

U.S. NUCLEAR REGULATORY COMMISSION
REGION III

Report No. 50-440/88004(DRP)

Docket No. 50-440/88004

License No. NPF-58

Licensee: Cleveland Electric Illuminating Company
Post Office Box 5000
Cleveland, OH 44101

Facility Name: Perry Nuclear Power Plant, Unit 1

Inspection At: Perry Site, Perry, OH

Inspection Conducted: February 23 through April 19, 1988

Inspectors: K. A. Connaughton
G. F. O'Dwyer
Steven Ray

Approved By: *R C Cooper*
R. Cooper, Chief
Reactor Projects Section 3B

5/27/88
Date

Inspection Summary

Inspection in February 23 through April 19, 1988(Report No. 50-440/88004(DRP))

Areas Inspected: Routine unannounced inspection by resident inspectors of previous inspection items, operational safety, nonroutine events, maintenance, surveillance, engineered safety features, Operational Safety Team Inspection findings, allegations, onsite review committee activities, physical security, and radiological controls. Plant status meetings between licensee and NRC regional management personnel were conducted on March 25, 1988 and April 15, 1988.

Results: Of the 11 areas inspected, one violation was identified in one area (failure to take required actions for inoperable APRM instrument channels - Paragraph 4.b.); and one violation was identified in a second area (failure to measure valve stroke time with the required accuracy - Paragraph 8.). An Operational Safety Team Inspection was conducted at the Perry site on March 14-25, 1988. Initial inspector followup of OSTI inspection findings is documented in Paragraph 8. of this report.

DETAILS

1. Persons Contacted

- 2 Alvin Kaplan, Vice President, Nuclear Group
 - C. M. Shuster, Director, Nuclear Engineering Department (NED)
 - M. D. Lyster, General Manager, Perry Plant Operations Department (PPOD)
- *1,2 R. A. Stratman, Manager, Operations Section, (PPOD)
- 1,2 V. K. Higaki, Manager, Outage Planning Section (PPOD)
- *1 M. Cohen, Manager, Maintenance Section (PPOD)
- *1,2 F. R. Stead, Director, Perry Plant Technical Department (PPTD)
 - W. R. Kanda, Manager, Technical Section (PPTD)
 - S. F. Kensicki, Technical Superintendent (PPTD)
 - L. L. Vanderhorst, Radiation Protection Section (PPTD)
- *1,2 E. M. Buzzelli, Manager, Licensing and Compliance Section (PPTD)
- 1 R. A. Newkirk, Manager, Technical Section (PPTD)
- S. J. Wojton, Manager, Radiation Protection Section (PPTD)
- * 2 E. Riley, Director, Nuclear Quality Assurance Department (NQAD)
 - T. A. Boss, Supervisor, Quality Audit Unit (NQAD)
 - D. J. Takas, Manager, Mechanical Maintenance Quality Section (NQAD)

* Denotes those attending the exit meeting held on April 19, 1988.

1 Denotes those attending the March 25, 1988 plant status meeting.

2 Denotes those attending the April 15, 1988 plant status meeting.

2. Licensee Action on Previous Inspection Findings (92701, 92702)

- a. (Closed) Violation (440/86020-01(DRS)): Inadequate test procedures caused offgas system charcoal adsorber fire (three examples). The first example involved Attachment 1 to the data sheet for Generic Procedure GEN-M-021. Attachment 1 (which delineated the testing) did not take into account the fact that the charcoal ignition temperature could be as low as 307^o F. The inspector determined that appropriate licensee personnel had become cognizant of this fact (see also the closeout of unresolved item (440/86020-03(DRS)) in Paragraph 2.b of NRC Inspection Report 440/87016). Also, administrative controls for the use of space heaters had been established (see closeout of violation (440/86020-02(DRS)) in NRC Inspection Report 440/87003).

The second example was that GEN-M-021 was an inadequate procedure for generating test instructions. This concern was resolved when the licensee cancelled GEN-M-021 on December 17, 1986. The inspector reviewed all other tests generated by GEN-M-021 and found them to be acceptable (see discussion and closeout of open item (440/86020-05(DRS)) in Paragraph 2.c of NRC Inspection Report 440/87016). The related concern that GEN-M-021-generated instructions did not require sufficient review was also resolved by its cancellation.

The third example was that the Work Order (WO) which controlled the offgas vault refrigeration system testing activity was incorrectly designated safety class 5 (nonsafety-related) and, therefore, the WO did not receive appropriate levels of review. Licensee personnel informed the inspector that they had reviewed all GEN-M-021-related WOs from November 1985 to August 1986 (16 cases) to verify that correct safety class designations were specified. Four additional WOs associated with current work in progress were directly examined and an on-line computer terminal which provided direct access into the WO data base was used by the inspector to verify safety classifications of additional current WOs. These reviews ensured that the safety class of the WO was the same as the safety class of the item being worked as designated on the Perry Nuclear Power Plant (PNPP) Qualification List (Q-List).

