U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-440
License No:	NPF-58
Report No:	50-440/96-11
Licensee:	Centerior Service Company
Facility:	Perry Nuclear Power Plant
Location:	P. O. Box 97, A200 Perry, OH 44081
Dates:	September 15 - November 1, 1996
Inspectors:	D. Kosloff, Senior Resident Inspector R. Twigg, Resident Inspector S. Salicrup, Intern
Approved by:	J. M. Jacobson, Chief, Projects Branch 4 Division of Reactor Projects

EXECUTIVE SUMMARY

Perry Nuclear Power Plant, Unit 1
NRC Inspection Report 50-440/96-11

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

Operations

- The operators were aware of plant conditions and plant activities were well controlled (Sections O1 and O2).

- The operators performed well in response to the unexpected loss of a motor control center (Section O4.1).

- 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 O7.1).

- Review of a previously identified problem resulted in identification of a non-cited violation. Poor control of a conductivity recorder caused a surveillance requirement to be missed (Section O8.5).

Maintenance

- Maintenance and surveillance activities were generally completed properly. However, in one case, operators were challenged by poor planning and technician performance (Section M1).

- Material condition problems observed by the inspectors had been identified by the licensee, monitored, and scheduled for repair (Section M2).

- The licensee identified an error in an instruction during a surveillance activity. Once the error was identified, remedial actions were prompt and appropriate. However, many earlier opportunities to identify the error had been missed. This demonstrated inattention to detail during review process, poor questioning attitudes, and poor procedural compliance. The introduction of the error into the instruction was a violation of Technical Specification 5.4.1 (Section M4.1).

- Maintenance activities related to an unexpected breaker trip were generally prompt and appropriate. However, the failure to identify the breaker defect prior to installation and during the initial shop inspection was a weakness. Evaluation of the defect has not been completed and is an unresolved item. This item is of concern because it had the potential to cause a loss of safety function of the control room emergency recirculation system (Section M4.2).

Engineering

- The licensee promptly responded to another GE fuel design analysis error. The repeated analytic errors are being tracked with a previously opened inspection follow-up item (Section E2.1).

- The inspectors identified that the underdrain manhole covers were not being maintained as described in the Updated Final Safety Analysis Report. This minor problem was considered an non-cited violation (Section E2.2).

Plant Support

- A licensee fire protection audit highlighted weaknesses in the licensee's corrective action process and identified significant opportunities for program improvement (Section F7).

Report Details

Summary of Plant Status

At the beginning of the inspection period the plant was operating at full power and continued to do so except for minor power reductions for testing, a power reduction to about 60% on September 29 for individual control rod scram time surveillance testing, and a power reduction to about 60% on October 6 to evaluate a steam leak and adjust the control rod pattern.

I. Operations

O1 Conduct of Operations

O1.1 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.

O1.2 Infrequently Performed Test or Evolution (IPTE)

a. Inspection Scope (71707, 92901)

The inspectors observed an Infrequently Performed Test or Evolution (IPTE) briefing for changing the operating steam jet air ejector (SJAE). The evolution was also observed. The transfer was needed because of a steam leak on one train of the offgas system between SJAE 'A' and its associated preheater. Potential hazards of the evolution included hydrogen buildup, loss of main condenser vacuum, loss of offgas loop seals, and ignition of offgas charcoal beds.

b. Observations and Findings

The IPTE was led by an engineering manager with all appropriate participants present, including operations management. Industry events were reviewed for relevancy and all potential hazards were discussed. The procedure was thoroughly reviewed with operators assigned to monitor parameters and auxiliary operators to monitor plant performance such as loop seal levels. Termination criteria were established with specific parameters identified. The evolution was completed without incident.

c. Conclusions

The operators and IPTE members prepared for and performed the evolution in a conservative and cautious manner and in accordance with the procedures.

O2 Operational Status of Facilities and Equipment

O2.1 Emergency Closed Cooling (ECC) Boundary Valve Leakage During Maintenance

a. Inspection Scope (71500, 71707, 92901)

The inspectors observed work activities associated with repair of packing leaks on ECC valves. The inspectors also observed operations coordination of the work.

b. Observations and Findings

Operations personnel were aware of plant conditions associated with the work in progress. The inspectors observed that drainage had continued from the isolated portion of the ECC system well beyond the expected duration. Since the volume of pipe was small and drainage had continued at about 1 gallon per minute (gpm) the inspectors suspected that one of the boundary valves was allowing leakage from the nonsafety-related nuclear closed cooling (NCC) system to the safety-related ECC system. The shift supervisor and unit supervisor were aware of the condition. While discussing the continued drainage with the inspectors the shift supervisor stated that he would write a potential issue form (PIF) on the issue. The inspectors verified that PIF 96-3039 was written and addressed the additional out-of-service time caused by the leakage and the need to evaluate the volume of leakage with respect to the allowed leakage from the valves that might have been leaking.

