U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos:	50-280, 50-281
License Nos:	DPR-32, DPR-37
Report No:	50-280/96-11, 50-281/96-11
Licensee:	Virginia Electric and Power Company (VEPCO)
Facility:	Surry Power Station, Units 1 & 2
Location:	5850 Hog Island Road Surry, VA 23883
Dates:	September 29 through November 9, 1996
Inspectors:	R. A. Musser, Senior Resident Inspector W. K. Poertner, Resident Inspector P. M. Byron, Resident Inspector
Approved by:	G. A. Belisle, Chief, Reactor Projects Branch 5 Division of Reactor Projects

ENCLOSURE 2

EXECUTIVE SUMMARY

Surry Power Station, Units 1 & 2
NRC Inspection Report 50-280/96-11, 50-281/96-11

This integrated inspection included aspects of licensee operations, engineering, maintenance, and plant support. The report covers a 6-week period of resident inspection.

Operations

The licensee's actions to prepare for severe cold weather could have been more thorough. Discrepancies were identified by the inspectors during walkdowns of the Refueling Water Storage Tank (RWST) level instrument enclosures and were corrected by the licensee when notified by the inspectors (Section O1.2).

A violation was identified concerning Spent Fuel Pit Cooling (FC) valve 1-FC-36, FC pump suction crosstie valve, not being in the position required by the valve alignment procedure. The position of the valve did not effect system operation. FC system labeling and material condition were good (Section O1.3).

Maintenance

Maintenance activities observed were performed in accordance with work package requirements (Sections M1.1, M1.2, M1.3).

Engineering

The licensee completed the Surry Updated Final Safety Analysis Report (UFSAR) assessment on five systems to examine the accuracy of the UFSAR. Corrective actions have been initiated to resolve/correct discrepancies identified. The licensee plans to determine if further reviews should be initiated following completion of the North Anna portion of the review (Section E1.1).

The licensee's actions to review a potential problem with the containment spray and recirculation spray piping supports initially identified at another facility were reasonable (Section E8.1).

Plant Support

During the inspection period, the inspectors determined that the licensee's security practices and material condition of the perimeter barrier were acceptable. Health physics practices were also observed to be proper (Sections S1 and R1).

Meeting with Local Officials

On November 7, 1996, the inspectors met with the County Administrators from Surry and Isle of Wight Counties (Section X3).

Report Details

Summary of Plant Status

Unit 1 operated at approximately 100 percent power until October 31 when power was reduced to 61 percent to secure the 1A main feedwater pump to repair an oil leak. The oil leak was repaired and the unit was returned to 100 percent power on November 1. The unit operated at approximately 100 percent power for the remainder of the inspection period.

Unit 2 operated at approximately 100 percent power the entire reporting period.

I. Operations

O1 Conduct of Operations

O1.1 General Comments (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 Technical Specifications (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.

O1.2 Cold Weather Preparations

a. Inspection Scope (71714)

The inspectors reviewed the licensee's program to protect safety related systems against extreme cold weather.

b. Observations and Findings

The licensee implements cold weather protection from October through March. The program is controlled by procedure 0-OSP-ZZ-001, Cold Weather Preparation, Revision 2, and procedure 0-EPM-1303-01, Freeze Protection Inspection, Revision 6. Procedure 0-OSP-ZZ-001 is performed by operations personnel to walk down systems and components and procedure 0-EPM-1303-01 is performed by electrical maintenance personnel to verify proper operation of heat tracing and strip heaters. The licensee also implements cold weather preparations utilizing Operations Checklist (OC) - 21, Severe Weather. The OC is implemented when outside air temperature drops below 2 Degrees Celsius.

The inspectors verified that procedures 0-OSP-ZZ-001 and 0-EPM-1303-01 had been implemented for the month of October. These inspections are

performed monthly during the period October through March. The inspectors reviewed the procedures and verified that licensee identified discrepancies were being addressed prior to the onset of cold weather. The inspectors performed tours of station areas and equipment to verify cold weather preparations. During the walkdown of the RWST level instruments and enclosures, the inspectors identified discrepancies with the material condition of the instrument enclosures. These discrepancies included missing insulation, gaps between the doors and the enclosures, missing screws, and loose material located in the enclosures. The inspectors discussed these items with operations supervision and the Operations Superintendent. The discrepancies were corrected expediously and increased emphasis was placed on cold weather preparations by station personnel. The licensee also reinspected areas that had been checked.

c. Conclusions

The licensee was implementing cold weather preparations. However, additional discrepancies were identified by the inspectors during walkdowns of the RWST level instrument enclosures. These were corrected by the licensee. The inspectors concluded that the licensee could have been more thorough in their actions to prepare for severe cold weather. Based on the inspector's findings, the licensee placed additional emphasis on cold weather preparations.

