U. S. NUCLEAR REGULATORY COMMISSION

REGION III

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Report No:	50-440/96006
Licensee:	Centerior Service Company
Facility:	Perry Nuclear Power Plant
Location:	P. O. Box 97, A200 Perry, OH 44081
Dates:	July 27 - September 14, 1996
Inspectors:	D. Kosloff, Senior Resident Inspector R. Twigg, Resident Inspector C. O'Keefe, Resident Inspector (Fermi) K. Zellers, Resident Inspector (Davis-Besse)
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EXECUTIVE SUMMARY

Perry Nuclear Power Plant, Unit 1 NRC Inspection Report 50-440/96006

This inspection included aspects of licensee operations, engineering, maintenance, and plant support. The report covers a 7-week period of resident inspection.

Operations

- Conduct ci operations continued to be professional and safety-conscious. The operators continued to consistently repeat back and acknowledge oral communications related to plant operations (Section 01.1).
- Reporting of abnormal conditions improved. Operator response to abnormal plant conditions continued to be prompt and appropriate. Communications with engineering improved. Identification of the suppression pool level increase demonstrated an appropriate questioning attitude (Section 02.1).
- A power reduction to identify a main condenser tube leak was well controlled and the failure to locate the leak was recognized as an opportunity to improve performance (Section 01.2).
- The licensee continued to use a variety of self-assessment techniques to identify issues that required corrective actions. The licensee recognized weaknesses in its corrective action process and continued to pursue improvements in that process (Section 07.1).

Maintenance

- The licensee continued to aggressively pursue corrective actions for previously identified weaknesses in work planning and timely execution of work. This led to improved performance (Section M1.1).
- An unresolved item was identified related to the Division 3 EDG air-start system which required NRR assistance for future resolution (Section M2).
- Inspectors identified a procedure violation with two examples. They involved the improper storage of M&TE and scaffolding components (Section M4.2).

Engineering

- A personnel error allowed improper use of backfill for protection of Emergency Service Water piping. This was a non-cited violation (Section E4.1).
- Previously identified personnel errors caused a modification to alter the operation of the RCIC system in a way that had not been conveyed to the operators. This was a non-cited violation (Section E5.1).

Personnel error caused six sets of electrical relay contacts to be omitted from a surveillance test. The contacts were subsequently tested satisfactorily however, the earlier failure to test the contacts was a violation of Technical Specifications (Section E5.2).

Plant Support

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 A hot short concern related to motor operated valve operation was reviewed (Section F2.1).

Report Details

Summary of Plant Status

The plant operated at full power throughout the inspection period except for short power reductions for testing, control rod realignments, and an attempt to identify a condenser tube leak.

I. Operations

O1 Conduct of Operations

01.1 General Comments (71707)

Using Inspection Procedure 71707, the inspectors conducted frequent reviews of ongoing plant operations. In general, the conduct of operations continued to be professional and safety-conscious. The operators continued to consistently repeat back and acknowledge oral communications related to plant operations.

01.2 Response to Main Condenser Leak

a. Inspection Scope (71500, 71707, 92901)

On September 2 at about 2:30 p.m., with the plant at full power, chemistry personnel observed high conductivity readings in the hotwell. The operators concluded that there was a condenser tube leak of circulating (lake) water into the hotwell and reduced plant power to 80 percent to maintain plant water chemistry within limits. The inspectors observed control room operations at various times during the associated power changes and leak isolation process.

b. Observations and Findings

The next day the licensee decided to reduce power to 60 percent in an unsuccessful attempt to locate and repair the leak. The licensee maintained power at about 60 percent from September 3 until September 4 while attempting to locate the leak. However, some time after the power reduction started, the leak had resealed. Power was increased to 100 percent by September 4 at 5:15 p.m. Because of the failure to locate the leak, the licensee decided to develop a plan to complete leak location prerequisites more promptly to increase the probability of locating a leak once power was reduced.

c. Conclusions

The inspectors concluded that the evolution was well controlled and the failure to locate the leak was recognized as an opportunity to improve future performance. No further leakage had been identified by the end of the inspection period.

O2 Operational Status of Facilities and Equipment

02.1 Plant Equipment Deficiencies

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a. Inspection Scope (71500, 71707, 92901)

The inspectors performed routine inspections of the plant and observed a few minor equipment deficiencies that had not been previously identified by the licensee. The inspectors observed operator actions in response to two self-identifying conditions.

b. Observations and Findings

The inspectors observed that licensee personnel continued to identify potential equipment deficiencies with deficiency tags and potential issue forms (PIF).

On August 23 at about 12:20 p.m. the control room operators observed several annunciators illuminate for the rod control and information system, the reactor core isolation cooling system, and the low pressure core spray system. The operators notified the inspectors who responded to the control room. The inspectors verified that the licensee had taken remedial actions and identified the proximate cause of the annunciated conditions, a broken lug for a fuse that interrupted power to a set of electronic trip units for various components. Although the trip units failed to their downscale positions, thereby causing incorrect logic signals to be provided to some safety equipment, none of the safety equipment was actually degraded. The inspectors observed that the operators promptly took appropriate compensatory actions and were aware of additional manual actions they would have to take for various plant transients. Also, the inspectors observed appropriate management oversight and support from other organizations. The inspectors completed proper restoration of all equipment functions by about 5:48 a.m. the next day.

