), and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended ("Act"), 42 U.S.C. 2282, PL 96-295, and 10 CFR 2.205, these particular violations and the associated civil penalties are set forth below:

- A. 10 CFR 20.106(a) requires that no licensee release radioactive material to an unrestricted area in concentrations which exceed the limits specified in 10 CFR 20, Appendix B, Table II, when averaged over one year. 10 CFR 20, Appendix B, Table II, specifies the effluent release limit for airborne xenon-133 to be  $3.0 \times 10^{-7}$  microcuries per milliliter.

10 CFR 20.201(b) requires that each licensee make such surveys as may be necessary to comply with all sections of Part 20 and that each licensee make or cause to be made such surveys that are reasonable under the circumstances to evaluate the extent of radiation hazards that may be present. As defined in 10 CFR 20.201(a), "survey" means an evaluation of the radiation hazards incident to the production, use, release, disposal, or presence of radioactive materials or other sources of radiation under a specific set of conditions.

Contrary to the above, as of June 2, 1983, an adequate survey had not been performed to assure compliance with 10 CFR 20.106(a) in that no evaluation of the concentrations of xenon-133 were made at the boundary of the restricted area to determine the concentration of xenon-133 resulting from releases made during the one-year period ending March 31, 1982, even

though surveys at the release point within the restricted area showed xenon-133 in concentrations of  $7.5 \times 10^{-7}$  microcurie per milliliter when averaged over one year.

- B. 10 CFR 20.301 requires that no licensee dispose of licensed material except in accordance with certain authorized methods which are specified in 10 CFR 20.301(a), (b) and (c).

Condition 22 of License No. 08-00216-22 requires a survey to be made of material placed in normal trash.

Contrary to the above, on January 25, 1983, a bag of waste consisting of disposable protective clothing and plastic-backed absorbent pads, containing approximately 70 microcuries of iodine-125, was removed from a restricted laboratory and placed in the normal trash without a survey. As a result, this waste was subsequently removed and transported to a public landfill near Lorton, Virginia, a method of disposal not authorized by 10 CFR 20.301(a), (b), or (c).

- C. 10 CFR 35.43 requires diagnostic misadministrations be reported to the NRC Regional Office within 10 days after the end of the calendar quarter in which the misadministration occurred.

Contrary to the above, misadministrations which occurred on October 13, 1982, and November 16, 1982, were not reported to the NRC Regional Office within 10 days after the end of the 4th quarter 1982 (December 31, 1982), and had not been reported as of June 2, 1983.

- D. Condition 13 of License No. 08-00216-22 requires that sealed sources containing byproduct material be tested for leakage and/or contamination at intervals not to exceed six months.

Contrary to the above, sealed sources containing millicurie quantities of cesium-137 for brachytherapy use were not leak tested during the first six months of 1981, or during the entire twelve months of 1982.

- E. Condition 21 of License No. 08-00216-22 requires that licensed material be possessed and used in accordance with statements, representations and procedures contained in applications dated March 21, 1978, and January 31, 1979; letters with attachments dated March 27, 1979, and April 18, 1979; Items A (ALARA Program), D, and E of letter dated May 15, 1981; and letters dated January 28, 1982, July 1, 1982, and July 13, 1982.

1. Item No. 10 of an attachment to the letter dated March 27, 1979, requires that dose calibrators be calibrated in accordance with procedures contained in Appendix D, Section 2, of Regulatory Guide 10.8 (January 1979).

Procedure E of Appendix D, Section 2, requires dose calibrators to be tested quarterly for linearity.

Contrary to the above, as of June 1, 1983, although records of linearity tests were maintained, no records were available to demonstrate that linearity tests were performed on a dose calibrator for the 3rd and 4th quarters of 1980, the 1st quarter of 1981, and the 2nd quarter of 1982.

2. Item No. 10 of the attachment to the letter dated March 27, 1979, requires that survey meters be calibrated every 6 months.

Contrary to the above, on June 1 and 2, 1983, an NRC inspector identified that several survey meters located in the research laboratories had not been calibrated since March 1982, an interval in excess of 6 months.

3. Item No. 15 of the attachment to the letter dated March 27, 1979, requires adherence to the "General Rule for Safe Use of Radioactive Materials" contained in Appendix G of Regulatory Guide 10.8.

- a. Rule 2 of Appendix G requires that disposable gloves be worn at all times while handling radioactive materials.

Contrary to the above, on June 1, 1983, an NRC inspector observed personnel in the Nuclear Medicine Department who were not wearing disposable gloves while handling and injecting radiopharmaceuticals.

- b. Rule 5 of Appendix G requires that there be no eating, drinking, smoking, or application of cosmetics in any area where radioactive materials are stored or used.

Contrary to the above, on June 2, 1982, an NRC inspector observed an individual smoking in Room 407AB, Ross Hall, where radioactive materials are stored, and found evidence of eating and drinking, namely eating utensils and cups, in several other of the research laboratories where radioactive materials are stored.

- c. Rule 8 of Appendix G requires that TLD finger badges be worn during elution of generators, and during preparation, assay, and injection of radiopharmaceuticals.

Contrary to the above, on June 1, 1983, an NRC inspector observed a student technologist who was not wearing a TLD ring badge while preparing radiopharmaceuticals.

- d. Rule 9 of Appendix G requires that radioactive waste be disposed of only in specifically designated receptacles.

Contrary to the above, on June 2, 1983, a receptacle designated as non-radioactive "cold trash" contained radioactive materials in that a radiation level of 7 milliroentgen per hour was identified by the NRC inspector at the surface of the receptacle.

- e. Rule 10 of Appendix G requires that there be no pipetting by mouth.

Contrary to the above, on June 2, 1983, an NRC inspector observed evidence (hose) of mouth pipetting in Room 234, Ross Hall, and an individual admitted pipetting quantities of phosphorous-32 by mouth.

- f. Rule 11 of Appendix G requires surveys of generator, kit preparation, and injection areas after each procedure or at the end of the day.

Contrary to the above, as of June 1, 1983, documentation reviewed by an NRC inspector demonstrated that surveys were not performed on May 9 and 10, 1983 in the Nuclear Medicine areas and between June 18 to August 2, 1982, October 10 to November 8, 1982 and December 18, 1982 to January 31, 1983 in the Nuclear Cardiology areas.

Collectively, the above twelve violations have been evaluated as a Severity Level III problem (Supplements IV and VI.)

(Cumulative Civil Penalty - \$2,500 - assessed equally among the violations.)

Pursuant to the provisions of 10 CFR 2.201, The George Washington University Medical Center is hereby required to submit to the Director, Office of Inspection and Enforcement, JSNRC, Washington, DC 20555, with a copy to this office, within 30 days of the date of this Notice, a written statement or explanation in reply, including for each alleged violation: (1) admission or denial of the alleged violation; (2) the reasons for the violation, if admitted; (3) the corrective steps that will be 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. Consideration may be given to extending the response time for good cause shown. Under the authority of Section 182 of the Act, 42 U.S.C. 2232, this response shall be submitted under oath or affirmation.

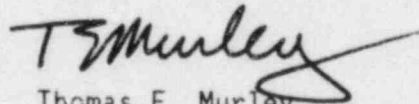
Within the same time as provided for the response required above under 10 CFR 2.201, The George Washington University Medical Center may pay the civil penalties in the amount of Two Thousand Five Hundred Dollars or may protest imposition of the civil penalties in whole or in part by a written answer. Should The George Washington University Medical Center fail to answer within the time specified, the Director, Office of Inspection and Enforcement, will issue an order imposing the civil penalties in the amount proposed above. Should The George Washington University Medical Center elect to file an answer in accord-



ance with 10 CFR 2.205 protesting the civil penalties, such answer may: (1) deny the violations listed in this Notice in whole or in part; (2) demonstrate extenuating circumstances; (3) show error in this Notice; or (4) show other reasons why the penalties should not be imposed. In addition to protesting the civil penalties in whole or in part, such answer may request remission or mitigation of the penalty. In requesting mitigation of the proposed penalties, the five factors contained in Section IV.B of 10 CFR Part 2, Appendix C should be addressed. Any written answer in accordance with 10 CFR 2.205 should be set forth separately from the statement or explanation in reply pursuant to 10 CFR 2.201, but may incorporate by specific reference (e.g., citing page and paragraph numbers) to avoid repetition. The attention of The George Washington University Medical Center is directed to the other provisions of 10 CFR 2.205 regarding the procedure for imposing a civil penalty.

Upon failure to pay any civil penalty due, which has been subsequently determined in accordance with the applicable provisions of 10 CFR 2.205, this matter may be referred to the Attorney General, and the penalties, unless compromised, remitted, or mitigated, may be collected by civil action pursuant to Section 234c of the Act, 42 U.S.C. 2282.

FOR THE NUCLEAR REGULATORY COMMISSION

  
Thomas E. Murley  
Regional Administrator

Dated at King of Prussia, Pennsylvania  
this 12 day of September 1983



THE  
GEORGE  
WASHINGTON  
UNIVERSITY  
MEDICAL CENTER

Washington, D.C. 20037

Office of the Associate Dean for Research  
2300 Eye Street, N.W.  
202-676-2995

Thomas B. Murley  
Regional Administrator  
Region I  
USNRC  
King of Prussia, PA

September 26, 1983

Dear Mr. Murley:

This letter is in response to the Notice of Violation EA No. 83-73 dated 9/1/83.

The letter is divided into 4 sections

- I. General comments concerning NRC conclusions.
- II. Specific comments for each alleged violation in accordance with instructions in the Notice.
- III. Policy actions that have been taken.
- IV. Conclusions

I. GENERAL COMMENTS

- A. The NRC conclusions that there has been a "significant breakdown in management oversight and control of the Radiation Safety Program," when considered in the light of our overall radiation program, is unwarranted. The following specific examples reflecting a meritorious Radiation Safety Program are presented:

1. Program Growth/Lower Personnel Exposure : Since our last inspection in 1980, the size of the George Washington University program rose from 37,300 mCi of activity to 362,600 mCi of activity in 1982 plus 2,100,000 mCi Cs sealed source. During that period of time, the number of personnel with exposures exceeding the low ALARA trigger levels (10% MPD as approved by NRC in 1981.) decreased from 27 in 1981 to 12, in 1982 to 2 in the first half of 1983. Eight hundred (800) thyroid bioassays were performed during the same three year period and only once (12% MPD) was the ALARA trigger level exceeded. This record is not one which reflects a program which is an "actual or high potential risk" to the public, the patients, or personnel at the George Washington University or one in which there is a "significant breakdown in management oversight of the Radiation Safety Program."

2. Radiation Safety Education Program: There is an active educational program in radiation safety for both students and workers. Since the beginning of 1983, over 410 workers have attended on the job radiation safety education inservices. Three radiation safety courses have been given for credit in our Allied Health Program. In addition, research personnel who work with radioactive materials are required to take, and pass, a radiation safety examination.
3. Radiation Safety Development Program: a.) Recently, a double energy calibration technique has been developed and implemented by the Radiation Safety Office at the George Washington University. The technique was presented at the Annual meeting of Campus Radiation Safety Officers, June 1983, Columbia, Missouri. This procedure exceeds requirements. As a result of this new calibration protocol, investigators have a more accurate indication of exposure levels when working with a variety of isotopes. b.) The Radiation Safety Office has developed a method for converting oil-soluble radioactive waste to stable oil in water emulsions so that they may be disposed of in a similar manner as water soluble radioactive waste. The method was presented at the annual meeting of the Health Physics Society, June 1983, Baltimore, Maryland, and a paper is being submitted for publication to Health Physics.

The George Washington University is very supportive of the educational and development efforts of the Radiation Safety Office for travel and attendance at meetings, for exchange and dissemination of information developed by the Radiation Safety Office, and for specialized courses in Radiation Safety to train the radiation safety personnel working at the University.

4. Salutory Comments on the Latest Inspection: In a recent licensing inspection on September 13, 1983 the University was commended by a NRC representative for the security and safety precautions that have been taken for our 2.1 kCi Cesium irradiator.

- B. The characterization by the NRC of the violations cited at a collective severity level III is inappropriate.

This is the first time that the George Washington University has been inspected since the establishment of the severity level concept for academic institutions and therefore there is little past experience. However, in its policy statements the NRC defines severity level III as violations which have "actual or high potential impact on the public." (PS-33). The main concern expressed in your letter, "breakdown in management oversight control" appears to be analogous to the definition of a level IV problem

"degradation of...management control systems." (PS-33). It also states that "severity level IV in themselves are not cause for concern, they are the sort of violations that, if left uncorrected, could lead to matters of significant concern." Many of the violations cited in EA No., 83-73 had been identified and corrected prior to the NRC inspection. Most of the remaining items had been identified and were being worked on by the Radiation Safety Committee. Even the need for a new streamlined administrative structure in Radiation Safety was being initiated as early as January 1983. In view of the foregoing, and as specified below, a severity level III in our opinion is unwarranted.

- C. Allegations are made by NRC that corrective actions were not promptly taken when previous violations had been noted by NRC.

These allegations are incorrect. All of the violations cited in the NRC inspection in May 1980 were promptly corrected. (see letter June 3, 1980) Nuclear Medicine was promptly instructed to handle all waste containers as radioactive. Temporary film badges were immediately ordered so that anyone working in the hot lab would get a ring badge. The importance of wearing ring badges has been stressed in annual "inservices" and individual memoranda. An additional corrective action identified in the May 1980 inspection was the need for more frequent surveys in Dr. Kumar's research laboratory. Such weekly surveys were promptly initiated. In addition, persistent problems with decontamination in his laboratory led the Radiation Safety Office to recommend, and the University to proceed with, refinishing all the working surfaces in his laboratory. Since that time, the contamination rate has dropped dramatically. Therefore there is no basis for the NRC contention that corrective actions were not taken promptly.

## II. SPECIFIC COMMENTS FOR EACH ALLEGED INFRACTION

As requested we now respond to each alleged violation. These are:

- A. Inadequate survey to insure compliance with 10 CFR 20.106 (a).
- B. Disposal of RAM not authorized by 10 CFR 20.301.
- C. Reporting diagnostic misadministrations 10 CFR 35.43
- D. Sealed source leak test (License condition 13)
- E.
  - 1. Dose calibrator linearity tests (10.8 App D sec 2).
  - 2. Survey meter calibration tests. (License condition 21, item 10 3-27-79)
  - 3.
    - a. Wearing gloves (10.8 App G Rule 2)
    - b. Eating, drinking and smoking (10.8 App G Rule 5)



- c. Finger badges (10.8 App G Rule 8)
- d. Radioactive waste designated containers (10.8 App G Rule 9)
- e. Mouth pipetting (10.8 App G Rule 10)
- f. Daily surveys (10.8 App G Rule 11)

The citations A,B,D,E1,E3f were first discovered by the Radiation Safety Office and made part of University documentation. They were not discovered by the NRC and they did not exist at the time of the NRC inspection. The remaining citations had previously received attention of the Radiation Safety Office and corrective action by the Radiation Safety Committee.

#### Reasons for Violations

- A. There was varying hypotheses between personnel in Nuclear Medicine and Radiation Safety as to what assumptions were appropriate when performing the survey.
- B. The principal investigator, who was following appropriate guidelines, nevertheless lost a small amount of sealed I-125. An exposure estimate, made by the Radiation Safety Office as required by NRC for the purpose of the calculation, assumed that the unaccounted for activity ended up in a land fill although there is no actual evidence for this loss (estimated to be less than 70 uCi). It is clearly the intention of the University to properly dispose of all radioactive waste at all times.
- C. This is a self inspection program initiated just after our May, 1980 inspection by the NRC. Since its inception, only zero (0) therapeutic misadministrations and (2) diagnostic misadministrations have occurred. As required, in both cases the referring physician was notified, and an investigation was conducted and recorded. As required, the following was determined: the referring physician's name, the patient's name, social security number, the Nuclear Medicine physician's name, the technologist's name, the chronology of events that led to the diagnostic misadministration, and the effect on the patient. The misadministration report was reviewed by the Radiation Safety Committee and corrective action was implemented. As required, the entire record was kept on file for review by the NRC. This is the first time this program has been inspected. In setting up and carrying out the new program, the additional quarterly reporting requirement for diagnostic misadministrations was overlooked.

- D. Sealed sources of byproduct material which were less than 100 uCi (check sources) and exempt under License Condition 13, Amendment #12, May 4, 1979 were not included in the semiannual sealed source swipe program. Recently several check sources slightly over the 100 uCi exemption limit were purchased by Nuclear Medicine and inadvertently left off the list of sources to be swiped every 6 months. This error, by the Radiation Safety Office, was discovered and corrected prior to the NRC inspection.
- E1. The central file on dose calibrator linearity tests and sealed source therapy swipes was missing at the time of the NRC inspection. Copies of most of the missing documents have been recovered and forwarded to the NRC. Dose calibrator linearity and sealed source swipes have been performed. Also additional tests exceeding requirements have been done. These include extra accuracy and geometry checks. In addition, we calibrate against I-123 NBS standards.
- E2. A new calibration procedure which both improved the accuracy of the lower exposure stations and evaluated energy dependance was under development during the past year. Because of the development of this program, we were a few months behind in our routine checks of instrument calibration. This new method exceeds regulatory requirements and eliminated what we felt are gross inaccuracies in the standard two point calibration method widely used.
- E3a. Gloves are supplied by the University. University policy of wearing gloves is stressed in "inservices" and by supervisors. Disregard on the part of the worker for University established practice led to the citation.
- E3b. Eating, drinking, and smoking in restricted areas is against University established policy. Disregard for that policy on the part of the worker led to the citation.
- E3c. As required from our last NRC inspection, extra dosimeters are being kept on site so that new employees are "badged" as soon as they start working. In addition, "inservices" by the Radiation Safety Office and instruction from the immediate supervisors stress the importance of wearing ring badges. One student technologist out of seven was observed not wearing a ring badge. She did, however, have it in her pocket. This citation was due to disregard on the part of the student to follow established protocol and Radiation Safety's failure to survey for compliance.

- E3d. In response to the May 1980 inspection, University policy was changed to have all receptacles in Clinical Nuclear Medicine handled as radioactive. In addition, housekeeping access to several laboratories in Ross Hall was eliminated and cold trash was placed outside the doors for pick up. This citation was due to disregard on the part of personnel in Nuclear Medicine to follow established protocol.
- E3e. University policy prohibiting mouth pipetting of RAM has been included in annual inservices. Special lectures with this group covered in detail the hazards of mouth pipetting RAM and the mechanical alternatives available. This citation was due to disregard of established University policy on the part of the researcher.
- E3f. Daily surveys for contamination in the Nuclear Medicine areas is standard procedure since 1979. Radiation Safety does surveys for compliance. This infraction represents disregard of established University policy.

#### Corrective Steps Taken and Date of Full Compliance

- A. The "inadequate surveys" problems cited by the NRC, had been previously identified by the Safety Committee, reviewed by the Radiation Safety Committee, and corrected by Nuclear Medicine a year before the NRC inspection. (We have been, and are now in compliance.)
- B. The loss of RAM was reported by the user, investigated by Radiation Safety, and reviewed by the Radiation Safety Committee. The existing protocol was found to contain adequate safeguards. Educational efforts were intensified including new labeling on doors and "inservices". The entire event was kept on record. This incident represents a Radiation Safety program at its best. (We are in compliance and were at the time of the inspection).
- C. The quarterly reporting requirement has been added to the inhouse University form. (We are now in compliance).
- D. As a matter of inhouse policy, all sealed sources are now being swiped semiannually except for those which are not in use and stored in Radiation Safety's unused inventory areas. (We are now in compliance and were at the time of inspection).

- E1. Records of linearity tests are in a single notebook and maintained securely. (We are now in compliance and were at the time of the inspection).
- E2. The dual energy calibrator program has been instituted. A semiannual check of contamination meters has been implemented. New meters have been purchased. (We are now in compliance.)
- E3a. An enforcement program has been instituted which requires workers to utilize the safety equipment which the University provides under penalty of sanctions. (We are now in compliance.)
- E3b. An enforcement program has been instituted which requires workers to utilize the safety equipment which the University provides under penalty of sanctions. (We are now in compliance.)
- E3c. An enforcement program has been instituted which requires students to utilize the safety equipment which the University provides. (We are now in compliance.)
- E3d. A survey of waste container labels has been added to the Radiation Safety Inspection form for Nuclear Medicine. (We are now in compliance.)
- E3e. An enforcement program has been instituted which requires the principal investigator to utilize the safety equipment which the University provides. (We are now in compliance.)
- E3f. An enforcement program has been initiated to insure that user surveys are made on a daily basis under penalty of sanction. (We are now in compliance.)

### III. POLICY ACTIONS THAT HAVE BEEN TAKEN

To minimize the time between identification and correction of a radiation safety problem, a quarterly inspection and enforcement program supplementing our monthly, weekly and daily survey program has been implemented. The time limit allowed for corrective action is specified and sanctions will be imposed to insure compliance. In addition, an Executive Committee of the Radiation Safety Committee has been constituted to insure that the enforcement program is in place and that all policy questions receive immediate attention.



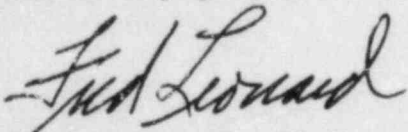
#### IV. CONCLUSIONS

In view of the foregoing documentation in regard to the George Washington Radiation Safety Program, we respectfully request that the NRC reconsider their initial conclusions, viz

1. That there has been a significant breakdown in management oversight and control of the Radiation Safety Program.
2. That the violations comprise a collective severity level III.
3. That corrective action was not promptly taken.

and rule in favor of reducing the severity level to level V and waiving the fine imposed upon the George Washington University.

Sincerely yours,



Fred Leonard, Ph.D.  
Associate Dean of Research  
Medical Center  
The George Washington University



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

NOV 15 1983

Docket Nos. 030-09049  
030-19445  
070-01795  
License Nos. 08-00216-22  
08-00216-23  
SNM-1499  
EA No. 83-73

The George Washington University Medical Center  
ATTN: Fred Leonard, Ph.D.  
Associate Dean of Research  
2300 Eye Street, N.W.  
Washington, D.C. 20037

Gentlemen:

This refers to your letter dated September 26, 1983, in response to the Notice of Violation and Proposed Imposition of Civil Penalties sent to you with our letter dated September 1, 1983. Our letter and Notice described violations identified during NRC Inspection 83-01 on June 1 - 2, 1983.

After careful consideration of your response, we have concluded for the reasons given in the enclosed Order and Appendix that a sufficient basis for mitigation of the proposed penalty was not provided in your response. Accordingly, we hereby serve the enclosed Order on The George Washington University Medical Center imposing a civil penalty in the amount of Two Thousand Five Hundred Dollars.

In your September 26, 1983 response, you express disagreement with the NRC conclusion that a significant breakdown in the management control and oversight of the radiation safety program had occurred at the George Washington University Medical Center. Rather, your response characterizes the program as meritorious, emphasizing that many of the violations were caused by the failure of individual personnel to adhere to established policies and procedures. The University is not only responsible for development of a satisfactory program, establishment of adequate procedures to implement the program, and training of personnel in the use of procedures, but is also responsible for maintaining adequate control and oversight of the program to ensure adherence to procedures, identification of procedural deviations, and prompt correction of procedural deviations including actions to prevent recurrence.

We recognize that the program at George Washington University Medical Center has expanded substantially in the last few years without significant personnel exposure in excess of NRC requirements. Nevertheless, we are concerned that the number of violations which were identified during this inspection, including several which were repetitive, indicate that the oversight of your program may

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

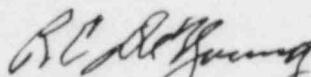
George Washington University  
Medical Center

2

not have expanded concurrently. Specifically, personnel failures to adhere to procedures were not identified, identified deficiencies were not promptly and effectively corrected, and previously identified deficiencies recurred. These deficiencies represent a significant breakdown in management control and oversight of the radiation safety program.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosure will be placed in the NRC's Public Document Room.

Sincerely,



Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Enclosures:

1. Order Imposing Civil Monetary Penalties
2. Appendix - Evaluations and Conclusion

cc:

Public Document Room (PDR)  
Nuclear Safety Information Center (NSIC)  
District of Columbia

The George Washington University Medical Center  
ATTN: Dr. Mark Selikson  
Radiation Safety Officer  
Warwick Building  
2300 K Street, N.W.  
Washington, D.C. 20037





violated, and the amount of civil penalty for each violation. A response dated September 26, 1983 to the Notice of Violation and Proposed Imposition of Civil Penalties was received from the licensee.

