U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No:	50-440
License No:	NPF-58
Report No:	50-440/98018(DRP)
Licensee:	Centerior Service Company P.O. Box 97 A200 Perry, OH 44081
Facility:	Perry Nuclear Power Plant
Location:	Perry, OH
Dates:	September 9 - October 20, 1998
Inspectors:	C. Lipa, Senior Resident Inspector D. Calhoun, Resident Inspector J. Clark, Resident Inspector S. Dupont, Project Engineer
Approved by:	Thomas J. Kozak, Chief Reactor Projects Branch 4

EXECUTIVE SUMMARY

Perry Nuclear Power Plant
NRC Inspection Report 50-440/98018(DRP)

This inspection report included resident inspectors' evaluation of aspects of licensee operations, engineering, maintenance, and plant support.

Operations

- The inspectors concluded that operators appropriately followed procedures and that shift turnovers were consistent from shift to shift. The overall conduct of operations continued to be effective with an appropriate safety focus. (Section O1.1)

- The inspectors concluded that a special evolution was effectively conducted to isolate and suppress a small fuel leak. Operations department personnel maintained a high level of reactivity control awareness during the several hundred control rod manipulations which occurred during the special evolution. (Section O1.2)

- The licensee took prompt and conservative actions upon the report of possible seismic activity in the vicinity of the plant. Operations department personnel conducted verifications of key indicators and plant walkdowns, even though no seismic alarm was received. (Section O1.3)

- Operations department personnel responded appropriately to abnormal indications for the rod control and information system. The coordination between the workgroups involved in the troubleshooting and repair was good, distractions to the operators were kept to a minimum, and the problem was repaired in a timely manner. (Section O1.4)

Maintenance

- Plant management demonstrated good involvement in the prioritization of the control complex chill water motor replacement, the assignment of a project manager for the work activity, and during the oversight of the activity, which resulted in the motor being replaced in an efficient and timely manner. (Section M1.2)

- The inspectors concluded that a fire watch demonstrated inadequate knowledge of his fire watch responsibilities during welding activities on the Division 1 diesel generator silencer. One violation was identified when a fire watch inappropriately allowed welders to perform hot work with a significant quantity of wood in the immediate work area. In addition, after deciding to use the wood, maintenance department personnel did not initiate a transient combustible permit (TCP) for the temporary staging of the wood. The failure to generate a TCP was similar to, but not a direct repeat of, other recent examples of problems with station personnel's awareness of when a TCP is required. (Section M1.3)

Engineering

- The inspectors concluded that a chemistry technician properly analyzed a routine off gas sample which indicated a small fuel pin leak had occurred and promptly notified the appropriate station personnel. Also, engineering department personnel provided good support for determining the location and suppressing the leak. (Section E1.1)

Plant Support

- Although the licensee's contamination control program allowed plant personnel to extend contamination area boundaries in certain situations, this policy was not consistently understood or implemented by radiation protection technicians. (Section R1.1)

Report Details

Summary of Plant Status

At the beginning of this inspection period, the plant was operated at 100 percent power. Plant power was reduced to 60 percent on September 12, 1998, to determine the location of a small fuel leak which had been detected through the identification of a slight increase in reactor coolant activity. The leak was localized and suppressed on September 14, 1998, and the plant was returned to full power. In order to maintain the leak suppression, plant management directed that the weekly control rod surveillance testing activities would be conducted at 90 percent power instead of 100 percent, and that power changes would be limited to 1 percent per hour. These restrictions continued throughout the remainder of the inspection period, and were expected to remain in effect until the April 1999 refueling outage.

I. Operations

O1 Conduct of Operations

O1.1 General Comments

a. Inspection Scope (71707)

The inspectors followed the guidance of Inspection Procedure 71707 and conducted frequent reviews of plant operations. This included observing routine control room activities, reviewing system tagouts, attending shift turnovers and crew briefings, and performing panel walkdowns. The inspectors also observed operators performing routine equipment cycling.

b. Observations and Findings

Operations management initiated several improvements to crew briefings including moving the briefing out of the Unit 1 control room to prevent distractions. Shift turnovers were thorough and consistent from shift to shift. The inspectors observed that operators consistently followed equipment operating procedures and alarm response instructions. Overall, the conduct of operations was appropriately focused on safety.

c. Conclusions

The inspectors concluded that operators appropriately followed procedures and that shift turnovers were consistent from shift to shift. The overall conduct of operations continued to be effective with an appropriate safety focus.