The inspector had concerns about the licensee's process of designating WO safety class by referring to only the PNPP Q-List. Therefore, the inspector reviewed the WOs listed below to ensure that the safety class of each WO was commensurate with the highest safety class of any item that could have been adversely impacted by the work. The inspector found all the below listed WOs to have appropriate safety class designations.

8608400	8609796	8511533	8511607
8608938	8605514	8611687	8511531
8610733	8606194	8513273	8511530
8610972	8609505	8511684	8511534
8611010	8609014	8511615	8511527
8611016	8609404	8511529	8609378
8610749	8610804	8511526	8609381
8610753	8611061	8511690	8609383
8610751	8611062	8511689	8609386
8610752	8511523	8511526	8609405
8609989			

In response to the inspector's concern about the lack of a Nuclear Quality Assurance Department (NQAD) review for the WO involved with the offgas system charcoal adsorber fire, the licensee revised Perry Administrative Procedure (PAP)-0905, "Work Order Process" to require an NQAD review for any WOs which specifically address the removal and/or disassembly of components which are: safety class 1, 2, 3, 4, SR, or MC, ASME Code related (Sections I, III, IV, VIII, and XI), Appendix R fire barriers required for electrical separation, or for items which are to be welded onto safety related components.

- b. (Closed) Open Item (440/86020-04(DRS)): Concern that WOs may not receive proper safety class designations. Actions to close this item were documented in the closeout of example three of Violation (440/86020-01(DRS)) in Paragraph 2.a. of this inspection report.
- c. (Closed) Open Item (440/86020-06(DRS)): Untimely notification of fire protection engineering personnel following offgas system

charcoal adsorber combustion event. The inspector reviewed Plant Administrative Procedure (PAP)-1911, "Fire Emergency," Revision 1, dated October 21, 1985. Temporary Change Notice (TCN)-004 to PAP-1911, dated February 2, 1987 provided clarification that, upon receipt of notification of a fire within the owner controlled area, Satellite Alarm Station (SAS) personnel shall notify designated members of the Fire Protection and Safety Unit. This procedural enhancement provided a more explicit assignment of responsibility for the notification of fire protection engineering personnel than was in place at the time of the offgas system charcoal adsorber fire. Inspector interviews with personnel assigned to the SAS indicated that the notification requirements were clearly understood by those responsible for carrying them out. The inspector has no further concerns regarding this matter.

- d. (Closed) Violation (440/87003-04(DRP)): Reactor Core Isolation Cooling (RCIC) system inoperability not reported within the time requirements specified in 10 CFR 50.72 (b)(2). The inspector verified by document review that corrective actions specified in the licensee's response letter, dated May 1, 1987, were implemented as follows: a Standing Instruction was issued on February 10, 1987, which clarified the reportability requirements for unplanned inoperability (failures) of the Reactor Core Isolation Cooling (RCIC) and the High Pressure Core Spray (HPCS) systems, and; Plant Administrative Procedure (PAP)-0606, "Condition Reports and Immediate Notifications," was revised to provide similar clarification regarding the designation of RCIC and HPCS as single train safety systems. The inspector noted that subsequent to implementation of the forgoing corrective actions, the Reactor Core Isolation Cooling system had been reclassified as a non-engineered safety feature system. This reclassification was based upon a reanalysis of the control rod drop accident which did not take credit for RCIC system operation. The analysis was incorporated into the Perry Final Safety Analysis Report. Future unplanned RCIC system inoperability will therefore not be reportable pursuant to 10 CFR 50.72 and 10 CFR 50.73 as a single train safety system failure.
- e. (Closed) Open Item (440/87003-06(DRS)): Administrative controls for motor-operated valve packing adjustments. This item was written to track future planned inspector reviews of this matter. This item was determined by NRC Regional office management to be included in future-planned inspection activities being tracked by NRC Inspection and Enforcement Bulleting (IEB) 440/85003-BB. This item, therefore, serves no purpose and is administratively closed.
- f. (Closed) Open Item (440/87003-07(DRS)): Adequacy of motor-operator sizing for Reactor Core Isolation Cooling (RCIC)/Residual Heat Removal (RHR) steamline inboard containment isolation valve 1E51-F063. Subsequent to the identification of this item, the licensee implemented a design change which replaced the D.C. powered motor operator for valve 1E51-F063 with a larger A.C. powered operator. The designation of valve 1E51-F063 as "normally closed"

was changed to "normally open." These changes rendered the question concerning the sizing of the D.C. motor operator moot. Additionally, motor operated valve design, maintenance, and testing will be reviewed as part of future planned inspection activities related to IEB 440/65003-BB. Based upon the forgoing, this item is hereby administratively closed.