On August 31 at about 8:00 a.m. the oncoming operations shift observed that suppression pool level had increased about 1 inch in the previous 16 hours. They continued to monitor and record suppression pool level while they searched for the source of water. They could find no direct indications of the inleakage, but did note that the level increase stopped about the same time as 82 control rod hydraulic control units had their pressures reduced from about 1800 pounds per square inch (psi) to about 1750 psi. The system pressure had increased as a result of placing a rebuilt control rod drive hydraulic pump in service. The operators reported their observations to their management and to engineering. The licensee's investigation determined that the increased pressure had not caused the level increase and at the end of the inspection period the source of the water had not been identified.

c. Conclusions

General reporting of abnormal conditions improved and operator response to abnormal plant conditions continued to be prompt and appropriate. Communications between engineering and operations improved. The identification of the suppression pool level increase demonstrated an appropriate questioning attitude even though the suspected cause was not validated.

07 Quality Assurance in Operations

07.1 Licensee Self-Assessment Activities (40500)

a. Inspection Scope

The inspectors reviewed the following self-assessment activities that addressed multiple functional areas, as well as operations:

- Licensee routine managers' meetings
- Licensee management meeting to discuss deficient fill around underground emergency service water piping
- Potential issue forms (PIF)

b. Observations and Findings

The meetings were attended by appropriate personnel and there was substantive discussion of specific issues and general methods of improving the corrective action process. More than 300 PIFs were written by a variety of personnel who represented a wide cross section of plant organizations.

c. Conclusions

The licensee continued to use a variety of self-assessment techniques to identify issues that required corrective actions. The licensee recognized weaknesses in its corrective action process and continued to pursue improvements in that process.

O8 Miscellaneous Operations Issues (92720, 92901, 92902, 92903)

08.1 (Closed) Violation 50-440/94011-01: "Interruption of Shutdown

Cooling." This event was caused mainly by personnel error (inattention to detail) during the preparation, review, and approval of a work order. The inspector reviewed the corrective actions which included improvements to the design change program, development of a Work Management Section, revision of the fuse policy, and personnel training. The inspectors concluded that the corrective actions were appropriate.

- <u>O8.2</u> (Closed) LER 50-440/94-017-00: "Inadequate work order results in RHR B Shutdown Cooling system isolation." This LER was for the same event discussed in item O8.1 above, and is closed on that basis.
- <u>Q8.3</u> (Closed) IFI (50-440/96005-09): On July 8, 1996, while testing a program revision for the simulator computer, a scenario file was inadvertently started. The scenario file affected computer screen indications in the control room such as control rod positions and core thermal power averages. The operators determined the

information to be inaccurate based on control panel indications and plant performance. Through discussions with plant operators and simulator operators, the inspectors concluded that the simulator computer's capability to alter control room indications was limited to non-sofety related indications. Corrective actions included additional computer graphics to indicate to the user that the simulator computer was monitoring control room indications.

Q8.4 (Closed) LER 50-440/93-014-00: "RACS Power Supply Failure Causes Technical Specification 3.0.3 Entry." This LER was closed in IR 9t/004, but was erroneously described as LER 50-440/95-014-00.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments

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a. Inspection Scope (62703, 61726, 92902)

The inspectors observed all or portions of the following work and surveillance testing activities during Division 1 and Division 3 online system outages:

- R85-13006 Lube, megger, and perform general inspection of motor control center for the emergency service water pump, Division III
- 95-4613, E21C0001 Low Pressure Core Spray pump relay replacement
- S85-10209 SVI-E22-T1200 High pressure core spray (HPCS) pump discharge pressure high channel functional test
- 95-1565 Division III Diesel, recalibrate oil temperature switch
- 96-1478 Division III Diesel, retorgue inspection covers

The inspectors observed all or portions of the following additional surveillance tests:

- SVI-B21-T0212-A ATWS-RPT Reactor Vessel Pressure High Division I Channel A Functional Test for B21-N403A Analog trip Module
- SVI-E31-T0086B NUMAC LDM Calibration for E31-N700B
- SVI-B21-T0369A SRV Pressure Actuation Channel A Functional Test for B21-N668A
- b. Observations and Findings

The inspectors found that the observed work activities were well coordinated with appropriate supervision present. The craft assigned to perform a "bucket check" for the Division 3 Emergency Service Water Pump electrical breaker were knowledgeable of potential deficiencies to look fur, such as cracked or damaged fuse clips. The craft were electrically safety conscious, having verified the tag out and metered the breaker to ensure it was deenergized. Procedures for the work activities were present and were used. Appropriate documentation, such as operation's approval to conduct the work, were included in the work packages. Responsible system engineers were observed to be engaged with the work activities. This included temporary assignments as online divisional system outage coordinators. A major activity, replacement of an air regulator on one of two subsystems for the air start system on the Division 3 Emergency Diesel Generator (EDG), is discussed in Section M2.

The Division 1 system outage was completed about 9 hours later than scheduled. The licensee evaluated its performance during this outage with a thorough formal post-outage critique. The Division 3 outage, two weeks later, was completed on schedule. A formal post-outage critique was held fc⁻ that outage as well. Prior to each outage some planned work items had to be deleted because not all preoutage requirements could be completed.