Further investigation by the licensee identified 1.06 gpm of leakage from NCC to ECC. The identified leakage was conservatively assumed to result in a similar ECC-to-NCC leakage rate during an accident. This leak rate was less than the allowed leakage of 3.3 gpm.

c. Conclusions

Operations monitoring and control of these maintenance activities were appropriate. The associated PIF written by the shift supervisor was comprehensive in identifying potential issues. Although the PIF could have been written more promptly, there was no significant delay. Evaluation of the potential issues was prompt and appropriate.

O4 Operator Knowledge and Performance

O4.1 Unexpected Trip of Breaker EF1D09

a. Inspection Scope (71707, 92901)

On September 16, 1996, at about 1:51 p.m., with the plant at full power, safety-related 480 volt, alternating current (VAC) breaker EF1D09 tripped on overload. This deenergized Motor Control Center (MCC) EF-1-D-09 which normally supplied various Division 2 safety-related ventilation systems, including control room ventilation. Technical Specification (TS) Action Statement 3.8.7 A.1 required the MCC to be

restored to operability within 8 hours. The inspectors observed operations evaluation of plant conditions, coordination of replacement of the breaker, and restoration of the MCC.

b. Observations and Findings:

The inspectors verified that the operators had identified the systems and components that were affected by the loss of the MCC. Appropriate TS action statements were entered, with 3.8.7 A.1 being the most restrictive. Initially, the licensee could not identify any reason for the breaker to have tripped. No abnormal electrical system conditions were identified. There were no personnel near the breaker when it tripped. The licensee promptly decided to remove the breaker for more detailed inspection and replace it. There were no identical breakers available on site. Maintenance personnel located two similar breakers that required replacement of some components and testing to allow them to be used in place of breaker EF1D09. The breaker vendor was contacted and a technical representative reported to the site and assisted maintenance workers in inspecting the tripped breaker. Again, no reason for the breaker trip was identified.

The operations manager assisted shift personnel in coordinating the restoration of the MCC. Additional management and engineering support was also provided. The VP-Nuclear provided direct oversight. Clear specific written and verbal instructions were promptly given to the shift supervisor on preparing the plant for an orderly shutdown upon approaching the end of the action statement time limit. One of the replacement breakers was almost ready for use at 9:51 p.m., when the action statement time limit was reached. However, the shift supervisor promptly began final preparations for plant shutdown. Working copies of the shutdown instructions were reviewed in a crew brief on the pending shutdown. The TS allowed 12 hours for the shutdown. The licensee determined that if it began reducing plant power within 6 hours there would be ample time for an orderly shutdown. Since breaker replacement was imminent, plant power was not reduced. The breaker was replaced and power was restored to the MCC at 11:32 p.m. At 12:44 a.m. on September 17, upon completion of a review of inspection and testing done on the MCC and the new breaker, the shift supervisor declared the MCC operable and exited the TS action statement. Related maintenance and engineering activities are discussed further in Section M4.2.

c. Conclusions

The operators promptly responded to the event and correctly identified and accomplished the appropriate remedial actions. Ample management, maintenance, and engineering support was promptly provided. The initial evaluation of the condition of the plant properly considered operability of redundant systems and overall impact on plant safety. Plans for plant operation and MCC restoration were well executed.

07 Quality Assurance in Operations

07.1 Licensee Self-Assessment Activities (40500)

a. Inspection Scope

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

- Licensee routine manager's meetings
- Human Performance Enhancement Day training session
- Potential issue forms (PIF)
- Corrective Action Audit

b. Observations and Findings

The meetings were attended by appropriate personnel and there was substantive discussion of specific issues. There was active trainee participation in the human performance training session. About 400 PIFs were written during the inspection period by a variety of personnel who represented a wide cross section of plant organizations. The corrective action audit was thorough and identified specific items for improvement.

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.

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

08.1 (Closed) LER 50-440/94010-00: "ESF (Engineered Safety Features) Actuation Due to Loss of Power to Level Instruments Caused by a Deficient Procedure." On April 14, 1994, an unanticipated automatic start of Emergency Service Water (ESW) Pump 'A' and Emergency Closed Cooling (ECC) Pump 'A' occurred when 125 V, direct current (DC) Bus ED-1-B was deenergized for a divisional equipment outage. This removed power from the Division II reactor vessel level instrumentation while causing actuation of reactor core isolation cooling (RCIC) initiation logic (RCIC was tagged out). The initiation logic for RCIC sent a signal to start ESW Pump 'A' and ECC Pump 'A.' All equipment functioned as designed and this event had no safety consequences. Prior to the event the operators consulted the controlled load lists to ascertain the expected results of the bus deenergization. The procedure indicated loads that would be deenergized, but did not provide the expected results of the deenergization. The licensee concluded that the cause of this event was a deficient procedure. Corrective actions were implemented within a reasonable timeframe and included: (1) review of load lists for the deenergization of loads, (2) revision to the load

lists if necessary, and (3) licensed operator training on this event during the requalification training program.