### III

Upon consideration of the answers received, the statements of fact, explanations, and arguments for remission or mitigation of the proposed civil penalties contained therein, and as set forth in the Appendix to this Order, the Director of the Office of Inspection and Enforcement has determined that the penalties proposed for the violations designated in the Notice of Violation and Proposed Imposition of Civil Penalties should be imposed.

### IV

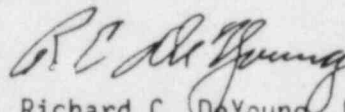
In view of the foregoing and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended (42 U.S.C. 2282, PL 96-295), and 10 CFR 2.205, IT IS HEREBY ORDERED THAT:

The licensee pay civil penalties in the amount of Two Thousand Five Hundred Dollars (\$2,500) within thirty days of the date of this Order, by check, draft, or money order, payable to the Treasurer of the United States and mailed to the Director of the Office of Inspection and Enforcement, USNRC, Washington, D.C. 20555.

The licensee may, within thirty days of the date of this Order, request a hearing. A request for a hearing shall be addressed to the Director, Office of Inspection and Enforcement. A copy of the hearing request shall also be sent to the Executive Legal Director, USNRC, Washington, D.C. 20555. If a hearing is requested, the Commission will issue an Order designating the time and place of hearing. Upon failure of the licensee to request a hearing within thirty days of the date of this Order, the provisions of this Order shall be effective without further proceedings and, if payment has not been made by that time, the matter may be referred to the Attorney General for collection. In the event the licensee requests a hearing as provided above, the issues to be considered at such hearing shall be:

- (a) whether the licensee violated NRC requirements as set forth in the Notice of Violation and Proposed Imposition of Civil Penalties; and
- (b) whether, on the basis of such violations, this Order should be sustained.

FOR THE NUCLEAR REGULATORY COMMISSION



Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Dated at Bethesda, Maryland  
this 5<sup>th</sup> day of November 1983

## APPENDIX

### EVALUATIONS AND CONCLUSIONS

Although the licensee essentially admits the twelve violations, the licensee's September 26, 1983 response to the Notice of Violation and Proposed Imposition of Civil Penalties dated September 1, 1983 requests that the Severity Level of the aggregate problem be reduced from Level III to Level V, and that the proposed fine be waived. The response provides the reasons why the licensee believes reduction of the Severity Level and waiving of the penalties are appropriate. Provided below are (1) restatement of each violation, (2) the licensee's assertions in support of their requests, and (3) the NRC response to each of the licensee's assertions.

#### Restatement of Violations:

- A. 10 CFR 20.106(a) requires that no licensee release radioactive material to an unrestricted area in concentrations which exceed the limits specified in 10 CFR 20, Appendix B, Table II, when averaged over one year. 10 CFR 20, Appendix B, Table II, specifies the effluent release limit for airborne xenon-133 to be  $3.0 \times 10^{-7}$  microcuries per milliliter.

10 CFR 20.201(b) requires that each licensee make such surveys as may be necessary to comply with all sections of Part 20 and that each licensee make or cause to be made such surveys that are reasonable under the circumstances to evaluate the extent of radiation hazards that may be present. As defined in 10 CFR 20.201(a), "survey" means an evaluation of the radiation hazards incident to the production, use, release, disposal, or presence of radioactive materials or other sources of radiation under a specific set of conditions.

Contrary to the above, as of June 2, 1983, an adequate survey had not been performed to assure compliance with 10 CFR 20.106(a) in that no evaluation of the concentrations of xenon-133 was made at the boundary of the restricted area to determine the concentration of xenon-133 resulting from releases made during the one-year period ending March 31, 1982, even though surveys at the release point within the restricted area showed xenon-133 in concentrations of  $7.5 \times 10^{-7}$  microcurie per milliliter when averaged over one year.

- B. 10 CFR 20.301 requires that no licensee dispose of licensed material except in accordance with certain authorized methods which are specified in 10 CFR 20.301(a), (b) and (c).

Condition 22 of License No. 08-00216-22 requires a survey to be made of material placed in normal trash.

Contrary to the above, on January 25, 1983, a bag of waste consisting of disposable protective clothing and plastic-backed absorbent pads, containing approximately 70 microcuries of iodine-125, was removed from a restricted laboratory and placed in the normal trash without a survey. As a result, this waste was subsequently removed and transported to a public landfill near Lorton, Virginia, a method of disposal not authorized by 10 CFR 20.301(a), (b), or (c).

- C. 10 CFR 35.43 requires diagnostic misadministrations be reported to the NRC Regional Office within 10 days after the end of the calendar quarter in which the misadministration occurred.

Contrary to the above, misadministrations which occurred on October 13, 1982, and November 16, 1982, were not reported to the NRC Regional Office within 10 days after the end of the 4th quarter 1982 (December 31, 1982), and had not been reported as of June 2, 1983.

- D. Condition 13 of License No. 08-00216-22 requires that sealed sources containing byproduct material be tested for leakage and/or contamination at intervals not to exceed six months.

Contrary to the above, sealed sources containing millicurie quantities of cesium-137 for brachytherapy use were not leak tested during the first six months of 1981, or during the entire twelve months of 1982.

- E. Condition 21 of License No. 08-00216-22 requires that licensed material be possessed and used in accordance with statements, representations and procedures contained in applications dated March 21, 1978, and January 31, 1979; letters with attachments dated March 27, 1979, and April 18, 1979; Items A (ALARA Program), D, and E of letter dated May 15, 1981; and letters dated January 28, 1982, July 1, 1982, and July 13, 1982.

1. Item No. 10 of an attachment to the letter dated March 27, 1979, requires that dose calibrators be calibrated in accordance with procedures contained in Appendix D, Section 2, of Regulatory Guide 10.8 (January 1979).

Procedure E of Appendix D, Section 2, requires dose calibrators to be tested quarterly for linearity.

Contrary to the above, as of June 1, 1983, although records of linearity tests were maintained, no records were available to demonstrate that linearity tests were performed on a dose calibrator for the 3rd and 4th quarters of 1980, the 1st quarter of 1981, and the 2nd quarter of 1982.

2. Item No. 10 of the attachment to the letter dated March 27, 1979, requires that survey meters be calibrated every six months.



Contrary to the above, on June 1 and 2, 1983, an NRC inspector identified that several survey meters located in the research laboratories had not been calibrated since March 1982, an interval in excess of six months.

3. Item No. 15 of the attachment to the letter dated March 27, 1979, requires adherence to the "General Rule for Safe Use of Radioactive Materials" contained in Appendix G of Regulatory Guide 10.8.

- a. Rule 2 of Appendix G requires that disposable gloves be worn at all times while handling radioactive materials.

Contrary to the above, on June 1, 1983, an NRC inspector observed personnel in the Nuclear Medicine Department who were not wearing disposable gloves while handling and injecting radiopharmaceuticals.

- b. Rule 5 of Appendix G requires that there be no eating, drinking, smoking, or application of cosmetics in any area where radioactive materials are stored or used.

Contrary to the above, on June 2, 1982, an NRC inspector observed an individual smoking in Room 407AB, Ross Hall, where radioactive materials are stored, and found evidence of eating and drinking, namely eating utensils and cups, in several other of the research laboratories where radioactive materials are stored.

- c. Rule 8 of Appendix G requires that TLD finger badges be worn during elution of generators, and during preparation, assay, and injection of radiopharmaceuticals.

Contrary to the above, on June 1, 1983, an NRC inspector observed a student technologist who was not wearing a TLD ring badge while preparing radiopharmaceuticals.

- d. Rule 9 of Appendix G requires that radioactive waste be disposed of only in specifically designated receptacles.

Contrary to the above, on June 2, 1983, a receptacle designated as non-radioactive "cold trash" contained radioactive materials in that a radiation level of seven milliroentgens per hour was identified by the NRC inspector at the surface of the receptacle.

- e. Rule 10 of Appendix G requires that there be no pipetting by mouth.

Contrary to the above, on June 2, 1983, an NRC inspector observed evidence (nose) of mouth pipetting in Room 234, Ross Hall, and an individual admitted pipetting quantities of phosphorous-32 by mouth.

- f. Rule 11 of Appendix G requires surveys of generator, kit preparation, and injection areas after each procedure or at the end of the day.

Contrary to the above, as of June 1, 1983, documentation reviewed by an NRC inspector demonstrated that surveys were not performed on May 9 and 10, 1983 in the Nuclear Medicine areas and between June 18 to August 2, 1982, October 10 to November 8, 1982 and December 18, 1982 to January 31, 1983 in the Nuclear Cardiology areas.

Collectively, the above twelve violations have been evaluated as a Severity Level III problem (Supplements IV and VI).

(Cumulative Civil Penalty - \$2,500 - assessed equally among the violations.)

#### Evaluation of Licensee's Response

Licensee's Assertion: The NRC conclusion that there has been a significant breakdown in management oversight and control of the Radiation Safety Program (RSP) is unwarranted. Rather, a meritorious RSP exists, as demonstrated by the following:

- (1) Although the size of the program increased in the past three years, the number of personnel with radiation exposures exceeding low ALARA trigger levels decreased during that time. Also, of 800 thyroid bioassays performed during the same three-year period, only once was the ALARA trigger level exceeded.
- (2) An active radiation safety program exists for both students and workers, including on the job radiation safety training, three radiation safety courses for credit, and exams for research personnel who work with radioactive materials.
- (3) The Radiation Safety Office (RSO) has developed a calibration technique to provide more accurate indications of exposure levels when working with various isotopes. Further the RSO has developed a method of converting oil-soluble radioactive waste to stable oil-in-water emulsions so they may be disposed in a similar manner as is water-soluble radioactive waste.
- (4) An NRC licensing representative commended the security and precautions taken for the cesium irradiator.

NRC Response:

The NRC expects that individuals who work with radioactive materials will be appropriately educated and trained. Further, the NRC expects that licensees will take appropriate measures to ensure adherence to ALARA principles. Such actions on the part of a licensee are not considered extraordinary.

While the NRC recognizes the stated development of calibration techniques and waste-disposal methods as positive factors, the violations described in the Notice of Violation and Proposed Imposition of Civil Penalties cannot be considered reflective of a meritorious RSP.

The NRC staff maintains that the twelve violations do represent a significant breakdown in the control and oversight of the RSP. The staff's conclusions are based on the facts that:

- (1) Of the twelve violations described in the Notice, eight were identified by the NRC (Violations C, E2, E3a-E3f), demonstrating that management's monitoring of the RSP was not adequate to identify existing deficiencies.
- (2) Six of the violations involved program personnel disregarding program requirements (Violations E3a-E3f), demonstrating that adequate supervision to ensure acceptable personnel performance was not provided.
- (3) One of the violations (Violation A), involving failure to perform an adequate survey to determine the xenon-133 release in March 1982, at the boundary of a restricted area, was identified by the licensee in March, 1982, but was not adequately corrected until after the NRC inspection and enforcement conference, when an adequate survey was then performed, demonstrating that prompt and appropriate corrective action was not taken.
- (4) Three of the violations (Violations B, E3c, E3d) were similar to violations identified during an NRC inspection conducted in May 1980, demonstrating that actions to prevent recurrence were not effective.

Management is responsible for proper development of the RSP, including procedures and training, proper supervision of program implementation, and proper actions to correct improper program implementation, including actions to correct identified deficiencies, and actions to prevent recurrence including disciplinary actions.

Licensee's Assertion: The NRC's characterization of the violations in the aggregate as Severity Level III is inappropriate. The NRC Enforcement Policy defines Severity Level III as violations which have an actual or potential impact on the public. The NRC's characterization of the violations as a breakdown in management oversight and control appears to be analagous to the definition of a Severity Level IV violation, namely, degradation of management

control systems. The NRC Enforcement Policy further states that Severity Level IV problems are the sort of violations that, if left uncorrected, could lead to matters of significant concern.

NRC Response: Contrary to the licensee's assertions, the NRC Enforcement Policy (10 CFR 2, Appendix C) does not define a Severity Level III violation as one having a high actual or potential impact on the public. Rather, that is the definition of a Severity Level I or II violation, as defined in Section III of the NRC Enforcement Policy. In Section III, Severity Level III violations are defined as cause for significant concern. The twelve violations, representing a significant breakdown in management control of the RSP, are cause for significant concern since personnel failures to adhere to procedures were not identified, identified deficiencies were not promptly and effectively corrected, and previously identified deficiencies recurred. The problem is appropriately classified as Severity Level III and civil penalties are appropriate.

The NRC staff further notes that Violation B, involving improper disposal of radioactive waste, could itself be classified as Severity Level III in accordance with Section C.6 of Supplement IV of the NRC Enforcement Policy. However, the staff has decided to consider all twelve violations in the aggregate as Severity Level III, so that the emphasis of the civil penalty is placed on the underlying cause of the violations.

Licensee's Assertion: The NRC's allegations that corrective actions were not promptly taken when previous violations were noted by the NRC are incorrect. All violations identified during the NRC inspection conducted in May 1980, were promptly corrected.

NRC Response: Although the specific violations identified in May 1980 were corrected, the actions taken at that time to prevent recurrence were not effective since three of the violations (B, E3c, E3d) recurred. The staff's concerns are increased because one of the violations identified in 1980, involving placement of radioactive trash in the wrong containers, recurred not once, but twice, in January 1983 and again in June 1983.

Licensee Assertion: Many of the violations had been identified and corrected prior to the NRC inspection. Most of the remaining items had been identified and were being worked on by the Radiation Safety Committee.

NRC Response: Only four of the twelve violations were identified by the Licensee (Violations A, B, D, E1). The remaining eight violations were identified by the NRC. Additionally, Violation A, which occurred in March 1981, was not adequately corrected at the time of the inspection in June 1983. Further, three violations (B, E3c, E3d) were recurrences of previous violations, indicating that actions to prevent recurrence were not effective.



NRC Conclusion:

The violations did occur as originally stated and are appropriately classified in the aggregate as Severity Level III. Assessment of a \$2,500 civil penalty for these violations is appropriate. The information provided in the licensee's response does not provide a basis for modifying the enforcement action.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

AUG 15 1983

License No. 12-11184-01  
EA No. 83-76

Kay-Ray, Incorporated  
ATTN: Mr. Jack C. Crump  
President  
516 West Campus Drive  
Arlington Heights, IL 60004

Gentlemen:

This refers to the inspections conducted at your facility by the Region III office on June 8 and 10 and August 1, 1983, of activities authorized by NRC Byproduct Material License No. 12-11184-01. This also refers to the discussion of our findings with you during the enforcement conference held on July 29, 1983.

In view of the violations and concerns identified, we have concluded that the enclosed Order Suspending License, Immediately Effective, and Order to Show Cause, is appropriate in the best interest of public health and safety.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosure, and your responses will be placed in the NRC's Public Document Room.

Sincerely,

A handwritten signature in cursive script, reading "R C DeYoung".

Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Enclosure:  
Order Suspending License,  
Immediately Effective,  
and Order to Show Cause

cc: Mr. Jay Silberg, Esq.  
Shaw, Pittman, Potts & Trowbridge

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of

KAY-RAY, INC.  
516 West Campus Drive  
Arlington Heights, IL, 60004

}  
}  
}  
}  
}  
Byproduct Material  
License No. 12-11184-01  
EA 83-76

ORDER SUSPENDING LICENSE, IMMEDIATELY EFFECTIVE,  
AND ORDER TO SHOW CAUSE

I.

Kay-Ray, Incorporated (the "licensee") holds Byproduct Material License No. 12-11184-01 issued by the Nuclear Regulatory Commission. The licensee has offices located at 516 West Campus Drive, Arlington Heights, Illinois. The license authorizes the licensee to possess and use radioactive byproduct material in the manufacture of gauges.

II.

Over the past several months the licensee has reported several apparent overexposures of its employees. The number and magnitude of these overexposures indicate potentially serious weaknesses in the licensee's radiation protection program and their ability to ensure the safe handling of radioactive material.

The Commission's regulations in 10 CFR Part 20 place upper limits on permissible occupational doses to a licensee's employees. Under 10 CFR 20.101(a), an individual in a restricted area may not receive doses in a calendar quarter of more than 1.25 rems to the whole body, head and trunk, active bloodforming organs, lens of eyes, or gonads, 18.75 rems to the hands and forearms, feet and ankles; and 7.5 rems to the skin of the whole body. As provided in

10 CFR 20.101(b), the licensee may permit an individual in a restricted area to receive a total occupational dose to the whole body of not more than 3 rems in a calendar quarter under certain circumstances, which the licensee has not complied with in all cases.

On March 8, 1983, the licensee reported an apparent dose of 1.260 rems (whole body gamma) to an employee during the fourth quarter of 1982. The NRC's Region III office conducted an inspection of the licensee's operations on April 12 and 13, 1983. As a result of the inspection (Report Nos. 030-04214/83-01 & 030-04215/83-01), a Notice of Violation pursuant to 10 CFR 2.201 for four items of noncompliance was issued to the licensee, including the gamma overexposure reported on March 8, 1983.

On May 24, 1983, the licensee reported an apparent dose of 29.88 rems (extremities) during the second quarter of 1983. Region III held an enforcement conference on July 29, 1983 to discuss this latest overexposure and package shipping violations identified during the inspection. On July 29, 1983, the licensee reported another apparent overexposure based on radiation exposure data for the week of July 18, 1983. The data indicated an apparent extremity dose of 60.68 rems, a dose to the lens of the eye of 7.19 rems, and doses to the whole body of 6.59 rems and 14.38 rems. The employees who received the apparent overexposures reported in May and July 1983 had been engaged in installing sealed radiation sources in gauges manufactured by the licensee.

During NRC inspections conducted on June 8 and 10 and August 1, 1983 in response to the apparent overexposures, NRC inspectors reviewed and obtained information pertaining to the conduct of the licensee's activities. In addition to obtaining information regarding the circumstances surrounding the reported overexposures, the inspectors observed that apparent low employee morale appears to be a cause for tension between management and employees such that potential radiation protection problems may not always be communicated to the Radiation



Safety Officer and the licensee's management. The inspectors observed that radiation dosimetry devices were not sufficiently controlled to provide adequate assurance against possible improper use. One employee responsible for receiving packages of radioactive material appeared to the inspectors to have an inadequate knowledge of survey procedures which suggests inadequate training.

In view of the repeated overexposures of licensee's employees, which raise questions concerning the adequacy of the licensee's radiation protection program, I have determined that the public health, safety and interest require an immediate suspension of all activities involving unshielded radioactive sources until the licensee has demonstrated that its radiation protection program is adequate to ensure compliance with the Commission's requirements.

### III.

Accordingly, pursuant to sections 81, 161b, 161o, and 186 of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2, 20, 30, and 32, IT IS HEREBY ORDERED THAT:

- A. Effective immediately, the licensee shall cease to load, unload or otherwise handle unshielded radioactive sources.
- B. The licensee shall show cause, as provided in section IV, why such operations should not remain suspended until the licensee has demonstrated that its radiation protection program is adequate to ensure compliance with 10 CFR Part 20. In

making such demonstration, the licensee shall conduct a review of its radiation protection program and submit the results of the review and the proposed revisions to the program to the Regional Administrator of NRC Region III for his review and approval. In conducting the review, the licensee shall give consideration to such matters as implementing audits of employee performance, with special emphasis on handling of radioactive material; establishing procedures to address employee morale and to improve cooperation between management and employees; ensuring adequate training and annual retraining of personnel in source handling techniques, survey instrument operation and reporting responsibilities; and controlling access to and use of dosimetry devices.

- C. The licensee may resume the suspended operations upon receipt of the written approval of the Regional Administrator.

#### IV.

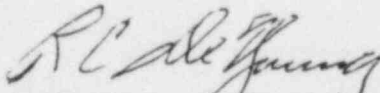
The licensee may show cause why its operations should not have been suspended and should not remain suspended as provided in section III of this Order by filing a written answer under oath or affirmation which sets forth the matters of fact and law on which the licensee relies. As provided in 10 CFR 2.202(d), the licensee may answer the Order by consenting to the terms of the Order. Upon the licensee's consent, the terms set forth in section III.B shall be effective.

The licensee may request a hearing on this Order with 25 days of the date of this Order. Any request for hearing or answer to this Order shall be submitted to the Director, Office of Inspection and Enforcement, U.S. Nuclear

Regulatory Commission, Washington, D.C., 20555. A copy of the request or answer shall also be sent to the Executive Legal Director at the same address and to the Regional Administrator, NRC Region III, 799 Roosevelt Road, Glen Ellyn, Illinois 60137. A request for hearing or answer to this Order shall not stay the immediate effectiveness of section III.A of this Order.

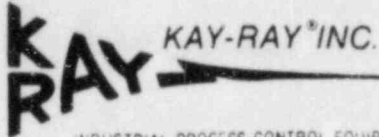
If a hearing is to be held concerning this Order, the Commission will issue an order designating the time and place of hearing. If a hearing is held, the issue to be considered at such hearing shall be whether on the basis of the matters set forth in section II of this Order, this Order should be sustained.

FOR THE NUCLEAR REGULATORY COMMISSION



Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Dated at Bethesda, Maryland,  
this 15<sup>th</sup> day of August, 1983.



KAY-RAY<sup>®</sup> INC.

INDUSTRIAL PROCESS CONTROL EQUIPMENT

516 West Campus Drive • Arlington Heights, Illinois 60004 • (312) 259-5600 • TELEX 281-085 • CABLE KAYRAY

September 2, 1983

Mr. James G. Keppler  
Regional Administrator  
U.S. Nuclear Regulatory Commission, Region III  
799 Roosevelt Road  
Glen Ellyn, IL 60137

License No. 12-11184-01  
EA No. 83-76

Dear Mr. Keppler:

In compliance with EA 83-76, we have conducted an audit and a review of our radiation protection program under the guidance of Mr. Eli Port of Radiation Safety Services, Inc. His audit report appears as Appendix A to this letter. Succeeding paragraphs will discuss specific areas of concern and our plans to correct them.

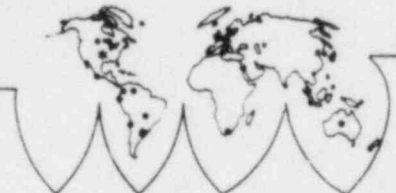
Implement audits of employee performance.

We plan to audit employee performance by having the employee demonstrate (and explain) to the satisfaction of his supervisor and the RSO each of the following activities:

1. Pre-operational phase
  - a. Select and wear proper dosimetry devices.
  - b. Select survey meters.
  - c. Select proper tools.
  - d. Proper selection of protection equipment.
  - e. Discuss the value of time, shielding, and distance (TSD).
  - f. Discuss exposure rates for different sources and distances.
  - g. Discuss purpose of each phase of the task being audited.
2. Operational phase
  - a. Proper use of dosimetry devices.
  - b. Proper use of survey meters.
  - c. Proper use of tools.
  - d. Proper use of protection equipment.
  - e. Proper application of TSD.
  - f. Demonstrate that task objective is met.

WORLDWIDE SALES AND SERVICE OFFICES:

Africa • Argentina • Australia • Benelux • Brazil • Canada • Chile • Colombia • France  
Germany • Indonesia • Italy • Japan • Mexico • New Zealand • Peru • Scandinavia • Spain  
South Africa • United Kingdom • Venezuela





3. Post-operational phase
  - a. Survey area.
  - b. Secure area.
  - c. Complete documentation.
  - d. Record dose.
  - e. Return all equipment.

Establish procedures to address employee morale and improve cooperation.

We have arranged for a Human Resources specialist from our parent company, Rosemount, Inc., to interview our employees and recommend actions to improve morale and cooperation.

Ensure adequate training.

On September 9, 1983, a health physicist from Radiation Safety Services will conduct a training session for our engineering personnel; source handlers; QC technicians; production, receiving, and shipping personnel; and field service technicians. His session will cover radiation safety, safe handling of sources, proper operation of survey instruments, and reporting relationships and responsibilities. We will follow up with additional in-house training. We feel that all employees who handle radioactive material will be fully trained by December 30, 1983.

In addition, the attached memo was distributed to all employees regarding notification of the RSO when any worker has concerns about radiation safety.

Furthermore, the requirement in our radiation safety manual to notify the RSO has been reinforced for specific operations; e.g., leak test analysis and incoming package surveys.

Mr. James G. Keppler  
September 2, 1983

Page 3

Control access to and use of dosimetry devices.

As of August 15, 1983, our dosimetry devices (pocket dosimeters, film badges, TLD rings, and TLD eye level detectors) have been under lock and key. Our Materials Manager unlocks the box in the morning and stands by as each person takes his badges and signs for them on a sign-out sheet. The box is then locked until quitting time. Our Radiation Safety Officer supervises the return and sign-in of the badges in the same way that the Materials Manager supervises their withdrawal and sign-out.