O1.2 Fuel Leakage Testing and Suppression

a. Inspection Scope (71707)

The inspectors followed the guidance of Inspection Procedure 71707 in assessing operations department personnel performance in isolating and suppressing a small fuel leak which was detected through the identification of a slight increase in reactor coolant activity.

b. Observations and Findings

Operations and engineering personnel developed a special evolution to localize and suppress a fuel leak that was detected on September 1, 1998. On September 12, 1998, the evolution was commenced. The inspectors observed the briefings associated with this evolution and determined that the briefings were formal and had an appropriate focus on human performance and plant safety.

The evolution involved a large number of repetitive control rod manipulations, with subsequent chemistry samples, to determine the specific location of the leak. The test was conducted throughout the weekend. In all, operations department personnel performed several hundred control rod manipulations without error. The operators maintained their sensitivity for reactivity controls throughout the evolution. In addition, operators used appropriate three-way communications amongst themselves and with other personnel.

c. Conclusions

The inspectors concluded that a special evolution was effectively conducted to isolate and suppress a small fuel leak. Operations department personnel maintained a high level of reactivity control awareness during the several hundred control rod manipulations which occurred during the special evolution.

O1.3 Operations Response to Report of Seismic Activity

a. Inspection Scope (71707)

The inspectors followed the guidance of Inspection Procedure 71707 in assessing the operations department personnel response to a report of seismic activity in the vicinity of the plant. The inspectors also reviewed logs and conducted interviews with operations department personnel.

b. Observations and Findings

On September 25, 1998, control room personnel received several reports from outside personnel that there had been a seismic event in the area. The licensee subsequently confirmed, through media reports and information from the National Earthquake Center, that a seismic event had been reported in Sharon, Pennsylvania (approximately 45 miles southeast of the Perry Plant). Control room personnel had no direct indication of the

activity, and had no abnormal alarms or indications. Operations department personnel also verified that the seismic monitors were in operation, but not alarming.

Operations department personnel conservatively entered the Off Normal Instruction (ONI) for seismic activity. Post seismic event walkdowns of plant systems were conducted, which determined there were no abnormal indications. Operations department personnel exited the ONI after all walkdowns and verifications were complete. The licensee also notified the NRC and issued a press release describing the plant status.

The licensee subsequently reviewed the seismic instrumentation for indications over the reportable 0.05g ground acceleration limit. Both the active and passive sensors showed no indication of the event. The inspectors were informed by operations and engineering personnel that based upon the available information, the earthquake produced less than 0.03g of ground acceleration in the vicinity of the plant.

c. Conclusions

The inspectors concluded that the licensee took prompt and conservative actions upon receiving a report of possible seismic activity in the plant vicinity. Operations department personnel conducted verifications of key indicators and plant walkdowns, even though no seismic alarm was received.

O1.4 Operations Response to Rod Gang Drive System Power Supply Failure

a. Inspection Scope (71707)

The inspectors followed the guidance of Inspection Procedure 71707 in assessing the operations department personnel response to a failure of a power supply in the rod gang drive system.

b. Observations and Findings

On October 2, 1998, operations department personnel informed the inspectors of an entry into ONI-C11, "Inability to Move Control Rods." This was due to an apparent lockup of the rod control and information system (RCIS). The inspectors monitored initial control room operator actions for the event. Operations department personnel thoroughly assessed the situation and used appropriate procedures. The licensee formed a team of operators, maintenance technicians, and engineers to investigate and correct the problem. The inspectors noted that the licensee kept activities of the group outside the control room as much as possible, to allow operators to focus on continued plant operations.

The investigation team determined that a 5-volt power supply in the rod gang drive system had failed. Briefings were held to discuss repair plans and plant operations. The inspectors observed that the briefings were open and informative. Operations department personnel entered 12-hour limiting condition for operation (LCO) 3.1.3 due to the loss of rod position indication to replace the power supply. Maintenance

personnel subsequently replaced the power supply and retested the RCIS. Operations department personnel verified proper rod position indication and RCIS operation and subsequently exited the LCO.

c. Conclusions

Operations department personnel responded appropriately to abnormal indications for the rod control and information system. The coordination between the workgroups involved in the troubleshooting and repair was good, distractions to the operators were kept to a minimum, and the problem was repaired in a timely manner.

