

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

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Licensee: Virginia Electric and Power Company (VEPCO)

Facility: Surry Power Station, Units 1 & 2

Location: 5850 Hog Island Road
Surry, VA 23883

Dates: August 24 - October 4, 1997

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Enclosure 1

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EXECUTIVE SUMMARY

Surry Power Station, Units 1 & 2
NRC Inspection Report Nos. 50-280/97-09, 50-281/97-09

This integrated inspection included aspects of licensee operations, engineering, maintenance, and plant support. The report covers a 6-week period of resident inspection; in addition, it includes the results of announced inspections by four regional inspectors.

Operations

- Licensee actions to repair a minor through wall leak on service water piping were conducted in a conservative manner. Operations personnel exhibited a good questioning attitude during identification of the leaking service water line (Section 01.2).
- The inspectors verified that Technical Specification requirements were satisfied during Unit 1 operation with both Pressurizer Powered Operated Relief Valves (PORVs) isolated (Section 01.3).
- A Non-cited Violation was identified for an inadequate procedure that resulted in an inadvertent makeup to the spent fuel pool from the Unit 2 refueling water storage tank. The inspectors concluded that the corrective actions implemented should prevent recurrence (Section 01.4).
- Hydrogen concentration has continued to decrease within the Unit 1 containment following installation of a portable autocatalytic recombiner. The portable recombiner appears to be functioning appropriately to reduce hydrogen concentration (Section 01.5).
- For the specific areas inspected, the Surry Operator Requalification program fully meets the requirements, and intent of 10 CFR 55.59(c). The inspectors noted much improvement in the operator requalification program since the last inspection of the program (Section 05.1).

Maintenance

- Maintenance performed on the Emergency Service Water Pumps was completed in a satisfactory manner. Problems with marine growth on the pumps have not been adequately resolved. An inspection followup item is being opened to track the licensee's resolution of this matter (Section M1.1).
- The licensee has made an effort to determine the cause of No. 1 emergency diesel generator louver controller failures but has not been successful. Additional effort is required to repair and return the east bank of louvers to a fully functional condition. Maintenance personnel were deliberate and acted in a professional manner during troubleshooting activities (Section M1.2).
- Reactor Protection System Logic Testing was performed in an excellent manner (Section M1.3).

- The licensee's deferral of the A Reactor Coolant Pump seal inspection during the upcoming Unit 2 outage could result in a mid-cycle maintenance outage, but does not preclude safe operation of the unit. Licensee commitments for the Unit 2 outage were reviewed and found to be within the scope of the outage (Section M1.4).
- The licensee's actions with regard to surveillance, testing and maintenance of the auxiliary shutdown panels and the remote monitoring panels were excellent (Section M8.1).
- Foreign material exclusion worker qualification training was considered a strength in that it personalized the negative affects that foreign material can have on employee safety and dose, as well as, the economic impact on the company (Section M8.2).

Engineering

- The Safety Evaluation addressing service water expansion joint operability was thorough and adequately justified system operability. The decision to defer modification of the Unit 2 expansion joints inside the containment for approximately two weeks until a scheduled refueling outage appeared appropriate (Section E1.1).

Plant Support

- Health physics practices were observed to be proper (Section R1).
- An Emergency Preparedness exercise was conducted August 26. Regional personnel and the resident inspectors participated in the exercise (Section P1).
- Security and material condition of the protected area perimeter barrier were acceptable (Section S1).
- Two apparent violations were identified for inadequate fire protection features which failed to meet the requirements of 10 CFR 50 Appendix R. The control room complex and safety related vital electrical panels were not fully protected, such that one train of systems necessary to achieve and maintain hot shutdown condition from either the control room or emergency control stations would be free of fire damage (Section F2.1).
- Two apparent violations were also identified for the failure of the licensee to report these discrepancies to the NRC and for the failure to correct these discrepancies in a timely manner (Section F2.1).
- Excellent housekeeping was provided for the Radwaste Facility with good implementation of the station's fire prevention procedures and maintenance of the fire protection equipment (Section F2.2).
- A justification for changes to the Radwaste Facility building structure, equipment and facility process was not being maintained. This was identified as an Inspection Followup Item (Section F2.2).

- The licensee took positive action to enhance the preventive maintenance being performed on the storage of spare safety related electric motors and rotating mechanical components (Section F8.1).
- A Non-cited Violation was identified concerning the failure to perform fire watch tours within the specified one hour time frame (Section F8.2).

Report Details

Summary of Plant Status

Unit 1 operated at power the entire reporting period. On September 15 a power reduction was commenced in anticipation of a Technical Specification (TS) required shutdown due to an inoperable service water flowpath. The power reduction was terminated at 99.25 percent power when the TS action statement was exited and the unit was returned to 100 percent power. The unit operated at power for the remainder of the inspection period.

Unit 2 operated at power the entire reporting period. On September 10 power was reduced to approximately 81 percent to repair a leak on the A condenser waterbox outlet piping. The leak was repaired and the unit returned to 100 percent power that same day. The unit operated at power for the remainder of the inspection period.

I. Operations

01 Conduct of Operations

01.1 General Comments (71707, 40500)

The inspectors conducted frequent control room tours to verify proper staffing, operator attentiveness, and adherence to approved procedures. The inspectors attended daily plant status meetings to maintain awareness of overall facility operations and reviewed operator logs to verify operational safety and compliance with TSs. Instrumentation and safety system lineups were periodically reviewed from control room indications to assess operability. Frequent plant tours were conducted to observe equipment status and housekeeping. Deviation Reports (DRs) were reviewed to assure that potential safety concerns were properly reported and resolved. The inspectors found that daily operations were generally conducted in accordance with regulatory requirements and plant procedures.

01.2 Service Water Piping Leak

a. Inspection Scope (71707)

The inspectors reviewed licensee actions associated with a through wall piping leak in the service water system.

b. Observations and Findings

On September 14, at 11:10 a.m., operations personnel identified a minor through wall leak on a service water line located in mechanical equipment room number 3. The leak developed in a 6 inch to 4 inch reducer immediately upstream of valve 2-SW-309. Initial discussions with engineering personnel indicated that an operability concern did not exist, however, subsequent review by engineering determined that the

through wall leak rendered the line inoperable. This determination was communicated to the operating crew at approximately 6:42 p.m. and a 24 hour TS action statement on both units was entered. The TS action was entered at 11:10 a.m., the time the leak was identified.

TS 3.14 requires two operable service water flow paths to the charging pump service water subsystem. With only one operable flow path TS 3.14.d requires that two flowpaths be restored within 24 hours or the unit be placed in hot shutdown. The location of the leak resulted in only one operable service water flowpath on both units. The service water line was isolated and tagged out at 10:50 p.m. for maintenance.

The line was repaired and returned to service at 10:04 a.m. on September 15. Prior to the return to service of the second service water flowpath a power reduction was commenced on Unit 1 at 9:36 a.m. in anticipation of a required dual unit shutdown if maintenance activities were not successful in returning the flowpath to an operable condition. The Unit 1 power reduction was terminated with the unit at 99.25 percent power when the service water line was returned to service. The initiation of a power reduction was determined not to be reportable to the NRC since the service water flowpath was returned to service prior to the expiration of the 24 hour action statement.

c. Conclusions

Licensee actions to repair a minor through wall leak on a service water flowpath were conducted in a conservative manner. Operations personnel exhibited a good questioning attitude during identification of the leaking service water line.

01.3 Unit 1 Operation With both Pressurizer Power Operated Relief Valves (PORVs) Isolated

a. Inspection Scope (71707)

The inspectors reviewed the TS requirements for unit operation with both pressurizer PORVs isolated.

b. Observations and Findings

On September 16, at 7:09 p.m., the block valve associated with PORV 1-RC-PCV-1455C was closed to isolate the PORV. The other PORV block valve had been closed earlier in the cycle due to PORV seat leakage. Isolating 1455C resulted in both PORVs being isolated. The block valve was shut to determine the effect on Reactor Coolant System (RCS) leakage and Primary Relief Tank (PRT) parameters. TS 3.1.A.6 allows operation with both PORVs isolated as long as the PORVs can be manually cycled and power is maintained on the associated block valve. The 1455C block valve was reopened at 9:20 p.m. on September 18. PORV tailpipe temperatures decreased when the block valve was shut and PRT parameters stabilized but RCS leakage was not affected. The block valve remained open for the remainder of the reporting period.

c. Conclusions

The inspectors verified that TS requirements were satisfied during Unit 1 operation with both pressurizer PORVs isolated.