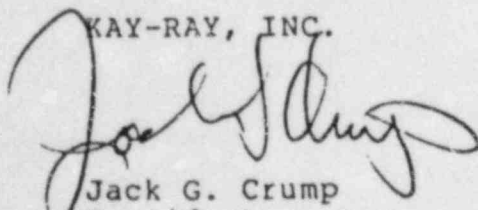
This is only a temporary measure. When top management feels that employee performance is fully acceptable, morale has improved, and employees are completely trained, we will simplify this procedure.

We recognize the gravity of this situation and are making every effort to rectify our problems as expeditiously as possible. We are confident that our plan will ensure compliance with 10 CFR 20 and are willing to make this letter part of our license conditions.

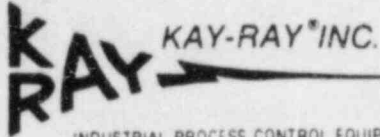
We request that, as a result of this letter, you approve our resumption of suspended operations in a timely fashion to prevent further, and possibly irreparable, damage to Kay-Ray, Inc.

Sincerely,

KAY-RAY, INC.



Jack G. Crump  
President



INDUSTRIAL PROCESS CONTROL EQUIPMENT

516 West Campus Drive • Arlington Heights, Illinois 60004 • (312) 259-5600 • TELEX 281-085 • CABLE KAYRAY

September 12, 1983

Mr. James G. Keppler  
Regional Administrator  
U. S. NUCLEAR REGULATORY COMMISSION, REGION III  
799 Roosevelt Road  
Glen Ellyn, IL 60137

- Re: 1. License No. 12-11184-01  
2. Enforcement Action No. EA 83-76, dated August 15, 1983  
3. Kay-Ray letter dated September 2, 1983

Dear Mr. Keppler:

1. Purpose

This letter supplements and clarifies the comments made in my earlier letter (reference 3). I believe it will more clearly demonstrate our compliance with the terms of your Enforcement Action (reference 2).

Sections 2-6 of this letter address themselves to issues raised in the Enforcement Action itself. Sections 7 and 8 deal with topics reported in Eli Port's audit of our radiation protection program (Appendix A of reference 3).

2. Review of Kay-Ray's Radiation Protection Program

A review and audit of our radiation protection program was conducted by Eli Port of Radiation Safety Services, Inc. (RSSI). His report was submitted as Appendix A of reference 3. Our management is presently reviewing it in detail, in order to determine the most practicable way to implement his recommendations. (See also Sections 7 and 8 of this letter.)

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UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

SEP 16 1983

License No. 12-11184-01  
EA No. 83-76

Kay-Ray, Incorporated  
ATTN: Mr. Jack G. Crump  
President  
516 West Campus Drive  
Arlington Heights, IL 60004

Gentlemen:

As a result of several apparent overexposures of Kay-Ray, Incorporated employees who had been engaged in installing sealed radiation sources in gauges, the NRC conducted inspections of your licensed activities on June 8 and 10 and August 1, 1983. After reviewing the inspection findings the NRC staff concluded that there were potentially serious weaknesses in your radiation protection program and your ability to ensure the safe handling of radioactive material.

In response to these concerns, on August 15, 1983, the NRC issued an Order Suspending License, Immediately Effective, and Order to Show Cause. (48 Fed. Reg. 38355, (August 23, 1983)). The Order required that loading, unloading or other handling of unshielded radioactive sources remain suspended until you had demonstrated that your radiation protection program was adequate to ensure compliance with 10 CFR Part 20. In making such demonstrations you were required to conduct a review of your radiation protection program and submit the results of the review and the proposed revisions to the program for NRC, Region III review and approval. In conducting your review you were required to give consideration to such matters as implementing audits of employee performance, with special emphasis on handling of radioactive material; establishing procedures to address employee morale and to improve cooperation between management and employees; ensuring adequate training and annual retraining of personnel in source handling techniques, survey instrument operation and reporting responsibilities; and controlling access to and use of dosimetry devices.

Your response to the Order and corrective actions taken were described in letters dated September 2 and 12, 1983, from Kay-Ray, Incorporated to the NRC. Your corrective actions were also discussed during a management meeting on September 6, 1983 in the NRC Region III Office in Glen Ellyn, Illinois between officials of Kay-Ray, Incorporated, its consultant, and Region III staff.



### 3. Employee Performance Audits

On September 9, 1983, Dave Derenzo of RSSI and our RSO, Al Peterson, used the attached checklist to audit the performance of Rich Lopez (primary loader) and Al Treu (backup loader). In their opinion, Lopez is fully qualified to serve immediately as a loader, both because of the excellent results of his performance audit and because of his prior satisfactory performance as a source loader and source loading supervisor.

Treu will receive on-job-training as a loader; we will permit him to load only after he has satisfactorily completed all the items on the Performance Checklist.

The audit performed on September 9 used dummy sources for both Lopez and Treu, because we are not yet authorized to handle unshielded sources. Even when our suspension is lifted, Treu will continue to use dummy sources until the RSO feels he is adequately trained to begin using actual sources.

We will formally audit the performance of source loaders every six months to verify that they are continuing to maintain their skills in this area. The semi-annual audits will be conducted by the RSO and the loader's supervisor, who will quiz the loader on the preoperational phase of the loading activity and observe the operational and postoperational phases themselves. If an employee's performance is deficient (that is, if he fails to satisfactorily perform any portions of the tasks), he will be immediately removed from source loading. He will then undergo refresher training, supervised by the RSO and (if necessary) an outside consultant. All audit results will be entered in the personnel files of the loaders.

The RSO will also conduct informal, unscheduled audits of the source loading activity on a continuing basis.

### 4. Employee Morale and Cooperation

In my opinion, employee morale and cooperation have already improved significantly. People are more open in their communications. They are asking more questions of their managers and relying less on the grapevine. We have had three employee meetings since receiving your Enforcement Action. There were opportunities at these meetings for all

employees to ask questions of top management; they took advantage of these opportunities to ask many questions relating to the Enforcement Action and its effect on the company's future. In addition, we held a special refresher course on radiation safety on September 9; at that meeting, there were questions raised relating to company-specific items, not just to matters of health physics and radiation safety.

As mentioned in reference 3, we distributed a memo to all employees reminding them that they should notify the RSO whenever they have concerns about radiation safety. In that memo, we also said that they have the right to go up the chain of command all the way to the President if they are unhappy with the replies of people lower in the chain of command.

We have had an ongoing program called "Tell It To The Pres", which offers a vehicle for any employee to communicate confidentially to the President. We have reminded people of its existence and hope that they will take advantage of it if they feel that it is necessary.

At present, we have meetings of all employees once a year. We will increase the frequency of these meetings to once every six months. At these meetings, we will discuss company financial performance, describe jobs that are of special interest, and allow time for the employees to raise questions or bring up any matters that are of concern to them. This procedure will assist us in keeping the channels of communication open and encourage the free interchange of ideas between employees and top management.

On August 30, 1983, Doug Steenson, a human resources specialist from our parent company, Rosemount, Inc., administered two tests to the eleven production personnel who are involved in handling sources and source housings: the Minnesota Multiphasic Personality Inventory and the California Personality Inventory. (These tests are part of a selection battery that has been developed by Personnel Decisions, Inc. in conjunction with the Nuclear Regulatory Commission and companies having extensive nuclear operations.) The test results were evaluated by a team of industrial psychologists; one of them conducted further tests and interviews with four selected personnel on September 7.

If the industrial psychologist determines that we have individuals who are unstable and not suited for work involving radioactive materials, we will see that they are removed from any sensitive positions at Kay-Ray.

The final results of the psychological tests and interviews are not in yet, but the preliminary results indicate that Rich Lopez is a stable individual and presents no cause for concern; this further substantiates our decision to use him immediately as our primary source loader.

Within the next several weeks, an Emerson Electric/Rosemount employee opinion survey will be administered to all Kay-Ray personnel. This survey, which will ask opinions on such diverse topics as competence of management, adequacy of pay, and quality of working conditions, will be evaluated by Rosemount's parent company, Emerson Electric. When we get the results, we will prepare a list of actions to correct major items of dissatisfaction.

#### 5. Training

On September 9, Eli Port conducted a training session on radiation safety for engineering personnel, source handlers, QC technicians, production, receiving, and shipping personnel, and a representative from Field Engineering Services. A follow-up session was held specifically for the source handlers and QC technicians, dealing with proper operation of survey instruments and safe handling of sources. These sessions were conducted by Dave Derenzo of RSSI. Rich Phelan, who participated in the September 9 training, will train the balance of the Field Engineering Services personnel in the proper operation of survey instruments and the safe handling of sources.

Additional in-house training will be conducted for QC technicians and other production personnel over the next two to four months. (These personnel do not handle unshielded sources.) Their training will deal primarily with the proper use of survey instruments.

We presently have one fully trained source loader, Rich Lopez. He will do all the source loading until our backup loader, Al Treu is qualified. I expect Treu to be fully trained by October 28, 1983.

This training will be in addition to the training program described in documents previously submitted in support of our application for license.

As the enclosures indicate, we have reminded our employees that they must notify the RSO whenever they encounter any violations of radiation safety. Particular emphasis has been placed on reporting leaky sources, leaky source housings, and packages with excessively high surface radiation.

6. Controlling Access to and Use of Dosimetry Devices

As stated in reference 3, our dosimetry devices have been under lock and key since August 15, 1983. Our Materials Manager unlocks the box in the morning and stands by as each person takes his badges and signs for them on a sign-out sheet. The box is then locked until quitting time. Our Radiation Safety Officer supervises the return and sign-in of the badges in the same way that the Materials Manager supervises their withdrawal and sign-out.

This is only a temporary measure. When top management feels that employee performance is fully acceptable, morale has improved, and employees are completely trained, we will simplify this procedure.

7. Inventory Control System

We will follow the inventory requirements as called for in our present license. We recognize that our inventory control system requirements are unnecessarily complex, and we will be submitting a request for a license amendment within the next two weeks. In the meantime, we will continue our monthly physical inventory of all sources and our daily curriage count.

8. Survey Meter Calibration

For the present, we will calibrate survey meters every three months, as required by our license. We believe that this is unnecessarily restrictive. Within the next two weeks, we will request an amendment to our license to change the frequency to every six months.



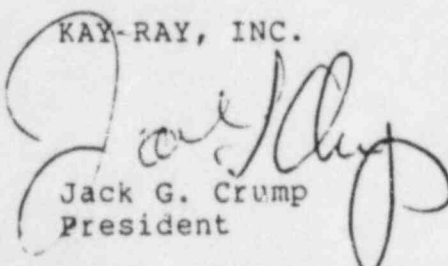
9. Conclusion

We believe that we are now in full compliance with 10CFR20, and we are willing to make this letter part of our license conditions.

We respectfully request that you approve the resumption of our suspended operations to prevent further, and possibly irreparable, damage to Kay-Ray, Inc. If you have any further questions, please feel free to call either Les Axelrod or me. We are willing to meet with you at any time to clarify our position.

Sincerely,

KAY-RAY, INC.



Jack G. Crump  
President

JGC:mm

Enc.

1. Source Handler Performance Checklist
2. Radiation Safety Manual, VI A-C
3. Radiation Safety Manual, VII A
4. Radiation Safety Manual, VII D
5. Radiation Safety Procedure 977-000201
6. Radiation Safety Procedure 977-000204
7. Radiation Safety Bulletin No. 2



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

SEP 16 1983

License No. 12-11184-01  
EA No. 83-76

Kay-Ray, Incorporated  
ATTN: Mr. Jack G. Crump  
President  
516 West Campus Drive  
Arlington Heights, IL 60004

Gentlemen:

As a result of several apparent overexposures of Kay-Ray, Incorporated employees who had been engaged in installing sealed radiation sources in gauges, the NRC conducted inspections of your licensed activities on June 8 and 10 and August 1, 1983. After reviewing the inspection findings the NRC staff concluded that there were potentially serious weaknesses in your radiation protection program and your ability to ensure the safe handling of radioactive material.

In response to these concerns, on August 15, 1983, the NRC issued an Order Suspending License, Immediately Effective, and Order to Show Cause. (48 Fed. Reg. 38355, (August 23, 1983)). The Order required that loading, unloading or other handling of unshielded radioactive sources remain suspended until you had demonstrated that your radiation protection program was adequate to ensure compliance with 10 CFR Part 20. In making such demonstrations you were required to conduct a review of your radiation protection program and submit the results of the review and the proposed revisions to the program for NRC, Region III review and approval. In conducting your review you were required to give consideration to such matters as implementing audits of employee performance, with special emphasis on handling of radioactive material; establishing procedures to address employee morale and to improve cooperation between management and employees; ensuring adequate training and annual retraining of personnel in source handling techniques, survey instrument operation and reporting responsibilities; and controlling access to and use of dosimetry devices.

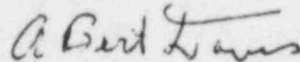
Your response to the Order and corrective actions taken were described in letters dated September 2 and 12, 1983, from Kay-Ray, Incorporated to the NRC. Your corrective actions were also discussed during a management meeting on September 6, 1983 in the NRC Region III Office in Glen Ellyn, Illinois between officials of Kay-Ray, Incorporated, its consultant, and Region III staff.

SEP 16 1983

The NRC conducted a followup inspection on September 9, 1983, to review the adequacy of your corrective actions. After reviewing the inspection findings, I have concluded that Kay-Ray, Incorporated has adequately responded to the terms of the August 15, 1983 Order. Accordingly, I find: (1) that, pursuant to Paragraph III.B of the Order, Kay-Ray, Incorporated has shown cause why the suspension of activities should not remain in effect, and (2) that, pursuant to Paragraph III.C of the Order, Kay-Ray, Incorporated may, immediately effective, resume loading, unloading or otherwise handling unshielded radioactive sources.

The NRC, as a separate matter, is continuing to review its inspection findings to determine if a civil penalty should be proposed. Correspondence relating to that matter will be provided to you at a later date.

Sincerely,



for James G. Keppler  
Regional Administrator



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

SEP 23 1983

License No. 12-11184-01  
EA 83-76

Kay-Ray, Incorporated  
ATTN: Mr. Jack G. Crump  
President  
516 West Campus Drive  
Arlington Heights, IL 60004

Gentlemen:

This refers to the inspections conducted by Messrs. J. L. Lynch and D. G. Wiedeman of our staff on June 8 and 10, and August 1, 1983, of activities authorized by NRC Byproduct Material License No. 12-11184-01. The results of the inspections were discussed on July 29, 1983, during an Enforcement Conference in the Region III office between you and members of your staff and Mr. A. B. Davis and others of the NRC staff.

The inspections showed that Kay-Ray employees received radiation doses in excess of NRC limits on two occasions in the second and third quarters of 1983. Also, a package containing byproduct material with excessive radiation levels at the surface of the package was packaged and shipped by a Kay-Ray employee.

To emphasize the importance of these matters and the responsibility of licensees to limit excessive radiation exposure, properly package and ship radioactive materials and ensure effective management control, we propose to impose civil penalties for the items set forth in the Notice of Violation that is enclosed with this letter. Although we recognize that an Order was issued to you on August 15, 1983 suspending certain activities under your license, that Order was issued to address the immediate threat to public health and safety posed by your activities. Civil penalties are now being proposed as a deterrence to similar occurrences in the future. The violations in the Notice have been categorized at the severity levels described in the General Policy and Procedure for NRC Enforcement Actions, Appendix C to 10 CFR Part 2. After consultation with the Director of the Office of Inspection and Enforcement, I have been authorized to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalties in the cumulative amount of One Thousand Eight Hundred Dollars.

You are required to respond to this letter and should follow the instructions in the Notice when preparing your response. You should also give particular attention to those actions that will be taken by management to ensure that in the future, source handling and shipping procedures will be properly followed. Your reply to this letter and the results of future inspections will be considered in determining whether further enforcement action is appropriate.

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

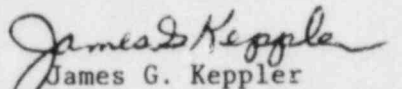


SEP 23 1983

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosure will be placed in the NRC Public Document Room.

The responses directed by this letter and the enclosed Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,

  
James G. Keppler  
Regional Administrator

Enclosure: Notice of Violation  
and Proposed Imposition of  
Civil Penalties

cc w/encl:  
DMB/Document Control Desk (RIDS)

Notice of Violation

and

Proposed Imposition of Civil Penalties

Kay-Ray, Incorporated  
516 West Campus Drive  
Arlington Heights, Illinois

License No. 12-11184-01  
EA 83-76

During NRC inspections on June 8 and 10, and August 1, 1983, violations of NRC requirements were identified. A licensee's employee received an apparent occupational radiation dose of 29.88 rems to the hands during the second quarter of 1983. Another employee received apparent radiation doses of 60.68 rems to the hands and 7.19 rems to the eyes during the third quarter of 1983. This same employee during the third quarter of 1983 received an apparent whole body radiation dose of 25.26 rems (14.38 rems gamma + 10.88 beta). In addition, a Kay-Ray employee shipped a package from a customer's facility that had surface radiation levels in excess of Department of Transportation limits.

To emphasize the importance of these matters and the responsibility of licensees to limit excessive radiation exposure, properly package and ship radioactive materials and ensure effective management control, the NRC proposes to impose civil penalties in the cumulative amount of One Thousand Eight Hundred Dollars. In accordance with the General Policy and Procedure for NRC Enforcement Actions (10 CFR Part 2, Appendix C), 47 FR 9987 (March 9, 1982), and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended ("Act"), 42 U.S.C. 2282, PL 96-295, and 10 CFR 2.205, the particular violations and associated civil penalties are set forth below:

I. Civil Penalty Violations

- A. 10 CFR 20.101(a) states no licensee shall use licensed material in such a manner as to cause an individual in a restricted area to receive in any period of one calendar quarter a total occupational dose in excess of 1.25 rems to the whole body and lens of the eyes, and 18.75 rems to the hands. 10 CFR 20.101(b) permits a whole body exposure of 3 rems per calendar quarter provided certain conditions are met.

Contrary to the above, an individual who worked in a restricted area during the third quarter of 1983 received an apparent whole body dose of 25.26 rems (14.38 rems gamma + 10.88 beta). In addition, this individual received apparent doses of 7.19 rems to the eyes and 60.68 rems to the hands during the third quarter of 1983.

This is a Severity Level II violation (Supplement IV).  
(Civil Penalty - \$800)

SEP 23 1983

- B. 10 CFR 20.101(a) states no licensee shall use licensed material in such a manner as to cause an individual in a restricted area to receive in any period of one calendar quarter a total occupational dose in excess of 1.25 rems to the whole body and 18.75 rems to the hands.

Contrary to the above, an individual working in a restricted area received an apparent dose of 29.88 rems to the hands during the second quarter of 1983.

This is a Severity Level III violation (Supplement IV).

(Civil Penalty - \$500)

- C. License Condition No. 15 requires that all transport of licensed material be performed in accordance with the provisions of 10 CFR Part 71, "Packaging of Radioactive Material for Transport and Transportation of Radioactive Material Under Certain Conditions."

10 CFR 71.5 requires licensees to transport licensed material in accordance with the Department of Transportation (DOT) regulations in 49 CFR Parts 170 through 189.

49 CFR 173.393(i) requires that all radioactive materials must be packaged so that at any time during the normal conditions incident to transportation, the radiation dose rate does not exceed 200 millirems per hour at any point on the external surface of the package.

Contrary to the above, a Kay-Ray Incorporated field service engineer packaged and shipped, from a customer's facility, two Kay-Ray gauging devices containing a total of 1 curie of cesium-137. After the package arrived at the Kay-Ray facility in Arlington Heights, Illinois, the licensee surveyed the package on September 21, 1982 and found radiation levels in excess of 500 millirems per hour on the external surface.

This is a Severity Level III violation (Supplement V).

(Civil Penalty - \$500)

Pursuant to the provisions of 10 CFR 2.201, Kay-Ray, Incorporated is hereby required to submit to the Director, Office of Inspection and Enforcement, USNRC, Washington, D.C. 20555, with a copy to the Regional Administrator, USNRC, Region II, 799 Roosevelt Road, Glen Ellyn, IL 60137, within 30 days of the date of this Notice, a written statement or explanation in reply, including for each alleged violation: (1) admission or denial of the alleged violation;

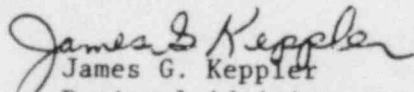
SEP 23 1983

(2) the reasons for the violation, if admitted; (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. Consideration may be given to extending the response time for good cause shown. Under the authority of Section 182 of the Act, 42 U.S.C. 2232, this response shall be submitted under oath or affirmation.

Within the same time as provided for the response required above under 10 CFR 2.201, Kay-Ray, Incorporated may pay the civil penalties in the cumulative amount of One Thousand Eight Hundred Dollars or may protest imposition of the civil penalties in whole or in part by a written answer. Should Kay-Ray, Incorporated fail to answer within the time specified, the Director, Office of Inspection and Enforcement, will issue an order imposing the civil penalties in the amount proposed above. Should Kay-Ray, Incorporated elect to file an answer in accordance with 10 CFR 2.205 protesting the civil penalties, such answer may: (1) deny the violations listed in this Notice, in whole or in part; (2) demonstrate extenuating circumstances; (3) show error in this Notice; or (4) show other reasons why the penalties should not be imposed. In addition to protesting the civil penalties, in whole or in part, such answer may request remission or mitigation of the penalties. In requesting mitigation of the proposed penalties, the five factors contained in Section IV(B) of 10 CFR Part 2, Appendix C should be addressed. Any written answer in accordance with 10 CFR 2.205 should be set forth separately from the statement or explanation in reply pursuant to 10 CFR 2.201, but may incorporate statements or explanations by specific reference (e.g., citing page and paragraph numbers) to avoid repetition. Kay-Ray, Incorporated's attention is directed to the other provisions of 10 CFR 2.205 regarding the procedure for imposing a civil penalty.

Upon failure to pay any civil penalty due, which has been subsequently determined in accordance with the applicable provisions of 10 CFR 2.205, this matter may be referred to the Attorney General, and the penalty, unless compromised, or mitigated, may be collected by civil action pursuant to Section 234c of the Act, 42 U.S.C. 2282.

FOR THE NUCLEAR REGULATORY COMMISSION

  
James G. Keppler  
Regional Administrator

Date at Glen Ellyn, Illinois  
this 23 day of September 1983





INDUSTRIAL PROCESS CONTROL EQUIPMENT

516 West Campus Drive • Arlington Heights, Illinois 60004 • (312) 259-5600 • TELEX 261-085 • CABLE KAYRAY

October 20, 1983

Director, Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

License No. 12-11184-01  
EA 83-76  
Notice of Violation dated September 23, 1983

Dear Sir:

I affirm that the following statements are true.

Pursuant to the provisions of 10 CFR 2.20, and in accordance with the requirements of the Notice of Violation we herewith respond to the three alleged violations. Our responses are referenced to the sections identified in the Notice of Violation.

- A. 1. Kay-Ray does not contest this alleged violation.
2. The apparent overexposures were due to the failure of employees to follow the procedures in our Radiation Safety Manual.
3. We took corrective action by conducting a refresher course on radiation safety for all production personnel, by providing detailed training for source loading personnel, and by highly publicizing the relevant portions of our Radiation Safety Manual. These actions have increased our employees' awareness of the need to follow essential procedures.
4. To avoid further violations, we will simplify our source handling and badge control procedures, conduct periodic refresher courses on radiation safety, and periodically review the performance of source loading personnel.
5. We are in full compliance now.
- B. 1. Kay-Ray does not contest this alleged violation.

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WORLDWIDE SALES AND SERVICE OFFICES:

Africa • Argentina • Australia • Benelux • Brazil • Canada • Chile • Colombia • France  
Germany • Indonesia • Italy • Japan • Mexico • New Zealand • Peru • Scandinavia • Spain  
South Africa • United Kingdom • Venezuela



Oct. 20, 1983

Page 2

2. The apparent overexposures were due to the failure of employees to follow the procedures in our Radiation Safety Manual.
  3. We took corrective action by conducting a refresher course on radiation safety for all production personnel, by providing detailed training for source loading personnel, and by highly publicizing the relevant portions of our Radiation Safety Manual. These actions have increased our employees' awareness of the need to follow essential procedures.
  4. To avoid further violations, we will simplify our source handling and badge control procedures, conduct periodic refresher courses on radiation safety, and periodically review the performance of source loading personnel.
  5. We are in full compliance now.
- C. 1. Kay-Ray does not contest this alleged violation.
2. This alleged violation was due to the failure of employees to follow the procedures in our Radiation Safety Manual.
  3. We took corrective action by conducting a refresher course on radiation safety for all production personnel, by providing refresher training for field service engineers, and by highly publicizing the relevant portions of our Radiation Safety Manual.
  4. To avoid further violations, we will conduct periodic refresher courses on radiation safety and periodically review the performance of receiving personnel and field service engineers. In addition, we have issued a written procedure that documents applicable DOT regulations.
  5. We are in full compliance now.