- g. (Closed) Violation (440/87004-02(DRP)): Containment entry through a personnel airlock with an inoperable door. The licensee's response letter dated May 20, 1987 reaffirmed that the root cause of this violation was miscommunication between ongoing and offgoing security personnel assigned to control access at the containment personnel airlock. In order to prevent recurrence, the licensee provided guidance to security personnel that verbal instructions were to be documented and thoroughly communicated during personnel turnovers. Additionally, verbal instructions were to be reported to the Security Shift Supervisor who, in turn, would confirm the accuracy of the instruction with the originator. The inspector has, in the course of routine inspection activities, observed implementation of this guidance by security personnel. Based upon these observations and a lack of repetitive occurrences since this violation was identified, the inspector has no further concerns regarding this matter.
- h. (Closed) Violation (440/87012-03(DRP)): Inadequate performance of Main Steam Isolation Valve (MSIV) control logic preoperational testing. Corrective actions identified in the licensee's response letter dated October 8, 1987 were reviewed and determined to be acceptable during a special Augmented Inspection Team (AIT) Inspection conducted on June 17-20, 1987, and documented in NRC Inspection Report 440/87014(DRP). The AIT findings relative to this item were discussed in Paragraph 4. of the subject inspection report.
- i. (Closed) Violation (440/87012-12(DRP)): Failure to independently verify discharge path valve lineup prior to initiation of liquid radiological effluent release. Licensee corrective actions for this violation involved the counseling of individuals on the need to implement independent verification actions based upon equipment conditions at the time of liquid effluent release. Based upon a lack of repetitive occurrences subsequent to the time this violation was identified, these actions appear to have been effective and appropriate. The inspector has no further concerns regarding this matter.
- j. (Closed) Violation (440/87016-01(DRP)): Inadequate periodic test instruction results in reactor scram. The inspector reviewed Temporary Change Notice (TCN)-001 to Periodic Test Instruction (PTI)-N27-P0001, "Reactor Feedwater Pump Turbine Stop Valve Test," Revision 1, dated April 22, 1987. The subject TCN, which was implemented on October 2, 1987, required that the feedwater pump controller for the pump under test be placed in manual. This

eliminated an increase in feedwater control system demand when a feedwater pump trip signal was generated during the test. Since the subject TCN was issued testing has been satisfactorily accomplished without perturbation of feedwater flow to the reactor vessel.

3. Operational Safety Verification (71707)

The inspectors observed control room operations, reviewed applicable logs, and conducted discussions with control room operators during this inspection period. The inspectors verified the operability of selected emergency systems, reviewed tag-out records and verified tracking of Limiting Conditions for Operation associated with affected components. Tours of the intermediate, auxiliary, reactor, and turbine buildings were conducted to observe plant equipment conditions including potential fire hazards, fluid leaks, and excessive vibrations, and to verify that maintenance requests had been initiated for certain pieces of equipment in need of maintenance. The inspectors by observation and direct interview verified that the physical security plan was being implemented in accordance with the station security plan. The inspector observed plant housekeeping/cleanliness conditions and verified implementation of radiation protection controls.

During a routine tour of containment during reactor operations, the inspector noted a number of isolation valves on branch lines (i.e. vent, drain, and test connections) associated with drywell penetrations which were closed but not locked closed. Additionally, the inspector identified one branch line isolation valve associated with a containment penetration, valve 1G41-F528, which was not locked.

Technical Specifications 3.6.1.1.1 and 3.6.2.1 required that containment and drywell integrity be maintained during Operational Conditions 1, 2, and 3. Associated surveillance requirements included verification once per 31 days that all containment and drywell penetrations not capable of being closed by operable automatic isolation valve and required to be closed during accident conditions were closed by valves, blind flanges, or deactivated automatic valves secured in position. Exceptions were provided for valves, blind flanges, and deactivated automatic valves which were located inside the containment, drywell, or the steam tunnel portion of the auxiliary building and which were locked, sealed, or otherwise secured in the closed position. These containment/drywell penetrations were required to be verified closed during each cold shutdown except that such verifications need not have been performed more often than once per 92 days.

The inspector determined that valve 1G41-F528 and, apparently all drywell penetration branch line isolation valves were not required to be locked or verified closed once per 31 days by licensee valve lineup and surveillance test instructions. Instead, these valves were to be verified closed at the "each cold shutdown/32 day" surveillance frequency which technical specifications specified for such valves that were "locked, sealed, or otherwise secured in the closed position."