01.4 Inadvertent Spent Fuel Pool (SFP) Makeup from Unit 2 Refueling Water Storage Tank (RWST).

a. Inspection Scope (71707)

The inspectors reviewed the circumstances surrounding an inadvertent addition to the SFP from the Unit 2 RWST.

b. Observations and Findings

On August 30, while Unit 1 operators were performing procedure 1-OP-FC-001, "Spent Fuel Pool Makeup," Revision 3, to makeup to the SFP from the Unit 1 blender, the operating crew determined that Unit 2 RWST level was slightly decreasing. Procedure 1-OP-FC-001 was secured and the makeup to the SFP was terminated after approximately 1000 gallons of water had been added. Investigation determined that procedure 2-OP-CS-005, "Purifying Unit 2 RWST," Revision 3, was in progress on Unit 2 and this procedure aligned the Unit 2 RWST through the SFP ion exchanger. When procedure 1-OP-FC-001 was initiated the operator opened manual valve 1-FC-69 and this resulted in a flowpath from the Unit 2 RWST to the SFP.

The misalignment was recognized and corrected within 10 minutes. RWST level and SFP level remained in the normal operating band. Operations issued a deviation report documenting that the procedures were inadequate in that they did not properly verify system alignment prior to commencing a makeup from the Unit 1 blender. The Unit 2 RWST recirculation procedure was revised to require that valve 1-FC-69 be tagged closed to prevent an inadvertent addition to the SFP from the Unit 2 RWST. The inspectors discussed this event with the operating crew and operations supervision and reviewed the deviation report and the procedure change initiated to prevent recurrence. The inspectors concluded that procedure 1-OP-FC-001 was inadequate in that it did not verify proper system alignment prior to initiating a makeup to the SFP and that the corrective actions implemented should prevent another inadvertent addition to the SFP from the Unit 2 RWST. This non-repetitive, licensee-identified and corrected violation is being treated as a Non-cited Violation (NCV) consistent with Section VII.B.1 of the NRC Enforcement Policy. This matter is identified as NCV 280, 281/97009-01.

c. Conclusions

A NCV was identified for an inadequate procedure that resulted in an inadvertent makeup to the SFP from the Unit 2 RWST. The inspectors concluded that the corrective actions implemented should prevent recurrence.

01.5 Unit 1 Containment Hydrogen Concentration

a. Inspection Scope (71707)

The inspectors continued to review the licensee's actions related to detectable hydrogen concentration within the Unit 1 containment.

b. Observations and Findings

As reported in NRC Inspection Report 280, 281/97-07, the licensee installed a Portable Autocatalytic Recombiner (PAR) in the Unit 1 containment on August 22, 1997, to remove hydrogen from the containment atmosphere. At that time, containment hydrogen concentration was approximately 0.5 percent. Subsequent to the installation of the PAR, the inspectors have been monitoring containment hydrogen concentration and have noted a downward trend. At the end of the reporting period, Unit 1 hydrogen concentration was approximately 0.3 percent indicating that the PAR is performing as expected. The licensee is continuing to perform bi-weekly samples of the containment to monitor hydrogen concentration changes.

c. Conclusion

Hydrogen concentration has continued to decrease within the Unit 1 containment. The PAR appears to be functioning appropriately to reduce hydrogen concentration.

05 Operator Training and Qualification

05.1 Licensed Operator Requalification Program (71001)

a. Inspection Scope

During the period September 22-25, 1997, the inspectors reviewed the licensee's licensed operator requalification program. Specific areas of review included observation of simulator and plant walkthrough tests, program implementation procedures, and management involvement in the program.

b. Observations and Findings

The inspectors observed three teams of operators from Crew B shift. This crew was comprised of five Senior Reactor Operators (SROs), six Reactor Operators (ROs), and two Shift Technical Advisors (STAs). Each operator was administered two simulator scenarios and five Job Performance Measures (JPMs).

The inspectors noted that operator performance was generally good. Several operators had performance weaknesses which were identified and documented by the training department evaluators. Additionally, the scenarios appeared to be quite good. They were challenging and operationally oriented. Each explored various aspects of the abnormal

and emergency procedures as well as TS actions. The JPMs were good as well. The inspectors observed that many enhancements had been made in response to findings of the previous requalification inspection.

The inspectors noted that the licensee's evaluators did an excellent job, particularly during the simulator evaluations. They were objective and thorough in identifying and documenting operator strengths and weaknesses. These were discussed among all team members immediately following each scenario to ensure no problems were overlooked and to ensure they were properly characterized. The evaluation team included an Operations Department representative. Usually this representative was the Operations Superintendent.

The inspectors reviewed the licensee's documentation of operator performance for this crew and that for Crew E. The inspectors found that remedial training was identified and conducted when needed. Operators with minor deficiencies were trained and re-tested before returning to shift. While remediation appears to be primarily self-study, some instructor interface was required. Documentation and follow through in this area was very good, but the actual retraining identified in the remedial packages lacked depth.

The inspectors found evidence of strong and continual management involvement in the requalification training program (as well as other non-licensed training programs). A file of management observations forms for the last two years was reviewed. The inspectors found that the management observer often provided meaningful feedback and beneficial ideas. The inspectors found several completed observation forms by the Plant Manager. Each form had been properly dispositioned, with corrective action identified where necessary.

c. Conclusions

The inspectors noted much improvement from the last inspection. It was evident that the nuclear training department had worked on those areas where improvement could be made and the positive change in performance was observable. The inspectors concluded that the Surry Operator Requalification training program was in very good condition. For the specific areas inspected, the Surry Operator Requalification program fully meets the requirements and intent of 10 CFR 55.59(c).

08 Miscellaneous Operations Issues (92901)

- 08.1 (Closed) Violation (VIO) 50-280/96005-01, 50-281/96005-01: inadequate system isolation. On May 18, 1996, the control room operator received ventilation system Vent-Vent ALERT alarms on both the Victoreen (RI-VG-110) and Kaman (RI-VG-131-1) radiation monitors. The operator observed that the overhead gas pressure had decreased by approximately two psi. The operator isolated the Primary Drains Transfer Tank (PDTT) from the overhead gas header and terminated the release to the Unit 2 containment. The operators determined that the release path had been through PDTT Cooler Inlet Header Relief Valve, 2-DG-RV-202, which had

been removed to perform set point testing. A Root Cause Evaluation (RCE) team was formed and their findings are contained in RCE S-96-1089.

The RCE Team reviewed Safety Valve/Relief Valve (SV/RV) work practices and determined that an operator knowledge deficiency existed in the area of tailpipe system interactions. The operators had not considered that when removing a single relief valve in the tailpipe system that the potential for lifting a second active RV in the chain must be considered before the SV/RV is removed. The team determined that three other RVs had been worked with the Residual Heat Removal (RHR) Heat Exchanger outlet header RV in service. The tagout of the PDTT vent line was not discussed or considered prior to releasing work on 2-DG-RV-202. Two SROs reviewed and concurred with the proposed boundaries and another SRO approved the hanging of tags. Work was released for maintenance without carefully considering that the system downstream of the RV tail pipe was slightly pressurized by the gaseous waste system (approximately two psig). OPAP-0010 requires that a system be depressurized prior to breaking its pressure boundary for maintenance. The team determined that job scoping did not address special circumstances. Unit 1 had known fuel failures and the outage unit (Unit 2) PDTT vent remained connected to the Unit 1 common waste gas header. Isolating the Unit 2 PDTT vent from the common gaseous waste header was never considered or discussed.