As a result of these alleged violations, our RSO has already rewritten the procedures dealing with source handling, badge security, and receipt of radioactive materials. In the near future, he will write a procedure covering the proper packaging and shipment of packages containing radioactive materials. In addition, the RSO and the manager of Field Engineering Services will conduct in-service training for production and field service engineers. The RSO will also perform periodic audits of employee performance to ensure that they are continuing to maintain their proficiency.

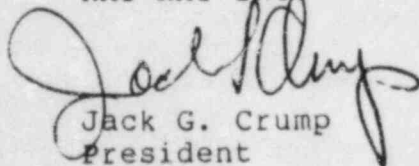
Oct. 20, 1983  
Page 3

Kay-Ray Inc. has always had concern for the health and safety of the general public, as well as for its own employees. This has been demonstrated over the years by the integrity of our source housing designs and the thoroughness of our radiation safety program. The recent audit of our program by a certified health physicist pointed out areas of improvement, and we are currently in the process of making these improvements. Over half of the items have already been corrected, and the others will be corrected by December 21, 1983.

Our check for \$1800 is enclosed, as payment in full of the imposed civil penalties.

Sincerely,

KAY-RAY INC

  
Jack G. Crump  
President

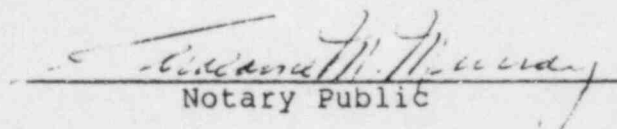
JGC/dk

STATE OF ILLINOIS

COUNTY OF COOK

On this 14th day of October, 1983, before me personally appeared Jack G. Crump, to me known to be the person described in and who executed the foregoing instrument and acknowledged that he executed the same as his free act and deed.

cc: Regional Administrator  
USNRC, Region III  
799 Roosevelt Road  
Glen Ellyn, IL 60137

  
Notary Public  
*My Commission Expires 5/16/86*



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA ST., N.W., SUITE 3100  
ATLANTA, GEORGIA 30303

MAR 23 1983

Hospital Metropolitano  
ATTN: Ms. R. Esteras, Administrator  
Box EH Cappare Heights Station  
San Juan, Puerto Rico 00922

SUBJECT: PROPOSED CIVIL PENALTIES - EA 83-14  
(Reference Report Nos. 52-16033-01/83-01 AND -02/83-01)

A routine safety inspection, conducted on February 2 and 3, 1983, indicated that certain activities authorized by NRC License Nos. 52-16033-01 and -02 were not conducted in full compliance with the conditions of the licenses and NRC requirements. At the conclusion of the inspection, the findings were discussed by the inspector with the Hospital Administrator. Our immediate concerns for ensuring the health and safety of involved personnel were also discussed on February 11, 1983, in a telephone conference with the Hospital Administrator. On February 18, 1983, Mr. J. P. Stohr, Director, Division of Emergency Preparedness and Materials Safety Programs, and other members of the Region II staff, met with Ms. R. Esteras, Administrator, in an enforcement conference at the hospital.

One subject discussed in the enforcement conference related to NRC concerns about the practice of administering therapeutic doses of radioiodine to patients under conditions in which the administering technician was subject to an unmonitored inhalation exposure. The conferences also included discussion relevant to the hospital's requirement for the services of a qualified expert to check and calibrate its teletherapy machine. The NRC officials attending the conference expressed concern that the number and scope of the violations indicated a lack of management control over licensed activities and discussed the need for the hospital administrator, the safety committee and the radiation safety officer to ensure licensed activities are conducted in accordance with the license.

One unresolved item was identified during this inspection. That matter is currently under investigation by the NRC Office of Investigation. Upon completion of the investigation, you will be informed of what, if any, enforcement action will be taken for that item.

To emphasize the importance of this matter and the need to ensure implementation of effective management control over your licensed program, we propose to impose civil penalties for the items set forth in the Notice of Violation which is enclosed with this letter. The violations in the Notice have been categorized as Severity Level III violations in accordance with the NRC Enforcement Policy, 10 CFR Part 2, Appendix C, published in the Federal Register, 47 FR 9987 (March 9, 1982). The base value for each of the two Severity Level III violations is Two

CERTIFIED MAIL RETURN RECEIPT REQUESTED



Thousand Dollars. After consultation with the Director of the Office of Inspection and Enforcement, I have been authorized to issue the enclosed Notice of Violation and Proposed Imposition of Civil Penalties in the cumulative amount of Four Thousand Dollars.

You are required to respond to this letter and should follow the instructions in the Notice when preparing your response. You should give particular attention to those actions that will be taken by management to ensure compliance with NRC requirements. Your reply to this letter and the results of future inspections will be considered in determining whether further enforcement action is appropriate.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosure will be placed in the NRC Public Document Room.

The responses directed by this letter and the enclosed Notice are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,

James P. O'Reilly  
Regional Administrator

Enclosure:  
Notice of Violation and Proposed  
Imposition of Civil Penalties

cc: D. Soldana, Director  
Radiological Health Division  
Rio Piedras, Puerto Rico

NOTICE OF VIOLATION  
AND  
PROPOSED IMPOSITION OF CIVIL PENALTIES

Hospital Metropolitano  
Box EH, Cappare Heights Station  
San Juan, Puerto Rico 00922

License Nos. 52-16033-01  
52-16033-02  
EA 83-14

A routine safety inspection conducted on February 2 and 3, 1983 disclosed that Hospital Metropolitano (the "licensee") had failed to comply with various regulatory requirements. The number and nature of the violations indicated serious weaknesses in the licensee's administrative and managerial controls. Specific violations were discussed with the Hospital Administrator by the inspector at the conclusion of the inspection. The safety implications of the findings and NRC concerns regarding the adequacy of management control systems for ensuring licensed activities are conducted in accordance with regulatory requirements were discussed in a telephone conversation on February 10, 1983, between the Hospital Administrator and the Director, Division of Emergency Preparedness and Materials Safety Programs (DEPMSP), NRC Region II. In addition, an Enforcement Conference was conducted at the hospital on February 18, 1983, in which the Director, DEPMSP, and other NRC staff members further expressed NRC concerns regarding the licensee's management control systems to the Hospital Administrator and other members of the hospital staff.

In order to emphasize the importance of these matters and the need to ensure implementation of effective management control over your licensed program, NRC proposes to impose civil penalties in the cumulative amount of Four Thousand Dollars. In accordance with the NRC Enforcement Policy (10 CFR Part 2, Appendix C) 47 FR 9987 (March 9, 1982), and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended ("Act"), 42 U.S.C. 2282, PL 96-295, and 10 CFR 2.205, the particular violations and associated civil penalties are set forth below:

Collectively, 10 CFR 30.3, 10 CFR 30.34(a), and 10 CFR 35.2 require that the licensee shall receive, use, possess, and transfer byproduct material intended for human use in accordance with all valid NRC rules and regulations and specific licenses issued by the NRC.

Contrary to the above:

- A. The licensee did not use and possess byproduct material for human use at its Nuclear Medicine facility in accordance with NRC regulations and the conditions of its specific license, No. 52-16033-01, including the statements contained in its application dated June 27, 1980, which are incorporated into the license by Condition 18, as indicated by the following examples, each of which constitutes a violation:

1. Item 15 G.1 of the application states that therapeutic radioiodine solutions will be opened and handled within a fume hood. However, since June 1980, the licensee opened and handled doses of 100 to 200

millicuries of radioiodine solutions, approximately five times each year, without using a fume hood. The Nuclear Medicine Department was not equipped with a fume hood.

2. Item 15 G.5 of the application states that all persons handling more than 1 millicurie of radioiodine will have a measurement of thyroid uptake on the following day. However, since June 1980, the licensee has not measured the thyroid uptake of the persons who opened and administered the therapeutic doses identified above. Accordingly, the licensee made no evaluation of the internal radiation exposure incurred by the personnel who handled radioiodine solutions under conditions presenting a substantial potential for exposure.
3. Item 15 F.30 of the application states that syringe shields will be used for preparation and administration of patients' doses. However, since June 1980, syringe shields have not been used for preparation and administration of patients' doses.
4. Item 10 of the application states that the procedures specified in Appendix D of Regulatory Guide 10.8 will be followed for the dose calibrator. Appendix D specifies a procedure for testing the linearity of a dose calibrator that requires the use of a Tc-99m source, the activity of which is equivalent to the maximum activity to be assayed (typically, 700 to 1000 mCi), over a period of 48 hours. However, since June 1980, the licensee has tested the linearity of its dose calibrator over a period of 12 hours using a 100 mCi source of Tc-99m.
5. Item 9 of the application states that the licensee possesses an Exposure Ratemeter Nuclear Chicago Model 2592 having a sensitivity range of 0-1000 mR/hr. However, on February 3, 1983 (the day of the inspection) the only survey meter in the Nuclear Medicine Department had a range from 0-200 mR/hr.
6. Item 15 F.28 of the application states that areas used for elution of Mo-99/Tc-99m generators, for preparation of radiopharmaceuticals from reagent kits, and for preparation of individual patient doses will be surveyed for contamination after each procedure and/or at the end of each working day. However, since June 1980, the licensee did not follow this regime; the Nuclear Medicine Department was surveyed at weekly intervals.
7. 10 CFR 35.11(b) requires an institution having a specific license for human use of byproduct material to appoint a radiation safety committee to oversee the use of licensed material throughout the institution and to review the institution's radiation safety program. It specifies that the membership of the committee must include a representative of the nursing staff. However, the membership of the licensee's radiation safety committee did not include a representative of the nursing staff.

This is a Severity Level III Violation (Supplement IV).  
(Civil Penalty - \$2,000)

- B. The licensee did not use and possess byproduct material for human use at its teletherapy facility in accordance with NRC regulations and the conditions of its specific license, No. 52-16033-02, as indicated by the following examples:

1. 10 CFR 35.22(a) and (c) require the licensee to cause spot-check measurements to be performed on each teletherapy unit at intervals not exceeding one month. It requires that these measurements be conducted by a qualified expert or, if not conducted by such an expert, reviewed by a qualified expert within 15 days.

10 CFR 35.24 requires the licensee to determine that the person who reviews the results of spot-check measurements of its teletherapy units is an expert qualified by training and experience to perform this service. Footnote 2 to 10 CFR 35.24 allows a licensee, who has its teletherapy unit calibrated by persons who do not meet the criteria for minimum training and experience, to request a license amendment excepting them from the provisions of 10 CFR 35.24.

However, since April 1982, the licensee did not determine if the person who either conducted or reviewed spot-check measurements of its teletherapy unit had the qualifications specified in 10 CFR 35.24 to perform this service. Spot-check measurements were not performed or reviewed by a qualified expert. The licensee did not request a license amendment in accordance with the provisions of Footnote 2.

2. 10 CFR 35.21(6)(3) requires a licensee, who is authorized to use teletherapy units for treating humans, to cause full calibration measurements to be performed on each teletherapy unit at intervals not exceeding one year. It requires that these measurements include a determination of the uniformity of the radiation field.

However, the full calibration measurements performed in March 1982 did not include a determination of the uniformity of the radiation field.

3. 10 CFR 35.21(c) requires a licensee, who is authorized to use teletherapy units for treating humans, to cause full calibration measurements to be performed on each teletherapy unit following the procedures recommended by the Scientific Committee on Radiation Dosimetry of the American Association of Physicists in Medicine (Physics in Medicine and Biology, Vol. 16, November 3, 1971, pp. 379-396). However, on the last full calibration of the teletherapy unit (March 1982), the licensee did not follow the procedures cited above. The referenced protocol recommends, when determining the absorbed dose from in-air measurements of exposure, the use of an "F" factor for water or muscle (exposure-to-dose conversion for cobalt-60), and an "Aeq" factor (attenuation correction factor) for cobalt-60 in the final absorbed



dose equation. However, the licensee, in determining the absorbed dose from in-air measurements did not use these factors in the final absorbed dose equation.

4. Condition 16 of License No. 52-16033-02 requires the licensee to post written emergency instructions at the teletherapy machine control.

However, on February 3, 1983 the licensee had the emergency instruction posted on the teletherapy room door versus the teletherapy machine control.

This is a Severity Level III Violation (Supplement VI).  
(Civil Penalty - \$2,000)

Pursuant to the provisions of 10 CFR 2.201, Hospital Metropolitano is hereby required to submit to the Director, Office of Inspection and Enforcement USNRC, Washington, D.C. 20555, and a copy to the Regional Administrator, USNRC, Region II, within 30 days of the date of this Notice, a written statement or explanation in reply, including for each alleged violation: (1) admission or denial of the alleged violation; (2) the reasons for the violation, if admitted; (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. Consideration may be given to extending the response time for good cause shown. Under the authority of Section 182 of the Act, 42 U.S.C. 2232, this response shall be submitted under oath or affirmation.

Within the same time as provided for the response required above under 10 CFR 2.201, Hospital Metropolitano may pay the civil penalties in the cumulative amount of Four Thousand Dollars or may protest imposition of the civil penalties in whole or in part by a written answer. Should Hospital Metropolitano fail to answer within the time specified, the Director, Office of Inspection and Enforcement, will issue an order imposing the civil penalties in the amount proposed above. Should Hospital Metropolitano elect to file an answer in accordance with 10 CFR 2.205 protesting the civil penalties, such answer may: (1) deny the violations listed in this Notice in whole or in part; (2) demonstrate extenuating circumstances; (3) show error in this Notice; or (4) show other reasons why the penalties should not be imposed. In addition to protesting the civil penalties in whole or in part, such answer may request remission or mitigation of the penalties. In requesting mitigation of the proposed penalties, the five factors contained in Section IV(B) of 10 CFR Part 2, Appendix C should be addressed. Any written answer in accordance with 10 CFR 2.205 should be set forth separately from the statement or explanation in reply pursuant to 10 CFR 2.201, but may incorporate by specific reference (e.g., citing page and paragraph numbers to avoid repetition). Hospital Metropolitano's attention is directed to the other provisions of 10 CFR 2.205 regarding the procedure for imposing a civil penalty.

Upon failure to pay any civil penalty due, which has been subsequently determined in accordance with the applicable provisions of 10 CFR 2.205, this matter may be

referred to the Attorney General, and the penalty, unless compromised, remitted, or mitigated, may be collected by civil action pursuant to Section 234c of the Act, 42 U.S.C. 2282.

FOR THE NUCLEAR REGULATORY COMMISSION

James F. O'Reilly  
Regional Administrator

Dated at Atlanta, Georgia  
this    day of March 1983

# Metropolitan Hospital

BOX E. H.  
CAPARRA HEIGHTS  
00922

CARR. 21 NO. 1785  
LAS LOMAS, RIO PIEDRAS  
PUERTO RICO, 00928

TELS. 783-6200  
782-0934

April 18, 1983

The Director  
Office of Inspection and Enforcement USNRC  
Washington, D.C. 20555

Dear Sirs:

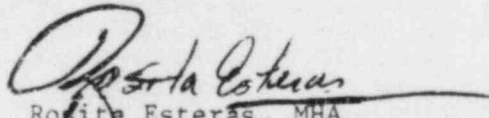
I include copies of the letters from Dr. Sostre of Nuclear Medicine & Dr. Víctor Marcial from Radiotherapy.

We also include a copy of the Curriculum Vitae of Mr. Zaidi, our Physicist & Mrs. Quiñones, Director of Nursing.

The communications very well explain in detail our position & the measurements we have taken to correct the situation.

I understand that proposed penalties will be revoked. I hope to hear from you soon.

Cordially,

  
Rosita Esteras, MHA  
Administrator

RE/nc

cc: James P.O' Reilly  
Regional Administrator

Mr. M.K. Zaidi



## LABORATORIO MEDICINA NUCLEAR

HOSPITAL METROPOLITANO

2do. PISO - CARRETERA 21. No. 1785 - LAS LOMAS RIO PIEDRAS, PUERTO RICO 00922

TELS 783-6200  
781-1455

April 13, 1983

The director  
Office of Inspection and Enforcement USNRC  
Washington, D.C. 20555

Ref: Notice of Violation & Proposed Imposition  
of Civil Penalties, EA 83-14  
March 23, 1983

Copy submitted to: The Regional Administrator  
USNRC Region II  
101 Marieta St. N.W. Suite 3100  
Atlanta, Georgia 30303

Dear Sirs:

As per provisions of 10 C.F.R. 220f and under the authority of Section 182 of the Act 42 U.S.C. 2232, this response is sent under oath protesting imposition of the Civil penalties amounts \$2,000.00 to our Nuclear Medicine Division at the Metropolitan Hospital, Box E.H., Caparra Heights Station, San Juan, P.R. 00922, covered under license number 52-16033-01.

Introduction: One premise that we consider basic in the evaluation of an individual or an institution is that each has to be judged on an individual basis. Judgements that could well be suited for an institution in the U.S.A. may not be so for one in India, Mexico or Puerto Rico. To be fair in the judgement and penalty imposition to our Laboratory of Nuclear Medicine, several factors should be well understood. The first one is strictly an economical one and you will see how this makes our laboratory completely different from the "usual" Nuclear Medicine Laboratory you inspect on the mainland. The Metropolitan Nuclear Medicine Lab. does not make money. It is unusual to find a year in which we break even. We are including a Financial statement (Attachement one) which shows that for the first time since 1972 the laboratory has had a net benefit of \$2,711.00. That is achieved by paying very low salaries. For example, the salary of the Nuclear Medicine Physician is \$800.00 per month. This brings the first problem. The physician is doing all the work that a Nuclear Medicine Lab entails because the service is needed. His only interest in the Nuclear Medicine Division is that a needed service is provided. To be able to exist and to bring up a family (& you must know that the cost of living in Puerto Rico is higher than in U.S.A.) he maintains a full Internal Medicine Practice and a full ultrasound practice. This usually takes him from 12-14 hours a day. It is imposible, due to the circumstances, that he himself supervises all the safety procedures that must be carried on in the Nuclear Medicine Department.



However, conscious of the need for radiation protection (and please remember that Dr. Sostre was trained in Nuclear Medicine at the Johns Hopkins Medical Institutions; was Chairman of the Department of Nuclear Medicine at the Wright Patterson USAF Medical Center and Chairman of the Department of Nuclear Medicine of the Buffalo General Hospital of SUNY at Buffalo) he has hired as Radiation Protection Officer upon whom he deposits all the responsibility for the safety, as it is impossible for him to do it. Again it would have been very easy for Dr. Sostre to stay in the U.S.A. doing full time Nuclear Medicine, receiving a large salary, but Puerto Rico needs these services and even at a sacrifice of time, effort and lost income this change was worth while.

Up until recently we had a good RPO and this laboratory (understaffed, underequipped, and in debt as it was) had never to be fined by the NRC. A disaster occurred and our RPO was killed in an accident. Again, here our local problems play a role. In the mainland a hospital would have had many physicists to choose from as a replacement. We just do not have those facilities. We do not have the trained people and as you have already gathered we can not pay salaries to attract physicists from U.S.A.

Doing the best we could, we hired Mr. H. Rios to do the routine work and Mr. Santiago Gomez as his consultant. Again, we had to place all the responsibility for radiation protection in their hands. We as physicians trusted the information we were provided.

In time we would have found that Mr. Rios preparation was inadequate for the job, because that is the truth. The work was not being performed according to the standards we have been used to.

All of a sudden we have an inspection by the NRC. At a time of change, a time of chaos, a time when we are trying to train a person to do this difficult job, a time when Mr. Rios is trying to understand and manage radiation safety both in Nuclear Medicine and Radiotherapy ( a task which without the proper training is immense as you well know).

We could not expect, the NRC could not expect, God could not expect that your inspectors, with their extreme expertise, would find everything in perfect order at a time like this. This is equivalent to performing a military inspection at Pearl Harbor after the fateful day.

We can not bring ourselves to blame Mr. Rios because he was over whelmed, and again, due to our situation, the RPO at our institution has all the responsibility for radiation safety.

Now, what do we have?... We have a group of well trained, very responsible and serious physicians trying to do a job under very adverse conditions because you do not do Nuclear Medicine in Puerto Rico for a living. You do it because it is needed and somebody has to do it.

We have an inspection which came at a time of change, at a time of fleex, at a time when we were starting to clean house.

This is not an irresponsible group of people trying to get away with the performance of sloppy medicine. Even in a court of law the intention and circumstances of the involved is fully evaluated.

Finally the imposition of such a heavy fine (which in another Nuclear Medicine Department would be very tolerable) in our case it would entail the Laboratory to have to make a loan which would further hinder its efforts to improve on the things it must work.

I am sure the intention of the NRC is to improve the quality of the services and honestly we believe a fine of such magnitude would not serve that purpose in our case.

Now we have a new RPO (which was at M.D. Anderson in training) when you came. (The fact that we had sent this man for adequate training to the USA gives you evidence of how difficult is to get already trained people here and evidence of our good faith in having somebody well prepared for the job). He has started cleaning up house. Again, it will take a few weeks to have everything in order. If you come tomorrow we may still have problems.

We have complied with every thing you stated. We added a Nurse to the Radiation Protection Committee, we ordered new syringe shields, we are using 131 I capsules (until we can finance the installation of a hood), you name it we have done it.

Actually several of the violations you found were not even real and mostly the results of confusion. For example on Item 5. The exposure rate meter Nuclear Chicago 2592, range 0-1000 mR/hr is still in our division. It was being calibrated by Mr. Gómez at the time of the inspection and Mr. Rios didn't know it. It is fully operational in our Lab. at present.

Even when our technologist did not comply with using a syringe shield his exposures as demonstrated by his ring readings were very acceptable, which again brings up the problem that with a syringe shield injection time is prolonged and may defeat its purpose, plus increase discomfort to the patient as the vein may be missed more often.

Linearity testing has been performed in our Lab. with approximately 150 mCi of 99 mTc. We are a small laboratory, we perform 2-6 studies per day. We can not get 800 mCi of ~~800 mCi~~ of 99 mTc because our generator does not need to be that big. In this item we will formally apply to change that provision.

In conclusion, we feel it is unfair and counterproductive to implement the fine you have determined, for reasons explained above. Somebody once said, "it is impossible to judge a man until you have walked a mile in his shoes". We have had problems, at times seemingly impossible to solve, but we have to go ahead and we will do good medicine, as we have to the present.

We suggest that you hold the fine until you have had the chance to see the changes now that we have fully trained Mr. Mohammed Zaidi to do this job (a move that we had undertaken prior to your inspection).

Thanks for your indulgence. I hope we can all learn from this experience (makes one wonder if one should return to the Ivory Tower at the University of Buffalo where an NRC inspection was "no sweat").

Sincerely,

Radiation Protection Committee

II.A-96

## Radiation Oncology Center, Inc.

APARTADO E - H CAPARRA HEIGHTS STA.  
SAN JUAN, P. R. 00922

VICTOR A. MARCIAL, M. D.  
JOSE M. TOME, M. D.  
JEANNE UBIÑAS, M. D.

HOSPITAL METROPOLITANO  
1785 CARR. NO. 21, LAS LOMAS  
SAN JUAN, PUERTO RICO 00922  
TELS. 783-6936, 783-6200

April 18, 1983

The Director  
Office of Inspection & Enforcement  
United States Nuclear Regulatory Commission,  
Washington, D. C. 20555

SUBJECT: Proposed civil penalties EA- 83-14, Report number  
52-16033-02/83-01.

Dear sirs:

Reference to the above notice of violation and proposed imposition of civil penalties, EA- 83-14 dated March 23, 1983 and pursuant to the provisions of 10 CFR 2.201, this response is sent under affirmation. We hereby appeal the imposition of proposed civil penalties amounting to two thousand dollars (\$2,000.00) to our Radiotherapy Institute at the Metropolitan Hospital. We will limit our reply to section B which refers to the Radiotherapy Institute.

### SECTION B- ITEM-1

Spot checks at our Institute have been done regularly, on the teletherapy unit almost every week. After the tragic death of our former physicist, Mr. Del Valle, on April 11, 1982, Mr. José C. Pacheco, Medical physicist from the School of Medicine, started working with us on a part time basis as consultant. He performed the spot checks upto the end of May 1982. Miss Cecilia Ramírez, Dosimetrist-physicist at the Schools of Medicine, was also hired, on a part time basis, to do dosimetry and provide physics support from April 16, 1982 on. Mr. Ríos a dosimetrist, started working with us, under the supervision of Ms. Ramírez, on June 16, 1982 to do dosimetry and provide physics support. The spot checks done by Mr. Ríos had always been reviewed by Ms. Ramírez but she did not sign this. Mr. M. K. Zaidi, a qualified physicist, joined this Institute on March 16, 1983 and has been in charge of the spot checks since then.