08.2 (Closed) LER 50-440/94011-00: Unexpected automatic closure of several containment isolation valves during a refueling outage. A newly installed transformer had been placed in service without installing the line fuses. Causes for this event included design change package (DCP) weaknesses, work order preparation weaknesses, and post-modification testing weaknesses. Corrective actions included DCP, work management, and post-maintenance test program improvements. The licensee also clarified the site fuse control policy. This event was one of six examples for violation 50-440/94009-01, which is discussed below.

08.3 (Closed) LER 50-440/94013-00: Valve status not in compliance with technical specifications (TS). The Low Pressure Core Injection 'C' loop injection valve was closed but energized during core alterations in the 1994 refueling outage. TS 3.6.4 required this valve to be closed and deenergized during core alterations. The cause of this event was a program weakness in the plant administrative procedure to verify components placed under operations administrative control. The licensee stopped core alterations immediately after the valve status was identified. Long term corrective actions included: operator training on appropriate component status review, program and policy alterations, and licensed plant operator training on this event during the requalification training program. The inspectors found the corrective actions appropriate. This event was one of six examples of violation 50-440/94009-01, which is discussed below.

08.4 (Closed) Violation 50-440/94009-01: This violation of 10 CFR Part 50, Appendix B, Criterion V, cited six examples of failure to have appropriate procedures or to follow procedures. The two most significant examples are discussed in sections 08.2 and 08.3 above. The inspectors also reviewed the remaining four examples and determined that appropriate corrective actions had been taken by the licensee.

08.5 (Closed) Unresolved Item 50-440/94015-01: Reactor water conductivity recorder inadvertently left in the off position. TS Surveillance Requirement (SR) 4.4.4.c.1 required continuous recording of reactor water conductivity or, with both recorders inoperable, sampling every 4 hours. One recorder was known to be inoperable. For a period of about 4 days, the second conductivity recorder was not recognized as being off. Therefore, the sampling rate was a normal 12 hours instead of every 4 hours. Because all samples indicated that conductivity remained well below the TS limit, this error had no safety consequences. The on/off switch was not visible without opening the cover of the recorder and the indication with the recorder off was not noticeably different from the normal steady indication. However, the operators and technicians had numerous opportunities to identify the recorder's status. The poor control of this TS required recorder was caused by inadequate questioning attitudes and lack of procedural guidance for on-line servicing of TS recorders. Corrective actions included development of instruction IAI-0502, "Control of Plant Instrument Charts and

Recorders," which provided a detailed list of TS recorders and a non-TS recorders list. The inspectors discussed with technicians and plant operators the requirements to communicate recorder status changes. Both the operators and technicians clearly understood the need to communicate any changes to the status of recorders. This licensee identified and corrected violation (50-440/96011-01(DRP)) of TS SR 4.4.4.c.1 is being treated as a Non-Cited Violation, consistent with Section VII.8.1 of the NRC Enforcement Policy, NUREG-1600.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments

a. Inspection Scope (61726, 62707, 71714, and 92902)

Using Inspection Procedures 61726, 62707, and 92902, the inspectors observed all or portions of the following maintenance and surveillance activities:

- Surveillance SVI P45-T0367, Emergency Service Water From ECC Heat Exchanger Flow Calibration
- Surveillance SVI G43-T1305, Suppression Pool Water Level Channel Calibration for Instrument G43-N070B
- Surveillance SVI E22-T5217, Performance Test of Battery Capacity
- R86-6679 M15N0013B Calibrate transmitter and loop check
- Surveillance SVI B21-T0210E, ATWS Reactor Vessel Water Level 2 Div. II Analog Trip Module Functional Test
- Surveillance SVI P53-T6305, Lower Airlock Between the Seals Test
- Surveillance SVI C51-T0030-A, APRM A Channel Calibration A - 1C51-K605A, Rev. 5, effective 3/16/95
- Surveillance SVI C71-T5232, Reactor Protection System - Electrical Power Monitoring Calibration/Functional for 1C71-5003B and 1C71-5003D, Rev. 4, effective 9/5/90
- Surveillance SVI C11-T1006, Control Rod Maximum Scram Insertion Time, Rev. 5, effective 7/14/96
- Surveillance SVI R43-T1318, Diesel Generator Start and Load Division 2, Rev. 5, effective 1/5/96

b. Observations and Findings

Two problems were identified during observation of Surveillance R86-6679 M15N0013B, Calibrate Transmitter and Loop Check. The impact sheet (LCO determination) was not done until the technician asked the unit supervisor (US) for approval to start work. The US realized the work instructions failed to note the system would be inoperable. Also, the plant vent damper failed to fully close and was turned over to the next shift of technicians, the night shift. The night shift had no problems with the damper. Investigation indicated that one of the surveillance

required jumpers at the control circuit in the control room had not been fully engaged.

c. Conclusions

Maintenance and surveillance activities were generally completed properly. However, in one case, operators were challenged by planning and technician performance. An additional surveillance problem is discussed in Section M4.1.