The RCE Team made three recommendations to site management:

- Develop a training synopsis on SV/RV tagging requirements to include tail pipe system interactions and OPAP-0010 requirements.
- Modify Operations Checklist (OC)-9, Outage Readiness Checklist, to ensure SV/RV tagging/maintenance is addressed.
- Evaluate revising existing procedures to establish an alternate vent path for the PDTT during refueling outages.

Management accepted all the recommendations and committed to the NRC that the first two items would be completed as the corrective actions in their August 14, 1996, response to the violation.

The inspectors reviewed the training synopses and training attendance records for the SV/RV training. The inspectors verified that OC-9 was modified to address the issues. The licensee evaluated Operating Procedures 1 and 2-MOP-DG-001, "Removal and Return to Service of the PDTT for Maintenance," Revision 0, and as a result issued a PAR to add alternate vent paths in Step 5.1.3. The inspectors reviewed 1 and 2-MOP-DG-001, Revision 0, P-1 and verified that the licensee completed all three recommended corrective actions.

- 08.2 (Open) Inspection Followup Item (IFI) 280, 281/97002-01: long term corrective actions to resolve potential Turbine Driven Auxiliary Feedwater (TDAFW) pump overspeed trips. The inspectors reviewed the status of licensee corrective actions with regard to this IFI. The

licensee is presently in the early stages of developing a design change package to enhance the design of the TDAFW pump control circuitry. The design change, as presently conceived, will add a seal in signal to the pump start circuitry. Discussions with the system engineer indicated that the modification would most likely be implemented during the next scheduled refueling outage on the respective units. The design change package and schedule for implementation had not been finalized. This item will remain open until a final resolution is determined and implemented.

II. Maintenance

M1 Conduct of Maintenance

M1.1 Emergency Service Water Pump (ESWP) 1-SW-P-1B Cleaning

a. Inspection Scope (62707)

On September 11, 1997, ESWP 1-SW-P-1B failed its monthly Operations Periodic Test (OPT), (0-OPT-SW-002) and was declared inoperable. The inspectors observed portions of the licensee's efforts to restore the pump to operable status.

b. Observations and Findings

On September 11, the licensee performed procedure 0-OPT-SW-002, "Emergency Service Water Pump 1-SW-P-1B," Revision 10-P1. The licensee entered a seven day Limiting Condition for Operation (LCO) when Tagout 1-97-SW-0075 was implemented for pump testing. At 4:18 a.m., the operator at the low level reported that the pump had failed the OPT in that it was only able to achieve a flow of 14,750 gpm. The test required that the pump achieve a minimum flow of 15,100 gpm. Divers were brought in to clean the pump. The pump was run a number of times, but continued to exhibit low flow. Deficiency Report (DR) 97-2528 was written to track this event. The inspectors attended a meeting chaired by Engineering which focussed on causes of the pump to achieve required flow and corrective actions. The decision was made to remove and disassemble the pump, inspect the pump internals, re-baseline, and have vendor support on site. Work Order (WO) 374295-01 was issued to troubleshoot and perform the required maintenance.

On September 12, the pump was removed from the pump bay, disassembled, and inspected. The licensee's inspection revealed barnacles approximately one half inch deep on the pump diffuser and impeller. The vendor representative stated that marine growth in excess of one fourth of an inch would significantly affect pump performance. The licensee took photographs of the affected areas of the pump. The inspectors viewed the photographs and toured the low level to observe the disassembled pump. The inspectors observed the craft removing marine growth from the pump column. The disassembled pump and the pump bowl, diffuser and impeller were viewed. The bowl, impeller, and diffuser were sent to the shop to remove the barnacles and re-activate the anti-

fouling coating. The licensee had previously coated these components to inhibit hydroid growth.

The inspectors observed craft performance and also observed that the WO and the following procedures and documents were at the job site and were being used:

0-MCM-1910-01, "Diving Procedure," Revision 2

0-MCM-0114-01, "Emergency Service Water Pump Maintenance,"
Revision 5

GMP-C-107, "Rigging and Lifting," Revision 5

Tagout 1-97-SW-0075

The inspectors reviewed WO 374295-01, the tagout, and five of the last completed 0-OPT-SW-002 procedures. On September 13, the licensee had reassembled the pump, replaced it in the pump pit, and realigned the pump assembly. The pump was placed back in service following Post Maintenance Testing (PMT) with the pump producing 16,700 gpm. The licensee exited the LCO at 10:45 p.m. on September 13. The licensee performed the same maintenance on the A and C ESOWPs. Upon removal from the water, both pumps exhibited barnacle growth similar to the B pump. Following cleaning, both pumps demonstrated a significant improvement in performance.

The licensee is evaluating various methods to prevent barnacles from attaching to the impeller as well as methods to effectively remove the barnacles without pump disassembly. Review of the licensee's corrective actions is identified as IFI 50-280, 281/97009-02.

c. Conclusions

Maintenance performed on the ESOWPs was completed in a satisfactory manner. Problems with marine growth on the pumps have not been adequately resolved. An IFI is being opened to track the licensee's resolution of this matter.

M1.2 No. 1 Emergency Diesel Generator (EDG) Radiator Louvers

a. Inspection Scope (62707)

The inspectors observed the licensee's troubleshooting efforts to determine the cause of the failure of the East Radiator Louvers of No. 1 EDG to modulate.

b. Observations and Findings

On August 12, 1997, an operator observed that the East Radiator Louvers of No. 1 EDG did not operate properly. The controller was replaced and the louvers functioned satisfactorily. This matter was documented in

NRC Inspection Report 50-280, 281/97-07. On September 1, during the troubleshooting effort, the "Hot Engine" alarm came in and cleared several times during the two hour EDG run. The east louvers did not open until 185 degrees F but should have started to open at 165 degrees F. The controller was set at 165 degrees F as a corrective action for the August event. DR 97-2463 was issued to track the event. The inspectors attended several meetings in which the licensee discussed potential causes of the failure of the East Louvers to modulate. No conclusions were reached on the causes of the failure and Engineering requested that the EDG be run for data gathering. Operations was reluctant to unnecessarily operate the EDG for data gathering.

On September 23, the inspectors observed the data gathering run for the No. 1 EDG. The licensee instrumented the controls for the East Radiator Louvers. The inspectors observed that the instrument cables were routed between the control cabinet and the door and rested on the upper door hinge. The door was free to move and the inspectors believed the cables could be damaged if the door was accidentally closed. The inspectors discussed their observation with the licensee who concurred with the conclusion. The licensee secured the door in the open position to prevent it from closing.

The inspectors observed that WO 370314-01, "Repair Louver Control," and Operating Procedure (OP)-EG-001, "Number 1 Emergency Diesel Generator," Revision 7, were at the jobsite and were used by both the craft and the operators. Craft personnel were methodical and professional in carrying out their duties. The inspectors observed that the operators were performing independent verification of the prestartup procedure steps. The inspectors reviewed the WO and OP-EG-001.

The No. 1 EDG was started at 10:45 a.m. and was at full load 27 minutes later. The inspectors observed the run and noted that the west louvers modulated but the east louvers only opened slightly. The EDG coolant temperature stabilized and the east louvers had not modulated nor did the "Hot Engine" alarm initiate. At 11:54 a.m. the EDG load was reduced when the system engineer determined that no additional data was required. A review of the data revealed that the controller did not function properly and DR 97-2655 was issued to track the failure of the controller.

The licensee contacted the controller vendor, Barber-Coleman, and was informed that the vendor no longer recommends the use of the external capacitor that is located between the controller and the actuator. A Request for Engineering Assistance (REA) was submitted to remove the capacitor from all three EDGs. The licensee was attempting to obtain another actuator and planned to replace both the actuator and controller. The licensee plans to bench test the replacement controller prior to installation.

The controller is designed to cause the louvers to fully open when the "Hot Engine" alarm is initiated. The licensee determined that No. 1 EDG was not inoperable based on their determination that the EDG coolant

temperature limits would not be exceeded even if the east lovers failed to open.

c. Conclusions

The licensee attempted to determine the cause of No. 1 EDG louver controller failures, but has not been successful. Additional effort is required to repair and return the east bank of louvers to a fully functional condition. The inspectors considered that the craft were deliberate and acted in a professional manner during troubleshooting activities.