### Section B- ITEM-2.

Field uniformity tests done on our teletherapy unit were not recorded in the past. Mr. Zaidi will be doing all these tests regularly and they will be on record for next inspection.

We are sending one of the exposed filmsto the University of Texas, Calibration Lab. at Houston for their review.

#### SECTION B- ITEM-3

We cannot evaluate the calibration factors used by our former physicist, Mr. Del Valle, but our present physicist Mr. Zaidi, will be doing these tests using NCRP-69 as a guide. Moreover, he has recently attended four weeks training at the University of Texas, M. D. Anderson Hospital and Cancer Institute at Houston. The courses were:

- a. External beam, interstitial and intracavitary principles and calibration January 3, 1982 to January 14, 1982.
- b. External beam, interstitial and intracavitary dosimetry- manual and computer methods of calculation, January 17, 1982 to January 28, 1982.

We expect that the tests and calculations performed by Mr. Zaidi will be correct.

We have asked the University of Texas Calibration Lab. at Houston, Texas to send us TLD's to be exposed on our unit and the exposed TLD's will be read in Houston. The results will be used to determine any percentage error in our measurements.

#### SECTION B- ITEM-4 :

The emergency instructions were posted on the outside of the teletherapy unit door, which is 15 ft away from the control console. As per recommendations a copy of the instructions has been placed at the control desk. In addition to the above mentioned statements, we would like to report the following:

- a. Our Radiation safety committee met on April 4, 1983 and we will be holding meetings regularly. Mr. Zaidi, our Radiation Protection Officer, is a member of the Committee (C. V. attached) and Mrs. Luz. M. Quiñones, R. N. Director of Nursing has been appointed a member (C. V. attached).
2. Mr. Ríos was hired as a dosimetrist to work under the supervision of qualified physicists, Mr. Pacheco and Ms. Ramírez. Mr. Santiago Gómez, R. P. O at the School of Medicine of

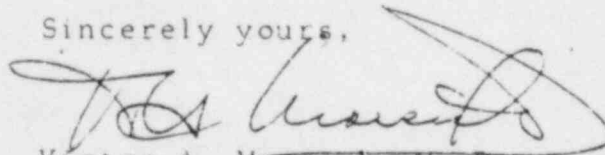


of the University of Puerto Rico, has always remained with us as a Consultant for radiation safety, leak tests, calibration of survey instruments and to attend emergencies. Ever since Mr. Del Valle died, we had been searching for a qualified physicist to work on a full time basis, but this was not possible until March 16, 1983, when Mr. Zaidi joined our staff. As you know there exists a great shortage of this personnel in Puerto Rico.

- c. We are negotiating with Siemens Co. to have a service contract for our machines and this arrangement will permit us to comply with this recommendation.

We trust you will take in consideration the hardships we have gone through and that you will be able to revoke the proposed penalties. We look forward to hearing from you.

Sincerely yours,



Victor A. Marcial, M. D.  
Radiotherapist

VAM/em

CC: The Regional Administrator  
USNRC Region II  
101 Marieta St. N. W. Suite 3100  
Atlanta, Georgia 30303



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SEP 29 1983

License Nos. 52-16033-01  
52-16033-02

Hospital Metropolitano  
ATTN: Ms. R. Esteras, Administrator  
Box E.H., Caparra Heights Station  
San Juan, Puerto Rico 00922

Gentlemen:

SUBJECT: IMPOSITION OF CIVIL PENALTIES - EA 83-14  
(REFERENCE REPORT NOS. 52-16033-01/83-10 AND 52-16033-02/83-01)

This acknowledges receipt of your letters dated April 18, 1983, May 25, 1983, and August 10, 1983, in response to the Notice of Violation and Proposed Imposition of Civil Penalties sent to you by letter dated March 23, 1983 from the Regional Administrator, Region II. The March 23, 1983 letter concerned violations identified during a routine inspection of the hospital on February 2 and 3, 1983.

After careful consideration of your responses, and for the reasons given in the enclosed Order and Appendix, we have concluded that all the violations, except Violation B.2, did occur as set forth in the Notice of Violation and Proposed Imposition of Civil Penalties. We have also given careful consideration to your request for remission of the proposed penalties and have concluded that the penalties will be reduced from Four Thousand Dollars to Two Thousand Five Hundred Dollars. The penalty mitigation takes into account the licensee's "ability to pay" and our withdrawal of Violation B.2. Accordingly, we hereby serve the enclosed Order on Hospital Metropolitano, imposing a civil penalty in the amount of Two Thousand Five Hundred Dollars.

Your actions taken to correct the violations and to prevent their recurrence will be evaluated during future inspections of the hospital.

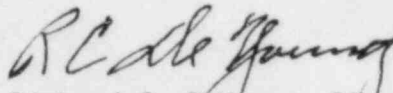
In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosure will be placed in NRC's Public Document Room.

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

SEP 29 1983

The responses directed by this letter and the enclosed Order are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,



Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Enclosures:

1. Order Imposing Civil Monetary Penalties
2. Appendix - Evaluation and Conclusions

UNITED STATES  
NUCLEAR REGULATORY COMMISSION

In The Matter of	)	
	)	License Nos. 52-16033-01
HOSPITAL METROPOLITANO	)	52-16033-02
Box E.H., Caparra Heights Station	)	
San Juan, Puerto Rico 00922	)	EA 83-14

ORDER IMPOSING CIVIL MONETARY PENALTIES

I

Hospital Metropolitano, San Juan, Puerto Rico 00922, (the "licensee") is the holder of License Nos. 52-16033-01 and 02 (the "licenses") issued by the Nuclear Regulatory Commission (the "Commission") which authorizes the licensee to operate nuclear medicine and teletherapy activities in accordance with the conditions specified therein. The licenses were issued on February 9, 1981, and September 14, 1982, respectively.

II

As a result of a routine safety inspection conducted on February 2 and 3, 1983 by the Nuclear Regulatory Commission Region II inspection staff, the NRC staff determined that the licensee had conducted activities in its Nuclear Medicine and Teletherapy departments in violation of NRC's regulations and the conditions of its licenses. The NRC served the licensee with a written Notice of Violation and Proposed Imposition of Civil Penalties by letter dated March 23, 1983. The Notice identified the NRC regulations and license conditions that had been violated, disclosed the inspection findings substantiating the violations, and stated the amount of civil penalty proposed for each violation. The licensee responded to the Notice of Violation and Proposed Imposition of Civil Penalties with letters dated April 18, 1983, May 25, 1983, and August 10, 1983.



## III

Upon consideration of the responses received and the statements of fact, explanation and argument for remission of the proposed civil penalties contained therein as set forth in the Appendix to this Order, the Director of the Office of Inspection and Enforcement determined that the violations, except example B.2 in the Notice, did occur as set forth in the Notice of Violation. The Director concluded that the proposed penalties should be mitigated in recognition of the licensee's limited ability to pay and the NRC's withdrawal of example B.2.

## IV

In view of the foregoing and pursuant to Section 234 of the Atomic Energy Act of 1954, as amended, 42 U.S.C. 2282, PL 96-295, and 10 CFR 2.205, IT IS HEREBY ORDERED THAT:

The licensee pay a civil penalty in the amount of Two Thousand Five Hundred Dollars (\$2,500) within 30 days of the date of this Order, by check, draft, or money order payable to the Treasurer of the United States and mailed to the Director of the Office of Inspection and Enforcement, USNRC, Washington, D.C. 20555.

## V

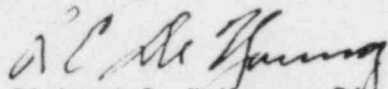
The licensee may within thirty days of the date of this Order request a hearing. A request for a hearing shall be addressed to the Director, Office of Inspection

and Enforcement. A copy of the hearing request shall also be sent to the Executive Legal Director, USNRC, Washington, D.C. 20555. If a hearing is requested, the Commission will issue an Order designating the time and place of hearing. Should the licensee fail to request a hearing within thirty days of the date of this Order, the provisions of this Order shall be effective without further proceedings and, if payment has not been made by that time, the matter may be referred to the Attorney General for collection.

In the event the licensee requests a hearing as provided above, the issues to be considered at such hearing shall be:

- (a) whether the licensee was in violation of the Commission's requirements as set forth in the Notice of Violation and Proposed Imposition of Civil Penalties as modified in Section III above, and
- (b) whether on the basis of such violations, this Order should be sustained.

FOR THE NUCLEAR REGULATORY COMMISSION



Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Dated at Bethesda, Maryland  
this 29 day September 1983

## APPENDIX

### EVALUATIONS AND CONCLUSIONS

For each violation and associated civil penalty identified in the Notice of Violation and Proposed Imposition of Civil Penalties (dated March 23, 1983) the original violation is restated and the Office of Inspection and Enforcement's evaluation and conclusion regarding the licensee's responses (dated April 18, May 25, and August 10, 1983) to each item is presented.

#### Item A

##### Statement of Violation (Part 1)

Collectively, 10 CFR 30.3, 10 CFR 30.34(a), and 10 CFR 35.2 require that the licensee shall receive, use, possess, and transfer byproduct material intended for human use in accordance with all valid NRC rules and regulations and specific licenses issued by the NRC.

Contrary to the above:

- A. The licensee did not use and possess byproduct material for human use at its Nuclear Medicine facility in accordance with NRC regulations and the conditions of its specific license, No. 52-16033-02, including the statements contained in its application dated June 27, 1980, which are incorporated into the license by Condition 18, as indicated by the following examples, each of which constitutes a violation:

1. Item 15 G.1 of the application states that therapeutic radioiodine solutions will be opened and handled within a fume hood. However, since June 1980, the licensee opened and handled doses of 100 to 200 millicuries of radioiodine solutions, approximately five times each year, without using a fume hood. The Nuclear Medicine Department was not equipped with a fume hood.

Licensee Response - The licensee admitted the violation.

##### Statement of Violation (Part 2)

2. Item 15 G.5 of the application states that all persons handling more than 1 millicurie of radioiodine will have a measurement of thyroid uptake on the following day. However, since June 1980, the licensee has not measured the thyroid uptake of the persons who opened and administered the therapeutic doses identified above. Accordingly, the licensee made no evaluation of the internal radiation exposure incurred by the personnel who handled radioiodine solutions under conditions presenting a substantial potential for exposure.

Licensee Response - The licensee admitted the violation.

Statement of Violation (Part 3)

3. Item 15 F.30 of the application states that syringe shields will be used for preparation and administration of patients' doses. However, since June 1980, syringe shields have not been used for preparation and administration of patients' doses.

Licensee Response - The licensee denied the violation stating that they had a broken shield on hand.

NRC Evaluation and Conclusion - Since the licensee did not have available for use at the time of the inspection an operable syringe shield for preparation and administration of patients' doses as required, and had not been using the shields, the violation stands as proposed in the Notice of Violation.

Statement of Violation (Part 4)

4. Item 10 of the application states that the procedures specified in Appendix D of Regulatory Guide 10.8 will be followed for the dose calibrator. Appendix D specifies a procedure for testing the linearity of a dose calibrator that requires the use of a Tc-99m source, the activity of which is equivalent to the maximum activity to be assayed (typically, 700 to 1000 mCi), over a period of 48 hours. However, since June 1980, the licensee has tested the linearity of its dose calibrator over a period of 12 hours using a 100 mCi source of Tc-99m.

Licensee Response - The licensee admitted the violation.

Statement of Violation (Part 5)

5. Item 9 of the application states that the licensee possesses an Exposure Ratemeter Nuclear Chicago Model 2592 having a sensitivity range of 0-1000 mR/hr. However, on February 3, 1983 (the day of the inspection) the only survey meter in the Nuclear Medicine Department had a range from 0-200 mR/hr.

Licensee Response - The licensee denied the violation on the basis that the instrument was being calibrated on the day of the inspection.

NRC Evaluation and Conclusion - The NRC requires a licensee to have survey instrumentation, having a range commensurate with the magnitude of exposure rates encountered in its licensed activities, available for use when required. On the day of the inspection, the licensee was performing licensed activities but did not have available for use the required survey meter (i.e., a survey meter with a range of 0-1000 mR/hr) because that meter was out for calibration. The violation stands as proposed in the Notice of Violation.



Statement of Violation (Part 6)

6. Item 15 F.28 of the application states that areas used for elution of Mo-99/Tc-99m generators, for preparation of radiopharmaceuticals from reagent kits, and for preparation of individual patient doses will be surveyed for contamination after each procedure and/or at the end of each working day. However, since June 1980, the licensee did not follow this regime; the Nuclear Medicine Department was surveyed at weekly intervals.

Licensee Response - The licensee admitted the violation.

Statement of Violation (Part 7)

7. 10 CFR 35.11(b) requires an institution having a specific license for human use of byproduct material to appoint a radiation safety committee to oversee the use of licensed material throughout the institution and to review the institution's radiation safety program. It specifies that the membership of the committee must include a representative of the nursing staff. However, the membership of the licensee's radiation safety committee did not include a representative of the nursing staff.

Licensee Response - The licensee admitted the violation.

Item BStatement of Violation (Part 1)

Collectively, 10 CFR 30.3, 10 CFR 30.34(a), and 10 CFR 35.2 require that the licensee shall receive, use, possess, and transfer byproduct material intended for human use in accordance with all valid NRC rules and regulations and specific licenses issued by the NRC.

Contrary to the above:

- B. The licensee did not use and possess byproduct material for human use at its teletherapy facility in accordance with NRC regulations and the conditions of its specific license, No. 52-16033-02, as indicated by the following examples:

1. 10 CFR 35.22(a) and (c) require the licensee to cause spot-check measurements to be performed on each teletherapy unit at intervals not exceeding one month. It requires that these measurements be conducted by a qualified expert or, if not conducted by such an expert, reviewed by a qualified expert within 15 days.

10 CFR 35.24 requires the licensee to determine that the person who reviews the results of spot-check measurements of its teletherapy units is an expert qualified by training and experience to perform this service. Footnote 2 to 10 CFR 35.24 allows a licensee, who has its teletherapy unit calibrated by persons who do not meet the criteria for minimum training and experience, to request a license amendment excepting them from the provisions of 10 CFR 35.24.

However, since April 1982, the licensee did not determine if the person who either conducted or reviewed spot-check measurements of its teletherapy unit had the qualifications specified in 10 CFR 35.24 to perform this service. Spot-check measurements were not performed or reviewed by a qualified expert. The licensee did not request a license amendment in accordance with the provisions of Footnote 2.

Licensee Response - The licensee denied the violation stating that the monthly spot-check measurements had been accomplished by a medical physicist from the School of Medicine from April 11, 1982 until June 1, 1982 and by a dosimetrist - physicist from June 1982 until March 1983.

NRC Evaluation and Conclusion - In the licensee's response, no information was provided to show that the individuals who conducted the spot-check measurements were appropriately certified or had the minimum training and experience specified in 10 CFR 35.24. Accordingly, the violation stands as proposed in the Notice of Violation.

#### Statement of Violation (Part 2)

2. 10 CFR 35.21(b)(3) requires a licensee who is authorized to use teletherapy units for treating humans to cause full calibration measurements to be performed on each teletherapy unit at intervals not exceeding one year. It requires that these measurements include a determination of the uniformity of the radiation field.

However, the full calibration measurements performed in March 1982 did not include a determination of the uniformity of the radiation field.

Licensee Response - The licensee denied the violation. He stated that the measurements had included a determination of the uniformity of the radiation field but records of these determinations had not been made.

NRC Evaluation and Conclusion - The denial is accepted by the NRC and part 2 of Violation B is withdrawn. The licensee's failure to record the determinations was a violation of the requirements of 10 CFR 35.25.

#### Statement of Violation (Part 3)

3. 10 CFR 35.21(c) requires a licensee, who is authorized to use teletherapy units for treating humans, to cause full calibration measurements to be performed on each teletherapy unit following the procedures recommended by the Scientific Committee on Radiation Dosimetry of the American Association of Physicists in Medicine (Physics in Medicine and Biology, Vol. 16, November 3, 1971, pp. 379-396). However, on the last full calibration of the teletherapy unit (March 1982), the licensee did not follow the procedures cited above. The referenced protocol recommends, when determining the absorbed dose from in-air measurements of exposure, the use of an "F" factor for water or muscle (exposure-to-dose conversion for cobalt-60), and an "Aeq" factor (attenuation correction factor) for cobalt-60 in

the final absorbed dose equation. However, the licensee, in determining the absorbed dose from in-air measurements did not use these factors in the final absorbed dose equation.

Licensee Response - The licensee admitted the violation.

Statement of Violation (Part 4)

4. Condition 16 of License No. 52-16033-02 requires the licensee to post written emergency instructions at the teletherapy machine control.

However, on February 3, 1983 the licensee had the emergency instruction posted on the teletherapy room door versus the teletherapy machine control.

Licensee Response - The licensee admitted the violation.

Licensee Request for Remission of Proposed Civil Penalties

The licensee requested remission of the \$2,000 penalty assigned to Item A asserting that the Nuclear Medicine Laboratory has not shown a profit of more than approximately \$3,000 per year since 1972. The licensee stated that the penalty would have a substantial and adverse affect on its attempt to improve patient care in the Nuclear Medicine Department. Its request for remission of the \$2,000 penalty assigned to Item B was nonspecific.

NRC Evaluation and Conclusion

In consideration of the hardship plea, the penalty for Item A is reduced to \$1,000. The penalty for Item B is reduced to \$1,500 to reflect the withdrawal of Item B.2 as a violation.

# Metropolitan Hospital

BOX E. H.  
CAPARRA HEIGHTS  
00922

CARR. 21 NO. 1785  
LAS LOMAS, RIO PIEDRAS  
PUERTO RICO, 00928

TELS. 783-6200  
782-0934

October 14, 1983

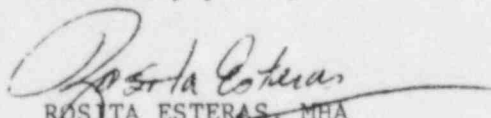
Richard C. DeYoung, Director  
Office of Inspection and Enforcement  
United States Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mister DeYoung:

SUBJECT: IMPOSITION OF CIVIL PENALTIES - EA 83-14 (REFERENCE  
REPORT NOS. 52-16033-01/83 AND 52-16033-02/83-01)

Refer to the letter dated September 29, 1983 in which  
United States Regulatory Commission imposed a Civil Penalty  
for Violation. We enclose a certified check of Two Thousand  
Five Hundred Dollars (\$2,500.00) to cover the monetary penalty  
according to instructions.

Cordially yours,

  
ROSITA ESTERAS, MHA  
ADMINISTRATOR

RE/nc

Enclosure

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

SEP 20 1983

License No. 34-10445-01  
EA 83-96

Shelwell Services Incorporated  
Route 1, Harbor Hills  
Hebron, Ohio 43025

Gentlemen:

SUBJECT: ORDER TO SHOW CAUSE AND ORDER TEMPORARILY SUSPENDING LICENSE  
(EFFECTIVE IMMEDIATELY)

Enclosed herewith is an Order, effective immediately, suspending your license and directing you to show cause why your license should not be revoked.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed Order will be placed in the NRC's Public Document Room.

The responses directed by this letter and the accompanying Order are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,

Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Enclosure:  
Order to Show Cause and  
Order Temporarily Suspending  
License (Effective Immediately)

cc: Ohio Department of Health

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED



September 15, 1983, the licensee agreed in a telephone conversation with Region III officials to discontinue licensed activities.

### III

While Region III's investigation of this incident is not yet complete, it appears that continued conduct of licensed activities could pose a potential threat to the health of the public including licensee's employees. Therefore, I have determined that the public health, safety, and interest require that License No. 34-10445-01 be suspended, pending the completion of the ongoing investigation and a determination as to whether licensed activities will be conducted in accordance with Commission requirements. I have further determined pursuant to 10 CFR 2.202(f) that the suspension be immediately effective pending further Order.

### IV

In view of the foregoing and pursuant to sections 81, 161(b) and 186 of the Atomic Energy Act of 1954, and the Commission's regulations, 10 CFR Parts 2 and 30, IT IS HEREBY ORDERED EFFECTIVE IMMEDIATELY THAT:

- A. The licensee shall not use byproduct material except as permitted in Conditions B, C, and D below.

- B. The licensee shall store all byproduct material in a restricted area in its Hebron, Ohio facility. This storage area shall comply with 10 CFR Part 20. The licensee's actions shall include the return of all sources located off-site to the licensee's facility.
- C. The licensee shall immediately initiate decontamination of residences of its contaminated workers and any off-site areas that were contaminated as a result of the incident. All such areas shall be decontaminated to levels specified in "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material" (NRC, Division of Fuel Cycle and Material Safety, July 1982). Completion of decontamination work shall be evidenced by means of a final survey and verification of completed decontamination submitted under oath to the Regional Administrator, NRC Region III. Pending completion of the decontamination the licensee shall provide an oral report weekly to William L. Axelson, Chief, Materials and Safeguards Branch, Region III (312/790-5612) on the status of decontamination.
- D. Prior to entry into the licensee's facility to initiate decontamination operations, and by no later than October 19, 1983, the licensee shall submit a proposed decontamination plan for its facility to NRC's Regional Office and obtain the Regional Administrator's approval of the plan. The plan shall discuss (1) the qualifications of the persons responsible for radiation safety during the decontamination operations; (2) the levels of



contamination that will be permitted to remain in the facility after decontamination; (3) a description of the methods to be used to assure protection of workers and the environment against radiation hazards during the decontamination operations; and (4) a description of the methods to be used for disposal of contaminated materials.

- E. The licensee shall show cause, in the manner hereinafter provided, why License No. 34-10445-01 should not be revoked.

## V

Pursuant to 10 CFR 2.202(b), the licensee may show cause, within 25 days after issuance of this Order, as required by section IV.D, above, by filing a written answer under oath or affirmation setting forth the matters of fact and law on which licensee relies. The licensee may answer, as provided in 10 CFR 2.202(d), by consenting to the entry of an Order in substantially the form proposed in this Order to Show Cause. Upon failure of the licensee to file an answer within the specified time, the Director, Office of Inspection and Enforcement may issue without further notice an Order revoking License No. 34-10445-01.

## VI

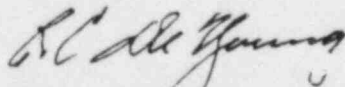
Pursuant to 10 CFR 2.202(b), the licensee may, in its answer filed under section V, above, request a hearing. Any answer to this Order or any request for hearing shall be submitted to the Director, Office of Inspection

and Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C., 20555. Copies shall also be sent to the Executive Legal Director at the same address and to the Regional Administrator NRC Region III, 799 Roosevelt Road, Glen Ellyn, Illinois, 60137. A REQUEST FOR HEARING SHALL NOT STAY THE IMMEDIATE EFFECTIVENESS OF SECTION IV OF THIS ORDER.

If a hearing is requested by the licensee, the Commission will issue an order designating the time and place of any hearing. If a hearing is held, the issue to be considered at such hearing shall be:

Whether this Order should be sustained.

FOR THE NUCLEAR REGULATORY COMMISSION



Richard C. DeYoung, Director

Office of Inspection and Enforcement

Dated at Bethesda, Maryland  
this 20 day of September 1983



Route #1, Harbor Hills

Hebron, Ohio 43025  
Phone 614 928-2501

October 17, 1983

Richard C. DeYoung, Director  
Office of Inspection and Enforcement  
U.S. Nuclear Regulatory Commission  
Washington, D.C. 20555

Dear Mr. DeYoung:

I am enclosing the Answer of Shelwell Seervices to NRC's September 20, 1983, Order to Show Cause and Order Temporarily Suspending License. This Answer is dated October 17, 1983, and reflects the discussions which we had on October 14 with Region III officials. Additional confidential financial information is being submitted separately with a request that it be withheld from public disclosure.

Very truly yours,

  
Morey Shelton

enc.

cc: James G. Keppler  
James Lieberman, Esq.



UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of

Shelwell Services Incorporated	)	License No.
Route 1, Harbor Hills	)	34-10445-01
Hebron, Ohio 43025	)	EA 83-96

Licensee's Answer to NRC Order to  
Show Cause and Order Temporarily  
Suspending License

I. Background

On September 20, 1983, Richard C. DeYoung, Director of the Office of Inspection and Enforcement of the NRC, issued an "Order to Show Cause and Order Temporarily Suspending License" in connection with NRC byproduct material License No. 34-10445-01 held by Shelwell Services Incorporated (hereinafter referred to as "Licensee"). The Order, which was effective immediately, was prompted by an incident at Licensee's Hebron, Ohio, facility on September 13 which resulted in radioactive contamination of the facility, personnel, and off-site locations.