M2 Maintenance and Material Condition of Facilities and Equipment

The inspectors observed the material condition of facilities and equipment during routine inspections of the plant and during inspection of maintenance and surveillance activities. Material condition problems observed by the inspectors had been identified by the licensee, monitored, and scheduled for repair.

M4 Maintenance Staff Knowledge and Performance

M4.1 Delayed Identification of Error in Operating Instruction

a. Inspection Scope (61726)

On October 23, the inspectors observed portions of the conduct of surveillance instruction (SVI) R43-T1318. This included licensed operator activities in the control room and nonlicensed operator activities in the Division II Emergency Diesel Generator (EDG) Room. The SVI required use of some steps of System Operating Instruction (SOI) R43, "Division 1 and 2 Diesel Generator System (Unit 1)," Rev. 8, effective 12-28-92, including changes 1 through 10, with change 10 being effective 9-11-96. The inspectors reviewed the licensee's PIF (96-3263) investigation related to an error in the SOI. The inspectors also discussed the error and related personnel errors with licensee personnel.

b. Observations and Findings

The control room operators had copies of the appropriate procedures and appropriate measuring and test equipment ready for use in the control room. The inspectors noted that shortly after one of the nonlicensed operators began reading SOI-R43, he commented that he thought the instruction was wrong because the order of two of the steps in Section 7.1 did not appear to support the expected physical configuration of the EDG. The shift supervisor and RSE were notified, came to the EDG room, and concluded that the SOI would have to be changed to complete the test. Step 1. stated, "Verify the following:" and included four items. Item b. was "Proper operation of the shutdown cylinder by observing proper extension of the cylinder plunger, and that the fuel rack is closed." That item could not be verified until Step 4, which operated the shutdown cylinder, was completed. The other three items in the step could be verified. Several hours later, after shift

change, the inspectors verified that the SOI had been changed and observed two different nonlicensed operators use the corrected SOI to prepare the EDG for testing.

The next morning the inspectors verified that a PIF had been written on October 23 for the error in SOI R43. The individual who had written the PIF included a statement that the EDG had been tested on September 16, 1996, which had required three uses of Section 7.1. Procedure change 10, which had introduced the error, had become effective on September 11, 1996. The licensee later discovered that there had been three other uses of Section 7.1 related to another EDG test. The licensee's process for reviewing the SOI change had not identified the error. The next Saturday and Monday the licensee called in eleven nonlicensed operators to have them simulate performance of the erroneous version of SOI-R43 in one of the EDG rooms. The licensee determined that only two of them identified the error in the instruction. Operations management concluded that they had not effectively communicated their expectations for instruction compliance to the nonlicensed operators.

c. Conclusion

On October 23, the operators who identified the error in SOI-R43 promptly demonstrated an appropriate questioning attitude. The responses of the shift supervisor and the RSE were prompt and appropriate. An appropriate PIF was promptly initiated and provided valuable background information. The error in the instruction, and the errors the operators made earlier in not following the procedure had no safety consequence. However, the error in the instruction had not been identified during the change process or during multiple uses of the SOI. This demonstrated inattention to detail during the instruction review process, poor questioning attitudes by the operators who performed the incorrect instruction, and poor follow through in monitoring implementation of expectations for use of written instructions. Collectively these weaknesses had potential safety consequences. Issuance of the erroneous instruction on September 11, 1996, was a violation (50-440/96011-02(DRP)) of TS 5.4.1, which requires that written instructions be established and maintained covering the applicable procedures recommended in Regulatory Guide 1.33, Revision 2, Appendix A, February 1978.

M4.2 Electrical Breaker EF1D09 Inoperable

a. Inspection Scope (37551, 61726, 62707, and 92902)

After safety-related 480 VAC Breaker EF1D09 unexpectedly tripped on September 16, 1996, the inspectors observed licensee maintenance and test activities used to determine the cause of the breaker trip and extent of condition. The inspectors also reviewed unit and plant logs, and the licensee's PIF (96-3098) investigation of the breaker trip.

b. Observations and Findings

On September 16, 1996, Breaker EF1D09 unexpectedly tripped shortly after a fan was started. The breaker was replaced and initial shop tests and inspections did not identify a cause for the trip. A vendor technical representative assisted the licensee. On September 26, the licensee determined that the breaker had a wiring error which caused it to trip on overcurrent at 350 amps instead of the expected setpoint of 660 amps. The breaker had been installed on March 10, 1996, during the fifth refueling outage (RF05). The reduced breaker trip setpoint caused the breaker to be inoperable between March 10, 1996, and September 16, 1996, when certain electrical loads were being supplied, and contributed to losses of safety function for the control room emergency recirculation (CRER) system.