M1.3 Surveillance Observations (61726)

On October 4, the inspectors observed portions of procedure 1-PT-8.1, "Reactor Protection System Logic (For Normal Operations)," Revision 14, being performed. The inspectors observed the briefings held in the Instrumentation & Calibration (I&C) shop, the Control Room, and with the work planning SRO and the STA. The briefings were thorough and detailed. The inspectors observed the train A portion of the surveillance. The performance of the surveillance was observed in the relay and switchgear rooms and in the Control Room. The I&C technicians were methodical and cautious. Repeat backs and verification were consistently performed. The inspectors considered that the technicians did an excellent job performing the surveillance.

M1.4 Miscellaneous Unit 2 Outage Issues

a. Inspection Scope (62707)

The inspectors reviewed the licensee's plans and commitments for the upcoming Unit 2 refueling outage. This effort included licensee maintenance deferrals and commitments.

b. Observations and Findings

Unit 2 Reactor Coolant Pump (RCP) Seal Inspection

The licensee had originally scheduled a RCP seal inspection during the upcoming Refueling Outage (RFO 15); however, management determined that the seal inspection of RCPs A and B would be deferred until RFO 16. The RCPs at Surry are Westinghouse Model 93A with a standard eight inch Aluminum Oxide seal package. The vendor recommends inspection of the seals on a frequency of every other cycle. The licensee asked Westinghouse in 1994 for recommendations concerning the extension of the inspection frequency to every third cycle. In an August 24, 1994, memorandum, Westinghouse provided recommendations for extending the operation life of the seals. The recommendations were to be implemented at the beginning of the three cycle period and included:

1. Rebuild the Number 1 seal with new internal O-rings.

2. Replace the Number 1 and 2 inserts regardless of condition.
3. Install new Number 2 and 3 runners.
4. Calibrate and repair all RCP seal related instrumentation. If the instrumentation is chronically unreliable, replace it.
5. Install high temperature O-rings.
6. Do not use obsolete Aluminum Oxide seal components: The Silica Nitride seals of RCP B have better wear characteristics.
7. Reduce the rating of the seal injection filters.

Westinghouse stated that even with the recommendations fully implemented the licensee should anticipate some erratic Number 2 seal operation during the third cycle.

For RCP A, only recommendations Number 1, 2, and 7 were implemented. All but recommendations Number 4 and 5 had been implemented for RCP B during 1995. Engineering recommended that the inspection frequency not be extended to three cycles for RCP A and that the seal be overhauled during RFO 15. Engineering stated that the operation of RCP B for an additional cycle had its risks, but the condition of the seal was more conducive to operation for an additional cycle.

The inspectors were concerned about the deferral of the RCP A seal inspection and discussed their concerns with licensee management. The inspectors were informed that the licensee was aware of the risks involved and that the deferral of the RCP A seal inspection was an "at-risk" decision. A factor in this decision was that if the Number 1 seal failed, it would not be catastrophic failure and the Unit could be safely shut down.

NRC Commitments To Be Completed During The Unit 2 RFO 15

The licensee has committed to the NRC to perform or complete various tasks. The following is a list of those significant items which will be completed during RFO 15:

- Install Appendix R isolation breakers between vital buses and uninterruptable power supplies. (DCP-94-018)
- Modify valves 2-SI-MOV-1890A/B to install bonnet cavity pressure equalization line. (DCP 96-034, WO 350835-01)
- Complete the physical verification of differences associated with documented valve alignments for valves not accessible during normal plant operation. (IR 50-280, 281/96011)

The inspectors reviewed these commitments and determined that they were in the scope of the outage.

c. Conclusions

The licensee's deferral of the A RCP seal inspection during the upcoming Unit 2 outage could result in a forced RCP seal replacement outage, but does not preclude safe operation of the unit. Licensee commitments for the Unit 2 outage were reviewed and found to be within the scope of the outage.

M8 Miscellaneous Maintenance Issues (92902)

M8.1 Auxiliary Shutdown Facilities Maintenance/Surveillance

a. Inspection Scope (62700)

This portion of the inspection was conducted to review the licensee's practices concerning surveillance, testing and maintenance of the plants' auxiliary shutdown facilities. The purpose of the inspection was to determine what actions were being taken by the licensee to assure that the facilities would perform their safety function if called upon during a plant event. In order to complete the inspection, the licensee was requested to provide the following information: a list of all surveillances, preventive maintenance, and calibrations performed; a list of all deficiency reports and work orders written on the facility in the last year, and a list of any design changes implemented on the facility in the last three years. This information was provided and reviewed during the course of the inspection. Additionally, the inspectors reviewed the Updated Final Safety Analysis Report (UFSAR), TSs and the licensee's Abnormal Procedure AP 20, "Main Control Room Inaccessibility," Revision 3. Walkdowns of the auxiliary shutdown panel (for each unit) and the two remote monitoring panels (located in the cable spreading room) were conducted. These walkdowns compared installed equipment to the applicable drawing, verified system lineup to the applicable site procedure, and included an inspection of the inside of the auxiliary shutdown panels for material condition. In addition, a sample of surveillances, calibrations and periodic tests were reviewed for technical adequacy.

b. Observations and Findings

Review of the station deviations and WOs written on the equipment determined that adequate and appropriate corrective action was being taken for identified equipment deficiencies. Review of the UFSAR determined that there were no differences between the UFSAR and the site procedures concerning the auxiliary shutdown facility. Walkdown of the panels identified one minor problem concerning eight switches, which had been inadvertently omitted from the switch position verification checklist in OC-15 (Unit 1) and OC-16 (Unit 2), "Aux Shutdown Panel Switches," effective date June 23, 1997. This condition was immediately addressed by the licensee in Deviation Report S97-2653. The walkdown determined that the equipment was in good condition, although the inside of the auxiliary shutdown panel had some dust accumulation. The licensee was in the process of establishing a five year preventive

maintenance to clean that area. The inspection determined that the following surveillance, calibration, and periodic testing was being routinely conducted by the licensee:

- Functional testing of all switches on the auxiliary shutdown panels was performed in accordance with procedure 1-OSP-ZZ-001, "Auxiliary Shutdown Panel Functional Surveillance," Revision 2.
- Calibration of all meters on the auxiliary shutdown panels and the remote monitoring panels was performed in accordance with various site calibration procedures.
- An operational check was periodically performed, using Procedure PT-36.1, "Remote Instrumentation Channel Check," Revision 4, which compared the readings on the remote meters to those same readings in the control room.
- An operational check was periodically performed which verified the correct positioning of the auxiliary shutdown panel(s) switches in accordance with Procedures OC-15 and OC-16.

c. Conclusions

The licensee's actions with regard to surveillance, testing and maintenance of the auxiliary shutdown panels and the remote monitoring panels were excellent. All switches controlling equipment on the auxiliary shutdown panels were subjected to testing to verify operability. All meters on all of the panels were in the licensee's calibration program. There were operational checks that compared the meter readings on all of the panels to the comparable control room meters, and checks that periodically verified proper switch positioning on the auxiliary shutdown panels.

M8.2 (Closed) VIO 50-280, 281/94017-02: failure to implement corrective actions to preclude repetition of Foreign Material Exclusion (FME) deficiencies. The inspectors reviewed the following documents:

- Reply To A Notice Of Violation, dated August 17, 1994
- VPAP-1302, "Foreign Material Exclusion Program," Revision 9
- VPAP-2002, "Work Request and Work Order Tasks," Revision 7
- Station Nuclear Safety Station Deviation Trend Reports for fourth quarter 1996 and first and second quarter 1997
- Surry Self Assessment 1997 Unit 1 RFO FME Report,
- Maintenance Self Assessment First Quarter 1997 Status Report
- Lesson plan EMI-6-LP-4, Foreign Material Exclusion Program

- Various Deviation Reports (DRs) issued for FME problems.