Surveillance procedures were appropriate for testing conditions and correctly identified parameters needed to verify proper equipment performance. Test personnel followed the procedures during the observed testing and equipment problems were promptly identified and resolved.

c. Conclusions

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All activities observed were conducted in a professional manner, tagouts were appropriately completed, and engineering and management involvement was apparent. The licensee continued to aggressively pursue corrective actions for previously identified weaknesses in work planning and timely execution of work. This led to improved performance in the divisional system outages.

M2 Maintenance and Material Condition of Facilities and Equipment

a. Inspection Scope (61726, 92902)

The inspectors evaluated the licensee's corrective actions for an observed increase in Division 3 Emergency Diesel Generator (EDG) surveillance test start times.

b. Observations and Findings

In May 1996 the Division 3 EDG start time increased from an average of about 9 seconds to about 9.7 seconds and remained constant for each monthly start until August. The technical specification (TS) start time limit was 10 seconds. Systems Engineering concluded that either an EDG governor or air-start system problem had developed. Testing equipment monitoring the air-start system during the August premaintenance EDG start revealed a malfunctioning air regulator in one of the air-start subsystems thus rendering that subsystem inoperable. The regulator was replaced and the EDG start time returned to the expected range. The RSE was effective in locating and correcting the degraded regulator. However, the start time records indicated that the regulator had been malfunctioning since May, 1996, and called into question the timeliness of the identification.

On July 14, 1996, the licensee began using improved TS (ITS) based on NUREG-1434, "Improved BWR-6 Technical Specifications." The ITS included a new specification (3.8.3) for the air-start <u>system</u> that was not part of the previous TS. The ITS bases for 3.8.3 stated that "Division 1, 2, and 3 have two independent air start <u>subsystems</u> per DG. For Division 1 and 2 DGs, <u>one</u> air start subsystem for an engine is required for OPERABILITY of each DG" and the licensee tested the EDG 1 and 2 air-start subsystems independently. Eases 3.8.3 continued, "For the Division 3 DG, <u>two</u> air start subsystems are required for OPERABILITY" and the licensee tested the EDG 3 subsystems together. The inspectors were concerned that the plain meaning of the bases statement appeared to be that both air-start subsystems for EDG 3 were required to be operable for EDG 3 to be operable. Therefore, once the ITS became effective, with one air-start subsystem degraded and inoperable, the inspectors considered the Division 3 EDG inoperable until the defective regulator was replaced.

A review of the UFSAR revealed apparent inconsistencies. Section 9.5.6.4 air-start system description for EDGs 1 and 2 was identical to the UFSAR Section 9.5.9.3.4 description of the EDG 3 air-start system. However, the air-start system design for EDG 3 was significantly different from the air-start systems for EDGs 1 and 2. Additionally, section 9.6.5 of the May 1982 NUREG-0887 plant Safety Evaluation Report, May 1982, described the air-start systems in a manner that was unclear to the inspectors in light of the actual design of the systems.

c. <u>Conclusions</u>

The inspectors' understanding of the meaning of the TS basis statement on Division 3 EDG air-start systems differed from the licensee's. The inspectors requested NRR to provide the proper interpretation of the TS basis statement. Until the inspectors receive an answer, the past operability of the Division 3 EDG will be considered an unresolved item URI (50-440/96006-01(DRP)).

M4 Maintenance Staff Knowledge and Performance

M4.1 Control of Measuring and Test Equipment Control (M&TE)

a. Inspection Scope (62703, 92902)

During a general plant inspection the inspectors identified a FLUKE multimeter that was unattended.

b. Observations and Findings

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Because the multimeter was used for testing of safety-related electrical components, it was calibrated and controlled under the licensee's procedure for Control of Measuring and Test Equipment, PAP-1201, Rev. 7, effective December 19, 1995. The procedure was intended to achieve and maintain a high degree of confidence in the accuracy of safety-related measurements. Section 6.3.1, step 3.c of PAP-1201 required that M&TE be stored in a secure area when not in use or in the controlled issue area. The inspectors found the multimeter on top of an air distribution header for plant service air, which was not a secure area. Section 6.3 also required documented control of M&TE when issued to individuals for use. The licensee determined that the multimeter was documented as being in the controlled issue area.

M4.2 Scaffold Storage

a. Inspection Scope (62703, 92902)

On September 5, 1996, the inspectors accompanied the plant manager on an inspection of the plant. The inspectors observed some of the same areas of the plant on September 10, 1996.

Observations and Findings

On September 5, 1996, the inspectors observed one scaffold component stored outside of the designated scaffold storage area on the 599 foot elevation of the intermediate building. The area boundaries were defined by Field Clarification Request (FCR) 13745, approved May 22, 1990. The boundaries were clearly marked on the floor. This observation was shared with the plant manager. On September 10, 1996, the inspectors again observed scaffold components (4 pieces) at the same unauthorized location, which was within 1 meter of a safety related valve.

c. Conclusions on Maintenance Staff Knowledge and Performance

The safety consequences and the potential safety consequences of the improper storage of M&TE and scaffolding components were minor. However, the regulatory consequences were of more than minor significance because the licensee had identified repeated problems in both areas and had taken corrective actions which were not fully effective. Therefore, the improper storage of M&TE and scaffolding components were examples of a violation of 10 CFR Part 50, Appendix B, Criterion V, which requires that activities affecting quality be prescribed by documented instructions and procedures and be accomplished in accordance with those instructions and procedures (50-440/96006-02a&b(DRP)).

