



THE CLEVELAND ELECTRIC ILLUMINATING COMPANY

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Al Kaplan

VICE PRESIDENT
NUCLEAR GROUP

Serving The Best Location in the Nation
PERRY NUCLEAR POWER PLANT

April 11, 1990
PY-CEI/NRR-1163 L

Director, Office of Enforcement
U.S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Perry Nuclear Power Plant
Docket No. 50-440
Reply to a Notice of Violation

Gentlemen:

Attachment 1 provides the Cleveland Electric Illuminating Company's (CEI) reply to the Notice of Violation pursuant to 10CFR2.201 as required by the NRC Notice of Violation and Proposed Imposition of Civil Penalty dated March 12, 1990.

While CEI admits to the violations as described in the Notice of Violation and Imposition of Civil Penalty, we respectfully submit for your consideration a request for review of the escalation factors used in determining the amount of the civil penalty (Attachment 2).

Although CEI is requesting mitigation of the Civil Penalty, a check has been enclosed and made payable to the Treasurer of the United States for payment of the civil penalty. Please feel free to contact us should you have any additional questions.

Very truly yours,

Al Kaplan
Vice President
Nuclear Group

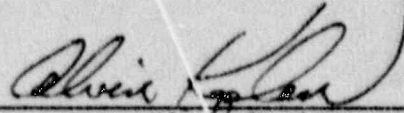
Attachment

cc: Regional Administrator, Region III
Sr. Resident Inspector
T. Colburn

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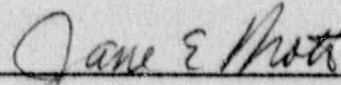
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Alvin Kaplan who, being duly sworn, deposed and said that (1) he is Vice President, Nuclear Group of The Cleveland Electric Illuminating Company, (2) he is duly authorized to execute and file this report on behalf of The Cleveland Electric Illuminating Company and as duly authorized agent for Duquesne Light Company, Ohio Edison Company, Pennsylvania Power Company and the Toledo Edison Company, and (3) the statements set forth therein are true and correct to the best of his knowledge, information and belief.



Alvin Kaplan

Sworn to and subscribed before me, this 11th day of April, 1990.



JANE E. MOTT
Notary Public, State of Ohio
My Commission expires Feb. 20, 1995
(Recorded in Lake County)

Reply to a Notice of Violation

Restatement of Violation

During an NRC inspection conducted from November 21, 1989 through January 11, 1990, violations of NRC requirements were identified. In accordance with the "General Statement of Policy and Procedure for NRC Enforcement Actions," 10 CFR Part 2, Appendix C (1989), the Nuclear Regulatory Commission proposes to impose a civil penalty pursuant to Section 234 of the Atomic Energy Act of 1954, as amended (Act), 42 U.S.C. 2282, and 10 CFR 2.205. The particular violations and the associated civil penalty are set forth below:

- I. 10 CFR 50, Appendix B, Criterion XI, "Test Control," requires in part that test results be evaluated to assure that test requirements have been satisfied.

Contrary to the above, the licensee failed to properly evaluate test results following the scram time test of control rods on July 30, 1989, and again on November 25, 1989.

- a. On July 30, 1989, control rods 34-47 and 34-51 were scram time tested. Control rods 34-47 and 34-51 did not insert within the time required by Technical Specification 3.1.3.2 but were declared operational based on a successful second scram time test without an evaluation of the test failures and without performing any corrective maintenance.
- b. On November 25, 1989, control rod 34-47 was scram time tested and twice did not insert within the time required by Technical Specification 3.1.3.2. However, the licensee declared control rod 34-47 operable based on two subsequent successful scram time tests, but without first performing an evaluation of the prior two test failures and without performing any corrective maintenance.

- II. 10 CFR 50, Appendix B, Criterion XVI, "Corrective Action," requires in those instances where significant conditions adverse to quality have been identified that corrective actions be taken to assure the cause of the condition is determined and corrective action is taken to preclude repetition.

Contrary to the above, the licensee did not identify the cause of the condition or take adequate corrective action to preclude repetition following the July 30, 1989, scram time test failure of control rods 34-47 and 34-51.