O1.3 Spent Fuel Pit Cooling System Walkdown

a. Inspection Scope (71707)

During the week of November 4, the inspectors walked down portions of the FC system. The inspectors reviewed system alignment using procedure O-OP-FC-001A, Spent Fuel Pit Cooling System Alignment, Revision 0, and system drawing 11448-FM-081A. The inspectors also reviewed component labeling and general material condition. The specific system portions inspected included the fuel pit pumps, and all accessible suction and discharge piping used during spent fuel pit cooling operations.

b. Observations and Findings

Component labeling and system material condition were good. During verification of system alignment per procedure O-OP-FC-001A, the inspectors identified that valve 1-FC-36, Spent Fuel Pit Pumps Suction Header Crosstie Isolation was closed. This valve position was contrary to the position required by the valve alignment procedure. The fact that the valve was closed would not affect normal system operation. The inspectors notified operations of the discrepancy between the actual valve position and the required position as stated in the valve alignment procedure. The Shift Supervisor initiated a DR and the valve was opened following a review by operations management. Investigation by the inspectors determined that the valve's alignment procedure had been upgraded in April 1996 to require that the valve's normal position be open. Prior to the procedure upgrade, the valve's normal position

had been closed. The inspectors expressed concern that seven months after a change to the required valve position, the valve was still not aligned in the proper position. The inspectors determined that the licensee does not have a formal program to ensure that valve alignment procedure changes affecting valve positions are performed after the procedures are changed/revised. The licensee reviewed all 1996 valve alignment procedure changes and identified 60 instances in which the required valve position had been changed. The licensee was in the process of physically verifying that the valves were in the required positions at the end of the inspection period. No discrepancies had been identified with approximately 90 percent of the verifications complete. The licensee was pursuing further corrective actions via the DR system. The failure to maintain valve 1-FC-36 in the required position is identified as Violation 50-280, 281/96011-01.

c. Conclusions

A violation was identified concerning valve 1-FC-36, FC pump suction crosstie valve, not being in the position required by the valve alignment procedure. The position of the valve did not effect system operation. FC system labeling and material condition were good.

II. Maintenance

M1 Conduct of Maintenance

M1.1 Circulating Water Expansion Joint Inspection (62707)

The inspectors observed portions of the work activity controlled by Work Order (WO) 00341147, Inspect 96 Inch Expansion Joint 2-CW-REJ-201B. The work activity was a scheduled preventive maintenance. The work was accomplished in accordance with the work package requirements and all acceptance criteria were met. The inspectors also verified that the system was adequately isolated prior to performing the work activity.

M1.2 Emergency Service Water (ESW) Pump Replacement (62707)

The inspectors monitored maintenance activities associated with ESW pump 1A replacement. The work activity consisted of replacing the pump assembly and angle drive. The inspectors verified proper system isolation prior to commencement of work activities and observed portions of the work activity in progress. The maintenance activity was conducted continuously to return the pump to service and meet maintenance rule time frames. No discrepancies were noted.

M1.3 Replacement of Strip Heater for U2 RWST Level Indication Freeze Protection Box (62707, 62703)

The inspectors observed portions of the work activity which replaced a strip heater for a Unit 2 RWST level indication freeze protection box. The work was being performed in accordance with WO 00354424-01. The inspectors observed that the work being performed was in accordance with

the WO and under the supervision of health physics personnel.

M1.4 Shift Operating Logs (61726)

The inspectors reviewed procedure 1-PT-36, Instrument Surveillance, Revision 24, conducted November 6. The inspectors verified that procedure acceptance requirements were met and independently verified selected data points. No discrepancies were noted during the inspectors review.

Maintenance activities observed were performed in accordance with work package requirements.