O7 Quality Assurance in Operations

O7.1 Licensee Self-Assessment Activities (71707)

During the inspection period, the inspectors observed multiple licensee self-assessment activities, including:

Plant Onsite Review Committee, September 17, 1998
Corrective Action Review Board, September 30, 1998
Daily Management Review of New Condition Reports

The meetings were attended by appropriate personnel and there was good discussion of issues. The inspectors observed that several items were identified for priority upgrades or additional work during these meetings. The inspectors concluded that the observed self-assessment activities were thorough, self-critical, and effective in identifying problems and developing appropriate corrective actions.

O8 Miscellaneous Operations Issues (92700, 92901)

O8.1 (Closed) Licensee Event Report (LER) 50-440/98002-00(DRP): On July 1, 1998, a trip unit failure initiated reactor core isolation cooling (RCIC) with a subsequent reactor scram. This event was documented in Inspection Report 50-440/97013. The inspectors concluded in the inspection report that the licensee's preliminary root cause investigation had determined that the root cause of the scram was due to RCIC initiation, and that RCIC had initiated due to the failure of a capacitor on a instrumentation card. The inspectors subsequently reviewed the licensee's completed Category 2 investigation and concluded that the licensee had conducted a very thorough investigation. The licensee's preliminary root causes were documented in the root cause report. The licensee replaced the damaged card and conducted testing to restore the system to service. This item is closed.

O8.2 (Closed) Violation 50-440/97009-02(DRP): Engineering personnel did not give procedure guidance on how to handle post test changes to previous acceptance criteria. The inspectors reviewed the licensee's response to this violation dated December 23, 1997. The licensee changed plant administrative procedure, PAP-1105, "Surveillance Test Control," Revision 8, August 1998, for changing maintenance and test procedure acceptance criteria. Additional training was also given to responsible

engineers as to the effects of procedure changes. The inspectors have noted no repeat occurrences of this issue. The inspectors concluded that the corrective actions for this violation are adequate and this item is closed.

II. Maintenance

M1 Conduct of Maintenance

M1.1 General Comments

The inspectors observed or reviewed all or portions of the following work activities.

- Surveillance Instruction SVI-E22-T1202, "High Pressure Core Spray System Flow Rate - Low (Bypass) Channel Functional for 1E22-N656," Revision 3
- Work Order (WO) No. 98-5174, emergency service water alternate tunnel silt inspection
- WO No. 97-298, replacement of operator for E1200028A, containment spray "A" first shutoff valve
- GEI-0006, "General Maintenance of Motor Control Centers," Revision 5, on main steam isolation valve leakage control inboard valve, 1E32-F002N-EF1B07-TT
- WO No. 91-4164, welding of the Division 1 diesel generator silencer
- WO No. 98-4174, replace hydraulic power Unit "A" subloop filter elements

Noteworthy observations are discussed below in Sections M1.2 and M1.3.

M1.2 Proactive Actions to Replace the "A" Control Complex Chill Water Chiller Motor

a. Inspection Scope (62707)

The inspectors reviewed the licensee's response to the unexpected trip of the "A" control complex chill water chiller motor. The inspectors interviewed operators and mechanics and observed motor replacement activities.

b. Observations and Findings

On September 15, 1998, operators started the "A" control complex chill water chiller P47A to support a 2-hour run of motor control center switchgear and miscellaneous area heating, ventilation, and air conditioning system. However, the chiller tripped approximately 15 minutes into the run. The operating crew on shift determined that the failure of the chiller placed the plant in a 30-day Technical Specification LCO. The licensee investigated the problem and determined that P47A tripped on a motor low temperature alarm due to the failure of the motor's temperature sensors. The motor

had two sets of temperature sensors and one set had failed earlier in the year. The backup set of temperature sensors allowed continued operation until its failure on September 15, 1998. The licensee, in discussion with the vendor, determined that the motor had to be replaced. The licensee planned to install a spare motor which was in the warehouse. The licensee classified this motor replacement activity as a priority Level II and assigned a project manager to ensure the evolution was conducted in a timely and controlled manner. On September 19, 1998, the inspectors noted that the maintenance supervisor performed oversight responsibilities during the motor replacement activities and that the on-shift operating crew shift supervisor observed parts of the activities. The motor was replaced in a timely manner well within the 30-day LCO.

c Conclusion

Plant management demonstrated good involvement in the prioritization of the control complex chill water motor replacement, the assignment of a project manager for the work activity, and during the oversight of the activity which resulted in the motor being replaced in an efficient and timely manner.