- III. 10 CFR 50, Appendix B, Criterion XV, "Nonconforming Materials," requires measures be established to control components which do not conform to requirements in order to prevent their inadvertent use or installation.

Contrary to the above, on June 7, 1985 a nonconformance report was written concerning ASCO pilot valves containing urethane seat material rather than the required viton material. However, twelve ASCO pilot valves containing the nonconforming urethane seat material were not adequately controlled. This resulted in five ASCO pilot valves containing the urethane seat material being installed in control rod drive mechanisms, during the 1989 outage, including control rods 34-47 and 34-51.

Collectively, these constitute a Severity Level III violation (Supplement I).

Violation I - Failure to Properly Evaluate Test Results Following Scram Time Testing

Admission of the Alleged Violation

The Cleveland Electric Illuminating Company (CEI) admits that the violation occurred as stated.

Violation/Event Background

During the first refueling outage, 59 of the 177 installed scram pilot solenoid valves were replaced as part of routine preventative maintenance for equipment qualification reasons. On July 30, 1989, during retest procedures following this replacement, control rods 34-47 and 34-51 each failed to satisfy scram time testing requirements on the initial attempt. Both rods were initially declared inoperable, and appropriate Technical Specification LCO's were entered; however, because the control rod timing tests were satisfied on subsequent attempts, the rods were declared operable and returned to service. Although the rods were considered operable, system engineering personnel documented the event on a condition report.

As a result of this condition report's corrective actions, control rods 34-47 and 34-51 were specifically included in the test population for the next scheduled control rod scram timing surveillance. On November 25, 1989, while performing the above described surveillance, rod 34-47 again failed to satisfy acceptance criteria on the first two attempts, but did scram satisfactorily on the third and fourth attempt. Control room supervisory personnel were not aware of the specific reasons for inclusion of the two subject control rods in the test population. The initial failures of rod 34-47 to satisfy surveillance requirements were attributed to faulty test switches and the rod was not immediately declared inoperable. Following the testing of rod 34-47, control rod 34-51 failed to scram on two successive attempts, and was declared inoperable due to being untrippable. Only after discussion with the Reactor Engineer performing the testing did control room supervisory personnel realize the significance of the failures documented on July 30, and declared control rod 34-47 inoperable due to being untrippable.

Reasons for the Violation

The violations described above resulted from a combination of personnel errors and procedural inadequacies as described below:

1. Although Plant Administrative Procedure, PAP-0205, "Operability of Plant Systems", clearly provided a program that describes proper guidance criteria for determining system or component operability, the operations crews used a non-conservative testing philosophy when evaluating operability of control rods 34-47 and 34-51 on July 30, 1989 and November 25, 1989.
2. Inadequate communication between Operations and Reactor Engineering personnel existed during the event on November 25, 1989.

3. Plant Administrative Procedure (PAP-1105), "Surveillance Test Control", did not provide adequate guidance to ensure that complete analysis of unsatisfactory test results is performed prior to declaration of component operability and resumption of testing activities.

Corrective Actions That Have Been Taken and Results Achieved

1. Following the declaration of the inoperability of the affected control rods, control room operations personnel did not immediately recognize the implications for compliance with Technical Specification 3.0.3. Following shift turnover, however, oncoming crew members recognized that the plant had been in a condition not allowed, since Technical Specifications do not allow for inoperability of two control rods due to being untrippable. After follow-up discussions with operations management and verification of the inoperability of the control rods and the causes thereof, the scram pilot solenoid valves were replaced and surveillance tests performed, and the control rods were declared operable. The plant was verified to be in full compliance with all requirements of Technical Specifications, and the NRC Resident Inspector was informed of all circumstances surrounding the event.
2. The operators involved in these events have been coached with respect to equipment operability and the conduct of testing and troubleshooting. These same operators were contacted during the event investigation and are fully knowledgeable of the errors committed during the events. In addition, a memo has been sent from the Operations Manager to all operations personnel outlining surveillance test performance philosophy and control. Specifically the memo states that "all operators need to be very sensitive to: a) maintaining a clear separation between surveillance test performance and troubleshooting. b) ensuring that an operability determination is made immediately following the failure of any surveillance test step. c) ensuring that decisions concerning the operability of a component, after it has demonstrated unsatisfactory performance, are based on objective reasons, rework, and satisfactory completion of surveillances". Along with this memo, a copy of the Licensee Event Report (LER 89-30) was distributed to all licensed Operations Section personnel. In addition, the Operations Manager discussed this LER during Current Events Training as part of continuing licensed operator requalification training.
3. Plant Administrative Procedure (PAP-1105), "Surveillance Test Control", was also modified to include actions to be taken when unsatisfactory test results are encountered as well as a requirement to analyze and evaluate the causes for the unsatisfactory results prior to declaring the component back in