The affected breaker, manufactured in December 1995, was a K-LINE 600 Series ABB breaker with a solid state POWER SHIELD trip device. The trip device received breaker load information from three current transformers (CT), one for each phase. Each CT had two wires providing load information to the trip device. The three sets of two wires were attached to three terminal boards at the bottom of the breaker. A wiring harness carried the six wires to a fourth terminal board in the trip device. The wires from one of the CTs were reversed where they attached to one of the lower terminal boards. This reversed the phase A polarity. When the phase A current information was combined with information from the other phases at the trip device the trip device sensed that the breaker was carrying more current then it actually was.

A review by the licensee identified multiple apparent losses of CRER safety function due to the breaker trip setpoint reduction. Upon identifying those conditions the licensee notified the NRC via the emergency notification system.

The licensee identified six other similar breakers installed at the same time. The inspectors verified that those breakers were inspected for the same error. The inspectors observed the inspections of three of the breakers. No other wiring problems were observed. The licensee also developed a method to test the polarity of the signals to the solid state trip device. The licensee also evaluated the operability of other similar breakers.

On November 1, the inspectors observed the first polarity test of the breaker CTs. The inspectors reviewed the procedures and found no discrepancies. The craft effectively utilized the procedures and supervision was present throughout the evolution.

Manufacturer and pre-installation testing had failed to identify this problem. The licensee determined that other trips of similar breakers had been reported by other utilities. At the end of the inspection the licensee was still evaluating those reports. A single phase primary signal injection test was typically done for new breakers at Perry and other nuclear facilities. Moreover, the vendor local service facility

had the same testing equipment as Perry. This type of testing will not identify the observed error since the effect is caused by improper addition of multiple phases of current indications. Different size breakers and breakers made by other manufacturers may be susceptible to the same problem. Also the solid state trip devices and CTs are sometimes changed on site to change breaker capacity, so this type of error could be introduced after manufacture.

c. Conclusion

The licensee's efforts to identify the cause of the breaker failure were appropriate. The failure to identify the breaker defect during pre-installation testing and when the breaker was initially inspected in the shop was a weakness. The license's evaluation of the operability of other breakers was thorough. The licensee's development of a polarity testing method was prompt and effective. At the end of the inspection period the licensee was preparing a licensee event report (LER) on this event. This is an Unresolved Item (' ,40/96011-03(DRP;) pending completion of the licensee's evaluation of the breaker defect and the inspectors review of that evaluation and the LER. This item is of concern because it had the potential to cause a loss of safety function of the CRER.

M8 Miscellaneous Maintenance Issues

M8.1 (Closed) Violation 50-440/94006-02: This violation of 10 CFR 50, Appendix B, Criterion V, cited three examples of inadequate implementation of documented procedures: 1) a technician failed to wait the full 5 minutes required by an SVI, 2) measuring and test equipment (M&TE) was found unattended and not within the calibration dates, 3) combustible material was found closer to a welding activity than permitted by procedure. Corrective actions included clarification of management expectations for procedure compliance, counseling of appropriate individuals, M&TE procedure enhancements, and strengthening of the fire watch program. The inspectors observed that proper use of procedures and instructions improved following those activities. However, periodic problems occurred in this area and additional corrective actions were initiated by the licensee. Additional violations have also been cited. The inspectors will continue to monitor the licensee's continuing corrective actions in following up those later violations.

III. Engineering

E2 Engineering Support of Facilities and Equipment

E2.1 General Electric (GE) Fuel Design Error

a. Inspection Scope (37551)

In discussions with GE fuels engineering, the licensee learned that certain values used by 3D MONICORE (computer program that monitors reactor power and thermal limits) were incorrect. The inspectors evaluated the licensee's review of that error.

b. Observations and Findings

The values were incorrect because they were not modified to correct for the new Cycle 6 core design. The resulting errors affected thermal limit calculations in a non-conservative manner (added .002 to the indicated value). The licensee's administrative limit was .996 (TS limit was considered to be equivalent to an indicated value of 1.000). The licensee reviewed computer records and determined that the greatest corrected value reached was .996 during a plant transient. The error was corrected by adjusting the 3D Monicore software. The corrective actions included the event as part of PIF 96-2337, "GE product quality." The licensee was still evaluating PIF 96-2337 at the end of the inspection. This issue will be evaluated in the future as part of a previous inspection follow-up item (IFI 50-440/96003-16(DRP)), opened based on other identified GE core design errors.

E2.2 Review of Updated Final Safety Analysis Report (UFSAR) Commitments

a. Inspection Scope

While performing the inspections discussed in this report, the inspectors reviewed applicable portions of the UFSAR that related to the areas inspected. This inspectors also reviewed items that the licensee had identified during its review of the UFSAR. Several inconsistencies were noted between wording of the UFSAR and the plant practices, procedures, and parameters observed. Those identified by the licensee were included in the licensee's corrective action program and may be reviewed in a future inspection based on the NRC's recently established policy (61 FR 54461, October 18, 1996) for the review of licensee-identified UFSAR inconsistencies.