The Order requires Licensee to terminate use of byproduct material except as needed to comply with the Order's provisions. All byproduct material is required to be returned to Licensee's facility and stored in a restricted area in accordance with 10 C.F.R. Part 20. Licensee is required to decontaminate residences and other off-site areas contaminated as a result of the September 13 incident. The Order requires Licensee to submit



a proposed decontamination plan for the Hebron facility to to the NRC Regional Office by October 19 and obtain the Regional Administrator's approval of the plan before initiating facility decontamination. Finally, the Licensee is required to show cause why License No. 34-10445-01 should not be revoked.

This answer is submitted in response to the NRC Order. Licensee requests the withdrawal of the temporary license suspension and demonstrates that its license should not be revoked.

## II. Present State of Compliance with Order

Licensee has complied with the Order in the following respects.

- ° As specified in Paragraph IV.A. of the Order, Licensee is not using byproduct material, except as permitted by the Order in connection with storage and decontamination.
- ° As specified in Paragraph IV.B. of the Order, all byproduct material has been returned to Licensee's facility at Hebron, Ohio, and is stored in a restricted area which complies with 10 C.F.R. Part 20.
- ° As specified in Paragraph IV.C. of the Order, Licensee promptly initiated decontamination of residences and other off-site areas which were contaminated as a result of the incident. Oral reports on the status of decontamination have been submitted to Region III during the

course of those activities. The decontamination has now been completed and evidence thereof in the form of a final survey and verification is being submitted to the Regional Administrator on October 17, 1983.

- 2 A draft proposed decontamination plan for the facility was discussed with Region III on October 13, 1983, and will be submitted today. The plan discusses (1) the qualifications of the persons responsible for radiation safety during the decontamination operations; (2) the levels of contamination that will be permitted to remain in the facility after decontamination; (3) a description of the methods to be used to assure protection of workers and the environment against radiation hazards during the decontamination operations; and (4) a description of the methods to be used for disposal of contaminated materials. Implementation of the proposed plan will not begin until the Regional Administrator's approval is obtained.

### III. Licensee's Activities and the Incident of September 13, 1983

Licensee is a small family-owned business engaged in furnishing essential well-logging services to the industry which is responsible for meeting much of this country's energy requirements.

Licensee has provided logging and perforating services since 1964 to oil and gas well developers in Ohio and Illinois. Two of the Company's full time employees are family members - Clyde Shelton, President and Morey Shelton, Vice-President. Licensee employed approximately 40 persons full time at the time of the incident involving release of radioactive materials. Of those, 28 were in Ohio and 12 in Illinois. The Illinois business involves logging activities in the oil fields, which activities work out of the Licensee's Hebron, Ohio headquarters.

Licensee's logging business entails taking sealed radioactive materials to well drill site locations where the materials are run down and up the bore hole to characterize the physical structure of the geologic formations which have been penetrated. Licensee's well logging activities cannot be carried out without an NRC license. The regulated aspects of well logging operations are essentially (1) the storage of byproduct materials as sealed sources in restricted areas; (2) shipment of the sealed sources in locked containers on trucks to a job site or from job site to job site over a period of time; (3) use of the sealed source with well logging tools on the job site; (4) return of the sealed source to storage in the restricted area.

License No. 34-10445-01 authorizes the use of licensed material "at the licensee's facilities at Route 1, East of Hebron on US 40, Hebron, Ohio and at temporary job sites of the Licensee anywhere in the United States where the U.S. Nuclear Regulatory

Commission maintains jurisdiction for regulating the use of licensed material." Because virtually all of Licensee's licensed operations actually are conducted in the oil fields, many miles from Company buildings where the accidental release occurred, use of Company buildings is not currently critical to resumption of the logging operations. Because the Order has required all byproduct materials to be stored at its Hebron facility and because its license has been suspended, all of the Company's oil and gas well logging operations have ceased. As will be described below, the license suspension is effectively putting Licensee out of business.

During the almost-twenty years of its existence, Licensee's record of compliance with AEC and NRC regulatory requirements has been acceptable. One civil penalty (\$1,000) was imposed in 1978 for violations in connection with the loss of an americium source from a vehicle. In recent years violations have not exceeded Severity Level IV and have not involved violations of a repetitive nature. None of these violations involved any hazard to health or safety.

The contamination resulted from efforts late in the afternoon on September 13 by Licensee's personnel at the Hebron facility to remove a 2 curie cesium-137 source from a source holder which had been stored in a lead pig for approximately six (6) years. Cleanup efforts were begun on September 14 and the incident was reported to the NRC by telephone within twenty-four (24) hours of the incident. The initial report was made by



Licensee's Radiation Safety Officer who was then at a job site in Illinois and had himself received information from Hebron by telephone. Cleanup efforts by Licensee's personnel were unsuccessful and, after consultations with personnel of the NRC and the State of Ohio, the Licensee, upon the recommendation of its consulting health physicist, engaged Applied Health Physics, Inc., of Pittsburgh, Pennsylvania, to conduct the cleanup.

The incident is, in our view, an unfortunate accident which resulted in over exposure to two and possibly three employees. Licensee has been assured thus far by medical and health physics consultants that these over exposures have not resulted in damage, although final results have not yet been submitted to us. The accidental release resulted in the contamination of four buildings and one trailer at Licensee's facility, of numerous pieces of operating equipment, fourteen homes and three public buildings. Licensee has reacted quickly and efficiently to accomplish the cleanup, engaging the services of persons highly qualified and experienced in conduct of similar decontamination activities. The off-site cleanup was completed on October 6. A final survey and verification of the off-site cleanup is being filed with Region III at this time. Licensee has complied promptly and fully with the Order of September 20.

#### IV. Cleanup Activities

As soon as the potential magnitude of the cleanup activities became apparent, the Company's retained health physicist, James Lewis, recommended that an expert in the field of decontamination

be retained to oversee the work. He recommended Applied Health Physics, Inc. of Pittsburgh, Pennsylvania ("Applied Health") with which Mr. Lewis had worked on several decontamination projects involving other licensees. Licensee immediately retained Applied Health which agreed to perform the work only if it would conduct, as opposed to direct, the decontamination. Applied Health arrived to begin problem analysis and decontamination of off-site facilities on September 16. Applied Health's activities have been led by Robert G. Gallagher, P.E., C.H.P., its President.

Well logging activities involving radioactive material were voluntarily stopped on September 15 immediately upon the oral request to do so by NRC Staff made to the Licensee's President. At Applied Health's recommendation, the Licensee caused the contaminated site to be posted with radiation warning signs and isolated by barriers on all sides and put under twenty-four hour continuous security. Beginning Saturday, September 17, Applied Health in continuous coordination and cooperation with NRC Staff and the Radiological Assistance Program Team made up of State of Ohio and U.S. Department of Energy personnel, carried out the contamination evaluation. Initial steps were taken to identify contaminated vehicles, equipment, persons, homes, etc., and to prohibit further spreading of contamination. When the evaluation was completed, cleanup of off-site facilities was conducted in accordance with NRC criteria.

All off-site contamination was cleaned up to NRC criteria and verified as such by NRC site officials by October 6, 1983. Applied Health is filing a decontamination plan for the on-site contamination with the NRC on October 17, 1983. Upon NRC approval of the plan, those decontamination activities will begin.

V. Revised Radiation Protection Program

In the thirty-three (33) days since the release incident, Licensee has undertaken numerous activities (in addition to providing such assistance as requested by Applied Health) to assure compliance with all NRC regulations and license conditions. Licensee fully recognizes that its future authorization to operate under an NRC license will require it to handle byproduct materials in a totally secure and appropriate manner. In order to accomplish this, Licensee has initiated the following regulatory radiation safety program:

A. Development of Radiation Safety Manuals. Licensee has written a new Operating Procedures Manual in cooperation with its retained health physicist and Applied Health. This manual, a copy of which is attached as Appendix A, allocates, defines and prescribes responsibilities, practices and procedures for managing all routine and emergency situations. Compliance with this manual will be an on-going condition of employment for all of Licensee's employees. The Manual is significantly detailed, and is constructed in compliance with the Licensee's "Policy Statement Re: Radiological Safety" which provides,

Shelwell has a legal responsibility as well as a moral obligation to assure that all operations involving the possession and use of licensed radioactive materials are conducted in accordance with all applicable safety regulations. Therefore our company, including every employee, must make certain that we know and comply with the radiation safety procedures that are set forth in this manual as well as the terms and conditions of our NRC license. We consider our commitment to practice radiological safety so important that we hereby make it a condition of employment. Our responsibilities as an employer and your responsibilities as an employee are concisely stated in NRC Form 3 by the U.S. Nuclear Regulatory Commission. A copy of this Form 3 has been posted at our job sites, in our logging trucks and is also contained in this manual as Appendix I. We encourage you to help us to maintain all radiation exposures to as low as reasonably achievable (ALARA). Your cooperation and assistance in the implementation of this policy is essential to you, our company and to all who rely upon us to use radiation safely and profitably.

In addition to the Operating Procedures Manual, Licensee is also developing a Quality Assurance Manual to make certain that the requirements of the Operating Procedures Manual are performed. The outline for the Quality Assurance Manual is attached as Exhibit B; the Manual should be written by Applied Health and adopted by Licensee within the next thirty (30) days.

B. Training Program. Immediately following the incident, Licensee initiated action to improve the skills of its Radiation Safety Officer, Mr. Miller. Between September 19-23 he completed a 5-day training course in radiological safety offered by Applied Health. This course is specifically designed for persons responsible for implementing radiation safety programs. The course focuses on how to implement such programs effectively, including such aspects as instrumentation, monitoring and documentation



procedures, emergency and incident response, transportation, and storage and disposal of radioactive materials. It is a practical, rather than theoretical, course. A description of this course is attached as Appendix C.

The Licensee will also conduct formal training for all employees to familiarize them with the Operating Procedures Manual and prepare them to carry out their responsibilities under the Manual. This training will provide further assurance that the requirements of License No. 34-10445-01 and NRC regulations can be - and are - met in all circumstances. This training program will be conducted by the Company's Radiation Safety Officer, retained health physicist and Applied Health. The initial training sessions will begin on or before October 21, 1983. Satisfactory completion of the program will be a condition of continuing employment, as well as a condition precedent to new employees undertaking work with Licensee.

C. Additional Instrumentation. The Licensee has ordered a number of additional radiation detection instruments which will enable it to carry out required radiation surveys in normal operations and any emergency situation which may arise in the future. These instruments should be authorized for use by Shelwell of Illinois, Inc., as well as Shelwell Services, Inc. This instrumentation includes:

- 1 neutron survey meter Ludlum Model 15
- 2 Victoreen ionization chamber survey instruments for measurement of higher levels of gamma radiation

5 Solar Electronics Alert 4 end-window geiger tube instruments for measurement of lower levels of alpha-beta gamma radiation

15 low range Geiger-Mueller instruments for measurement of beta-gamma radiation

Licensee expects to receive this instrumentation on site before October 21, 1983 so that its use can be included in the training sessions discussed in B.

D. Quality Assurance Audits. The Licensee believes that it is important to confirm regularly that it is in ongoing compliance with the procedures prescribed in the manuals and training programs discussed above and that the new instrumentation is used properly. Therefore, Licensee has retained Applied Health to perform "compliance audits" to make certain that Licensee continues to meet its regulatory and permit requirements and its Policy Statement. The audits will be conducted under the supervision of a Certified Health Physicist. They will consist of regular unannounced surveys of oil field operations and annual complete reviews of all of Licensee's licensed operations. The audits will be conducted whether NRC inspections of the facility have been conducted within the same time frame.

E. Problem Awareness. The radiological release event which caused the subject Temporary License Suspension has had a profound impact upon the managers and owners of Licensee. This experience has raised the awareness level of all company personnel concerning the critical need to handle byproduct materials in full compliance with all regulatory and license requirements. Shelwell Services,

Inc. is a small family-owned and operated business, not a large operation in which numerous employees are isolated from management and its policies. Licensee believes that the traumatic impact which this incident has had on its employees, officers and business prospects is itself a significant factor in assuring that such an event is unlikely to occur again.

Licensee believes that the Revised Radiation Protection Program outlined above will prevent radiological release events from occurring in the future. It will also cause Licensee to conduct all of its operations in full compliance with applicable rules and permit terms. Because of this new program, the NRC can be assured that Licensee will conduct all of its future well logging activities without threat to the public health and safety. Licensee has shown the NRC good cause as to why Licensee's permit should not be revoked. The NRC should make the determination not to revoke NRC byproduct material License No. 34-10445-01, so inform Licensee, and withdraw its order temporarily suspending said License.

## VI. Need For Expedited Favorable Action

Licensee believes that it has shown good cause for the lifting of the NRC's Order temporarily suspending its license and a final determination by NRC that the license should not be revoked. Furthermore, the economic burden being experienced by Licensee requires that the lifting of the temporary suspension occur promptly. That is because the suspension has effectively put Licensee out of business.

During the first six months of 1983 Licensee performed 720 well logging and well perforating operations. Of these, 300 were logging of wells and 420 were perforating of wells. Perforating does not entail use of byproduct material and does not require an NRC license. At first blush it might appear that Licensee's well perforation business might stand on its own. However, that is not the case. Of total perforating jobs, 225 or 53.6% of the total, were performed on wells where Licensee had earlier also logged the wells. Thus, 73% of its business in the first half of 1983 was for wells on which Licensee performed both logging and perforation services.

That experience is consistent with 1982. Last year, 1,824 total jobs were performed with 67% (698 logging and 524 perforation)



of the jobs being performed on the same wells. Therefore, only 602 unrelated perforation jobs were performed, which accounted for only 33% of Licensee's total jobs.

The normal business practice in the Appalachian petroleum basin is for producers to purchase both logging and perforating services from the same company. Jobs are usually awarded on that basis. Licensee believes that if it had not been able to log the 300 wells it did in the first 6 months of 1983, or the 698 wells it logged in 1982, Licensee would have been able to perforate few, if any, of the wells which it also logged. Therefore, Licensee believes that common industry practice would have allowed Licensee to have perforated only those 195 wells in the first half of 1983 and those 602 wells in 1982 which it perforated without logging. That is the work which would have been left if the Company had not been licensed to use radioactive material.

Licensee believes that the surest way to evaluate the future impact of the currently enforced license suspension is to calculate its impact on past business as if the suspension had occurred during that past business. Therefore, accounting projections have been developed assuming that the logging and logging-related perforation jobs had not been performed during the respective accounting periods. Licensee is submitting, under separate cover and with an application for confidentiality, Tables A 1-3 and B 1-3, which provide total jobs, actual income and expense records and projected income and

expense records without logging-related business for the first half of 1983 and for 1982 respectively. In the projections, logging and logging-related perforation income and expenses were deleted based on their percentage contribution. Fixed costs unrelated to type of jobs performed were modified on a best estimation basis.


The bottom lines of these projections are that Licensee would have lost \$278,675.16 in the first half of 1983 and \$520,058.85 in 1982 without logging and logging-related perforations. This is a catastrophic impact, and is precisely the effect which Licensee is experiencing today because of the NRC's license suspension. Licensee believes it is losing \$10,718.28 each week, or \$1,531.18 each day this suspension continues. These estimates do not include any decontamination costs.

These losses are more than any small, family business can endure for any length of time. Since the logging business can be resumed without renewed threat to public health and safety, no regulatory or public interest mandates continued imposition of these losses. Prompt reinstatement of the NRC license is appropriate.

Licensee therefore respectfully requests that the temporary suspension of License No. 34-10445-01 be lifted promptly. Licensee conditionally requests a hearing to be conducted in the event that the NRC should deny its request for the lifting of the suspension

and/or should the NRC find that Licensee has not shown good cause as to why the license should not be revoked.

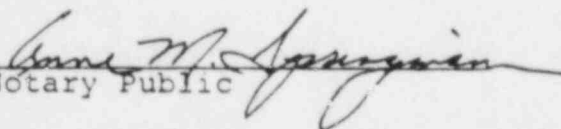
SHELWELL SERVICES, INCORPORATED

By   
Morey D. Shelton  
Vice-President

DISTRICT OF COLUMBIA, SS:

Sworn to before me and subscribed in my presence this  
17th day of October, 1983.

My Commission Expires January 1, 1984

  
Notary Public

Of Counsel:

Kathleen H. Shea, Esq.  
Lovenstein, Newman, Reis &  
Axelrad, P.C.  
1025 Connecticut Avenue, N.W.  
Washington, D.C. 20036  
(202) 862-8400

John W. Hoberg, Esq.  
Vorys, Sater, Seymour and Pease  
52 East Gay Street  
P.O. Box 1008  
Columbus, Ohio 43216  
(614) 464-6213



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

OCT 28 1983

License No. 34-10445-01  
EA 83-96

Shelwell Service, Inc.  
ATTN: Mr. Morey Shelton  
Vice President  
Route #1, Harbor Hills  
Hebron, OH 43025

Gentlemen:

We have reviewed your response to our September 20, 1983 Order to Show Cause and Order Temporarily Suspending License and will require you to provide certain information and make certain changes to your procedures, as described below, prior to our lifting of the suspension. The commitments you make in response to this letter will be confirmed by Order.

1. Removal of sources from their holders.

The Operating Procedures Manual is silent on the removal of sources from their holders. If the practice is prohibited, the manual should so state. If source changes from one holder to another are to be performed by operating engineers, station managers, or the radiation safety officer, a detailed procedure should be provided.

2. Handling of source holders.

A detailed procedure should be provided on the handling of source holders. These procedures should include but not be limited to instructions on the requirement to perform radiation measurement for both direct radiation and removable contamination; the personnel monitoring needed; who is authorized to handle the source holders and the requirement to use remote handling tools when feasible.

3. Radiation safety officer (RSO)

This individual and his alternate must be trained in radiation protection sufficient to oversee the program at Shelwell (i.e., training program must cover use of survey meters, instrument calibration, area survey procedures, leak test procedures, emergency procedures, etc.). It is not clear if Shelwell's RSO and alternate RSO have received training as outlined above.

Your response to the Order lists duties and responsibilities for the RSO. However, the same duties are listed for the Station Manager. You need to clarify who is ultimately responsible for these duties and it should be the RSO. In addition, his duties need to be expanded to include performing area exposure and contamination surveys at a certain frequency and ensuring all individuals using radioactive materials are authorized.



OCT 28 1983

## 4. Calibration of radiation survey instruments.

The current license has permitted in-house calibration of radiation survey instruments. The licensee should commit to suspension of in-house calibration and the calibrations should be performed by an independent, qualified organization.

## 5. Training

Past correspondence and items of noncompliance indicate that you have had no defined program for training of users or instructions to workers in accordance with 10 CFR 19.12. The response to the order indicates a training program to be given by Applied Health Physics and appears to indicate a refresher training in the audit program. However, the response does not specify whether this program will be used to fulfill 10 CFR 19.12 or to train users. You need to specify the instructor's name and qualifications, duration, outline, method of determining trainee competency, and frequency of refresher training for all types of training you intend to conduct.

## 6. Facilities

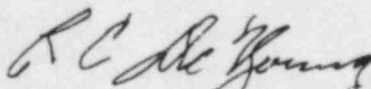
You should submit a description of the location, shielding, adjacent areas, and security for your new permanent storage and use areas.

## 7. Authorized users.

You should identify the operating engineers who will be using the sources, state that they are or will be properly certified, and that they will be physically present whenever licensed material is used.

A written response to this letter is required before the suspension can be lifted.

Sincerely,



Richard C. DeYoung, Director  
Office of Inspection and Enforcement



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

NOV 7 1983

License No. 34-10445-01  
EA 83-96

Shelwell Services Incorporated  
Route 1, Harbor Hills  
Hebron, Ohio 43025

Gentlemen:

Subject: Decision on Order to Show Cause and Order Temporarily Suspending  
License (Effective Immediately)

We have reviewed your responses to the Order to Show Cause and Order Temporarily Suspending License dated September 20, 1983. After careful consideration of your responses, the Director, Office of Inspection and Enforcement has determined that adequate cause has been shown and, therefore, the Order is rescinded subject to the enclosed Rescission of Suspension and Order Modifying License. This decision is based upon the determination that you have made improvements in your programs to comply with license requirements, and that the specific plans, procedures and changes, as described in your responses, if implemented as described, are adequate to enable you to conduct future activities in compliance with Commission requirements.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosed Order will be placed in the NRC's Public Document Room.

Sincerely,

Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Enclosure:

Rescission of Suspension and Order Modifying License

cc: Ohio Department of Health

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

UNITED STATES OF AMERICA  
NUCLEAR REGULATORY COMMISSION

In the Matter of	)	License No. 34-10445-01
	)	EA No. 83-96
SHELWELL SERVICES, INC.	)	
Route 1	)	
Hebron, Ohio 43025	)	

RESCISSION OF SUSPENSION AND ORDER MODIFYING LICENSE

I

Shelwell Services, Incorporated, Route 1, Harbor Hills, Hebron, Ohio, 43025 (the licensee) is the holder of a specific byproduct material license (No. 34-10445-01) issued by the Nuclear Regulatory Commission (the Commission) pursuant to, among other regulations, 10 CFR Part 30. The license was originally issued on October 27, 1964, and was most recently renewed on June 1, 1979, with an expiration date of July 31, 1984.

II

On September 14, 1983, the licensee advised the NRC of an incident at its facility on September 13, 1983 wherein a source had been cut into with the resultant release of cesium-137 in powder form. Subsequent investigation by the NRC Region III Office revealed that contamination had occurred onsite at the licensee's facility and at offsite locations, including residences of licensee workers. These findings resulted in the issuance to the licensee on September 20, 1983, of an Order Temporarily Suspending License, Effective Immediately, and an Order to Show Cause why the license should not be revoked. The Order was published in the Federal Register at 48 Fed. Reg. 43745 (September 26, 1983).

By a submittal dated October 17, 1983, the licensee responded to the Order. On that date, the licensee also submitted its proposed onsite decontamination plan as required by section IV.D. of the September 20th Order. By letter dated October 25, 1983, NRC Region III approved the licensee's decontamination plan subject to several restrictions.

In its October 17th response, the licensee described the actions it had taken following the incident. The licensee stated that it had fully complied with the terms of section IV of the Order. The licensee had stopped use of its byproduct material in compliance with section IV.d.A. of the Order. All byproduct material possessed by the licensee had been returned to its Hebron, Ohio facility, and stored in compliance with 10 CFR Part 20, as required by section IV.d.B. Offsite decontamination had been accomplished in accordance with section IV.d.C. of the Order, and had been verified by NRC site officials on October 6, 1983, to be in compliance with NRC criteria.

In its October 17 submittal, the licensee also described a revised Radiation Protection Program which would aid the licensee in complying with the terms of its license. As described by the licensee, its revised program included the development of radiation safety manuals, development of a quality assurance manual for its operating procedures manual, institution of an employee training program, the purchase of additional instrumentation, and the institution of



quality assurance audits to ensure that licensed activities were being carried out in accordance with its license. The licensee also stated that the incident had raised its "awareness level" as to the need to handle byproduct material in full compliance with regulatory and license requirements.

After a careful review of the licensee's October 17, 1983 response, it was determined that the licensee needed further clarification of its corrective action to assure that licensed activities will be performed safely and in accordance with regulatory requirements. Accordingly, on October 28, 1983, members of the NRC staff met with licensee representatives at NRC offices in Bethesda, Maryland. At the meeting, the licensee submitted additional information regarding its corrective action, including an amended Operating Procedures Manual, an amended outline for a Quality Assurance Manual, and a Radiological Health Training Manual. By letter dated October 28, 1983, the NRC required the licensee to provide additional information and make certain changes to its procedures before the NRC could rescind the suspension order. The licensee provided supplemental information by letter of that same date.

The proposed corrective actions provided in the licensee's submittals appear to be adequate to assure that the licensee will be able to use byproduct material in compliance with its license and NRC regulations. The licensee has shown cause why License No. 34-10445-01 should not be revoked and has shown that, subject to the implementation of the proposed improvements in its

licensed program, licensed activities can be performed under its license without undue risk to the public health and safety. Accordingly, I have determined that the public health, safety and interest requires that any continued operation be subject to the conditions set forth in section III. Therefore, I have further determined that subject to these conditions its license suspension may be rescinded.