In addition, the inspectors looked at the computer based training provided for the Nuclear Business Unit employees, attended the FME worker qualification training presented on September 25, 1997, and discussed FME issues with Maintenance personnel. Actions to avoid FME problems included the requirements in VPAP-1302 that personnel entering a FME area were to have been qualified or be escorted by a qualified person and specially trained FME coordinators were to be assigned responsibility for the FME area. The FME worker qualification training was considered a strength in that it personalized the negative affects that foreign material can have on employee safety and dose, as well as, the economic impact on the company. The licensee has expended considerable resources to sensitize workers, both contract and plant employees, concerning FME issues.

III. Engineering

E1 Conduct of Engineering

E1.1 Service Water System Safety Evaluation 97-123

a. Inspection Scope (37551)

The inspectors reviewed safety evaluation 97-123 that justified continued operation with improperly installed service water Metal Expansion Joints (MEJs).

b. Observations and Findings

On September 17, a concern was raised by engineering personnel dealing with the adequacy of the service water MEJs in the recirculation spray heat exchanger service water lines located inside containment on both units. The concern specifically addressed the configuration of the tie rods and the gap between the nuts on the tie rod and the expansion joint. The installed configuration allowed unrestrained compression of the MEJs but did not allow unrestrained extension of the MEJs. Based on the as installed configuration of the expansion joint tie rods, an engineering analysis was performed to determine the effect of this additional loading on the system. The analysis determined that the most limiting component was the recirculation spray heat exchanger upper support structure support plate and shear bolts. The associated design allowable stress values would be exceeded during a design basis seismic event. The analysis also determined that the stresses would not exceed the American Society of Mechanical Engineers, Section III Appendix F allowables. Based on the analysis performed, the licensee determined that the system was degraded but operable.

The Unit 1 MEJ tie rods were configured to the proper configuration prior to completion of the safety evaluation. Based on the operability evaluation, the licensee elected to wait until the scheduled Unit 2

refueling outage to modify the expansion joint tie rods inside the Unit 2 containment. The unit was scheduled to shutdown October 6 for the refueling outage.

C. Conclusions

The Safety Evaluation addressing service water expansion joint operability was thorough and adequately justified system operability. The decision to defer modification of the Unit 2 expansion joints inside containment approximately two weeks until a scheduled refueling outage appeared appropriate.

IV. Plant Support

R1 Radiological Protection and Chemistry Controls (71750)

On numerous occasions during the inspection period, the inspectors reviewed Radiation Protection (RP) practices including radiation control area entry and exit, survey results, and radiological area material conditions. No discrepancies were noted, and the inspectors determined that RP practices were proper.

P1 Conduct of Emergency Preparedness (EP) Activities

On August 26, an Emergency Preparedness Exercise was conducted. Regional personnel and the resident inspectors participated in the exercise. The exercise is discussed in detail in NRC Inspection Report 280, 281/97008.

S1 Conduct of Security and Safeguards Activities

On numerous occasions during the inspection period, the inspectors performed walkdowns of the protected area perimeter to assess security and general barrier conditions. No deficiencies were noted and the inspectors concluded that security posts were properly manned and that the perimeter barrier's material condition was properly maintained.

F2 Status of Fire Protection Facilities and Equipment

F2.1 10 CFR 50 Appendix R Isolation and Breaker Coordination

a. Inspection Scope (64704)

The inspector reviewed an issue identified by the licensee regarding the electrical isolation and protection provided for the vital electrical bus panels in the event of a control room fire. Also reviewed was circuit breaker coordination provided for the vital electrical bus panels for compliance with the requirements of 10 CFR 50 Appendix R.

b. Observations and Findings

VITAL BUS ISOLATION

The Surry facility has a common control room for both Units 1 and 2. The control room complex includes the Unit 1 computer room, the Unit 2 computer room and the control room administrative annex. These rooms are in the same fire area. Each unit has four Uninterruptable Power Supplies (UPS), UPS A-1, A-2, B-1 and B-2, which supply power to vital emergency panels. These panels provide power to safety related equipment and equipment required to achieve safe shutdown in the event of a control room fire. UPS 1A-1 and 1A-2 supply power to panels VB 1-I and VB 1-III which are located in the Unit 1 computer room. UPS 2A-1 and 2A-2 supply power to VB 2-I and VB 2-III which are located in the Unit 2 computer room. UPS 1A-2 supplies the Unit 2 Appendix R safe shutdown panels and UPS 2A-2 supplies the Unit 1 Appendix R safe shutdown panels. These Appendix R remote shutdown panels are located in each unit's emergency switchgear room and in the cable spreading room. They contain instrumentation required for performing plant shutdowns from outside the main control room, such as steam generator level, RCS pressure and temperature, and pressurizer level.

There were no means available to isolate the vital 120 VAC bus panels in the Unit 1 and 2 computer rooms from the UPS panels. A control room fire could cause an electrical fault ("short") in vital buses VBs 1-I, 1-III, 2-I and 2-III which could trip the breaker or fuse to the affected UPS panel. This could result in the loss of power to the Appendix R shutdown panels. Should this occur, there would be no instrumentation operable on the Appendix R panels to support the plant shutdown activities. In addition, power would also be lost to the emergency communication equipment located adjacent to the remote Appendix R panels. This communication equipment is required for remote shutdown activities. Power to the vital buses could not be restored until the fault conditions were corrected and any blown fuses replaced.

The failure to provide vital bus isolation does not meet the requirements of Appendix R Section III.G and is identified as Apparent Violation EEI 50-280, 281/97009-03

BREAKER COORDINATION

The vital bus panels are supplied power by the UPS. Each vital bus panel contains a number of branch circuit breakers and a 100-amp main circuit breaker. Each circuit breaker has a thermal unit and a magnetic unit. Based on the licensee's engineering evaluations, the thermal units had inverse time versus current characteristics, so that as current increased, the trip time decreased. The magnetic units would operate instantaneously. At current less than 1,000 amps, the thermal units would provide selective tripping to ensure that the branch breakers would open prior to the main circuit breaker, i.e., correct circuit breaker coordination. However, at currents above 1,000 amps, proper selective tripping could not be ensured. This could result in the opening of either the branch or main circuit breaker. Most of the vital bus panels supply power to some Appendix R related functions. If

the main circuit breaker opened, all functions provided by the panel would be lost. The licensee's analysis found that at least one panel could be lost due to a coordination issue in the following fire areas: control room, Unit 1 emergency switchgear room, Unit 2 emergency switchgear room and the turbine building. These branch circuits supply electrical power to a number of Appendix R and safe shutdown components.

This inadequate breaker coordination does not meet the requirements of 10 CFR 50, Appendix R, Section III.G as implemented by the Surry Appendix R report, Section 3.9.2 which states "The problem of associated circuits of concern by common power supply is resolved by ensuring adequate electrical coordination between the safe shutdown power source supply breaker and the component feeder breakers or fuses..." The failure to meet the requirements of Appendix R for circuit breaker coordination is identified as Apparent Violation EEI 50-280, 281/97009-04.

CORRECTIVE ACTIONS

The licensee's Electrical Distribution System Functional Inspection (EDSFI) assessment performed in 1992 identified the possible loss of uninterruptable power supplies to equipment required in both units to achieve and maintain the plant in a safe shutdown condition in the event of an Appendix R control room fire. The licensee issued Deviation Report (DR) S-92-1806 which documented that the facility was outside the plant's design basis and in violation of the requirements of 10 CFR 50 Appendix R. However, this condition was not reported to the NRC. A plant modification request was initiated by Design Change Package (DCP) 93-002-03 to install fuses on the feeders to the vital bus panels. This DCP was subsequently superseded by DCP 94-018 which was scheduled to be completed for Unit 1 during the Fall 1998 refueling outage and for Unit 2 during the Fall 1997 refueling outage.

In early 1993, the licensee identified inadequate breaker coordination between the branch circuits and the main circuit on a number of vital bus distribution panels. This issue involved the possibility that a fault condition affecting one of the branch circuits would trip the main panel circuit breaker in lieu of the branch circuit breaker and result in the loss of the entire bus panel. This issue was identified as outside of the plant's design basis and was documented by DR S-93-0109. This condition was also not reported to the NRC. DCP 94-018 was revised to replace the main input breakers to each of the vital bus distribution panels with non-automatic switches, i.e., no fuses or circuit breakers.