III. Engineering

E2 Engineering Support of Facilities and Equipment

- E2.1 Review of Updated Final Safety Analysis Report (UFSAR) Commitments
 - a. Inspection Scope (37001, 92903)

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While performing the inspections discussed in this report, the inspectors reviewed applicable portions of the UFSAR that related to the areas inspected. The inspectors also reviewed situations that the licensee had identified as potential inconsistencies between wording of the UFSAR and actual plant practices, procedures, and parameters.

b. Observations and Findings

- E2.1.1 UFSAR Table 3.5-7, "Safety-Related Systems/Components Located Outside Seismic Category I Structures," listed seven systems/components with brief descriptions of now they were protected from external missiles. The table stated that "Emergency Service Water Piping" was protected by being covered with "compacted ear fill" instead of "compacted earth fill" as other listed systems/components were. The inspectors concluded that this was a minor typographical error which does not merit further followup.
- E2.1.2 UFSAR Figure 9.2-13, "Condensate Transfer and Storage System" was a copy of plant drawing 302-102. The licensee determined during a UFSAR update review that drawing 302-102 was changed in June 1993 by Drawing Change Notice 4199 without a required UFSAR change request and safety evaluation. The licensee completed a safety evaluation which was reviewed by the onsite review committee on September 5, 1996. This issue will be reconsidered in the future and is an unresolved item URI (50-440/96006-03).
- E2.1.3 UFSAR Section 9.5.9.2.4, "Inspection and Testing Requirements" for the Division 3 EDG describes the air-start system incorrectly. See Section M2b of this report. This description appeared to be part of the original issue of the UFSAR. This issue will be reconsidered in the future and is an unresolved item URI (50-440/96006-04).
- E2.1.4 UFSAR Section 17.2.1.3.5.1, "Company Nuclear Review Board(CNRB)" describes the composition and functions of the CNRB. The licensee determined that the CNRB had delegated some of its review functions to subcommittees. That delegation was not specifically described in the UFSAR and the licensee was evaluating whether its actual practices met the intent of the UFSAR description.

This issue will be reconsidered in the future and is an unresolved item URI (50-440/96006-05).

c. Conclusions

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The inspectors will evaluate the findings and determine whether a violation of NRC requirements has occurred.

E4 Staff Knowledge and Performance

E4.1 Service Water (SW) Modification Impacts Emergency SW Tornado Protection

a. Inspection Scope (92720, 2903)

An inspector responded to the site on August 3, 1996, to evaluate the licensee's immediate corrective actions following their discovery that improper backfill had been used for temporary protection of a small portion of emergency SW (ESW) piping from postulated tornado generated missiles. The inspector also observed a licensee management meeting about the issue and inspected the area where the ESW piping was improperly covered and other site areas where ESW piping was propenv covered.

b. Observations and Findings

On August 2, 1996, the licensee determined that uncompacted safety-related Class A engineered backfill (a course sand mixture) temporarily placed over about 3 meters of underground safety-related ESW piping was required to be compacted. About 1.2 meters of compacted fill was required by Table 3.5-7 of the UFSAR. This requirement was in engineering documents that had been given to the construction contractor performing the nonsafety-related SW work. The engineering documents had been completed by an engineering contractor. The SW piping being installed by the contractor was being connected to an abandoned Unit 2 underground ESW pipe. That pipe was parallel to a Unit 1 underground ESW pipe buried at the same elevation. The contractor excavated an area about 3 meters square down to the Unit 2 pipe, which was about 4 meters deep. They did not uncover the Unit 1 ESW pipe but left only about 0.6 meters of compacted fill above and to the side of the pipe. Whenever direct access to the pipe was not required the contractor partially filled the excavation by placing about 0.7 meters of uncompacted fill over the compacted fill. The contractor also maintained the capability to place the uncompacted fill within 1 hour of declaration of a tornado watch. The licensee determined that since there was no analysis that demonstrated that the uncompacted fill could protect the ESW pipe from tornado generated missiles, the associated train of ESW would have been declared inoperable if a tornado watch were to have been declared. That was an interim measure while the licensee developed an independently verified engineering analysis that identified an acceptable method of temporary backfill that could be practically removed for construction activities. On August 4, 1996, the licensee concluded that, for temporary missile protection, 1.2 meters of uncompacted crushed rock

was equivalent to 1.2 meters of compacted engineered backfill, and placed that material in the excavation. No tornado watch was declared during the inspection period.