M1.3 Division 1 Diesel Generator Silencer Maintenance

a. Inspection Scope (71750, 62707)

The inspectors observed the maintenance activities on the Division I diesel generator (DG) silencer. The inspectors reviewed applicable documentation and interviewed maintenance and fire protection department personnel.

b. Observations and Findings

On September 2, 1998, the inspectors observed two welders on the Division 1 DG room roof performing hot work on the DG silencer. A fire watch was providing control over the hot work activities and had a portable fire extinguisher. The inspectors noted a significant amount of wood had been staged to support the welding activities in the immediate area and questioned the appropriateness of having the wood in the area while hot work was in progress. The fire watch informed the inspectors that he believed the wood had been fire treated and therefore it was approved for the area. The inspectors reviewed Burn Permit No. B98-DG-83, which was in use for the activity, and determined that it specified that all combustibles within 35 feet of the hot work be removed or covered. The fire watch incorrectly still considered the area suitable for hot work because the portion of the wood on which the welders were sitting was covered. The inspectors discussed this situation with a fire protection technician (FPT) who subsequently moved all of the wood to a distance greater than 35 feet from the hot work area.

Perry Nuclear Power Plant Unit 1 Technical Specification (TS) 5.4.1.a., requires that written procedures shall be implemented covering the applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A, February 1978. Appendix A, of RG 1.33, lists the Plant Fire Protection Program as an activity that should be covered by written procedures. Perry Administrative Procedure (PAP)1916,

"Duties of the Fire Watch," Revision 4, Step 6.3.5, specified that prior to and during hot work activities, the fire watch person shall be responsible for verifying that the special instructions of the applicable Burn Permit have been met, and that no fire hazards exist that would prohibit commencement of work. The failure of the fire watch to ensure the special instructions of the Burn Permit were met is a violation of TS 5.4.1.a **(VIO 50-440/98018-01(DRP))**.

During the FPT's assessment of the situation, he determined that a Transient Combustible Permit (TCP) should have been generated for the wood in the hot work area but was not. Specifically, PAP-1913, "Control of Transient Combustibles," Revision 4, Section 6.4.1, states that a TCP was required to authorize, track, and document the use of transient combustible materials when the quantity of the flammable/combustible material exceeds the minimum requirement listed on Attachment 1. Attachment 1, "Listing of Combustible Material Quantities not Requiring a Transient Combustible Permit," Item No. 4, Lumber Treated Fire Resistant, specified that a transient combustible permit was required for a quantity of lumber that exceeded 50 board feet (1 board foot = 12" X 12" X 1"). The amount of lumber on the DG room roof exceeded 50 board feet.

In addition to moving the wood to a distance greater than 35 feet from the area, the FPT initiated the following corrective actions: 1) informed the fire protection and mechanical maintenance supervisors of the problem; 2) interviewed the workers involved in the incident; and 3) generated a condition report. Subsequently, the maintenance supervisor generated a TCP for the wood. The failure to initially generate a TCP for the wood is a violation of TS 5.4.1.a. This non-repetitive, licensee-identified and corrected violation is being treated as a non-cited violation, consistent with Section VII.B.1, of the NRC Enforcement Policy **(NCV 50-440/98018-02(DRP))**.

The inspectors considered that the safety significance of this event was low because the fire watch was present during the hot work activity and could have used a portable fire extinguisher to quench a fire. However, the inspectors were concerned with the licensee's failure to generate a TCP when the wood was staged during the welding activity and with the inadequate knowledge level of the fire watch during the performance of his duties. The licensee's failure to generate the TCP was similar to, but not a direct repeat of, other recent examples of problems with station personnel's awareness of when a TCP is required (see Inspection Reports 50-440/97021 and 50-440/98010). The licensee indicated that a collective significance condition report would be initiated to assess this aspect of the fire protection program and to develop corrective actions to improve performance in this area.

c. Conclusions

The inspectors concluded that a fire watch demonstrated inadequate knowledge of his fire watch responsibilities during welding activities on the Division 1 DG silencer. One violation was identified when the fire watch inappropriately allowed welders to perform hot work with a significant quantity of wood in the immediate work area. In addition, after deciding to use the wood, maintenance department personnel did not initiate a TCP for the temporary staging of the wood. The failure to generate a TCP was similar

to, but not a direct repeat of, other recent examples of problems with station personnel's awareness of when a TCP is required.