### III

In view of the foregoing and pursuant to sections 81 and 761b of the Atomic Energy Act of 1954, as amended, and the Commission's regulations in 10 CFR Parts 2 and 30, it is hereby ordered that:

- A. License No. 34-10445-01 is modified to include the licensee's statements, representations, and procedures as indicated in the following documents submitted to the NRC:
- (1) October 17, 1983, response to the NRC's September 20, 1983, Order to Show Cause and Order Temporarily Suspending License,
  - (2) October 28, 1983, response to the NRC with appendices amending the licensee's October 17, 1983, response;
  - (3) October 28, 1983, response to the NRC identifying operating engineers who will be certified and properly trained to handle licensed materials;

- (4) October 28, 1983, response to NRC questions dated October 28, 1983; and
  - (5) An undated letter received on October 28, 1983 addressed to Radioisotopes Licensing Branch, Division of Fuel Cycle and Material Safety, NRC, addressing the licensee's new operating facility in Mt. Sterling, Illinois.
- B. License No. 34-10445-01 is further modified to require no later than March 31, 1984 a qualified Assistant Radiation Safety Officer who is trained to the same level of competence as the Radiation Safety Officer.

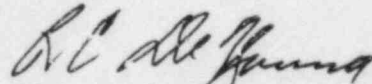
#### IV

The licensee may request a hearing within 20 days of the date of publication of this Order in the Federal Register. Any request for a hearing shall be addressed to the Director, Office of Inspection and Enforcement, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. A copy of any such request shall also be sent to the Executive Legal Director at the same address.

If a hearing is to be held, the Commission will issue an Order designating the time and place of any such hearing. If a hearing is held concerning this Order, the issue to be considered at the hearing shall be whether the licensee should comply with the requirements set forth in section III of this Order.

The Order modifying license set forth in section III shall become effective upon the licensee's consent or upon expiration of the time within which the licensee may request a hearing or, if a hearing is requested by the licensee, on the date specified in an Order issued following further proceedings on this Order. The suspension of licensed activities imposed by the Order of September 20, 1983 is rescinded upon the effectiveness of the Order set forth in section III.

FOR THE NUCLEAR REGULATORY COMMISSION



Richard C. DeYoung, Director  
Office of Inspection and Enforcement

Dated at Bethesda, Maryland  
this ~~7<sup>th</sup>~~ day of November 1983



II.B. MATERIAL LICENSEES, SEVERITY LEVEL III VIOLATIONS,  
NO CIVIL PENALTY



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION V

1450 MARIA LANE, SUITE 210  
WALNUT CREEK, CALIFORNIA 94596

NOV 10 1983

License No. 50-16084-01  
EA 83-100

Alaska Industrial X-Ray  
4047 Kingston Drive  
Anchorage, Alaska 99504  
Attention: Mr. Peter Millar, President

Gentlemen:

Subject: NRC Inspection

This refers to the routine safety inspection conducted by Mr. M. Grayson of this office on July 26, 1983 of activities authorized by NRC License No. 50-16084-01 and to the discussion of our findings between you and Mr. M. Grayson at the conclusion of the inspection. The results of this inspection were also discussed with you during the October 7, 1983 Enforcement Conference held at the Region V office.

The inspection was an examination of the activities conducted under your license as they relate to radiation safety and to compliance with the Commission's rules and regulations and the conditions of your license. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector.

Based on the results of this inspection, it appears that a number of your activities were not conducted in full compliance with NRC requirements, as set forth in the Notice of Violation enclosed as Appendix A to this letter.

The violations would have been categorized individually as Severity Level IV and V violations. However, taken collectively, and considering the fact that several are similar to previously cited violations, these violations have been categorized in the aggregate as a Severity Level III problem in accordance with the NRC Enforcement Policy (10 CFR 2, Appendix C). Normally, a civil penalty is proposed for a Severity Level III problem. However, we have exercised our discretion, after our discussion with you during the enforcement conference and after consultation with the Director of the Office of Inspection and Enforcement, and have decided not to propose a civil penalty in this case. In making this decision, we have considered two facts: (1) the majority of the violations identified during this inspection were administrative in nature and did not present an immediate safety hazard and (2) you have taken comprehensive corrective measures to preclude any future recurrences. Similar violations in the future may result in escalated enforcement action.

You are required to respond to the enclosed Notice and should follow the instructions specified therein when preparing your response. Your written

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Alaska Industrial X-Ray

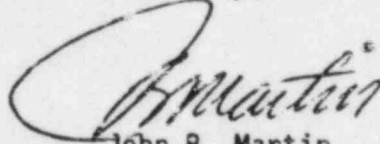
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reply to this letter and the results of future inspections will be considered  
in determining whether further enforcement action is appropriate

The responses directed by this letter and the enclosed Notice of Violation  
to the clearance procedures of the Office of Management and Budget, subject  
required by the Paperwork Reduction Act of 1980, PL 96-511. , wise

Sincerely,



John B. Martin  
Regional Administrator

Enclosure:  
Appendix A - Notice of Violation

## APPENDIX A

### NOTICE OF VIOLATION

Alaska Industrial X-Ray  
4047 Kingston Drive  
Anchorage, Alaska 99504

License No. 50-16084-01  
EA 83-100

As a result of the inspection conducted on July 26, 1983, and in accordance with the NRC Enforcement Policy, 10 CFR Part 2, Appendix C, the following violations were identified:

- A. License Condition 8, states that the maximum amount of radioactive material that the licensee may possess at any one time under this license shall not exceed 100 Ci of Ir-192 per source. License Condition 13, states that the licensee is authorized to receive, possess, and use sealed sources of Ir-192 where the radioactivity exceeds the maximum amount of radioactivity specified in Item 8 of this license provided:

1. Such possession does not exceed the quantity per source specified in Item 8 by more than 20 percent for Ir-192;
2. The licensee's records show that no more than the maximum amount of radioactivity per source specified in Item 8 of the license was ordered from the supplier or transferor of the byproduct material.

Contrary to the above requirements, at the time of the inspection, the licensee's Radiation Safety Officer stated that he had ordered and received 120 curies of Ir-192 from Industrial Nuclear Company. The invoice for this shipment (Number 881-306001, dated June 1, 1983) identified the materials as one 120-Ci Ir-192 source Model Number 8, Serial Number 274.

- B. 10 CFR 34.24 requires that radiation survey meters be calibrated quarterly.

Contrary to the above requirement, survey meter number 1702 was calibrated on June 28, 1982 and was not calibrated again until February 3, 1983, a period in excess of seven months. This survey meter was used in radiographic operations on January 5 and 7, 1983. During a previous inspection on August 6, 1981 you were cited for a similar violation.

- C. 10 CFR 34.43(b) and (c) requires that a survey with a radiation survey instrument be made after each radiographic exposure to determine that the sealed source has been returned to the shielded position. The entire circumference of the radiographic exposure device is required to be surveyed including the guide tube. A record is required to be maintained when the survey is the last survey prior to locking the radiographic exposure device.

Contrary to the above requirement, on May 12, 1983, June 23, 1983, June 27, 1983, and June 28, 1983, the licensee failed to document the



final surveys of radiographic exposure devices used on those days prior to locking the devices.

- D. 10 CFR 34.11(d) requires that licensees have an internal inspection system adequate to assure that the Commissions regulations, Commission license provisions, and the licensee's operating and emergency procedures are followed. The inspection system shall include the performance of internal inspections at intervals not to exceed three months and the retention of records of such inspections for two years.

Contrary to the above requirement, the licensee performed internal inspections on January 11, 1982, and not again until January 7, 1983, a period in excess of 3 months.

- E. 10 CFR 20.205(c)(1) requires each licensee who receives a package which contains quantities in excess of Type A limits specified in 20.205(b), to monitor the radiation levels external to the package. 10 CFR 20.401 requires licensees to keep records of monitoring made pursuant to 10 CFR 20.205(c)(1).

Contrary to the above requirement, the licensee received a 120-Ci Ir-192 source, serial number 274, on June 6, 1983, and failed to maintain records of monitoring radiation levels external to the package.

- F. 10 CFR 20.201(b) requires each licensee to make or cause to be made such surveys as may be necessary for the licensee to comply with the regulations in 20.105 for permissible levels of radiation in an unrestricted area. 10 CFR 20.401(b) requires that the licensee maintain records of the results of surveys required by 20.201(b).

Contrary to the above requirement, on February 8, 1983, the RSO at the Wantana job and other licensee representatives on May 10, 13, 17, 18, 20, and 21, 1983, failed to maintain records of surveys made pursuant to 20.105 to establish unrestricted area boundaries. During a previous inspection on August 6, 1981 you were cited for a similar violation.

- G. 10 CFR 34.33(a) requires that pocket dosimeters be recharged at the start of each shift.

Contrary to the above requirement, on January 14, 1982, a licensee representative failed to recharge his pocket dosimeter. A second licensee employee on January 10, 1983, also failed to recharge his pocket dosimeter at the start of the shift.

- H. 10 CFR 34.33(b) requires that pocket dosimeters be read and recorded daily.

Contrary to the above requirement, records were not maintained of pocket dosimeter readings on May 10, 13, 17, 18, 20, and 21, 1983. During a previous inspection on August 6, 1981 you were cited for a similar violation.

- I. 10 CFR 34.25 requires licensees to test each radiographic sealed source for leakage at intervals not to exceed six months.

Contrary to the above requirement, a radiographic sealed source number 992, which was leak tested at the manufacturer's establishment on September 9, 1982, was utilized on March 30 and 31, 1983, six months and 22 days after it was last leak tested.

- J. License Condition 12.6 states that radiographic sealed sources which are being stored and not being used are exempted from the six-month leak test requirement in Section 34.25. The sources excepted from this test shall be tested for leakage before any use or transfer to another person, unless they have been leak tested within six months of the date of use or transfer.

Contrary to the above requirement, the licensee received radiographic sealed source number 646 on October 21, 1981, leak tested the source on December 30, 1981, but failed to leak test the source on September 11, 1982, which was over eight months since the last leak test, before transfer back to the manufacturer.

- K. 10 CFR 34.28, and Item 17 of the license which incorporates pages 16B-20B of the licensee's Radiation Safety Manual, require licensees to conduct a program for inspection and maintenance of radiographic exposure devices, storage containers, and source changers at intervals not to exceed three months. Records of these inspections and maintenance shall be kept for two years.

Contrary to the above requirement, quarterly audits of radiographic devices have not taken place since the last inspection. Daily inspection of radiographic devices for obvious defects cannot be substituted for the more rigorous quarterly audits.

- L. 10 CFR 34.27 requires each licensee to maintain current utilization logs, which shall be kept available for two years from the date of the recorded event, at the address specified in the license. This log is required to include (a) a description of the radiographic exposure device, (b) the identity of the radiographer, and (c) the date and location of use.

Contrary to the above requirement, on May 10, 13, 17, 18, 20, and 21, 1983 the licensee used radiographic exposure devices and failed to maintain a utilization log.

- M. 10 CFR 34.31 requires that the licensee shall not permit any individual to act as a radiographer until such an individual has been instructed in

the subjects outlined in 10 CFR, Part 34, Appendix A, and has demonstrated an understanding of these subjects by successful completion of a written examination. Records of the above training, including copies of written tests, shall be maintained for three years.

Contrary to the above requirements, at the time of the inspection, the licensee failed to maintain copies of written examinations for three radiographers.

- N. License Condition 17, states that the licensee shall possess and utilize licensed materials in accordance with statements, representations, and procedures contained in application dated May 15, 1979, as amended by letter dated November 19, 1979.

1. Item 7, Page 45B, of the licensee's Radiation Protection Manual, as amended, provided as an attachment to the May 15, 1979 application, states that the licensee will conduct yearly audits of the licensee's quality assurance program for packaging and shipping of radiographic devices.

Contrary to the above requirement, quality assurance audits of the licensee's program for packaging and shipping of radiographic devices were not conducted between the last inspection on August 6, 1981 and this inspection on July 26, 1983, a period in excess of 23 months.

2. Page 13A, entitled "Daily Radiation Totals," of the licensee's Radiation Protection Manual provided as an attachment to the May 15, 1979 application, requires an individual who receives more than 20 millirems in any one day to provide a written report to the manager.

Contrary to the above requirement, when on January 14, 1982, a licensee employee received 40 millirems and on May 11, 1983, when a licensee employee received 30 millirems, written reports were not provided to the manager. During a previous inspection on August 6, 1981 you were cited for a similar violation.

3. Item 12, Page 5A, of the licensee's Radiation Protection Manual provided as an attachment to the May 15, 1979 application, states that only by constant overall surveillance including routine checking and reviewing, and by periodic checks of radiographers and equipment as required by Alaska Industrial X-Ray and NRC regulations, can a good safety program be maintained. A monthly review and report of the surveillance of the radiographic protection program shall be made.

Contrary to the above requirement, at the time of the inspection, the radiation safety officer stated that monthly reviews were not performed on a regular basis and that no reports of these reviews were maintained.



4. Section IV, Page 19C, of the licensee's Radiation Protection Manual as revised by the November 19, 1979 letter, states that "Personnel shall receive periodic or refresher training at a minimum of once yearly."

Contrary to the above requirement, annual refresher training has not taken place from September 1981 to the date of this inspection on July 26, 1983, a period of 22 months. During a previous inspection on August 6, 1981 you were cited for a similar violation.

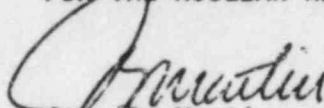
5. Item 2, Page 8B, of the licensee's Radiation Protection Manual provided as an attachment to the May 15, 1979 application, states that monthly film badge reports shall be displayed on the company bulletin board for one week or until superseded by the next report.

Contrary to the above requirement, at the time of the inspection, monthly exposure film badge reports were not posted. The RSO stated that these reports were not being posted. The need to post these reports or to amend the license was discussed with the RSO during the last NRC inspection on August 6, 1981.

Collectively the above violations have been evaluated as a Severity Level III problem (Supplement VI).

Pursuant to the provisions of 10 CFR 2.201, Alaska Industrial X-Ray is hereby required to submit to this office within thirty days of the date of this Notice, a written statement or explanation in reply, including: (1) the corrective steps which have been taken and the results achieved; (2) corrective steps which will be taken to avoid further violations; and (3) the date when full compliance will be achieved. Consideration may be given to extending your response time for good cause shown.

FOR THE NUCLEAR REGULATORY COMMISSION



John B. Martin  
Regional Administrator

Dated at Walnut Creek, California  
this      day of November 1983

NOV 10 1983





UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION I  
821 PARK AVENUE  
KING OF PRUSSIA, PENNSYLVANIA 19406

October 24, 1983

Docket Nos. 030-04579  
030-04581  
030-04704

EA 83-115

New England Nuclear Corporation  
ATTN: M. A. Stolberg  
President  
575 Albany Street  
Boston, Massachusetts 02118

Gentlemen:

Subject: Notice of Violation (Inspection Nos. 83-01 and 83-02)

This refers to the inspection conducted by Messrs. C. Rowe and J. Nicolosi of this office on April 25 - 29, 1983 and to the inspection conducted by Mr. Nicolosi on June 27 - 28, 1983, of activities authorized by NRC License Nos. 20-00320-09, 20-00320-13, and 20-11868-01. The reports of these inspections were forwarded to you on September 10, 1983. The inspections were conducted to review the circumstances associated with three violations of NRC requirements which were identified by your staff and reported to the NRC. These violations were discussed at an enforcement conference held with members of your staff on September 27, 1983. At that conference, the cause of the violations and your corrective actions were also discussed.

The first violation involved exposure of a worker to concentrations of airborne radioactive material in excess of the quarterly limit. The radiation dose received by the individual from exposure to these concentrations was not in excess of regulatory limits. The exposure occurred after a glass reaction flask containing tritium cracked during flame sealing, thereby releasing airborne tritium and causing the exposure. The second violation involved transportation of packages containing licensed material with dose rates in excess of regulatory limits. The causes of this violation included: (1) inadequate shielding of the radioactive material because of voids in the lead shielding; (2) use of nonconservative acceptance criteria which was very close to the transport limit programmed into the radiation level measurement system computer; and, (3) inadequate determination of background radiation measurements because of other packages containing radioactive material in the areas where such measurements were taken. The third violation involved shipment of a cask containing licensed material when the cask was thought to be empty. As a result, the cask was mislabeled, and the shipping papers were incorrect. This violation occurred because of inadequate control of incoming and outgoing casks in that they were stored in the same area. Therefore, a cask, mistakenly thought to be empty, was shipped back to the original supplier.

These violations have each been categorized as Severity Level III in accordance with the NRC Enforcement Policy (10 CFR 2, Appendix C). Normally, a civil penalty is proposed for a Severity Level III violation; however, we have exercised our discretion, after consultation with the Director of the Office of Inspection

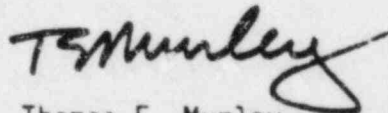
and Enforcement, and have decided not to propose civil penalties for these violations. In making this decision, we have considered the facts that (1) the first event, involving rupture of the glass reaction flask, appears to be an isolated occurrence caused by equipment failure; (2) each event was promptly reported to the NRC by telephone and in writing, even though the two transportation events were not required to be reported; and (3) your corrective actions were prompt and comprehensive. Nonetheless, we emphasize that similar violations in the future may result in additional enforcement action.

You are required to respond to the enclosed Notice and should follow the instructions specified therein when preparing your response. In your response you should also include a description of your quality assurance program for all shipping containers to ensure that all components meet critical specifications and that future shipments comply with all appropriate requirements. Your written reply to this letter and the results of future inspections will be considered in determining whether further enforcement action is appropriate.

In accordance with 10 CFR 2.790, a copy of this letter and its enclosures will be placed in the NRC Public Document Room.

The responses directed by this letter and the enclosed Notice are not subject to the clearance procedures of the Office of Management and Budget, as required by the Paperwork Reduction Act of 1980, PL 96-511.

Sincerely,



Thomas E. Murley  
Regional Administrator

Enclosure: Notice of Violation

cc:  
Public Document Room (PDR)  
Nuclear Safety Information Center (NSIC)  
Commonwealth of Massachusetts (2)

## NOTICE OF VIOLATION

New England Nuclear Corporation  
Boston, Massachusetts 02118

Docket Nos. 030-04579  
030-04581  
030-04704  
License Nos. 20-00320-09  
20-00320-13  
20-11868-01  
EA No. 83-115

On April 25 - 29, 1983 and June 27 - 28, 1983, NRC inspections were conducted to review the circumstances associated with three violations of NRC requirements which were reported to the NRC by New England Nuclear Corporation (NENC).

### EVENTS ASSOCIATED WITH VIOLATION A

On November 16, 1981, a laboratory technician was exposed to the equivalent of 1248 maximum permissible concentration (MPC) hours of tritium, which is 2.4 times the limit specified in 10 CFR 20. This event was reported to the NRC at that time by telephone. A followup report was provided the NRC in a letter dated December 10, 1981.

A review of this incident indicated that a worker was flame sealing a glass reaction flask containing 30 curies of tritium in an exhaust hood. This procedure, approved by the Radiation Safety Committee, is performed daily. For reasons that could not be determined during the licensee's evaluation and review, the flask cracked and permitted the tritium to be released. Although the maximum permissible concentration for airborne tritium was exceeded, dose calculations by the licensee indicated that the worker's whole body absorbed dose from this exposure was 900 millirem. The dose was limited by the timely action of the supervisory staff in decontaminating the worker immediately.

### EVENTS ASSOCIATED WITH VIOLATION B.1

In November, 1981, NENC shipped two molybdenum-99/technetium-99m generators with Radioactive Yellow III labels. Their clients measured radiation levels exceeding 200 milliroentgen per hour at the surface and 10 milliroentgen per hour at one meter. NENC promptly informed the NRC of the event by telephone and also in letters dated December 12, 1981, and January 13, 1982.

Licensee evaluation of the incidents identified three problems, namely, (1) the generator lead pigs contained voids which provided less than adequate shielding, allowing narrow directional beams of radiation which were not detected at the final transport index check; (2) the acceptance criterion programed into the external radiation level measurement system computer was not conservative in that it was very close to the transport limit; and, (3) a large number of generator packages in the adjacent loading dock area increased background radiation significantly, making accurate measurements difficult.



EVENTS ASSOCIATED WITH VIOLATION B.2

On June 8, 1983, an NENC representative reported to the NRC by telephone that a Type B quantity of sulfur-35 in a sealed capsule had been inadvertently shipped on June 2, 1983, in what was thought to be an empty container. As a result, the package was mislabeled and shipping papers were incorrect. A written report was also provided to the NRC.

NENC had originally received a shipment of sulfur-35 from the University of Missouri on June 1, 1983, and it was placed in temporary storage to await processing. Incoming and outgoing shipping casks were stored in the same area. This cask, with the security seal still intact, was mistakenly thought to be empty by a lab technician. Though it was not clear how the cask was labeled as "empty," this cask, along with four other empty casks, were shipped back to the original supplier. The labels on the cask and the shipping papers indicated that the container was empty except for its uranium shielding. Once NENC personnel recognized what had happened, they immediately traced the container to the original shipper and notified them that the cask still contained the sulfur-35. The original shipper found that their original security seal was intact.

Normally, civil penalties are proposed for Severity Level III violations or events; however, civil penalties have not been proposed for these violations because (1) the violations were promptly identified and reported to the NRC by telephone and in writing; and, (2) corrective actions were prompt and comprehensive. In addition, Violation A does not appear to have been the result of either improper training or inadequate procedures. In accordance with the NRC Enforcement Policy (10 CFR 2, Appendix C), the particular violations associated with these events are set forth below:

- A. 10 CFR 20.103(a)(1) requires that no individual in a restricted area be exposed to radioactive material such that the uptake by any organ from either inhalation or absorption or both routes of intake in any calendar quarter exceed that which would result from inhaling such radioactive material for 40 hours per week for 13 weeks - in other words, 520 hours at the maximum permissible concentration specified in 10 CFR 20, Appendix B, Table I, Column 1.

Contrary to the above, as a result of the cracking of a glass reaction flask, one individual working in the restricted area during the fourth calendar quarter of 1981 was exposed to tritium in an amount equivalent to 1,248 MPC hours for the tritium limit specified in 10 CFR 20, Appendix B, Table I, Column 1, and this 1,248 MPC hours is in excess of the limits of 10 CFR 20.103(a)(1).

This is a Severity Level III violation (Supplement IV).

- B. 10 CFR 71.5(a) requires that no licensee deliver any licensed material to a carrier for transport without complying with the applicable requirements of the regulations, appropriate to the mode of transport, of the Department of Transportation in 49 CFR Parts 170 - 189.



1. 49 CFR 173.393(i) requires that all radioactive material be packaged in suitable packaging so that at any time during normal conditions incident to transportation, the radiation dose rate does not exceed 200 millirem per hour at any point on the external surface of the package and the transport index does not exceed 10.

Contrary to the above, packages containing molybdenum-99/technetium-99m generators were shipped by the licensee in November, 1981, and were received at Las Vegas, Nevada, and Lubbock, Texas, on November 10, 1981 and December 11, 1981, respectively, and the packages had respective radiation dose rates of at least 220 and 400 millirem per hour at the surface and respective transport indices of 12 and 12.

This is a Severity Level III violation (Supplement V).

2. 49 CFR 172.403(g) requires that each package of radioactive material, unless excepted from labeling by §173.391 or §173.392, be labeled, as appropriate, with content and the number of curies.

49 CFR 172.202(a)(1) requires that the shipping papers include the proper shipping name described in 172.101 or 172.102.

Contrary to the above, on June 3, 1983, a package containing a Type B quantity of sulfur-35 shipped from NENC was received at Columbia, Missouri, and the Radioactive Yellow-III label and the shipping papers did not identify the contents as sulfur-35.

This is a Severity Level III violation (Supplement V).

Pursuant to the provisions of 10 CFR 2.201, New England Nuclear Corporation is hereby required to submit to this office within thirty days of the date of the letter which transmitted this Notice, a written statement or explanation in reply, including: (1) the corrective steps which have been taken and the results achieved; (2) corrective steps which will be taken to avoid further violations; and (3) the date when full compliance will be achieved. Where good cause is shown, consideration will be given to extending this response time.



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION III  
799 ROOSEVELT ROAD  
GLEN ELLYN, ILLINOIS 60137

NOV 3 1983

License No. 12-17577-01  
EA 83-119

Charles O'Brien and Son  
Construction Company, Inc.  
ATTN: John O'Brien  
President  
P. O. Box 627  
Morris, IL 60450

Gentlemen:

This refers to the telephone conversations between Ms. Lucille O'Brien of your company, Messrs. D. G. Wiedeman and W. P. Reichhold and Ms. R. M. Douglas of this office concerning activities authorized by License No. 12-17577-01 which expired on July 31, 1982.