c. Conclusions

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The personnel error in translating the engineering information into an actual work practice that allowed the improper use of backfill had no actual safety consequence because there was no tornado watch while the violation existed. The potential safety consequence was minor because the inspectors concluded, after discussion with Region III menagement and staff, that the size and shape of the excavation minimized the probability that a tornado generated missile could have damaged the ESW pipe. However, the regulatory significance is more than minor because, in slightly different circumstances, a similar communications error could have more significant consequences. The communications error appeared to be the result of the way the backfill information had been presented in the engineering documents prepared by the engineering contractor. The licensee's planned corrective actions included a request for the engineering contractor to evaluate other engineering work for similar problems and its programs for creating and reviewing its engineering documents. The licensee also planned to train its engineering staff on the communications error and its potential consequences. Procedure PAP-0305, "Safety Evaluations," Rev. 7, effective September 1, 1993, step 3.6 1. required responsible/sponsoring managers to "Ensure required 10CFR50.59 Applicability Checks and Safety Evaluations, ... are performed for necessary items prepared within their section." The communications error that allowed the uncompacted fill to be used (an inadvertent temporary change to the facility as described in the UFSAR) prevented step 3.6 1. from being fulfilled. Failure to fulfill step 3.6 1. is a violation of TS 6.8.1 which required written instructions to be implemented for the activities recommended in Appendix A of Regulatory Guide 1.33, Rev. 1, February 1978. This licensee identified and corrected violation is being treated as a Non-Ci.ed Violation NCV (50-440/96006-06(DRP)) consistent with Section VII.8.1 of the NRC Enforcement Policy (60 FR 34380, June 30, 1995).

E5 Engineering Staff Training and Qualification

E5.1 Modification Alters Safety-Related System Response

a. Inspection Scope (37551, 92903)

The inspectors reviewed the licensee's evaluation of Unresolved Item 96005-03 which was opened as the result of a self-identified concern with a modification to the Leakage Control System completed during the recent refueling outage (RF05). The modification had been controlled by Design Change Package (DCP) 87-0725. The inspectors reviewed the human performance enhancement systems (HPES) evaluation report that was completed as part of the associated PIF investigation. The inspectors also discussed the results of the investigation with licensee personnel.

b. Observations and Findings

During a review of simulator operations the licensee observed that the Reactor Core Isolation Cooling (RCIC) system isolated during a simulated loss of electrical power to the General Electric (GE) Nuclear Measurement Analysis and Control (NUMAC) steam leak detection monitor equipment. Prior to installation of the NUMAC equipment, RCIC did not isolate on a loss of power. Licensee personnel appropriately documented their observation with PIF 96-2568. The licensee promptly investigated the obser. ad change and found that power monitoring relays, which prevented RCIC isolation in the previous design, had been removed when the NUMAC equipment was installed. The licensee verified that RCIC remained operable based on its continuing capability to perform its Technical Specification required safety functions and because RCIC had no design basis safety function relative to the UFSAR accident analyses. However, the changes introduced by DCP 87-0725 were of concern because RCIC, a safety-related system, would no longer have performed in the manner that operators had been trained to expect under certain conditions.

The licensee promptly recognized the potential impact of such unintended changes and began an investigation to identify the extent of the condition and the causes. Although most of the engineering work for DCP 87-0725 had been completed in 1992 and 1993, the licensee selected 13 recent DCPs (including 87-0725) for review for similar problems. Additional personnel errors were identified in the design or implementation of three of the DCPs. The inspectors reviewed the errors and concluded that they were not programmatic. One error was not an engineering error, but an error in the validation of an emergency operating procedure. Another involved the failure to identify an unusual heat transfer process. This item, DCP 94-0027 for emergency closed cooling system temperature control valves, was reviewed in IR 96008. The third error involved a communication failure related to the implementation of temporary compensatory actions during excavations for an SW DCP. That item is discussed in section E4.1 above.

The HPES evaluation identified four personnel errors that caused the design error and allowed it to remain undetected until after the modification had been placed in service. The initiating error was a failure by GE to recognize the isolation function of the power monitoring relays, even though they had committed to provide the licensee with specific information about the relays. In checking the GE design, licensee engineers then made two independent errors by not identifying that GE had changed the design by deleting the power monitoring relays. These errors involved a failure to follow up on the earlier question to GE; the advantage of a good questioning attitude had been lost. The fourth error was a failure to provide a postmaintenance test that would have identified a failure mode that had been overlooked during preparation of the DCP. The licensee was planning to further evaluate that error in conjunction with its evaluation of DCP 94-0027 for the temperature control valves.

c. Conclusions

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The licensee's investigation was thorough, including the root cause evaluation and the review of the extent of the condition. The inspectors concluded that the licensee's programmatic corrective actions in 1995 for other design control problems combined with additional corrective actions planned as a result of this newly discovered error should prevent recurrence. Nuclear Engineering Instruction NEI-0357, Rev. 9, effective November 20, 1992, step 6.2.5, required that, for a DCP, the "Design Engineer/Project Coordinator ... obtain necessary design review/verifications ... for the portions changed." The two personnel errors that allowed the design error (an inadvertent change to the design) to remain undetected prevented step 6.2.5 from being fulfilled. Failure to fulfill step 6.2.5 is a violation of TS 6.8.1 which required written instructions to be implemented for the activities recommended in Appendix A of Regulatory Guide 1.33, Rev. 1, February 1978. This licensee-identified and corrected violation is being treated as a Non-Cited Violation NCV (50-440/96006-07(DRP)) consistent with Section VII.8.1 of the NRC Enforcement Policy (60 FR 34380, June 30, 1995).