M1.4 Time-out Meeting for Plant Personnel to Address Human Performance

On September 14, 1998, the licensee conducted a "Human Performance Time-out" meeting to inform station personnel of the results of assessments, done by an outside organization, of the station's performance, to discuss recent human performance errors, and to review tools to enhance human performance. The licensee planned to have periodic meetings of this nature to keep site personnel aware of their progress in meeting station management's expectation toward improving human performance. The inspectors observed one maintenance department personnel meeting and determined that the meeting became more effective as it progressed because the meeting became more interactive. The third speaker effectively communicated that the station needed to continue to make progress in the area of human performance and that through the implementation of procedure adherence, peer checking, and the stop, think, act, and review efforts, the station's performance would be enhanced. The inspectors concluded that during the meeting, the licensee effectively communicated the status of personnel performance in the area of human performance and reinforced management expectations and commitments to effect change in this area.

M2 Maintenance and Materiel Condition of Facilities and Equipment

M2.1 Plant Materiel Condition

The inspectors conducted numerous observations and tours in areas of the plant where work on safety-related equipment was being conducted. The inspectors noted that several areas of the plant where maintenance activities were recently conducted were not thoroughly cleaned up after the work. Items such as tie wraps, tape, and small foreign material covers were found around the equipment. The inspectors concluded that there were no regulatory requirements involved in these occurrences. However, the inspectors brought the observations to the attention of plant management. Plant management indicated that they had independently observed similar housekeeping issues and were implementing actions to improve performances in this area.

M8 Miscellaneous Maintenance Issues (92700, 92902)

M8.1 (Closed) Unresolved Item (URI) 50-440/96017-02: Failure to obtain motor operated valve stroke time data. The inspectors observed that an operator failed to obtain stroke time data due to an error during the performance of a surveillance test. The inspectors were concerned that the data was taken during a subsequent stroke and that this data may not be valid due to a possible preconditioning of the motor operated valve. Upon further review, the inspectors concluded that the data was valid. There were no further concerns. This item is closed.

M8.2 (Closed) LER 50-440/97006-00(DRP): A technician error resulted in a high pressure core spray (HPCS) system actuation without injection. On June 10, 1997, while performing reactor vessel level instrument check valve operability checks, a technician

failed to follow procedures and did not correctly restore a reference leg purge valve. A pressure spike was induced into the reference leg and resulted in the level transmitters sensing an erroneous low reactor water level indication which completed the logic to actuate HPCS. However, because the reactor was shutdown and vessel level was above the HPCS injection valve closure set point, the injection valve did not open and HPCS did not inject into the vessel. The licensee took appropriate corrective actions with the individuals involved with the event, as well as providing lessons learned training to other technicians and supervisors. This failure to follow procedures constitutes a violation of the TSs with minor significance and is not subject to formal enforcement action.

M8.3 (Closed) Inspection Followup Item (IFI) 50-440/98009-03(DRP): On April 10, 1998, the Division 2 emergency DG was tested under surveillance instruction (SVI) SVI-R43-T1318, "Division 2 Diesel Generator Start and Load." While unloading the DG, operations department personnel observed erratic swings of approximately 1500 kW in electrical loading and secured the DG. The load swings were considered to originate from a problem with the DG regulator. The licensee conducted thorough testing and increased monitoring of the DG. However, the problem was not seen again. A root cause analysis failed to determine a definite cause for the problem. The licensee determined that some initial work performed before instrument testing, including lubrication of the governor linkage and tightening of an amphenol connector, could have repaired the problem. Due to repeated successful runs of the DG since the April occurrence, the licensee has closed their investigation. The inspectors concluded that the corrective actions for this item were adequate and this item is closed.