The licensee's surveillance requirements were apparently based upon the presence of threaded pipe caps on the affected containment and drywell penetration branch lines. It was not clear to the inspector that the threaded pipe caps were acceptable for satisfying the technical specification provisions for locking, sealing, or otherwise securing such valves in the closed position. This matter will remain an unresolved item pending receipt of a technical specification interpretation from the NRC Office of Nuclear Reactor Regulation (440/88004-01(DRP)).

4. Followup of Nonroutine Events at Operating Power Reactors (93702)

a. Plant Shutdown Due to Increase in Drywell Unidentified Leakage

On February 22, 1988 between midnight and 8:00 a.m., while operating at 98% reactor power, an increase in Drywell Unidentified Leakage from approximately 2.5 gallons per minute (gpm) to 4.6 gpm was detected by Drywell Floor Drain Sump instrumentation. The licensee reduced reactor power to approximately 12% and made a drywell entry to investigate the source of the increased leakage. The licensee determined that the increased leakage was from Feedwater Maintenance Isolation Valve, 1N27-F560A.

The valve had a bonnet-to-body leak and a collection shroud had previously been installed to capture the leakage and route it to the Drywell Equipment Drain Sump. The body-to-bonnet leak had increased and the collection shroud had failed to capture the increased leakage.

Even though unidentified leakage remained below the technical specification limit of 5 gpm, the licensee performed an orderly shutdown to repair the leak. Cold shutdown was achieved at approximately 11:10 p.m. the same day. The valve was repaired by injection of leak sealant by personnel from Team, Inc. into a collar over the body-to-bonnet seal area. This repair reduced the leakage to acceptable levels. The collection shroud was improved by installing another drain line from the enclosure to the Drywell Equipment Drain Sump. The new drain line prevented water buildup inside the enclosure and allowed for potential increases in leakage. The plant was restarted February 26, 1988.

b. Misadjustment of Average Power Range Monitor (APRM) Gain Settings

During a plant startup on February 27, 1988, channel calibrations for the Average Power Range Monitoring system were performed in accordance with Surveillance Instruction (SVI)-C5i-T0024, "APRM Channel Calibration Evaluation/Adjustment." Based upon process computer-generated thermal power calculations, the APRM gain settings were adjusted such that the APRM thermal power readings were within 2% of calculated thermal power. The gain adjustments were completed at approximately 4:58 a.m. Following approval of surveillance test results, power escalation was continued. At 5:45 a.m., operating personnel identified a discrepancy between indicated

reactor power and plant electrical output (i.e. plant efficiency seemed unreasonably high).

Investigation disclosed that calculations of thermal power used for the APRM adjustments were in error due to incorrect values of average feedwater flow being utilized in the calculations. Hardcopy process computer printouts obtained over the timeframe in question identified the incorrect feedwater flow inputs on the "failed sensor list." Personnel performing the APRM gain adjustments were neither directed by procedure, nor apparently knowledgeable enough to check the process computer output for these indications of an invalid thermal power calculation prior to APRM gain adjustment.

Following discovery of the invalid thermal power calculation, correct feedwater flow inputs to the process computer thermal power calculations were restored and thermal power was calculated to be 36%. Seven of the 8 APRM channels were reading excessively low (between 28% and 29.5%). The surveillance test was reperformed with satisfactory results on all APRM channels by 6:09 a.m.

As a result of the APRM gain misadjustments, the APRM Neutron Flux High and Simulated Thermal Power High scram and rod block setpoints for APRM channels A through G were outside of their allowable values. RPS trip systems "A" and "B" had less than the required minimum number of operable channels for periods of approximately 1 hour, 14 minutes and 1 hour, 12 minutes, respectively. Technical Specification 3.3.1 required, in part, that with less than the required minimum number of operable channels in both trip systems, the trip system with the least number of operable channels (in this case, the "A" trip system) be placed in the tripped condition within one hour and that the required minimum number of channels be restored to operable status or the plant placed in Startup within the following 6 hours.

The "A" trip system was not placed in the tripped condition during the 1 hour, 12 minute time interval over which less than the required minimum number of channels were operable. Failure to take technical specification required actions with less than the required minimum number of APRM RPS trip channels operable is a violation (440/88004-02(DRP)).

5. Monthly Maintenance Observation (62703)

Station maintenance activities of safety related systems and components described below were observed/reviewed to ascertain that they were conducted in accordance with approved procedures, regulatory guides and industry codes or standards and in conformance with technical specifications. The following items were considered during this review: the limiting conditions for operation were met while components or systems were removed from service; approvals were obtained prior to initiating the work; activities were accomplished using approved procedures and were inspected as applicable. Work requests were reviewed

to determine status of outstanding jobs and to assure that priority is assigned to safety related equipment maintenance which may affect system performance.