service even though subsequent retest results are satisfactory. Additionally, SVI-C11-T1006 (Control Rod Maximum Scram Insertion Time) was improved to direct the operators to immediately declare a control rod inoperable and comply with Technical Specification requirements if a rod fails to satisfy scram time testing criteria.

Corrective Actions That Will be Taken to Avoid Further Violations

The actions discussed above are expected to prevent the recurrence of similar violations; however, the following additional activities are being completed.

1. Details and analysis of the reasons for this event will be presented as part of Technical Staff and Managers Training and to all technicians/personnel involved in performing surveillances, to ensure appropriate personnel benefit from the lessons learned in this event.
2. Quality Assurance Section personnel are currently conducting a series of surveillances to observe and review plant surveillance testing to ensure that the test criteria philosophy as expressed in PAP-1105 is being implemented uniformly in all plant testing activities.

Date When Full Compliance Will be Achieved

Full compliance was achieved with proper evaluation of test results and replacement of scram pilot solenoid valves on November 26, 1989.

Violation II - Failure to Identify Root Cause of Scram Time Testing Failures and Take Adequate Corrective Actions to Preclude Repetition

Admission of the Alleged Violation

The Cleveland Electric Illuminating Company (CEI) admits that the violation occurred as stated in "Notice of Violation and Proposed Imposition of Civil Penalty".

CEI, however, would like to provide the following clarification. The NRC transmittal cover letter states "This violation pertained to the failure to identify the cause of or take adequate corrective action following the scram time test failures of control rods 34-47 and 34-51 on July 30, 1989, and similar test failures with control rods 34-47 and 34-51 on November 25, 1989". This wording implies that the November 25, 1989 event was not addressed with appropriate root cause analysis and effective corrective actions. CEI believes that aggressive, timely, and appropriate actions were taken in response to the November 25, 1989 scram time test failures of control rods 34-47 and 34-51. As a direct result of these actions, the root cause of the event was accurately determined as described in your letter.

Violation/Event Background

During performance of SVI-C11-T1006 on July 30, 1989, control rods 34-47 and 34-51 failed to satisfy acceptance criteria for scram time. Both rods did scram on each attempt, but reached position 43 slower than normally expected and the overall insertion times exceeded limits specified in Technical Specifications.

The control rods were declared inoperable and the action statements of TS 3.1.3.2 and 3.1.3.1 were satisfied. Operators entered a twelve-hour action statement for shutdown. Both rods were re-scrammed with successful scram times being attained. System engineering personnel evaluated the performance of the control rods, and attributed the initial failure to slow acting scram valves. The consensus reached was that the failure mechanism exhibited on the initial test was eliminated on subsequent successful tests. The rods were declared operable and the event was documented in Condition Report 89-301.

Investigation of Condition Report 89-301 determined six possible causes for the inadequate performance on the initial test attempts: excessive scram valve opening time; excessive drive line friction; faulty scram pilot solenoids, low accumulator pressure; high air pressure to scram valves; and worn internal drive seals.

Each potential cause was analyzed to logically determine the most likely cause, based on the circumstances of failure and previous experience with the Control Rod Drive Mechanisms and Hydraulic Control Units. The vendor, General Electric, was contacted to ensure that no potential causes were overlooked. The most likely cause of failure was determined to be excessive scram valve opening time.

Personnel involved in the investigation believed that the cause of the problem was eliminated with the successful exercising of the ECU's. It was not considered necessary, therefore, to question the operability of the control rods or schedule any immediate testing. To demonstrate added confidence in the operability of the rods, a corrective action was initiated to ensure that these two rods were included in the sample of rods tested in the next routine performance of SVI-C11-T1006, to comply with TS 4.1.3.2.c.