b. Observations and Findings

E2.2.1 UFSAR Section 2.4.13.5.5.e stated that the metal covers for all underdrain system manholes had gasketed, watertight covers installed at the surface and the covers were normally locked or bolted closed. The inspectors identified several covers that were open or had bolts missing. The licensee immediately performed a thorough inspection and

documented the results in PIF 96-3315. There were no records of safety evaluations having been performed for the observed conditions. The inspectors verified that the licensee had begun work to bring the manhole covers into compliance with the UFSAR. Based on an earlier review of the capacity of the underdrain system and the small amount of water that could have bypassed the heavy unbolted manhole covers, the inspectors concluded that the identified condition had no potential safety consequences. Failure to maintain the manhole covers as described in the UFSAR without a documented safety evaluation was a violation (50-440/96011-04(DRP)) of 10 CFR 50.59. This failure constitutes a violation of minor safety significance and is being treated as a Non-Cited Violation, consistent with Section IV of the NRC Enforcement Policy, NUREG-1600.

E8 Miscellaneous Engineering Issues (92720, 92903)

E8.1 (Closed) Unresolved Item 50-440/94011-02: This item was opened when the Residual Heat Removal (RHR) suction header was opened to the reactor pressure vessel with the plant shut down and resulted in a 10-inch water level drop. Investigation led to the conclusion that void formation was occurring due to heat conduction from the vessel pressurizing low pressure piping. Operations vented the piping periodically to relieve the pressure, forming the void. A violation (50-440/95009-01) of 10 CFR Part 50, Appendix B, Criterion XVI, "Corrective Action," was issued in Inspection Report 95009. This item is closed based on the issuance of the violation for the same subject.

E8.2 (Closed) LER 50-440/93021: "Loss of Safety Function for Emergency Closed Cooling System 'A'." This LER was reviewed in Inspection Report 96-08.

E8.3 (Closed) LER 50-440/94005: "Loss of Both Trains of Control Room Ventilation Due to Emergency Closed Cooling System Low Temperature." This LER was reviewed in Inspection Report 96-08.

IV. Plant Support

R8 Miscellaneous Radiation Protection and Chemistry Issues

R8.1 (Closed) Violation 50-440/93023-01(DRP): Failure to take reactor water conductivity measurements per Technical Specification Surveillance Requirement 4.4.4.c. The failure to take the conductivity measurements was caused by personnel error when the technician failed to read an information tag. Corrective actions included training for all technicians and the posting of a status board for all reactor water sample points. The inspector verified the status board was appropriately updated.

S8 Miscellaneous Security and Safeguards Issues (92904)

S8.1 (Closed) Inspection Followup Item 50-440/93023-04: An individual's concern with a psychological evaluation resulted in questions concerning the "Call-for-Quality" program (allowed employees to present concerns without using the normal management process) in 1993. Specific concerns with the psychological evaluation were closed as part of the NRC review of AMS 93-A-123. The Call-for-Quality program was replaced with the ombudsman program in 1994. The inspectors noted an improvement in the disposition of Call-for-Quality action items and all have been closed. Two recent concerns with the ombudsman program are being evaluated by other current NRC inspection activities.

F7 Quality Assurance in Fire Protection Activities

F7.1 Licensee Self-Assessment Activities (40500)

The inspectors reviewed the licensee's audit (96-17) of fire protection activities. The audit was thorough and identified specific items for improvement. The inspectors observed that the licensee promptly focused management attention on developing a comprehensive approach to improving fire protection activities. The audit results and the licensee's response will assist the inspectors in evaluating fire protection activities for future inspections.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on November 1, 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

L. W. Myers, Vice President - Nuclear
R. D. Brandt, General Manager Operations
N. L. Bonner, Engineering Director
R. W. Schrauder, Nuclear Services Director
L. W. Worley, 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 Preparations
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

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-440/96011-01	NCV	Conductivity surveillance requirement missed
50-440/96011-02	VIO	Error introduced into EDG SOI
50-440/96011-03	URI	Breaker defect potential impact on safety function
50-440/96011-04	NCV	Underdrain manhole covers not as described in UFSAR

Closed

50-440/93021-00	LER	Loss of safety function, ECC System "A"
50-440/93023-01	VIO	Conductivity measurements, TS Surv. 4.4.4.c
50-440/93023-04	IFI	Call for Quality program process not followed
50-440/94005-00	LER	ECC low temp., control room ventilation loss
50-440/94006-02	VIO	Inadequate implementation, procedures, 3 examples
50-440/94009-01	VIO	Failure to have or to follow appropriate procedures
50-440/94010-00	LER	Deficient procedure, ESF actuation
50-440/94011-02	URI	RHR valve opened caused 10" water level drop
50-440/94011-00	LER	Closure, cont. isol. valves during refuel outage
50-440/94013-00	LER	Valve status not in compliance with TS.
50-440/94015-01	URI	Reactor water conductivity recorder left off
50-440/96011-01	NCV	Conductivity surveillance requirement missed
50-440/96011-04	NCV	Underdrain manhole covers not as described in UFSAR