III. Engineering

E1 Conduct of Engineering

E1.1 Fuel Defect Indicated by Sample from Off Gas System

a Inspection Scope (37551)

The inspectors reviewed the licensee's response to indications of a minor leak in a fuel assembly. The inspectors reviewed applicable data and interviewed engineering and chemistry department personnel.

b. Observations and Findings.

On September 2, 1998, a chemistry technician obtained and analyzed the weekly sample from the off gas system. The results indicated that a minor fuel assembly defect existed, based on a slight increase in Xenon-133 and the ratio of Iodine-133 to Iodine-138. Chemistry department personnel promptly communicated the results to engineering department personnel and station management. As a result, engineering department personnel implemented the station fuel reliability improvement plan and had an independent sample taken and analyzed. On September 3, 1998, engineering analysis confirmed that a fuel rod had developed a small pinhole leak. The licensee

contacted the fuel vendor, General Electric (GE), to solicit their support while concurrently implementing the station fuel reliability plan. The vendor concurred with the licensee's assessment of the sample analysis.

The licensee decided that fuel defect localization testing would be conducted from September 11-14, 1998, to determine the location and then suppress the leak. The operators reduced reactor power to 65 percent to perform the testing. The licensee identified the leak, by using a control rod pull pattern supplied by GE. After identifying the leaking fuel assembly, the operators inserted control rods to suppress fission activity in the fuel assembly and prevent further opening of the pinhole leak. Even with the control rods inserted, the fuel bundle still produced approximately 1 KW/foot due to the internal fission of the bundle. The licensee had not determined the root cause of the fuel defect but suspected it was due to debris.

Licensee management initiated a standing instruction for the operators: 1) weekly control rod testing was to be conducted at 90 instead of 100 percent power and reactor engineer presence was established for power restoration; 2) increased monitoring of the off gas system was implemented; and 3) engineering representatives were to be contacted prior to any change in reactor power.

c. Conclusions

The inspectors concluded that a chemistry technician properly analyzed a routine off gas sample which indicated a small fuel pin leak had occurred and promptly notified the appropriate station personnel. Also, engineering department personnel provided good support for determining the location and suppressing the leak.

E8 Miscellaneous Engineering Issues (92903)

E8.1 (Closed) URI 50-440/96005-06: Description of fuel pool sipper in Updated Safety Analysis Report (USAR). The inspectors originally considered that there was a potential discrepancy regarding the description of fuel pool sipper in Section 9.1.4.2.3.5 of the USAR. Upon further review, no discrepancy existed. This item is closed.

E8.2 (Closed) URI 50-440/96006-04: The inspectors initially identified apparent inconsistencies between the plant configuration and the USAR descriptions for the Division 1, 2, and 3 emergency DG air start systems. Upon further review, no inconsistencies existed. This item is closed.

E8.3 (Closed) LER 50-440/97008-00 and 01: This was a retraction of Event Notification Number 32737 dated August 7, 1997, that identified two occurrences when it appeared that plant cooldown rate exceeded Technical Specification limits. On September 10, 1992, and January 7, 1997, the reactor vessel bottom head drain temperature exceeded a 100 degree F per hour cooldown rate following separate reactor scrams. Both events were appropriately notified to the NRC (Events Number 24205 and 31549) per 10 CFR 50.72 and subsequently per 10 CFR 50.73. On April 4, 1998, GE provided an analysis of both events and determined that the use of the bottom head drain temperature was neither the primary nor alternate point of measurement to ensure

compliance to Technical Specifications. The Technical Specification limit is based on maintaining the reactor vessel bulk temperature at less than 100 degrees F per hour cooldown rate. Evaluations of both events demonstrated that the vessel was heating up while the bottom head drain line was cooling down and temperature indications at that location were not representative of vessel bulk temperatures. These differences in vessel and drain line temperatures were due to a stagnant flow condition in the drain line. The drain line temperature measurement is not reliable unless flow exists in the drain line. The GE engineering personnel concluded, based on evaluation of the preferred measurement of the steam dome saturation temperature data, that neither event exceeded TS limits. Based on this conclusion, the licensee retracted the event notification and revised LER 97008-00. The GE analysis also provided alternate guidance of using multiple locations of measurements to provide conservatism and ensure that TS limits were not exceeded. The licensee implemented Revision 5 to SVI B21-T1176, "Reactor Coolant System Heatup and Cooldown Surveillance," to include multiple monitoring points. During on-site inspection, the inspectors reviewed GE's analysis and verified that the SVI revision implemented GE's recommendations. Based on these reviews, this LER is closed.