On April 18 and April 19, 1988, the following maintenance activities were observed/reviewed: determination of torque switch setting by MOVATS and installation of correct torque limiter plate on the motor operator for Standby Liquid Control (SLC) pump suction valve, 1C41-F001A, authorized by Work Order (WO) 86-15047, Revision 2. Initially, the mechanic performing the work improperly connected the MOVATS equipment to the valve but recognized this when the oscilloscope appeared to indicate that the torque switch was tripping before the Thrust Measuring Device (TMD) indicated any Bellville Washer Deflection. The mechanic failed to properly compensate for the differences between the valve's actual wiring and the sample wiring diagram (Figure 2) of General Electrical Instruction (GEI)-056, Revision 1, "Motor Operated Valve Analysis and Test System (MOVATS) Testing." He consulted with a Senior Maintenance Technician, returned to the work area, properly connected the equipment and satisfactorily accomplished the testing.

The Senior Maintenance Technician indicated to the inspector that GEI-056 would be clarified by a Temporary Change Notice (TCN). The wiring diagram contained in GEI-056 was typical for the actual wiring of approximately 85% of the valves. The Senior Maintenance Technician, on his own initiative, was collecting other diagrams that were typical for the remaining 15% of the valves. He informed the inspector that he would be holding training sessions for all mechanics certified to perform MOVATS testing to ensure that they can properly compensate for any wiring differences in the future. Until the TCN and the training are complete this will be tracked as open item (440/88004-03(DRP)).

6. Monthly Surveillance Observation (61726)

On March 11, 1988, the inspector observed technical specifications required surveillance test SVI-E32-T5403-E, Revision 1, "Main Steam Isolation Valve (MSIV) Leakage Control System - Main Steamline B Pressure Functional for 1E32-N661E," and verified that testing was performed in accordance with procedures, that test instrumentation was calibrated, that limiting conditions for operation were met, that removal and restoration of the affected components were accomplished, that test results conformed with technical specifications and procedure requirements and were reviewed by personnel other than the individual directing the test, and that any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel.

No violations or deviations were identified.

7. Engineered Safety Feature (ESF) Walkdown (71710)

During this inspection period, the inspector performed a detailed walkdown of train "A" and train "B" of the accessible portions of the Annulus Exhaust Gas Treatment (AEGT) System. The system walkdown was

conducted using Valve Lineup Instruction (VLI)-M15, Revision 4. Prior to conducting the walkdown, the inspector verified VLI-M15 against controlled Piping and Instrumentation (P&IDs) for the AEGT System.

During the walkdown, both trains of the AEGT system were identified by the licensee as operable systems in accordance with technical specifications. The "A" train of the AEGT system was in operation. During the walkdown, the inspector directly observed equipment conditions to verify that housekeeping was adequate; no prohibited ignition sources or flammable materials were in the vicinity; valves and dampers in the system were installed correctly and did not exhibit gross packing leakage, bent stems, missing handwheels, or improper labeling; major system components were properly labeled, lubricated, and cooled and exhibited no leakage. The inspector verified that instrumentation was properly installed and functioning and that process parameter values were consistent with normal expected values; Valves and dampers were in their proper positions and local and remote indications were functional; essential support systems were operational; and the electrical and control board lineups were proper.

No violations or deviations were identified.

8. Operational Safety Team Inspection Finding - Motor Operated Valve Surveillance Testing (92701)

a. Background

On March 14-25, 1988, an NRC Operational Safety Team Inspection (OSTI) was conducted for Perry, Unit 1, in order to assess licensee performance in a number of areas and to determine whether or not the licensee had successfully made the transition from a construction/preoperational test status to a fully operational status. This inspection was to be documented in NRC Inspection Report No. 440/88200. Among the issues raised during the OSTI, one issue was identified as having potential immediate impact on plant equipment operability. The issue involved potential valve limit switch setting inaccuracies resulting in non-conservative valve stroke time measurements.

During a review of valve stroke time data, one of the OSTI members noted that valve 1B21-F067C exhibited a significant increase in measured stroke time between tests conducted in May and July 1987. Further inquiry disclosed that, prior to the July 1987 stroke time measurement, the valve was subjected to Motor Operated Valve Analysis and Test System (MOVATS) testing. A portion of the MOVATS process involved valve limit switch adjustment.

Based upon the significant change in limit switch setting and resultant change in measured stroke times for valve 1B21-F067C, the OSTI member examined the licensee's methodology for verifying the accuracy of valve position indication. The OSTI member concluded that, as outlined in the licensee's inservice test program

implementing procedures, the licensee apparently only made static comparisons of locally observed valve full open or full closed status with remote full open or full closed position indication status. Such a methodology would not necessarily disclose premature valve position limit switch actuation. Inservice test results documentation similarly did not furnish objective evidence that the position indication tests were anything more than static comparison of valve status and position indication status.