Reasons for the Violation

Reasons for this violation are listed below.

1. Control Room and system engineering personnel did not adequately document their justification for operability of the Control Rods on July 30, 1989, and during the subsequent Condition Report (CR) investigation. A potential cause for the faulty operation was presented and accepted after consideration of the performance characteristics although no further testing was performed.
2. Personnel investigating CR 89-301 failed to utilize all available resources (NPRDS, etc.) to help determine the root cause of the July 30, 1989 event.
3. Several potential causes for slow opening of the scram valves were identified during investigation of CR 89-301, but the Condition Report did not describe how these conditions were analyzed to verify that they did not exist.
4. Given that the correct root cause of the July 30, 1989, control rod failure was not identified, the due date for the corrective action could be considered improper. The proposed due date allowed four months of power operation without additional verification of control rod operability.
5. Technical Section and Licensing and Compliance Section personnel performed inadequate reviews of Condition Report 89-301, thereby failing to identify the above listed inadequacies in the event investigation.

Corrective Actions That Have Been Taken and Results Achieved

Although the root cause was inadequately addressed following the July 30, 1989 failures, the Perry Plant staff took immediate and extensive action to ensure the cause was identified following the November 25 event.

On November 27, 1989, after plant management reviewed the event, actions were initiated to verify operability of the remaining control rods. An additional 55 controls rods were scram-time tested on November 27-28. Included in this sample were the two control rods which had failed previously and had been repaired, as well as all control rods reworked

during the refuel outage which had not been tested the previous weekend. Direction had been provided to operations personnel to commence a plant shutdown if any rod failed to scram or to satisfy scram time test criteria due to malfunctioning scram pilot valves. All control rods tested demonstrated satisfactory scram times.

In addition to the scram-time testing activities, inspection and failure analysis were initiated for the scram pilot solenoid valves removed from the HCU's for rods 34-47 and 34-51. Initial inspection showed that the elastomer seat material in the suspect valves (ASCO Model Number HV176-816-1) appeared by physical characteristics to be urethane, rather than Viton, which is specified for this application.

Investigation determined that the malfunctioning scram pilot valves belonged to a shipment of valves which had been recalled by the manufacturer in 1985. Further review of paperwork revealed that only 22 of 34 recalled valves were actually returned for refurbishment, and the remaining twelve were believed to have been rebuilt on-site by the piping construction contractor. The discovery of the potentially improper seat material in the two malfunctioning valves indicated that these valves may have been returned to stock without the necessary modifications. In order to absolutely determine whether any more valves with improper material had been installed, an inspection of serial numbers was conducted for all 177 installed scram pilot solenoid valves. In addition to the two valves which had already been replaced, five other suspect valves were located and replaced on November 29, 1989. All seven suspect valves were transported to an independent laboratory for further analysis, which confirmed that the improper seat material was present in the valves, and was most likely the cause of the malfunctioning control rods.

In addition to these activities, the following corrective actions have been completed to enhance future root cause analyses.

1. Personnel involved in the root cause analysis of Condition Report 89-301 have been counseled with regard to the importance of determining the root cause of an event to ensure proper corrective actions are identified and implemented.
2. Compliance Engineering Unit Personnel have discussed the inadequacies in the review of Condition Report 89-301 in an effort to identify potential problem areas to look for during condition report review. As a result, increased efforts are being expended to ensure that Condition Reports document a thorough, detailed analysis and a logical approach to root cause determination. Additionally, increased attention is being paid to verifying the adequacy, mode of completion, and timeliness of proposed corrective actions.
3. Quality Assurance Section personnel performed an annual audit from February 20 through April 3, 1990, which reviewed Perry's Condition Report process placing specific emphasis on root cause determination and the effectiveness of corrective actions.

Corrective Actions That Will be Taken to Avoid Further Violations

The actions discussed above are expected to prevent the recurrence of similar violations; however, the following additional activities are being completed.