On March 24, 1997, following completion of engineering evaluation ET CCE-96-068 to support DCP 94-018, the licensee concluded that the plant was not in compliance with the requirements of Appendix R. This conclusion was documented by DR S-97-0981 and this issue was discussed with the NRC resident inspectors; however, this condition was not formally reported to the NRC.

On July 31 and August 5, 1997, the NRC staff had conference calls with the licensee to discuss these issues. Effective August 14, 1997, the licensee revised the Fire Contingency Action Procedure 0-FCA-1.00, "Limiting Main Control Room Fire (With 19 Attachments)," Revision 12, to provide sufficient guidance to ensure that the units would be maintained in a safe shutdown condition in the event of an Appendix R fire. This procedure could be accomplished with the normal minimum plant staffing plus one designated electrician assigned to the operating shift. In general, the compensatory actions required cutting the supply cables to vital bus panels VBs 1-I, 1-III, 2-I, and 2-III. This would disconnect or open the circuit to the fire damaged cables or panels to eliminate an electrical fault condition. The vital power supply panels would then be restored to service. Any blown fuses within the uninterruptable power supply panels would be replaced. The electrical tools, fuses and other equipment required to perform these tasks were stored within the emergency switchgear room. Performance of these repair actions would be required within 30 minutes to meet the time lines for safe shutdown established in the Surry Appendix R Report, Chapter 5, Attachment 2. The licensee had performed walkdowns and verified that these actions could be accomplished within the required time frame. Adequate compensatory measures were implemented in August 1997 to control and monitor a plant shutdown following an Appendix R type fire until the permanent modifications were completed.

The compensatory measures for the breaker coordination issue consisted of restoring the vital buses supplying Appendix R equipment to service on an as needed basis. Operations personnel had been directed and Procedure 0-FCA-1.00 had been revised to first attempt to reclose an open circuit breaker on the affected vital bus panel. If this was not successful, circuit breakers supplying non-Appendix R equipment would be opened to allow the main circuit breaker to be successfully closed. The compensatory actions implemented in August 1997 were considered adequate to address this issue until permanent modifications are completed.

The inspectors reviewed Procedure 0-FCA-1.00, inspected the repair supplies and equipment stored in the emergency switchgear room, and concluded that the proposed compensatory actions were appropriate.

These compensatory actions were first identified in 1993; however, prior to August 1997, a designated electrician was not always on the site to perform the required actions and the required electrical tools and replacement fuses were not stored within the emergency switchgear rooms. In addition, Procedure 0-FCA-1.00 did not adequately address all of the required compensatory actions. The inspectors concluded that prior to August 1997, the plant operators may not have been able to activate the remote shutdown panels and establish remote monitoring of plant conditions within the required 30 minute time frame.

The Surry Operating License Section 2.I for Units 1 and 2 states that the licensee is required to implement and maintain the administrative controls identified in Section 6 of the Fire Protection Safety Evaluation. The Surry Appendix R Report, Chapter 12, Section C

identified that the Quality Assurance program applies to the fire protection program. Section C.8 states that measures established to ensure that conditions adverse to fire protection, such as failures, malfunctions, deficiencies, deviations, defective components, uncontrolled combustible materials, and nonconformances are promptly identified, reported and corrected and are described in Section 17.2.16 of VEP 1-5A, "Operational Quality Assurance Program Topical Report." A noncompliance to the Appendix R requirements in the event of a control room fire was identified in 1992 and inadequate breaker coordination issues were identified in 1993; however, actions were not taken to promptly correct these issues. The failure to promptly correct these identified Appendix R fire protection discrepancies is identified as Apparent Violation EEI 50-280, 281/97009-05.

REPORTABILITY

10 CFR 50.72(b)(1)(ii)(B) and 50.73(a)(2)(ii)(B) require licensees to notify the NRC of identified plant conditions that are outside the design basis of the plant. The notification is to be as soon as practical, but within one hour, of the occurrence followed by a written Licensee Event Report (LER) within 30 days after the discovery of the event. The licensee did not report these issues to the NRC. The failure to properly report to the NRC Appendix R fire protection discrepancies which were outside the design basis of the plant is identified as Apparent Violation EEI 50-280, 281/97-09-06.

c. Conclusions

Two apparent violations were identified for inadequate fire protection features involving the control room complex and for safety related vital electrical panels. Because of these deficiencies, at least one train of systems necessary to achieve and to maintain the plant in a hot shutdown condition from either the control room or emergency control station may not be protected from fire damage. Two additional apparent violations were identified involving the failure to report conditions outside the design basis of the plant and the failure to correct Appendix R fire protection discrepancies promptly.

F2.2 Fire Protection Features for Radwaste Facility (64704)

a. Inspection Scope

The inspectors reviewed the fire protection features provided for the Radwaste Facility to determine if these features met the NRC guidelines of NUREG 0800, Section 9.5.1.

b. Observations and Findings

Document C-20-122K-001, "Safety Analysis for New Radwaste Facility," Revision 1, dated April 1991, contained a description of the fire protection features for the Radwaste Facility. The inspectors reviewed Document C-20-122K-001 and performed a walkdown inspection of the

Radwaste Facility. The facility is a six-story non-combustible building provided with an automatic fire alarm system, fire hose standpipe system, portable fire extinguishers, and automatic sprinkler systems. The sprinkler systems only provide partial protection and were installed in areas containing combustible materials or high radiation. The design concept for the facility's fire protection features included provisions to detect and alert the facility operators of the existence of a fire, suppress the fire, and prevent the spread of fire to adjacent building areas.

The fire alarm signals are received in the Radwaste Facility control room which is continuously manned. Upon receipt of a fire alarm signal, the alarm response procedure refers the operator to Radwaste Abnormal Procedure RAP-26-02, "Fire," Revision 1. This procedure directed the operators to extinguish the fire and to contact the Surry control room and request Surry Fire Brigade assistance if the fire cannot be extinguished with one portable fire extinguisher. The inspectors verified that the Radwaste Facility operators had received training in the use of fire extinguishers.

Most of the maintenance and surveillance testing activities for various equipment in the Radwaste Facility were performed by radwaste personnel. Previously, the testing of the fire protection equipment had been performed by Surry station personnel; however, testing of the fire protection equipment was in the process of being transferred to the Radwaste Facility personnel.

The Surry fire prevention procedures were used to control transient combustible materials, combustible and flammable liquids, hot work activities, and the surveillance and testing of the fire protection equipment. These were adequate, except operability of the Radwaste Facility fire protection equipment was not addressed. To address this issue, the licensee had implemented a policy in which the Radwaste Facility personnel were to inform the Surry control room and fire brigade of any fire protection impairments. In addition, the area of the effected impairment was to be monitored approximately every four hours while the fire protection systems were out of service. The inspectors concluded that these compensatory actions were appropriate.

During the facility inspection, the inspectors noted that the general housekeeping in the facility was excellent with appropriate emphasis being provided for the control of combustible and flammable materials. Material condition of the fire protection equipment was very good and the equipment appeared to be well maintained. However, the inspectors noted that several changes had been made to the fire protection features provided for the facility, such as replacing the Halon fire extinguishers with dry chemical type extinguishers and installation of a suspended ceiling below the installed fire detection instruments in several areas. The licensee stated that no written evaluation was available to justify these changes. The safety analysis document for the Radwaste Facility was prepared as a 10 CFR 50.59 evaluation to determine if the facility could be constructed, tested and placed in

service without NRC approval. This document was apparently not intended to be maintained as a design basis document. Currently the licensee does not have a process to maintain an updated description of the facility and operational process or a requirement that a justification be provide for any changes made to the facility. The licensee stated that this issue would be evaluated. Until the inspectors can review and assess the licensee's evaluation, this is identified as IFI 50-280, 281/97009-07.

The inspectors reviewed the preventive maintenance program records and verified that periodic inspections and tests of the fire protection equipment was being performed at the frequency recommended by the licensee's insurance carrier. This inspection frequency was considered satisfactory.

c. Conclusions

Excellent housekeeping was provided for the Radwaste Facility with good implementation of the station's fire prevention procedures and maintenance of the fire protection equipment. An IFI was identified involving the lack of a design basis type document and no requirement to provide justifications for changes made to the building structure, equipment and facility processes.