E5.2 Isolation Contacts Not Tested

a. Inspection Scope (37551, 61726, 92903)

On August 20, 1996, licensee personnel identified six sets of electrical relay contacts that had not been surveillance tested since the installation of the GE NUMAC modification in RFO5. The inspectors reviewed the licensee's evaluation of this error and observed portions of the surveillance testing for the six relays.

b. Observations and Findings

Technical Specification (TS) Surveillance Requirement (SR) 3.3.6.1.4 required that a channel calibration be performed on the primary containment and drywell isolation instrumentation every 18 months. TS SR 3.3.6.1.5 required that a logic system functional test be performed on the primary containment and drywell isolation instrumentation every 18 months. TS Table 3.3.6.1-1 identified the functions that required testing for SR 3.3.6.1.4 and SR 3.3.6.1.5. The following relay contacts were required to be tested to verify functions listed in TS Table 3.3.6.1-1:

1E31-N702A-K5 contacts 9/5, Function 1.3.f 1E31-N702B-K5 contacts 9/5, Function 1.3.f 1E31-N702A-K6 contacts 9/5, Function 1.3.a 1E31-N702B-K6 contacts 9/5, Function 1.3.a 1E31-N702A-K7 contacts 9/5, Function 1.2.b 1E31-N702B-K7 contacts 9/5, Function 1.2.b

The above TS SRs became effective on July 14, 1996. The relay contacts listed above, part of the leak detection system, had not been tested following a modification to the system completed in February and March of 1996, and had not been tested in accordance with the old TS SR prior to the effective date of the above TS SR. Therefore, once the above TS SR became effective, they were immediately required to be tested.

The inspectors verified that all the untested contacts were associated with temperature indication instrumentation logic for isolation of piping following postulated pipe ruptures. If temperatures were to exceed a preset limit in certain rooms, the temperature indication signals from the affected temperature indicators would cause the logic relays to change state. As a result multiple sets of contacts associated with the relays would then change state. The relays had been properly tested and all sets of contacts on the relays had been properly tested except for one set on each of six relays. It was possible for one set of contacts to fail even though the associated relay and other sets of contacts worked properly. The untested contacts were required to be operable by TS Limiting Condition for Operation (LCO) 3.3.6.1 as detailed in TS Table 3.3.6.1-1.

Upon discovering the untested sets of contacts the licensee complied with TS SR 3.0.3 which allowed 24 hours to perform a surveillance after discovery that a surveillance had not been performed within its required frequency. The inspectors verified that the surveillance testing of the untested sets of contacts was successfully performed within 24 hour of discovery. The testing confirmed that the untested contacts had actually remained operable since they had been installed.

c. Conclusions

Once the untested contacts were discovered, the licensee took prompt and appropriate actions to confirm their operability. However, the earlier failure to test the contacts immediately upon the ITS becoming effective was a Violation (50-440/96006-08(DRP)) of TS SR 3.3.6.1.4 and SR 3.3.6.1.5.

E8 Miscellaneous Engineering Issues (92720, 92903)

- E8.1 (Closed) Unresolved Item 50-440/96005-03: During a review of simulator operations the licensee observed that the Reactor Core Isolation Cooling (RCIC) system isolated during a simulated loss of electrical power to the General Electric (GE) Nuclear Measurement Analysis and Control (NUMAC) steam leak detection monitor equipment. Prior to installation of the NUMAC equipment, RCIC did not isolate on a loss of power accident. This item is discussed in section E5 and is closed.
- E8.2 (Closed) LER 50-440/93-015-00: "Unexpected Reactor Recirculation Pump Fast to Slow Speed Downshift." This LER was closed in IR 96004, but was erroneously documented as LER 50-440/95-015-00.

IV. Plant Support

F2 Status of Fire Protection Facilities and Equipment (71750)

F2.1 Review of Licensee Compensatory Actions for "Hot Shorts" Issue

On September 10, 1996, the NRC, including a NRR lead fire protection reviewer, met with the licensee at the plant to discuss compensatory measures that would be taken in response to the licensee's determination that safe shutdown motor operated valves (MOVs) could be susceptible to fire induced hot shorts. Based on these discussions, reviews of guidance provided to plant operators, and walkdowns of affected portions of the plant, the NRC concluded that the compensatory actions were acceptable.

V. Management Meetings

X1 Exit Meeting Summary

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The inspectors presented the inspection results to members of licensee management after the conclusion of the inspection on September 18, 1996. The licensee acknowledged the findings presented.

The inspectors asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

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- D. C. Shelton, Senior Vice President
- R. D. Brandt, General Manager Operations
- N. L. Bonner, Engineering Director
- L. W. Worley, Nuclear Services Director
- W. R. Kanda, Nuclear Assurance Director
- J. Messina, Operations Manager

INSPECTION PROCEDURES USED

- IP 37551: Onsite Engineering
- IP 40500: Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems
- IP 61726: Surveillance Observations
- IP 62707: Maintenance Observation
- IP 71500: Balance of Plant Inspection
- IP 71707: Plant Operations
- IP 71714: Cold Weather Preparation
- IP 71750: Plant Support Activities
- IP 92700: Onsite Followup of Written Reports of Nonroutine Events at Power Reactor Facilities
- IP 92720: Corrective Action
- IP 92901: Followup Operations
- IP 92902: Followup Maintenance
- IP 92903: Followup Engineering
- IP 92904: Followup Plant Support
- IP 37001: 10 CFR 50.59 Safety Evaluation Program