Discussed

50-440/96003-16	IFI	GE core design errors

LIST OF ACRONYMS USED

APRM	AVERAGE POWER RANGE MONITOR
ATWS	ANTICIPATED TRANSIENT WITHOUT SCRAM
CFR	CODE OF FEDERAL REGULATIONS
CRER	CONTROL ROOM EMERGENCY RECIRCULATION
CT	CURRENT TRANSFORMER
DC	DIRECT CURRENT
DCP	DESIGN CHANGE PACKAGE
DIV	DIVISION
DRP	DIVISION OF REACTOR PROJECTS
ECC	EMERGENCY CLOSED COOLING
EDG	EMERGENCY DIESEL GENERATOR
ESW	EMERGENCY SERVICE WATER
ESF	ENGINEERED SAFETY FEATURE
FR	FEDERAL REGISTER
GE	GENERAL ELECTRIC
GPM	GALLONS PER MINUTE
IAI	INSTRUMENTATION & CONTROLS ADMINISTRATIVE INSTRUCTION
IFI	INSPECTION FOLLOW-UP ITEM
IPTE	INFREQUENTLY PERFORMED TEST OR EVOLUTION
LCO	LIMITING CONDITIONS FOR OPERATIONS
LER	LICENSEE EVENT REPORT
MCC	MOTOR CONTROL CENTER
M&TE	MEASURING AND TEST EQUIPMENT
NCC	NUCLEAR CLOSED COOLING
NRC	NUCLEAR REGULATORY COMMISSION
PDR	PUBLIC DOCUMENT ROOM
PIF	POTENTIAL ISSUE FORM
PORC	PLANT OPERATIONS REVIEW COMMITTEE
QA	QUALITY ASSURANCE
RCIC	REACTOR CORE ISOLATION COOLING
RFO	REFUELING OUTAGE
RHR	RESIDUAL HEAT REMOVAL
RSE	RESPONSIBLE SYSTEM ENGINEER
SJAE	STEAM JET AIR EJECTOR
SOI	SYSTEM OPERATING INSTRUCTION
SR	SURVEILLANCE REQUIREMENT
SVI	SURVEILLANCE INSTRUCTION
TS	TECHNICAL SPECIFICATION
UFSAR	UPDATED FINAL SAFETY ANALYSIS REPORT
URI	UNRESOLVED ITEM
US	UNIT SUPERVISOR
VAC	VOLT ALTERNATING CURRENT
VIO	VIOLATION
VP	VICE PRESIDENT

PARTIAL LIST OF DOCUMENTS REVIEWED DURING THE INSPECTION

Audit Report 96-16, Effectiveness of Corrective Action
Audit Report 96-17, Fire Protection
Control room standing orders, various dates
Control room computer printouts, various parameters
Control room daily instructions, various dates
Control room daily instructions, supplemental reading, various dates
Control room strip charts, various parameters
Control room annunciator status books, revisable format, various dates
Deficiency tags, various locations
Design Change Package 91-0210 REV. 1
Excessive Radwaste Sump Inleakage Report - 10/21/96
Fire extinguisher inspection tags, various locations
Forced Outage Meeting Minutes, September 25, 1996
Forced Outage Meeting Agenda, October 16, 1996
Forced Outage Meeting Minutes, October 25, 1996 (Cycle Six)
GEK-63100, Operation and Maintenance Instructions, Hydraulic Control Unit - 4/80
GEK-75602A, Rod Control and Information System (RC&IS) - 5/29/85
GEK-75624, RC&IS Engineering Drawings - 1/82
Human Performance Enhancement Day Lesson Plan, 10-3-96
Human Performance Issues, October 4, 1996
LCO log, various dates
Managers' Meeting Report - 09/16/96
Managers' Meeting Report - 09/18/96
Managers' Meeting Report - 09/20/96
Managers' Meeting Report - 09/23/96
Managers' Meeting Report - 09/25/96
Managers' Meeting Report - 09/27/96
Managers' Meeting Report - 09/30/96
Managers' Meeting Report - 10/02/96
Managers' Meeting Report - 10/04/96
Managers' Meeting Report - 10/07/96
Managers' Meeting Report - 10/09/96
Managers' Meeting Report - 10/11/96
Managers' Meeting Report - 10/14/96
Managers' Meeting Report - 10/16/96
Managers' Meeting Report - 10/21/96
Managers' Meeting Report - 10/23/96
Managers' Meeting Report - 10/25/96
Managers' Meeting Report - 10/28/96
Managers' Meeting Report - 10/30/96
Managers' Meeting Report - 11/01/96
Monthly Access Level Use Review For September, October 3, 1996
Monthly ALARA Report September 1996
Monthly ALARA Report October 1996
NEWSFLASH (for employees of Centerior Energy Corporation - September 16, 1996)
NEWSFLASH (for employees of Centerior Energy Corporation - October 31, 1996)
Nonconformance Report Review/Revision No. 96WS-053 - 09/17/96
Nonconformance Report Review/Revision No. 96WS-097 - 09/24/96