1. As part of Technical Staff and Managers Training, details of this event, including inadequacies of the investigation of CR 89-301, and the need to utilize all resources in the performance of failure analysis, will be provided to ensure appropriate personnel benefit from the lessons learned in this event (i.e., those responsible for performing root cause analysis).
2. An internal review of Perry's Condition Report Program is currently being performed. Recommendations from both the Quality Audit mentioned above and this internal review will be evaluated by Licensing and Compliance Section personnel to enhance the condition report process.

Date When Full Compliance Will be Achieved

Full compliance was achieved on November 29, 1989 with determination of the root cause of the November 25, 1989 event and completion of subsequently identified corrective actions.

Violation III - Failure to Control Nonconforming Material

Admission of the Alleged Violation

The Cleveland Electric Illuminating Company (CEI) admits that the violation occurred as stated.

Violation/Event Background

On January 17, 1985, a CEI Purchase Order (PO) was issued to General Electric (GE) for fifty scram pilot valves. A partial shipment of thirty-four valves against this PO was received at PNPP on April 19, 1985. Each valve was identifiable by a unique serial number having a common prefix of 48607N, the Automatic Switch Company (ASCO) internal shop order number. The valves were inspected and considered acceptable for placement into warehouse inventory.

On May 5, 1985, twelve of thirty-four valves received on this PO were issued to Pullman Power Products, the project erection contractor, for installation.

ASCO issued a letter to GE on April 29, 1985, in which they indicated that there was a possibility that forty valves on ASCO internal shop order 48607N may not have been rebuilt with Viton-A material for the disc holder assembly. GE-Wilmington determined that thirty-four of the forty valves were shipped to PNPP. GE on-site personnel were notified of these circumstances via a letter dated May 16, 1985. As a result, PNPP Quality Control personnel generated a nonconformance report (NR OPQC-1516) on June 7, 1985 to control the circumstances of the recall; however, because a GE site internal letter initiated on the same date indicated that the twelve valves issued to Pullman Power had been rebuilt by Pullman with kits supplied by ASCO, only twenty-two of the thirty-four valves were listed on the NR. This statement was also reiterated by GE in their disposition review of the NR. Based on this disposition, the NR was closed concurrent with the return of the twenty-two valves on December 13, 1985.

On August 12, 1986, a field return document and associated material was received by the warehouse. Included in this return were the twelve scram pilot valves originally issued to Pullman on May 5, 1985. This document included a note which stated that the material was "not used - never installed". Because NR OPQC-1516 was closed, and there was no other indication that the valves were suspect, they were placed into warehouse inventory.

All twelve valves remained in the warehouse until July 6, 1988, when one scram pilot valve from the suspect lot was issued for use as a training aid. In conjunction with refueling outage planning in November 1988, the remaining eleven suspect valves were issued to the field, and subsequently installed during the initial Refueling Outage in 1989. Four of the eleven installed valves failed preoperational testing due to unisolatable air leaks, and were then removed, replaced and scrapped. The remaining seven installed valves were removed in November 1989 as described previously.

Based on follow-up investigation which involved an extensive review of project documents, it was concluded that the twelve suspect valves had not been refurbished by Pullman as stated in the NR documentation.

Reasons for the Violation

The violations described above resulted from improper implementation of the nonconformance process. If the program had been implemented correctly, work documents would have been provided by GE with their NR disposition to confirm the refurbishment. The absence of this evidence should have resulted in project Quality Control personnel instructing Pullman to initiate an NR for the twelve valves in their possession. In conclusion, the NR disposition provided by GE was unsubstantiated and project personnel should have ensured that work documents were available and complete to support the GE nonconformance disposition.

Corrective Actions That Have Been Taken and Results Achieved

Immediately upon event discovery, a Condition Report was generated to determine the root cause of this problem. As a part of the Condition Report process, a review of all nonconformance reports (NR) for the period of time (1981-1985) that General Electric had NR disposition review responsibility was initiated for similar events. In all, 876 NR's were reviewed of which forty-five were identified as NRs that represented vendor supply problems. Emphasis was placed on NRs in this category. No anomalies were identified during this review and the inaccurate dispositioning of NR OPQC-1516 was determined to be an isolated event.