ITEMS OPFNED, CLOSED, AND DISCUSSED

Opened

50-440/96006-01	URI Diesel start testing
50-440/96006-02	VIO M&TE and scaffold control
50-440/96006-03	URI UFSAR Figure 9.2-13, drawing change
50-440/96006-04	URI UFSAR Sec. 9.5.9.2.4, EDG air-start system description
50-440/96006-05	URI UFSAR Sec. 17.2.1.3.5.1, CNRB delegation of functions
50-440/96006-06	NCV Use of incorrect temporary backfill
50-440/96006-07	NCV GE NUMAC modification affects RCIC
50-440/96006-08	VIO GE NUMAC surveillance testing inadequate

Closed

50-440/93014-00	LER RACS power supply failure causes TS 3.0.3 entry
50-440/93015-00	LER Unexpected recirculation pump downshift
50-440/94011-01	VIO Interruption of shutdown cooling
50-440/94017-00	LER Interruption of shutdown cooling
50-440/96005-03	URI Modification affects RCIC operation
50-440/96005-09	IFI Simulator computer interaction with control room

50-440/96006-06 NCV Use of incorrect tamporary backfill 50-440/96006-07 NCV GE NUMAC modification affects RCIC

Discussed

None

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LIST OF ACRONYMS USED

ALARA	AS LOW AS REASONABLE ACHIEVABLE
ATWS	ANTICIPATED TRANSIENT WITHOUT SCRAM
BWR	BOILING WATER REACTOR
CFR	CODE OF FEDERAL REGULATIONS
CNRB	COMPANY NUCLEAR REVIEW BOARD
DCP	DESIGN CHANGE PACKAGE
DIV	DIVISION
DG	DIESEL GENERATOR
DRP	DIVISION OF REACTOR PROJECTS
EDG	EMERGENCY DIESEL GENERATOR
ESW	EMERGENCY SERVICE WATER
FCR	FIELD CLARIFICATION REPORT
FSAR	FINAL SAFETY ANALYSIS REPORT
GDC	GENERAL DESIGN CRITERIA
GE	GENERAL ELECTFIC
HPCS	HIGH PRESSURE CORE SPRAY
HPES	HUMAN PERFORMANCE ENHANCEMENT SYSTEM
IFI	INSPECTION FOLLOW-UP ITEM
ITS	IMPROVED TECHNICAL SPECIFICATIONS
LCO	LIMITING CONDITIONS FOR OPERATIONS
LER	LICENSEE EVENT REPORT
LDM	LEAKAGE DETECTION MONITOR
MOV	MOTOR-OPERATED VALVE
M&TE	MEASURING & TEST EQUIPMENT
NEI	NUCLEAR ENGINEERING INSTRUCTION
NRC	NUCLEAR REGULATORY COMMISSION
NRR	OFFICE OF NUCLEAR REACTOR REGULATION
NUMAC	NUCLEAR MEASUREMENT ANALYSIS AND CONTROL
PAP	PERRY ADMINISTRATIVE PROCEDURE
PDR	PUBLIC DOCUMENT ROOM
PIF	POTENTIAL ISSUE FORM
PNPP	PERRY NUCLEAR POWER PLANT
DSi	POUNDS PER SQUARE INCH
RACS	ROD ACTION CONTROL SUBSYSTEM
RCIC	REACTOR CORE ISOLATION COOLING
RHR	RESIDUAL HEAT REMOVAL
RI	RESIDENT INSPECTOR
RSE	RESPONSIBLE SYSTEMS ENGINEER
SR	SURVEILLANCE REQUIREMENT
SRI	SENIOR RESIDENT INSPECTOR
SRV	SAFETY RELIEF VALVE
SW	SERVICE WATER
TS	TECHNICAL SPECIFICATION

TSPS TECHNICAL SPECIFICATION POSITION STATEMENT UFSAR UPDATED FINAL SAFETY ANALYSIS REPORT URI UNRESOLVED ITEM

PARTIAL LIST OF DOCUMENTS REVIEWED DURING THE INSPECTION

95-1565 Division III Diesel, recalibrate oil temperature switch

95-4613 E21C0001 Low Pressure Core Spray pump relay replacement

96-1478 Division III Diesel, retorque inspection covers

Charts on various control room chart recorders.

Computer printouts on various control room printers.

Control Room Standing Orders, various dates

Control Room Daily Instructions, various dates

Control Room Daily Instructions, Supplemental Reading, various dates

Control Room Annunciator Status Books, revisable format, various dates

DCP 95-0022

Drawing D-302-102, Rev.CC, 6-4-96

Excessive Radwaste Sump Inleakage Report - Dated 09/09/96

GCI 0016, Scaffolding Erection, Modification or Dismantling Guidelines, Rev. 1, 8-4-95