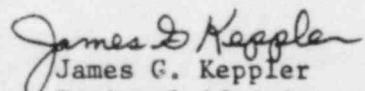
The telephone conversations between May 19, 1983 and October 12, 1983 related to the sale of your Troxler Model 3411 moisture-density gauge to persons not authorized to possess radioactive byproduct material.

We regard transfer of licensed material to unauthorized recipients as a serious matter. We would normally propose a civil penalty for such a violation. However, after reviewing the circumstances of this matter including the information provided in your letter dated September 8, 1983 concerning your financial hardship and the fact that you are no longer in operation, we have decided not to propose a civil penalty.

In accordance with Section 2.790 of the NRC's "Rules of Practice," Part 2, Title 10, Code of Federal Regulations, a copy of this letter and the enclosures will be placed in the NRC's Public Document Room.

We will gladly discuss any questions you have concerning this matter. No response to this letter is required by you.

Sincerely,

  
James G. Keppler  
Regional Administrator

Enclosure: Notice of Violation

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

NOTICE OF VIOLATION

Charles O'Brien and Son  
Construction Company, Inc.  
P. O. Box 627  
Morris, IL 60450

License No. 12-17577-01  
EA 83-119

As a result of the information obtained between May 19, 1983 and October 12, 1983, and in accordance with the NRC Enforcement Policy, 47 FR 9987 (March 9, 1982), the following violations were identified:

1. 10 CFR 30.41 (a) states that a licensee shall not transfer byproduct material except in accordance with the rules in Section 30.41. Section 30.41 (b) states that the licensee may transfer byproduct material provided certain requirements are met. Section 30.41 (b)(5) states that byproduct material may be transferred to any person authorized to receive such byproduct material under terms of a specific license or a general license or their equivalents issued by the Commission, or an Agreement State.

Contrary to the above, Charles O'Brien and Son Construction Company, Inc. transferred byproduct material to an individual who was not authorized to receive this material. Specifically, a Troxler Model 3411 moisture-density gauge containing 10 millicuries of cesium-137 and 50 millicuries of americium-241 was transferred to an equipment company that did not have a license authorizing them to receive the byproduct material contained in the gauge.

This is a Severity Level III violation (Supplement VI).

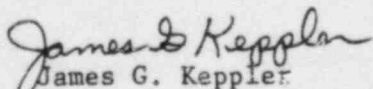
2. License Condition 13.A states that each sealed source containing licensed material shall be tested for leakage at intervals not to exceed six months.

Contrary to this requirement, based upon statements of licensee representatives, tests for leakage were not performed every six months.

This is a Severity Level IV violation (Supplement VI).

Since the licensee no longer possesses any licensed material and since License No. 12-17577-01 has expired, no response to this letter is necessary.

FOR THE NUCLEAR REGULATORY COMMISSION

  
James G. Keppler  
Regional Administrator

Dated at Glen Ellyn, Illinois  
this 3<sup>RD</sup> day of November 1983



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
REGION II  
101 MARIETTA STREET, N.W.  
ATLANTA, GEORGIA 30303

NOV 22 1983

Westinghouse Electric Corporation  
Attn: Mr. W. H. Britton, Manager  
Columbia Plant  
Nuclear Fuel Division  
Drawer R  
Columbia, SC 29250

Gentlemen:

SUBJECT: IMPROPER SHIPMENT OF LOW-LEVEL RADIOACTIVE WASTE (EA 83-107)  
REFERENCE INSPECTION REPORT NO. 70-1151/83-18, LICENSE NO. SWM-1107

This refers to the special safety inspection conducted by Region II at the Westinghouse Electric Corporation's Nuclear Fuel Division facility on August 17-19, 1983. The inspection included a review of the status of compliance with NRC requirements for control of radioactive wastes onsite and during the transportation of radioactive waste for subsequent burial or other disposal. The findings of the inspection were discussed by the Region II Regional Administrator with Mr. Meade D'Amore, Manager, Nuclear Fuel Division Operations, and members of the Columbia plant staff at an Enforcement Conference held in the Region II office in Atlanta, Georgia on September 7, 1983. The proceedings of the Enforcement Conference and a list of those who attended is presented in the enclosed inspection report.

The inspection findings reveal that the system for determining and controlling pyrophoric materials was inadequate at the Columbia facility. As a result of this deficiency, a fire occurred in a burial trench at the waste disposal facility in Barnwell, South Carolina, on August 11, 1983. It was fortuitous that the fire occurred in the burial trench where it was easily extinguished. Had the material ignited while in transit, the consequences of this event could have been significant.

Your activities in this instance were conducted in apparent violation of NRC requirements. The violation and references to pertinent NRC requirements are described in the enclosed Notice of Violation. Under the General Statement of Policy and Procedure for Enforcement Action, 10 CFR Part 2, Appendix C, this violation has been categorized as a Severity Level II, due to the substantial potential in this instance for serious contamination of the

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RETURN RECEIPT REQUESTED



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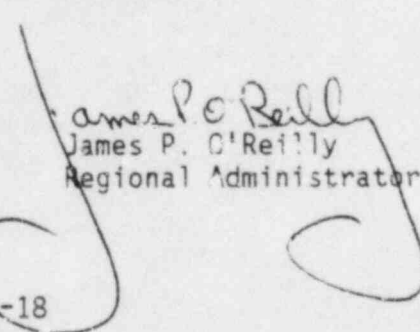
environment and exposure to the public. The improperly packaged pyrophoric materials you transported actually ignited, although fortunately, this occurred at the burial site. Had it occurred in transit, smoke containing radioactive contamination could have caused widespread health and safety problems. The violation would normally result in the NRC issuing a civil penalty. In this case, since the State of South Carolina has already imposed a civil penalty, no civil penalty will be proposed by the NRC. However, you are required to respond to the Notice of Violation. Elements to be included in your response are delineated in the Notice. You may, for convenience, reference other written correspondence to the NRC regarding this matter in your response.

In accordance with 10 CFR 2.790(a), a copy of this letter, its enclosures, and your reply will be placed in the NRC's Public Document Room upon completion of our evaluation of the reply. If you wish to withhold information contained in the inspection report, please notify this office by telephone or include a written application, to withhold information contained therein, in your response. Such application must be consistent with the requirements of 2.790(b)(1).

The responses directed by this letter and the enclosures are not subject to the clearance procedures of the Office of Management and Budget as required by the Paperwork Reduction Act of 1980, PL 96-511.

Should you have any questions concerning this letter, we will be glad to discuss them with you.

Sincerely,

  
James P. O'Reilly  
Regional Administrator

Enclosures:

1. Notice of Violation
2. Inspection Report No. 70-1151/83-18

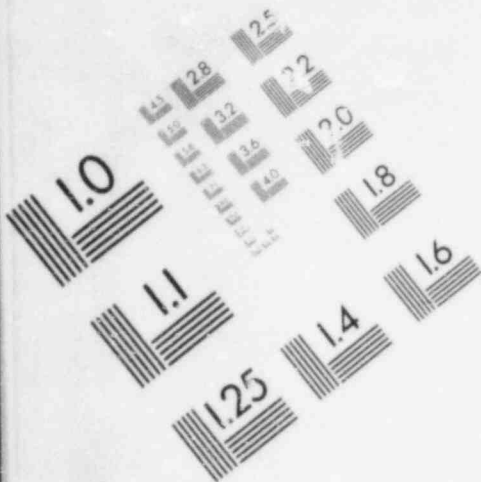


IMAGE EVALUATION  
TEST TARGET (MT-3)

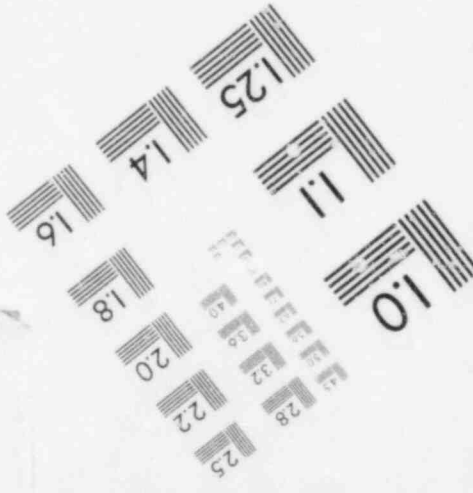
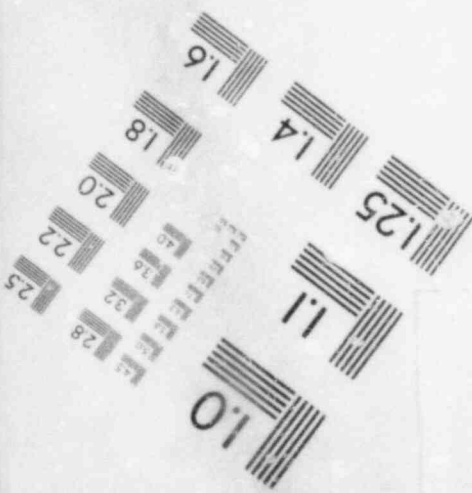
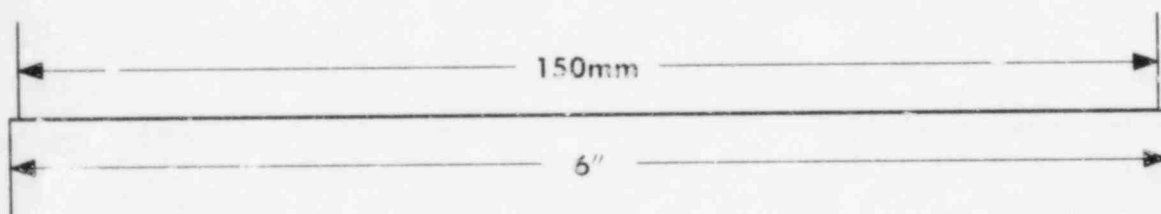
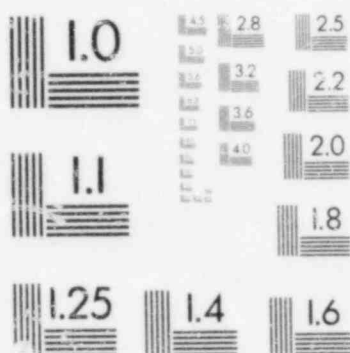
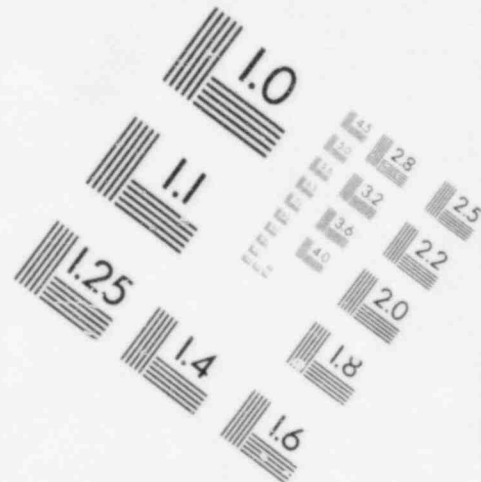
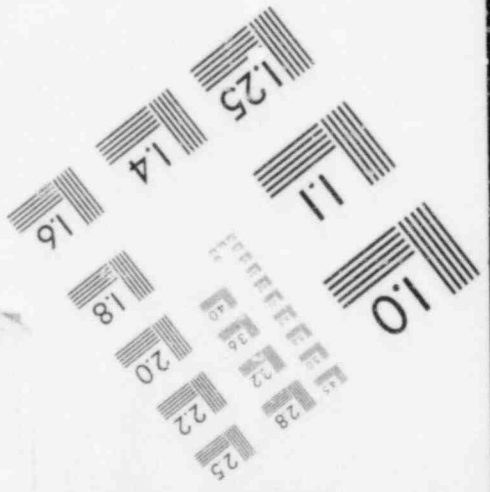
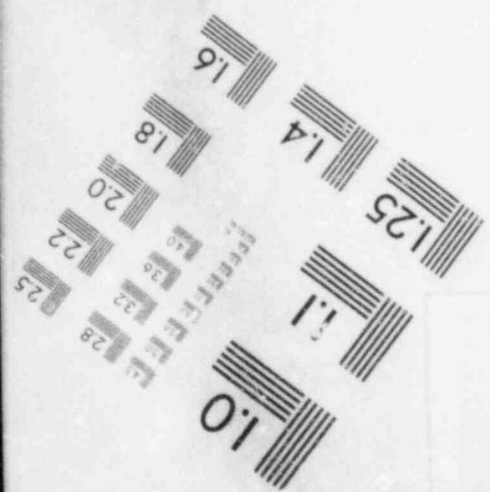
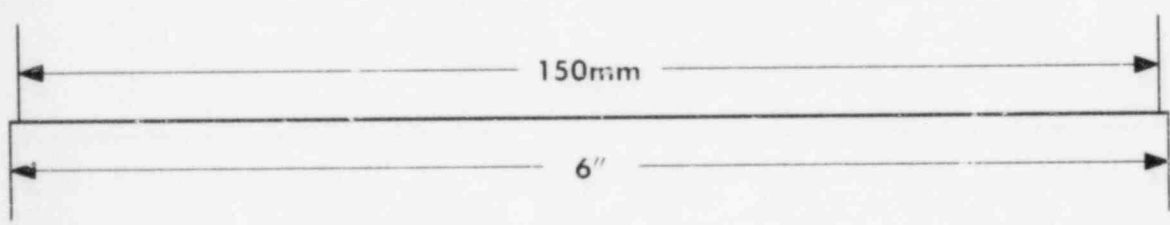
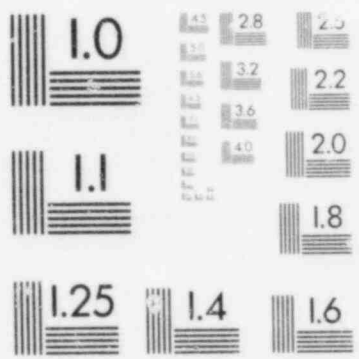
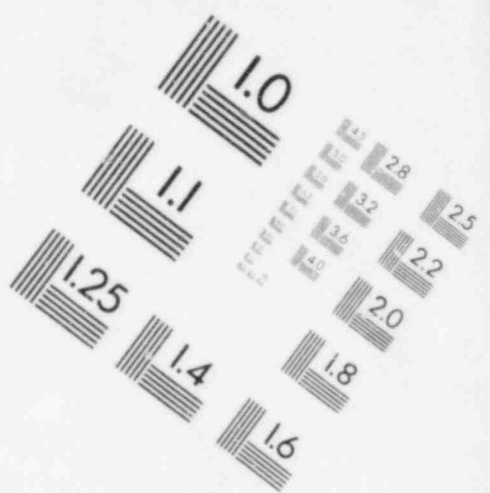
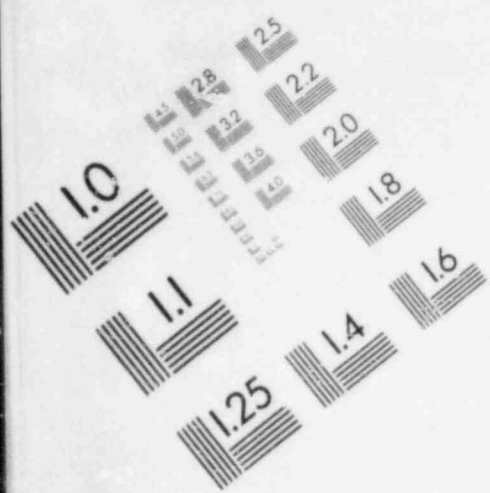


IMAGE EVALUATION  
TEST TARGET (MT-3)



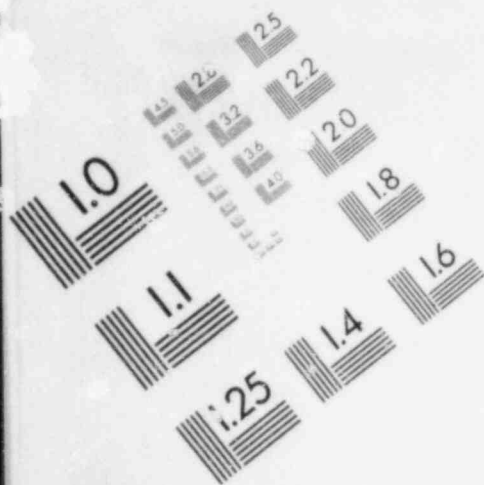
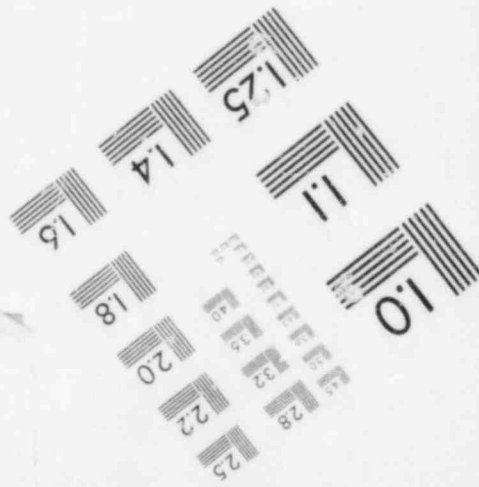
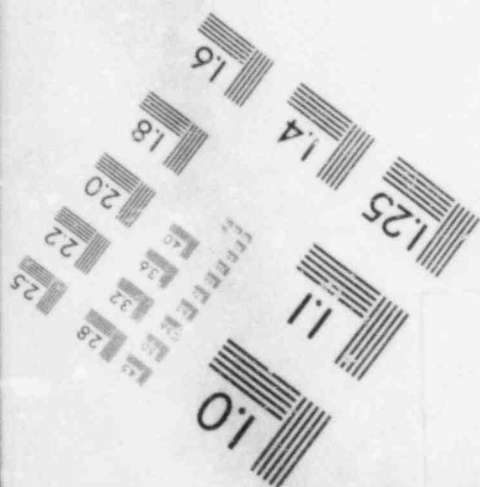
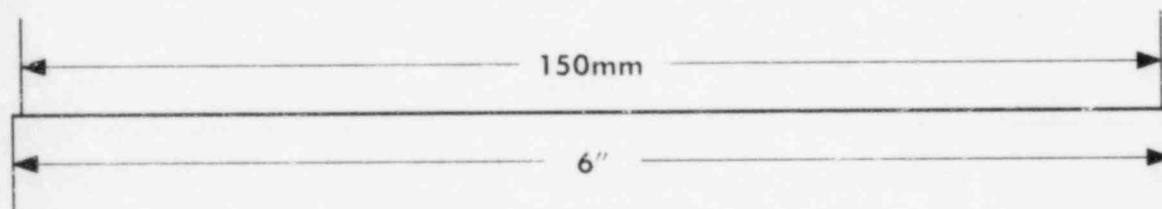
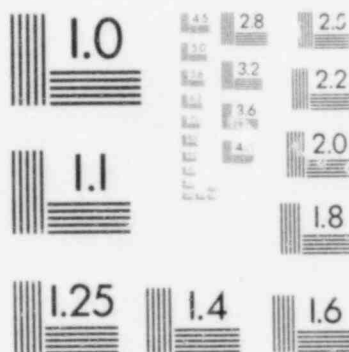
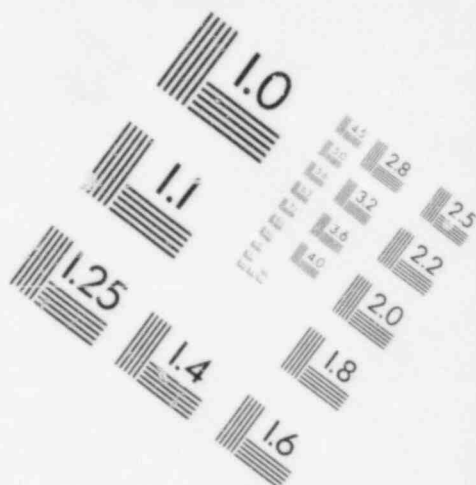


IMAGE EVALUATION  
TEST TARGET (MT-3)





APPENDIX A

NOTICE OF VIOLATION

Westinghouse Electric Corporation  
Columbia Nuclear Fuel Fabrication Plant

Docket No. 70-1151  
License No. SNM-1107  
EA 83-107

As a result of the inspection conducted on August 17 - 19, 1983, the following violation was identified.

License Condition 9 requires the licensee to use its licensed material in accordance with its application dated December 30, 1976. Section 3.1.4 of the application states that the shift supervisor will enforce operating procedures.

Operating Procedure WRD 1001, Low Level Contaminated Wastes, states that zirconium chips and turnings will be solidified in cement and placed in crates for shipment.

10 CFR 71.5(a) requires a licensee, who transports any licensed material outside the confines of his plant or other place of use, or delivers any licensed material for transport, except where such transport is subject to the regulations of the U. S. Postal Service, to comply with the applicable requirements of the Department of Transportation regulations presented in 49 CFR Parts 170 through 189 insofar as such regulations relate to the packaging of byproduct, source, or special nuclear material, marking and labeling of the packages, loading and storage of packages, placarding of the transportation vehicle, monitoring requirements, and accident reporting.

49 CFR 173.418 specifies authorized packaging for pyrophoric radioactive materials. It specifies that the material shall be made inert to prevent self-ignition during transport.

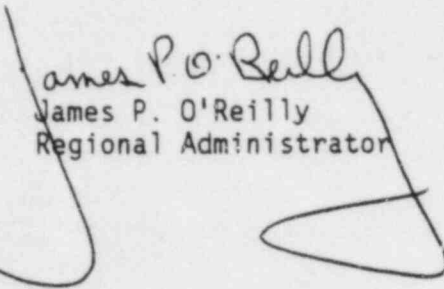
Contrary to the above, on August 11, 1983, the licensee shipped hazardous material, specifically radioactively contaminated pyrophoric zirconium chips and turnings, which were not solidified in cement and placed in crates for shipment and therefore were not rendered inert.

This is a Severity Level II Violation. (Supplement V)

Pursuant to the provisions of 10 CFR 2.201, you are hereby required to submit to this office within thirty days of the date of this Notice, a written statement or explanation in reply, including: (1) admission or denial of the alleged violation; (2) the reasons for the violations if admitted; (3) the corrective steps which have been taken and the results achieved; (4) corrective steps which will

be taken to avoid further violations; and (5) the date when full compliance will be achieved. Consideration may be given to extending your response time for good cause shown.

FOR THE NUCLEAR REGULATORY COMMISSION

  
James P. O'Reilly  
Regional Administrator

Dated at Atlanta, Georgia  
this 22 day of November 1983

<b>NRC FORM 335</b> (7-77)		<b>U.S. NUCLEAR REGULATORY COMMISSION</b> <b>BIBLIOGRAPHIC DATA SHEET</b>		<b>1. REPORT NUMBER (Assigned by DDC)</b> NUREG-0940 Vol. 2, No. 4	
<b>4. TITLE AND SUBTITLE (Add Volume No., if appropriate)</b> Enforcement Actions: Significant Actions Resolved Quarterly Progress Report October - December 1983				<b>2. (Leave blank)</b>	
<b>7. AUTHOR(S)</b> IE Enforcement Staff				<b>3. RECIPIENT'S ACCESSION NO.</b>	
<b>9. PERFORMING ORGANIZATION NAME AND MAILING ADDRESS (Include Zip Code)</b> Office of Inspection and Enforcement U.S. Nuclear Regulatory Commission Washington, DC 20555				<b>5. DATE REPORT COMPLETED</b> MONTH: December YEAR: 1983	
<b>12. SPONSORING ORGANIZATION NAME AND MAILING ADDRESS (Include Zip Code)</b> Same as 9 above				<b>DATE REPORT ISSUED</b> MONTH: January YEAR: 1984	
<b>13. TYPE OF REPORT</b> Technical				<b>PERIOD COVERED (Inclusive dates)</b> October - December 1983	
<b>15. SUPPLEMENTARY NOTES</b>				<b>14. (Leave blank)</b>	
<b>16. ABSTRACT (200 words or less)</b> <p>This compilation summarizes significant enforcement actions that have been resolved during one quarterly period (October - December 1983) and includes copies of letters, Notices, and Orders sent by the Nuclear Regulatory Commission to licensees with respect to these enforcement actions and the licensees' responses. It is anticipated that the information in this publication will be widely disseminated to managers and employees engaged in activities licensed by the NRC, in the interest of promoting public health and safety as well as common defense and security.</p>					
<b>17. KEY WORDS AND DOCUMENT ANALYSIS</b>			<b>17a. DESCRIPTORS</b>		
<b>17b. IDENTIFIERS/OPEN-ENDED TERMS</b>					
<b>18. AVAILABILITY STATEMENT</b> Unlimited			<b>19. SECURITY CLASS (This report)</b> Unclassified		<b>21. NO. OF PAGES</b>
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