These findings led the OSTI member to question the accuracy of valve position indication in general and the accuracy of valve stroke time measurements which relied upon observation of remote valve position indication. Since the operability of certain valves was contingent upon meeting technical specification-specified valve stroke time limits, nonconservative valve stroke time measurements could have resulted in inoperable valves going undetected. Inspector followup of this issue was performed during this inspection to ascertain whether or not inoperable valves had gone undetected and to evaluate whether or not the accuracy of valve stroke time measurements was in accordance with the applicable requirements of 10 CFR 50.55a(g), technical specifications, and the licensee's inservice test program for pumps and valves.

Followup Inspection and Results

The licensee assembled stroke time data for 21 motor operated valves which had not been subjected to MOVATS testing. Comparison with technical specification stroke time limits disclosed that four valves had measured stroke times which were within one second of exceeding these limits. Definitive stroke time measurements for these valves were subsequently obtained by monitoring valve operator motor current during a valve actuation cycle. In each case the measured stroke time (motor run time) met technical specification limits and agreed with previous stroke time measurements (utilizing valve remote position indication) within two tenths of a second. This data indicated that these valves had close limit switch settings which reflected valve position with a high degree of accuracy.

Inspector review of pre and post MOVATS stroke time data for 64 valves which had been MOVATS tested disclosed that, more often than not, valve stroke times obtained from remote position indication were shorter following MOVATS testing. This trend was attributable to the fact that the close limit switches also functioned as open torqueswitch bypass limit switches. In order to ensure that the open torqueswitches were bypassed until the valves were fully unseated during an opening cycle, MOVATS testing systematically established close position limit switch settings that did not coincide with valve full closure.

Based upon the motor run times obtained for valves which had been MOVATS tested as well as the marginal valves which had not been MOVATS tested, and the general trend in pre and post MOVATS stroke time measurements, the inspector concluded the following: (1) the methodology for setting the close position limit switch prior to the introduction of MOVATS testing generally resulted in more precise closed position indication; (2) the pre-MOVATS inaccuracy of limit switch settings on valve 1B21-F067C appeared to have been an isolated case, and not the result of a flawed limit switch setting methodology; (3) valve operability for all valve reviewed was not in question, and; (4) inaccuracies in close position limit switch settings resulting from MOVATS testing were not accounted for in valve stroke time measurements and, in some cases, resulted in measurement inaccuracies in excess of those permitted by 10 CFR 50.55a(g).

The licensee's current approved inservice test program for pumps and valves which implemented the requirements of 10 CFR 50.55a(g) and more specifically, the requirements of the ASME Boiler and Pressure Vessel Code, Section XI, 1983 Edition and Addenda through Summer, 1983, Subsection IWV, required that valve stroke times be measured to the nearest second, regardless of the valve's maximum allowable stroke time. The inspector noted that for valves with maximum allowable stroke times of greater than 10 seconds, the licensee's inservice test program stroke time measurement accuracy requirements were more restrictive than ASME Code requirements. The ASME Code required that stroke time measurements for such valves be accurate to the nearest 10% of the maximum allowable stroke time.

The time between close limit switch actuation and valve full closure (based upon MOVATS data) resulted in stroke time measurement errors which exceeded either set of accuracy requirements for the following valves:

<u>Valve</u>	<u>Max Allowable Stroke Time (Close Direction)</u>	<u>Required Measurement Accuracy (nearest 1 sec. or nearest 10%, as applicable)</u>	<u>Measurement Error</u>
1E12-F0073B	15s	+ .75s	-2.00s
1E12-F0024A	90s	+ 4.50s	-6.30s
1E12-F0024B	90s	+ 4.50s	-5.20s
1E22-F0012	5s	+ .50s	- .54s
1E51-F0068	60s	+ 3.00s	-3.20s
1G33-F0001	15s	+ .75s	- .96s
1G50-F0272	20s	+ 1.00s	-1.80s

Failure to measure the forgoing valves' stroke times to the nearest 1 second or 10% of maximum allowable stroke time, as applicable, is contrary to 10 CFR 50.55a(g), applicable Edition and Addenda of the ASME Code, Section XI, Subsection IWB, the licensee's current, approved inservice test program for pumps and valves, and is a violation (440/88004-04(DRP)).