F8 Miscellaneous Fire Protection Issues (92904)

F8.1 (Closed) VIO 50-280, 281/96010-03: inadequate preventive maintenance performed on spare electric motors.

(Closed) IFI 50-280, 281/96010-04: preventive maintenance requirements for spare RHR and component cooling water pumps.

The licensee responded to the VIO by letter dated November 26, 1996. The corrective actions taken on the VIO and IFI were closely related. The VIO was related to the lack of adequate preventive maintenance being performed for two large spare safety related component cooling water pump motors. The IFI was related to the preventive maintenance requirements for mechanical equipment in storage, such as safety related pumps.

As corrective action, the licensee sent the two electric motors to a vendor for a detailed inspection. The vendor performed an inspection and repaired all identified discrepancies. An assessment was performed by the licensee of the preventive maintenance requirements for all electric motors and mechanical components, such as pumps, blowers, air compressors, etc., which were being stored in the site warehouses. Procedure 0-EPM-2302-01, Inspection of Stored Motors, Revision 3, was revised to enhance the maintenance being provided for the stored motors. The revision included detailed inspection requirements for all stored motors and required the shafts be rotated annually for all electric motors in storage. In addition, all Appendix R designated motors and motors more than 50 HP were required to be rotated quarterly. The

licensee's assessment also identified several motors, such as the two large motors for the component cooling water pumps, which were required to be provided with heaters during storage.

The licensee's assessment identified approximately 20 mechanical components which were required to be included in a preventive maintenance program. These mechanical components were inspected and the component's shafts were rotated at least every 6-months using a routine maintenance work order.

The inspectors reviewed the work request for the maintenance components which was completed August 5, 1997, and Procedure 0-EPM-2302-01, which was completed on August 25, 1997, and verified that the required preventive maintenance for the electric motors and mechanical components in storage were being performed.

The licensee took positive action to enhance the preventive maintenance being performed on the storage of spare safety related electric motors and rotating mechanical components.

- F8.2 (Closed) LER 50-280/96007-00: fire watch patrol inspection frequency exceeds one hour. This event was reported to the NRC when the licensee failed to complete fire watch inspections within the frequency required by TS 3.21.B.1 of "at least once per hour." More specifically, three fire detection zones were inspected 7 minutes late, two fire detection zones were inspected 11 minutes late, and three fire detection zones were inspected 13 minutes late. The cause of this event was attributed to the fire watch patrol being delayed by station security personnel following an inadvertent activation of a security alarm.

The licensee's corrective actions for this event entailed the following; (1) Fire watch personnel were instructed that fire detection zone inspections must be performed in accordance with TSs and security requirements, (2) Fire watch personnel were further instructed to inform security officers that they are performing fire watch duties if a security alarm is activated during the tour so that the tour could be completed in accordance with TS requirements, and (3) Fire watch computer based training was revised to emphasize the importance of compliance with the one hour TS requirement for completing fire watch tours. The inspectors reviewed these actions and found them to be satisfactory.

The failure to perform fire watch tours within the specified one hour time frame is a VIO of TS 3.21.B.1. This non-repetitive, licensee-identified and corrected VIO is being treated as a Non-cited Violation consistent with Section VII.B.1 of the NRC Enforcement Policy. This matter is identified as NCV 280, 281/97009-08.

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 10, 1997. 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 CONTACTEDLicensee

M. Adams, Superintendent, Engineering
 R. Allen, Superintendent, Maintenance
 R. Blount, Assistant Station Manager, Nuclear Safety & Licensing
 D. Christian, Station Manager
 M. Crist, Superintendent, Operations
 B. Shriver, Assistant Station Manager, Operations & Maintenance
 T. Sowers, Superintendent, Training
 B. Stanley, Director, Nuclear Oversight
 W. Thorton, Superintendent, Radiological Protection

INSPECTION PROCEDURES USED

IP 37551: Onsite Engineering
 IP 40500: Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems
 IP 61726: Surveillance Observation
 IP 62700: Maintenance Program Implementation
 IP 62707: Maintenance Observation
 IP 64704: Fire Protection Program
 IP 71001: Licensed Operator Requalification Program Evaluation
 IP 71707: Plant Operations
 IP 71750: Plant Support Activities
 IP 92700: Onsite Followup of Written Reports of Nonroutine Events at Power Reactor Facilities
 IP 92901: Followup - Plant Operations
 IP 92902: Followup - Maintenance

ITEMS OPENED, CLOSED, AND DISCUSSEDOpened

50-280, 281/97009-01	NCV	inadequate SFP makeup procedure (Section 01.4).
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50-280, 281/97009-02	IFI	ESWP corrective action followup (Section M1.1).
50-280, 281/97009-03	EEI	failure to meet the requirements of Appendix R for vital bus isolation (Section F2.1).
50-280, 281/97009-04	EEI	failure to meet the requirements of Appendix R for circuit breaker coordination (Section F2.1).
50-280, 281/97009-05	EEI	failure to promptly correct licensee identified Appendix R fire protection discrepancies (Section F2.1).
50-280, 281/97009-06	EEI	failure to report Appendix R fire protection discrepancies which were outside the design basis of the plant (Section F2.1).
50-280, 281/97009-07	IFI	no documentation or evaluations available for changes made to the Radwaste Facility (Section F2.2).
50-280, 281/97009-08	NCV	failure to perform fire watch tours within the specified one hour time frame (Section F8.2).
<u>Closed</u>		
50-280, 281/97009-01	NCV	inadequate SFP makeup procedure (Section 01.4).
50-280, 281/96005-01	VIO	inadequate system isolation (Section 08.1).
50-280, 281/94017-02	VIO	failure to implement corrective actions to preclude repetition of foreign material exclusion deficiencies (Section M8.2).
50-280, 281/96010-03	VIO	inadequate preventive maintenance performed on spare electric motors (Section F8.1).
50-280, 281/96010-04	IFI	preventive maintenance requirements for spare RHR and component cooling water pumps (Section F8.1).
50-280, 281/97009-08	NCV	failure to perform fire watch tours within the specified one hour time frame (Section F8.2).

50-280/96007-00

LER

fire watch patrol inspection
frequency exceeds one hour (Section
F8.2).

Discussed

280, 281/97002-01

IFI

long term corrective actions to
resolve potential TDAFW overspeed
trips (Section 08.2)

the failure to make a required report to the NRC will be based upon the significance of and the circumstances surrounding the matter that should have been reported. However, the severity level of an untimely report, in contrast to no report, may be reduced depending on the circumstances surrounding the matter. A licensee will not normally be cited for a failure to report a condition or event unless the licensee was actually aware of the condition or event that it failed to report. A licensee will, on the other hand, normally be cited for a failure to report a condition or event if the licensee knew of the information to be reported, but did not recognize that it was required to make a report.

V. PREDECISIONAL ENFORCEMENT CONFERENCES

Whenever the NRC has learned of the existence of a potential violation for which escalated enforcement action appears to be warranted, or recurring nonconformance on the part of a vendor, the NRC may provide an opportunity for a predecisional enforcement conference with the licensee, vendor, or other person before taking enforcement action. The purpose of the conference is to obtain information that will assist the NRC in determining the appropriate enforcement action, such as: (1) a common understanding of facts, root causes and missed opportunities associated with the apparent violations, (2) a common understanding of corrective actions taken or planned, and (3) a common understanding of the significance of issues and the need for lasting comprehensive corrective action.

If the NRC concludes that it has sufficient information to make an informed enforcement decision, a conference will not normally be held unless the licensee requests it. However, an opportunity for a conference will normally be provided before issuing an order based on a violation of the rule on Deliberate Misconduct or a civil penalty to an unlicensed person. If a conference is not held, the licensee will normally be requested to provide a written response to an inspection report, if issued, as to the licensee's views on the apparent violations and their root causes and a description of planned or implemented corrective actions.