E8.4 (Closed) URI 50-440/97021-03(DRP): On January 7, 1998, the inspectors identified numerous tubing support clamps on all three divisional DGs that did not appear to meet seismic qualification criteria. The licensee conducted a thorough review of the DG tubing supports. The licensee presented documentation to the inspectors to show the original design criteria for the supports. The licensee concluded that the DGs were operable because no maximum spacing between supports was exceeded. However, the licensee identified that several mounting configurations could hamper the proper torquing of the clamps. The licensee also found several clamps that required retorquing or replacement. The licensee completed these clamp repairs. The inspectors concluded that the tubing support clamps met the seismic criteria, that no violations occurred and that this item is closed.

E8.5 (Closed) URI 50-440/98009-05(DRP): On March 23, 1998, the inspectors identified several cable trays in the cable spreading rooms that were apparently filled to beyond 50 percent of their volume. Section 8.3 of the Perry USAR stated that cable trays have 4" or 6" side rails and that, by design, will be filled to no more than 50 percent by volume. When extra fill capacity was needed for trays with 4" side rails, plant design drawings and construction techniques incorporated the use of 2" extender rails. However, these extender rails were not present on the noted trays.

Initially, engineering personnel could not provide calculations or documentation to the inspectors to show the reason or justification for not using extender rails. Engineering personnel subsequently completed a thorough review of original construction documentation. It was determined that ampacity and seismic concerns were properly analyzed in the original documentation. However, the instructions in the original design drawings were vague. Since the 4" trays were analyzed for increased load, they were shown as 6" trays. The licensee concluded that it was possible that field personnel, during original construction, could have concluded that the 2" extenders were not needed. Engineering personnel submitted a work request for the addition of the

2" extenders on the applicable trays. These extenders have been installed on the trays that are filled over 50 percent capacity. The inspectors concluded that no violations occurred and that the 4" trays are rated for increased load. This item is closed.

IV. Plant Support

R1 Radiological Protection and Chemistry Controls

R1.1 Radiation Protection Practice of Uncontrolled Extension of Contaminated Area

a. Inspection Scope (71750)

The inspectors observed plant personnel perform an inspection of a valve in a contaminated area. The inspectors interviewed radiation protection and engineering department personnel and reviewed applicable procedures.

b. Observations and Findings

On September 16, 1998, the inspectors observed two engineering department personnel perform a visual inspection of control rod drive hydraulic system "B" flow control valve 1C11F0002B. The valve was located in the containment building inside a contaminated area boundary. The engineers were inspecting the valve for wall thickness. When the engineers arrived at the valve, a foreign material exclusion cover had been placed on top of the valve body since the valve's bonnet had been previously removed. The cover was held in place by several bolts and nuts. One engineer entered the contaminated area boundary while the second engineer stood outside the boundary. The second engineer held an open bag across the contaminated boundary for temporary storage of the removed bolts and nuts. The engineer then performed his visual inspection inside the valve.

Upon the completion of his inspection, he requested the other engineer to lay out a tarp so he could exit from the contaminated area. The engineer exited the contaminated area, stepped onto the tarp, and kept his protective clothing donned. With the engineer standing outside the contaminated boundary area rope, the inspectors questioned whether the contaminated boundary had been inappropriately extended without radiation protection department approval. At that time, a radiation protection technician (RPT) came by and the inspectors questioned the RPT on the radiological work practice of the engineers. The RPT contacted the health physics control point and was informed that the engineers' actions were in accordance with the briefing which had been conducted for their work activity.

Later, the inspectors had discussions with the RPT who had conducted the engineers' briefing. The RPT informed the inspectors that he directed the engineers to use the tarp as the boundary to stand on while removing their protective clothing. The RPT gave this direction because step off pads were not used in containment due to the potential for them to become entrapped in the emergency core cooling system strainer. The RPT further informed the inspectors that PAP-0511, "Radiologically Restricted Area"

Revision 6, allowed this practice and that this had been a long-standing practice at the plant. After review of the applicable parts of PAP-0511, the inspectors determined that the procedure did not prohibit this practice. The licensee performed a subsequent survey of the area and did not identify any contamination.