On-Line Schedule Preparation Performance Indicators - Data Date 10/07/96
Operations Administrative Control Tags, various locations
Operations Information Tags, various locations
PAP 0201, Conduct of Operations, Rev. 9, effective 3-28-95
Perry Daily Report - 09/17/96
Perry Daily Report - 09/19/96
Perry Daily Report - 09/24/96
Perry Daily Report - 09/26/96
Perry Daily Report - 10/01/96
Perry Daily Report - 10/03/96
Perry Daily Report - 10/08/96
Perry Daily Report - 10/10/96
Perry Daily Report - 10/15/96
Perry Daily Report - 10/17/96
Perry Daily Report - 10/22/96
Perry Daily Report - 10/24/96
Perry Daily Report - 10/29/96
Perry Daily Report - 10/31/96
Perry Lines - Weekly, Volume XI, No. 47, October 17, 1996
Perry Lines - Weekly, Volume XI, No. 51, October 31, 1996
Perry Plan for Excellence, General Familiarization -- Undated.
Plant Log, Vol. 31, Pages 59 and 60, August 5 and 6, 1996
Plant Log, Vol. 31, Page No. 99 - 147, 9/15 - 11/1/96
Plant strip charts, various parameters
Personnel Radiation Dose Calculation Worksheet - 10/22/96
PNAD Operational Surveillance Report No. 96-046, Maintenance Rule, October 11, 1996
PNAD Operational Surveillance Report No. 96-048, Fire Protection Activities, September 16, 1996
PNAD Operational Surveillance Report No. 96-050, Speaker/Housekeeping Walkdown, September 20, 1996
PNAD Operational Surveillance Report No. 96-049, Safety Tagouts September 26, 1996
PNAD Operational Surveillance Report No. 96-053, 1996 Emergency Plan Evaluated Exercise, October 3, 1996
PNAD Operational Surveillance Report No. 96-052, Maintenance-Surveillance / Division 2 Outage
PNAD Operational Surveillance Report No. 96-056, Maintenance-Surveillance / Follow-up on the Backlog of Perry Master Activity Tracking System tracked activities, October 22, 1996
PNPP Plan of the Day - 09/16/96
PNPP Plan of the Day - 09/17/96
PNPP Plan of the Day - 09/18/96
PNPP Plan of the Day - 09/19/96
PNPP Plan of the Day - 10/04/96
PNPP Potential Issue Forms, No. 96-2937 through 96-3336
PNPP Potential Issue Form No. 96-1831 - 4/ 2/96 (Plant vent flow)
PNPP Potential Issue Form No. 96-2476 - 7/11/96 (Trip of RFPT)
PNPP Potential Issue Form No. 96-2716 - 8/12/96 (RC&IS Transponders)
Operations' Management Report - December 1992
Operations' Management Report - December 1993
Operations' Management Report - November 1994

Operations' Management Report - December 1995
POS (Perry Operations Section) Performance Indicators - January 1996
POS Performance Indicators - April 1996
POS Performance Indicators - July 1996
POS Performance Indicators - September 1996
POS Performance Indicators - October 14, 1996
Procedural Adherence, Volume II, No. 4 - October 1996
QCS Corrective Action Management Report Week Ending 9/20/96 dated 9/19/96
Radiation Work Permit 96006
Radiological Awareness - October 21, 1996
Radiologically Restricted Area Radiation Surveys, various
REGULATORY AFFAIRS BRIEFING SUMMARY - 10/21/96
Rod Control and Information System Corrective Action Plan - 9/15/93
Rod Control and Information System, C11, Rev. 7
Safety Tags, various locations
Shift Supervisors Meeting Notes - 9/24/96
Simple Modification Request Form, No. 96-4038, Rev. 0 - 09/26/96
Simple Modification Request Form, No. 96-4039, Rev. 0 - 09/26/96
Site Weekly Dose Summary, 10-21-96
Site Weekly Dose Summary, 10-27-96
STA Relief/Turnover Checklist - 10/09/96
SURVEILLANCE AREA/ACTIVITY - Maintenance-Surveillance/Division 3 Outage 9/16/96
SURVEILLANCE AREA/ACTIVITY - Maintenance-Surveillance/Division 2 Outage 10/15/96
System Description Manuals
Temporary Modification Tracking Report, October 1996 October 1, 1996
Unit Log, Unit 1, Vol. 89, "Page No. 1 - 135"
Updated Final Safety Analysis Report
Warehouse Nonconformance Report, No. 96WS-96 - 09/16/96
Weekly Effluent and Release Rate Data Report, about September 18
Weekly Effluent and Release Rate Data Report, about September 30, 1996
Weekly Effluent and Release Rate Data Report, about October 14, 1996
Weekly Effluent and Release Rate Data Report, about October 21, 1996
Weekly Effluent and Release Rate Data Report, about October 28, 1996
Work Process Performance Indicators - Data Date 10/07/96
Work Process Performance Indicators - Data Date 10/13/96