9. Reviews of Allegations (99014)

(Closed) Allegation (RIII-87-A-119)

On August 31, 1987, the inspector received via the licensee's internal mail system, an anonymous letter which contained a number of concerns related to the conduct of a named individual in the licensee's maintenance organization. The inspector determined by document review that the licensee's "Call for Quality" organization had earlier received an identical copy of the anonymous letter and was conducting an investigation to determine the validity of the concerns and to effect corrective actions for concerns which were substantiated. Given the licensee's prior receipt of the anonymous letter and ongoing licensee investigative efforts, NRC Region III management determined that a NRC review of the results of the licensee's investigation would be conducted in lieu of wholly independent NRC followup investigation.

Based upon the inspector's review of the licensee's investigation files concerning the anonymous letter and previous reviews of other Call for Quality files, the inspector determined that the licensee's handling of the issues raised in the letter was particularly thorough. The inspector noted that contributing to the thoroughness of the investigation was the fact that, during the investigation, three co-authors of the anonymously submitted letter identified themselves to Call for Quality investigators and availed themselves for followup interviews.

Each of the 15 specific concerns contained in the letter were evaluated to determine whether or not they concerned quality/safety-related matters. Those concerns which were determined to involve quality/safety-related matters were investigated in detail to develop factual information in order to substantiate the concerns. In addition to licensee followup interviews with the co-authors of the letter, licensee investigative efforts included: interviews with the named individual targeted in the concerns; interviews with other individuals having first-hand knowledge concerning the occurrences upon which the concerns were based; reviews of applicable administrative controls governing activities covered in the concerns; review of licensee QA program corrective action documentation to determine if issues had been identified which were similar to those raised in the concerns, and; supplementary interviews of randomly selected maintenance personnel to determine if they were aware of any occurrences similar to those discussed in the concerns which were substantiated. The inspector verified that file information detailing the results of the forgoing investigative efforts supported the conclusions reached by the licensee for each concern. Each concern and associated licensee finding is summarized below.

Concern 1

A Grade 1 and Grade 2 mechanic were instructed to top off the Division 3 batteries in Unit 2 prior to the repetitive task card being issued.

Finding

This concern could not be substantiated in that the work was performed in accordance with the applicable surveillance test instruction and after the repetitive task card was issued.

Concern 2

A Grade 2 mechanic was instructed to train a Grade 1 mechanic to the MOVATS and limitorque procedures.

Finding

This concern could not be substantiated. From a quality standpoint, both Grade 1 and 2 mechanics may perform maintenance to these procedures as long as they are properly trained and qualified. No procedure was violated in training additional personnel to perform this task.

Concern 3

A Grade 1 mechanic was instructed to erect scaffolding.

Finding

Since erection of scaffolding is not a nuclear safety related activity, this concern is not considered quality related. However, our investigation revealed that mechanics do erect scaffolding from time to time when carpenters are not available.

Concern 4

The named individual instructed two Grade 1 mechanics to remove an operator from a valve prior to obtaining permission from the shift outage director.

Finding

While this concern was substantiated, Call for Quality found that the work was done in accordance with an approved work package and there were no procedure violations involving substandard work quality. The individual in question has been subsequently trained to the administrative procedure covering the work order process to ensure that future work is properly sequenced and performed with the cognizance of outage planning personnel.

Concern 5

A Grade 2 mechanic was instructed to enter a confined space with no safety man and no Confined Space Entry Permit.

Finding

This concern could not be substantiated. Call for Quality found a Confined Space Entry Permit for this activity which was renewed each morning as work progressed.

Concern 6

The named individual wanted to send a crew into a confined space without a safety man.

Finding

This concern could not be substantiated. While the individual entertained the thought to change the area from a confined space, discussion with safety personnel revealed this was not possible. Consequently, the area remained classified as a confined space.

Concern 7

A Grade 1 mechanic was instructed to transport oil to a diesel room without a Transient Combustible Permit.

Finding

This concern could not be substantiated. A permit was issued to transport 55 gallons of oil to the Diesel Generator Building to cover this activity.

Concern 8

Two Grade 1 mechanics were instructed to perform two tasks which required an operator at the controlling motor control center buckets.

Finding

This concern could not be substantiated as a quality concern in that only one job was completed at a time. Further, investigation revealed that the shift supervisor would not dispatch one man to cover two remote tasks since it would have been physically impossible to do so.

Concern 9

A Grade 1 mechanic was told to change a limiter plate using a mechanic assistant as a human tag.

Finding

This concern was substantiated. The individual was retrained to applicable procedures and was counseled by his supervisor.

Concern 10

A Grade 1 mechanic was told to work on electrical equipment again using a mechanics assistant as a human tag.

Finding

This concern was substantiated. The individual was retrained to applicable procedures and was counseled by his supervisor.

Concern 11

A Grade 1 mechanic was told to make a design change on a sleeve without the use of an FCR.

Finding

This concern could not be substantiated. An FCR was written regarding the change and the work was completed in accordance with the instructions on the work order.