The inspectors also discussed this practice with the Radiation Protection Manager, who subsequently walked down the area, interviewed the RPT, and generated a condition report. The Radiation Protection Manager indicated that a review of this practice would be initiated. The licensee conducted interviews among the RPTs and determined that this practice was not uniformly understood by radiation protection department personnel.

c. Conclusion

Although the licensee's contamination control program allowed plant personnel to extend contamination area boundaries in certain situations, this policy was not consistently understood or implemented by radiation protection technicians.

F8 Miscellaneous Fire Protection Issues (71750)

F8.1 (Closed) Violation 50-440/97021-04(DRP): On December 8, 1997, inspectors found the fire door between the Division 2 and 3 emergency DG rooms stuck open. The licensee subsequently discovered that the door stuck on the floor sealant that had been recently applied. The licensee conducted a review of other fire doors to ensure no other door would stick open in a similar fashion. No other problems were noted. The inspectors have noted no repeat occurrences of this issue. The inspectors concluded that the corrective actions for this item are adequate and this item is closed.

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 October 20, 1998. 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. Myers, Vice President, Nuclear
H. Bergendahl, Director, Nuclear Services Department
N. Bonner, Director, Nuclear Maintenance Department
W. Kanda, General Manager, Nuclear Power Plant Department
F. Kearney, Superintendent, Plant Operations
T. Rausch, Operations Manager
R. Schrauder, Director, Nuclear Engineering Department
J. Sears, Radiation Protection Manager

INSPECTION PROCEDURES USED

IP 37551:	Onsite Engineering
IP 40500:	Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems
IP 61726:	Surveillance Observation
IP 62707:	Maintenance Observation
IP 71707:	Plant Operations
IP 71750:	Plant Support
IP 92700:	Onsite Followup of Written Reports of Nonroutine Events at Power Reactor Facilities
IP 92901:	Followup - Operations
IP 92902:	Followup - Maintenance
IP 92903:	Followup - Engineering

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-440/98018-01	VIO	Failure to Implement Requirements of Burn Permit
50-440/98018-02	NCV	Failure to Initiate Permit for Transient Combustibles

Closed

50-440/96005-06	URI	USAR Section 9.1.4.2.3.5 Fuel Pool Sipper
50-440/96006-04	URI	USAR Section 9.5.9.2.4, DG Air-Start Description
50-440/96017-02	URI	DG and HPCS Test Possible Preconditioning
50-440/97006-00	LER	HPCS Actuation Without Injection
50-440/97008-00&01	LER	Technical Specification Limits Exceeded and Plant Operation Continued Without Performing Required Actions
50-440/97009-02	VIO	Standby Liquid Control Pump Indicated Flow Low
50-440/97021-03	URI	Seismic Tubing Supports for DG
50-440/97021-04	VIO	Failure to Keep Fire Door Closed
50-440/98002-00	LER	Trip Unit Failure Initiates RCIC With Subsequent Reactor Scram
50-440/98009-03	IFI	Division 2 DG Load Swings
50-440/98009-05	URI	Cable Tray Loading Not in Conformance with USAR
50-440/98018-01	NCV	Failure to Initiate Permit for Transient Combustibles

LIST OF ACRONYMS USED

CFR	Code of Federal Regulations
CV	Check Valve
DG	Diesel Generators
DRP	Division of Reactor Projects
FPT	Fire Protection Technician
GE	General Electric
HPCS	High Pressure Core Spray
IFI	Inspection Followup Item
IP	Inspection Procedure
LCO	Limiting Condition for Operation
LER	Licensee Event Report
NCV	Non-cited Violation
NRC	Nuclear Regulatory Commission
ONI	Off Normal Instruction
PAP	Plant Administrative Procedure
PDR	Public Document Room
RCIC	Reactor Core Isolation Cooling
RCIS	Rod Control and Information System
RG	Regulatory Guide
RHR	Residual Heat Removal
RPT	Radiation Protection Technician
STAR	Stop, Think, Act, and Review
SVI	Surveillance Instruction
TCP	Transient Combustible Permit
TS	Technical Specification
USAR	Updated Safety Analysis Report
URI	Unresolved Item