During the predecisional enforcement conference, the licensee, vendor, or other persons will be given an opportunity to provide information consistent with the purpose of the conference, including an explanation to the NRC of the immediate corrective actions (if any) that were taken following identification of the potential violation or nonconformance and the long-term comprehensive actions that were taken or will be taken to prevent recurrence. Licensees, vendors, or other persons will be told when a meeting is a predecisional enforcement conference.

A predecisional enforcement conference is a meeting between the NRC and the licensee. Conferences are normally held in the regional offices and are normally open to public observation. Conferences will not normally be open to the public if the enforcement action being contemplated:

- (1) Would be taken against an individual, or if the action, though not taken against an individual, turns on whether an individual has committed wrongdoing;
- (2) Involves significant personnel failures where the NRC has requested that the individual(s) involved be present at the conference;
- (3) Is based on the findings of an NRC Office of Investigations report that has not been publicly disclosed; or
- (4) Involves safeguards information, Privacy Act information, or information which could be considered proprietary;

In addition, conferences will not normally be open to the public if:

- (5) The conference involves medical misadministrations or overexposures and the conference cannot be conducted without disclosing the exposed individual's name; or
- (6) The conference will be conducted by telephone or the conference will be conducted at a relatively small licensee's facility.

Notwithstanding meeting any of these criteria, a conference may still be open if the conference involves issues related to an ongoing adjudicatory proceeding with one or more intervenors or where the evidentiary basis for the conference is a matter of public record, such as an adjudicatory decision by the Department of Labor. In addition, notwithstanding the above normal criteria for opening or closing conferences, with the approval of the Executive Director for Operations, conferences may either be open or closed to the public after balancing the benefit of the public's observation against the potential impact on the agency's decision-making process in a particular case.

The NRC will notify the licensee that the conference will be open to public observation. Consistent with the agency's policy on open meetings, "Staff Meetings Open to Public," published September 20, 1994 (59 FR 48340), the NRC intends to announce open conferences normally at least 10 working days in advance of conferences through (1) notices posted in the Public Document Room, (2) a toll-free telephone recording at 800-952-9674, (3) a toll-free electronic bulletin board at 800-952-9676, and on the World Wide Web at the NRC Office of Enforcement homepage (www.nrc.gov/OE). In addition, the NRC will also issue a press release and notify appropriate State liaison officers that a predecisional enforcement conference has been scheduled and that it is open to public observation.

The public attending open conferences may observe but may not participate in the conference. It is noted that the purpose of conducting open conferences is not to maximize public attendance, but rather to provide the public with opportunities to be informed of NRC activities consistent with the NRC's ability to exercise its regulatory and safety responsibilities. Therefore, members of the public will be allowed access to the NRC regional offices to attend open enforcement conferences in accordance with the "Standard Operating Procedures for Providing Security Support For NRC Hearings and Meetings," published November 1, 1991 (56 FR 56251). These procedures provide that visitors may be subject to personnel screening, that signs, banners, posters, etc., not larger than 18" be permitted, and that disruptive persons may be removed. The open conference will be terminated if disruption interferes with a successful conference. NRC's Predecisional Enforcement Conferences (whether open or closed) normally will be held at the NRC's regional offices or in NRC Headquarters Offices and not in the vicinity of the licensee's facility.

For a case in which an NRC Office of Investigations (OI) report finds that discrimination as defined under 10 CFR 50.7 (or similar provisions in Parts 30, 40, 60, 70, or 72) has occurred, the OI report may be made public, subject to withholding certain information (i.e., after appropriate redaction), in which case the associated predecisional enforcement conference will normally be open to public observation. In a conference where a particular individual is being considered potentially responsible for the discrimination, the conference will remain closed. In either case (i.e., whether the conference is open or closed), the employee or former employee who was the subject of the alleged discrimination (hereafter referred to as "complainant") will normally be provided an opportunity to participate in the predecisional enforcement conference with the licensee/employer. This participation will normally be in the form of a complainant statement and comment on the licensee's presentation, followed in turn by an opportunity for the licensee to respond to the complainant's presentation. In cases where the complainant is unable to attend in person, arrangements will be made for the complainant's participation by telephone or an opportunity given for the complainant to submit a written response to the licensee's presentation. If the licensee chooses to forego an enforcement conference and, instead, responds to the NRC's findings in writing, the complainant will be provided the opportunity to submit written comments on the licensee's response. For cases involving potential discrimination by a contractor or vendor to the licensee, any associated predecisional enforcement conference with the contractor or vendor would be handled similarly. These arrangements for complainant participation in the predecisional enforcement conference are not to be conducted or viewed in any respect as an adjudicatory hearing. The purpose of the complainant's participation is to provide information to the NRC to assist it in its enforcement deliberations.

A predecisional enforcement conference may not need to be held in cases where there is a full adjudicatory record before the Department of Labor. If a conference is held in such cases, generally the conference will focus on the licensee's corrective action. As with discrimination cases based on OI investigations, the complainant may be allowed to participate.

Members of the public attending open conferences will be reminded that (1) the apparent violations discussed at predecisional enforcement conferences are subject to further review and may be subject to change prior to any resulting enforcement action and (2) the statements of views or expressions of opinion made by NRC employees at predecisional enforcement conferences, or the lack thereof, are not intended to represent final determinations or beliefs.

When needed to protect the public health and safety or common defense and security, escalated enforcement action, such as the issuance of an immediately effective order, will be taken before the conference. In these cases, a conference may be held after the escalated enforcement action is taken.

VI. ENFORCEMENT ACTIONS

This section describes the enforcement sanctions available to the NRC and specifies the conditions under which each may be used. The basic enforcement sanctions are Notices of Violation, civil penalties, and orders of various types. As discussed further in Section VI.D, related administrative actions such as Notices of Nonconformance, Notices of Deviation, Confirmatory Action Letters, Letters of Reprimand, and Demands for Information are used to supplement the enforcement program. In selecting the enforcement sanctions or administrative actions, the NRC will consider enforcement actions taken by other Federal or State regulatory bodies having concurrent jurisdiction, such as in transportation matters. Usually, whenever a violation of NRC requirements of more than a minor concern is identified, enforcement action is taken. The nature and extent of the enforcement action is intended to reflect the seriousness of the violation involved. For the vast majority of violations, a Notice of Violation or a Notice of Nonconformance is the normal action.

A. Notice of Violation

A Notice of Violation is a written notice setting forth one or more violations of a legally binding requirement. The Notice of Violation normally requires the recipient to provide a written statement describing (1) the reasons for the violation or, if contested, the basis for disputing the violation; (2) corrective steps that have been taken and the results achieved; (3) corrective steps that will be taken to prevent recurrence; and (4) the date when full compliance will be achieved. The NRC may waive all or portions of a written response to the extent relevant information has already been provided to the NRC in writing or documented in an NRC inspection report. The NRC may require responses to Notices of Violation to be under oath. Normally, responses under oath will be required only in connection with Severity Level I, II, or III violations or orders.

The NRC uses the Notice of Violation as the usual method for formalizing the existence of a violation. Issuance of a Notice of Violation is normally the only enforcement action taken, except in cases where the criteria for issuance of civil penalties and orders, as set forth in Sections VI.B and VI.C, respectively, are met. However, special circumstances regarding the violation findings may warrant discretion being exercised such that the NRC refrains from issuing a Notice of Violation. (See Section VII.B, "Mitigation of Enforcement Sanctions.") In addition, licensees are not ordinarily cited for violations resulting from matters not within their control, such as equipment failures that were not avoidable by reasonable licensee quality assurance measures or management controls. Generally, however, licensees are held responsible for the acts of their employees. Accordingly, this policy should not be construed to excuse personnel errors.

B. Civil Penalty

A civil penalty is a monetary penalty that may be imposed for violation of (1) certain specified licensing provisions of the Atomic Energy Act or supplementary NRC rules or orders; (2) any requirement for which a license may be revoked; or (3) reporting requirements under section 206 of the Energy Reorganization Act. Civil penalties are designed to deter future violations both by the involved licensee as well as by other licensees conducting similar activities and to emphasize the need for licensees to identify violations and take prompt comprehensive corrective action.