Concern 12

A Grade 1 mechanic was instructed to obtain an Arc Chute Grounding Bar from Unit 2 without the use of a Material Transfer Authorization (MTA).

Finding

This concern could not be substantiated. Call for Quality found that the named individual had merely questioned whether an MTA was required. A MTA was initiated but later voided and the necessary parts obtained from the warehouse. However, the individual in question was counseled on the importance of adhering to the MTA procedure.

Concern 13

A Grade 1 mechanic was instructed by the named individual to perform his work after waiting only 15 minutes for QC to cover a witness point.

Finding

While this concern could not be factually substantiated, the individual was, nevertheless, subsequently trained to procedures which required a 1/2 hour notification for QC inspection.

Concern 14

A Grade 1 mechanic was instructed to mill 20 thousandths from a site glass housing without an FCR. The mechanic refused to do so.

Finding

While this concern was substantiated, Call for Quality found that an FCR was initiated and dispositioned by Engineering allowing the milling of the front plate. All work was accomplished in accordance with the work package and the FCR. The individual in question has been counseled regarding this concern.

Concern 15

A mechanic assistant was instructed to install three vacuum cleaners to the front of the Service Building using unistrut fasteners.

Finding

Since the Service Building is not a safety related structure, this is not classified a quality concern.

Conclusion:

Based on the inspector's review, the only substantive violations by the named individual involved the use of "human tags" to isolate electrical equipment for maintenance. These violations of licensee administrative controls concerned matters of non-radiological occupational health and safety practice and, as such, do not fall within the realm of NRC jurisdiction. The inspector did ascertain, however, that a formal grievance addressing this and other matters was filed by the mechanics pursuant to provisions of the existing labor agreement with the licensee on August 12, 1987. This matter had since been settled.

10. Onsite Review Committee (40700)

The inspectors reviewed the minutes of the Plant Operations Review Committee (PORC) meetings No. 87-261 through 87-271, 88-001 through 88-017, 88-022 through 88-031, 88-034 through 88-040 and 88-42 through 88-45 conducted prior to and during the inspection period to verify conformance with PNPP procedures and regulatory requirements. These observations and examinations included PORC membership, quorum at PORC meetings, and PORC activities.

No violations or deviations were identified.

11. Physical Security Procedures For The Resident Inspector (71881)

During this inspection period, the inspectors observed/reviewed selected licensee activities for conformance with the approved physical security plan. The inspectors reviewed security personnel staffing levels and

verified that individuals authorized by the physical security plan to direct security activities were provided for each shift. The inspectors observed that access control measures, including search equipment, protected area and vital area barriers, and security door locking devices were operational and in use. The inspectors observed that personnel and packages entering the protected area were properly searched in accordance with licensee procedures. The inspectors observed that persons granted access to the site were badged to indicate whether or not they had unescorted or escorted access authorization. Finally, by direct observation the inspectors determined that the effectiveness of detection assessment aids was maintained by the absence of obstructions in the isolation zone, adequate illumination of the protected area and protected area barrier, and operable video surveillance equipment.

No violations or deviations were identified.

12. Radiological Protection Procedures For The Resident Inspector (71709)

Through discussions with licensee management, supervisory, and health physics personnel, and observation of licensee work planning activities, the inspectors determined that licensee personnel were aware of the ALARA program and that ALARA considerations were routinely considered in the planning of activities which involved occupational radiation exposure. The inspectors also determined through monthly Plant Status Meetings such as the one described in Paragraph 14. of this report and review of the licensee's internally generated Monthly Performance Reports, that the status of meeting ALARA goals and objectives is periodically assessed and disseminated to affected plant personnel.

No violations or deviations were identified.

13. Plant Status Meetings (30702)

On March 25, 1988, at the Perry site and on April 15, 1988 at the NRC Region III Office, NRC management met with CEI management to discuss the current status of the plant, recent events, and licensee initiatives to improve the quality of plant operating and maintenance activities. These meetings are being held on a periodic (initially monthly) basis.

14. Open Inspection Items

Open inspection items are matters which have been discussed with the licensee, which will be reviewed further by the inspector, and which involve some action on the part of the NRC or licensee or both. An open inspection item disclosed during the inspection is discussed in Paragraph 5.

15. Unresolved Items

Unresolved items are matters about which more information is required in order to ascertain whether it is an acceptable item, a violation or a deviation. An unresolved item is identified in Paragraph 3.

16. Exit Interviews (30703)

The inspectors met with the licensee representatives denoted in Paragraph 1 throughout the inspection period and on April 19, 1988. The inspector summarized the scope and results of the inspection and discussed the likely content of the inspection report. The licensee did not indicate that any of the information disclosed during the inspection could be considered proprietary in nature.