As an additional safeguard against the inadvertent issue of items from this lot (48607N), the Project generated Procurement Document Engineering Evaluation Basis (PDEEB) 000683. This document listed the stock code, material receipt number, the serial numbers of all twelve valves, and prohibits their issue to the plant. Additionally, all future scram pilot valves for HCU application will be procured under a different stock code.

Corrective Actions That Will be Taken to Avoid Further Violations

Current Site Procurement Procedures require full evaluation and documentation of actions taken in response to such issues. Upon notification from a supplier or manufacturer that an item is subject to recall, the Project examines all warehouse inventory as well as pertinent records related to material issues, work orders, warehouse job tickets, inspection reports and field returns to ensure the identification of all suspect items. Therefore, no additional corrective actions are considered necessary to prevent further violations in this area.

Date When Full Compliance Will be Achieved

Full compliance was achieved upon location, replacement and isolation of all questionable valves on November 29, 1989.

Request for Mitigation of Civil Penalty

The Cleveland Electric Illuminating Company (CEI) recognizes that the Nuclear Regulatory Commission (NRC) must have considerable discretion and flexibility whether to impose civil penalties and the amount of civil penalties imposed. One reason why this flexibility is needed is that no two violations, or circumstances surrounding them, are the same.

Notwithstanding this fact, CEI believes that the proposed \$100,000 civil penalty is somewhat disproportionate to other civil penalties recently proposed by the NRC. In reviewing other civil penalties, it appears to CEI that the civil penalty proposed by the NRC on March 12 included greater escalation for the multiple occurrence and prior notice factors than the NRC has imposed in other recent cases.

As set forth in the Regional Administrator's March 12 letter, the \$50,000 base civil penalty was escalated by 100 percent for prior notices of similar events and by 50 percent for multiple examples. It was also mitigated by 50 percent for work performed by the swing shift to recognize and correct the violations of the plant technical specifications. While the escalation factors applied no doubt fall within the literal language of 10 CFR Part 2, Appendix C, in other recent proposed civil penalty impositions, the NRC seems to have been less harsh in their application of the same factors.

Several examples illustrate this point:

1. EA 89-126 (Notice of Violation and Proposed Civil Penalty, dated August 10, 1989 - Limerick Nuclear Generator Station): A \$75,000 civil penalty was proposed for emergency preparedness related violations. The NRC escalated the base Severity level III penalty by 50 percent, based upon prior notice in three successive Nuclear Quality Assurance audits as well as in NRC inspection findings. The prior notices in EA 89-126 were at least as plant specific and as numerous as those in the CEI case, yet the escalation factor applied to CEI was twice that applied in the Limerick event.
2. EA 89-16 (Notice of Violation and Proposed Civil Penalty, dated April 4, 1989 - Trojan Nuclear Plant): A \$75,000 civil penalty was proposed for violations associated with the quality of installed materials. Although the NRC noted that there had been prior notices (the NRC has issued a notice of violation in 1985 for similar deficient procurement practices at that facility), no escalation for prior notice was proposed. In the CEI imposition, 100 percent escalation is proposed where there had not been a prior notice of violation.

3. EA 89-153 (Notice of Violation and Proposed Imposition of Civil Penalty, dated September 22, 1989 - Sequoyah Units 1 and 2): An \$87,500 civil penalty was proposed for three examples of failing to implement or adhere to safety review program requirements. The NRC considered this to be a "significant safety concern." In EA 89-152, the NRC proposed a 25 percent escalation for multiple occurrences, based in part on creating an unreviewed safety question on 26 separate occasions. The NRC also proposed a 50 percent escalation for prior notice and prior poor performance. The escalation factors in CEI's case, 100 percent for prior notice (where the NRC did not find escalation for prior poor performance to be warranted) and 50 percent for multiple occurrences (where there was only a single prior occurrence), seem to be disproportionate to these proposed in EA 89-152.

For these reasons, CEI would request that the NRC reconsider the magnitude of the escalation factors applied in this civil penalty, so that they will be applied consistently with prior civil penalty actions by other Regions. While we recognize the unique nature of each case, our review suggests that the escalation rates for multiple occurrences and prior notice may not have been consistently applied and that the total amount of the proposed civil penalty is somewhat higher than civil penalties for comparable situations.

NJC/CODED/3358