Managers' Meeting Report - 07/29/96 Managers' Meeting Report - 07/31/96

Managers' Meeting Report - 08/02/96

Managers' Meeting Report - 08/05/96

Managers' Meeting Report - 08/07/96

Managers' Meeting Report - 08/09/96

Managers' Meeting Report - 08/12/96

Managers' Meeting Report - 08/14/96

Managers' Meeting Report - 08/16/96 Managers' Meeting Report - 08/19/96

Managers' Meeting Report - 08/21/96

Managers' Meeting Report - 08/23/96

Managers' Meeting Report - 08/26/96

Managers' Meeting Report - 08/28/96

Managers' Meeting Report - 08/30/96

Managers' Meeting Report - 09/04/96

Managers' Meeting Report - 09/06/96

Managers' Meeting Report - 09/09/96

Managers' Meeting Report - 09/11/96

Managers' Meeting Report - 09/13/96

MEMORANDUM - J. Kloosterman to IRT on PIF 96-2568, 08/16/96

SUBJECT: REQUESTED INPUT TO INCIDENT RESPONSE TEAM (IRT) FOR PIF 96-2568. Monthly ALARA Report, July 1996

Monthly ALARA Report, August 1935

Monthly Performance Report, Perry Nuclear Power Plant, July 1996

Monthly Performance Report, Perry Nuclear Power Plant, August 1996

NEI-0357, Design Change Packages, Rev. 9, effective November 20, 1992

NEI-0357, Design Change Packages, Rev. 11, effective 2-1-95

PAP 020 , Conduct of Operations, Rev. 9, effective 3-28-95 PAP 0204, Housekeeping/Cleanliness Control Program, Rev. 8, effective 9-1-95 PAP-0305, Safety Evaluations, Rev. 7, effective September 1, 1993 PAP 0909, Scaffolding Erection/Teardown Requests and Scaffold Tracking Program PAP 1201, Control of Measuring and Test Equipment Perry Daily Report - 07/30/96 Perry Daily Report - 08/01/96 Perry Daily Report - 08/06/96 Perry Daily Report - 08/08/96 Perry Daily Report - 08/13/96 Perry Daily Report - 08/15/96 Perry Daily Report - 08/20/96 Perry Daily Report - 08/22/93 Perry Daily Report - 08/27/96 Perry Daily Report - 08/29/96 Perry Daily Report - 09/03/96 Perry Daily Report - 09/05/96 Perry Daily Report - 09/10/96 Perry Daily Report - 09/12/36 PERRY Lines, September 5, 1996 PERRY NUCLEAR POWEP PLANT - RADIATION PROTECTION SECTION Fifth Refueling - ALARA/ ALTH PHYSICS - POST OUTAGE REPORT January 27, 1996 to April 10, 1996 Plant Log Vol. 31, Page No. 49 - 98 PNPP Plan of the Day - 07/26/96 PNPP Plan of the Day - 07/29/96 PNPP Plan of the Day - 07/30/96 PNPP Plan of the Day - 07/31/96 PNPP Plan of the Day - 08/01/96 PNPP Plan of the Day - 08/02/96 PNPP Plan of the Day - 08/05/96 PNPP Plan of the Day - 08/06/96 PNPP Plan of the Day - 08/07/96 PNPP Plan of the Day - 08/08/96 PNPP Plan of the Day - 08/09/96 PNPP Plan of the Day - 08/12/96 PNPP Plan of the Day - 08/13/96 PNPP Plan of the Day - 08/14/96 PNPP Plan of the Day - 08/15/96 PNPP Plan of the Day - 08/16/96 PNPP Plan of the Day - 08/19/96 PNPP Plan of the Day - 08/20/96 PNPP Plan of the Day - 08/21/96 PNPP Plan of the Day - 08/22/96 PNPP Plan of the Day - 08/23/96 PNPP Plan of the Day - 08/26/96 PNPP Plan of the Day - 08/27/96 PNPP Plan of the Day - 08/28/36

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PNPP Plan of the Day - 08/29/96 PNPP Plan of the Day - 08/30/96 PNPP Plan of the Day - 09/03/96 PNPP Plan of the Day - 09/04/96 PNPP Plan of the Day - 09/05/96 PNPP Plan of the Day - 09/06/96 PNPP Plan of the Day - 09/09/96 PNPP Plan of the Day - 09/10/96 PNPP Plan of the Day - 09/11/96 PNPP Plan of the Day - 09/12/96 PNPP Plan of the Day - 09/13/96 PNPP Potential Issue Form No. 96-2590 through 96-2936 PNPP Potential Issue Form No. 95-1372 R85-13006 Lube, megger, and perform general inspection of motor control center for the emergency service water pump, Division III Radiation Protection Section Organization Chart (Effective Date: 8/5/96) RADIOLOGICAL AWARENESS - September 4, 1996 S85-10209, SVI-E22-T1200, High pressure core spray pump discharge pressure high channel functional test Site Weekly Dose Summary On-Line Quarterly Schedule Week Q3W4 09/02/96 Through 09/08/96 SVI-B21-T0212-A ATWS-RPT Reactor Vessel Pressure High Division I Channel A Functional Test for B21-N403A Analog trip Module SVI-E31-T0086B NUMAC LDM Calibration for E31-N700B SVI-B21-T0369A SRV Pressure Actuation Channel A Functional Test for B21-N668A Temporary Modification Tracking Report, September 1996, 9-1-96 Unit Log - Unit 1 - Vol. 88, Page No. 31 - 150 Updated Final Safety Analysis Report Various Equipment Deficiency Teas Various Active LCO Log Sheets Various Operations Administrative Control Tags Various Operations Information Tags Various Potential LCO Log Sheets Various Fire Extinguisher Inspection Tags Various Radiologically Restricted Area Radiation Surveys Various Safety Tags Radiation Work Permit 96006 Weekly Effluent and Release Rate Data Report, about August 21 Weekly Effluent and Release Rate Data Report, about August 28 Weekly Effluent and Release Rate Data Report, about September 4 Weekly Effluent and Release Rate Data Report, about September 11 Work Process Performance Indicators, July 2, 1996