III. Engineering

E1 Conduct of Engineering

E1.1 Updated Final Safety Analysis Report (UFSAR) Update Process

a. Inspection Scope (37551)

The inspectors reviewed the status of the UFSAR assessment.

b. Observations and Findings

During the inspection period, the licensee completed a review of the Surry UFSAR. An integrated team (Licensing, Operations, and Engineering) was used to perform the review which included the safety injection, auxiliary feedwater, component cooling, circulating water, and auxiliary steam systems. As a result of the review, 152 items were identified. Nine of the items resulted in DRs being issued. Preliminary review of the nine items did not identify any safety significant issues. The remaining items were categorized as discrepancies between UFSAR sections, editorials, abandoned equipment, UFSAR changes in progress, and clarifications. In addition, the licensee plans to perform a review of the North Anna UFSAR and then determine if any additional UFSAR reviews will be performed. The inspectors verified that DRs were initiated for the nine items identified by the licensee. The inspectors will continue to monitor licensee actions with respect to UFSAR reviews.

c. Conclusions

The licensee completed the Surry UFSAR assessment on five systems to examine the accuracy of the Surry UFSAR. Corrective actions have been initiated to resolve/correct discrepancies identified. The licensee plans to assess the results of the assessment following a review of the North Anna UFSAR to determine if further reviews should be initiated.

E8 Miscellaneous Engineering Issues (92903)

E8.1 Short Term Temperatures In Containment

a. Inspection Scope

On April 23, 1996, Stone and Webster Engineering Company (SWEC) verbally notified the licensee of a potential problem with the design of the Containment Spray (CS) and Recirculation Spray (RS) piping systems. The concern was initiated from a SWEC review of another utility's RS/CS piping supports during a Design Basis Accident (DBA). SWEC discovered during their review that the RS system at another utility may be subjected to higher temperatures than designed following a DBA. The licensee assigned Commitment Tracking System (CTS) Item No. 3461 to track this issue. DR S-96-0798 was written to provide an engineering evaluation of the functionality of the RS/CS piping.

b. Observations and Findings

The licensee compared their RS system design with that of another utility. The RS system headers at the other utility are cross tied and non-isolable. If service water flow to one RS Heat Exchanger (RSHX) is interrupted, the sump water flowing through the RSHX would not be cooled and the RS piping downstream of the RSHX would be exposed to a significantly higher temperature than is designed. The licensee's RS trains are independent as far as the pressure boundary is concerned. A failure of one RSHX would not impact the operability of the RS system. The licensee concluded that they did not have a similar problem. However, they determined that the RS piping downstream of the RS heat exchangers could experience a one time, short duration temperature spike due to the containment ambient temperature immediately following a Loss of Coolant Accident (LOCA) or a steam line break.

The licensee concluded from their review that it was unlikely that there would be a breach in the pipe pressure boundary. An engineering assessment of the Unit 2 RS piping support configurations was performed to identify any specific vulnerable pipe supports. The review determined that all but one of the pipe supports was adequate. One pipe support was determined to have inadequate welds. There were two undersize welds (5/16 in. vs. 3/8 in.) and one side of the support was missing a weld. DR S-96-2331 was written to assess the effect of the discrepant support on the RS piping and adjacent supports.

The original analysis assumed that all supports were rigid members. The licensee performed an additional analysis on the discrepant support and the two adjacent supports. The analysis assumed that the discrepant support would not support the lateral load. The calculation determined that the stresses in the piping and the load on the supports of the system including the discrepant one were within design parameters. The review indicated that the system would perform its intended functions during all loading conditions.

The affected weld will be repaired. The licensee plans to modify the discrepant support during the next outage of sufficient duration. The work will be performed via a Field Change to Design Change 93-048, M1 Piping & Tubing Supports Evaluations/Modifications Units 1&2. A review of the Unit 1 system is in progress.

c. Conclusions

The inspectors reviewed CTS-3461 and DRs S-96-0798 and S-96-2331 and found them to be adequate. The licensee's corrective action is reasonable.

IV. Plant Support

S1 Conduct of Security and Safeguards Activities (71750)

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.

R1 Radiological Protection and Chemistry (RP&C) 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 concluded that RP practices were proper. On October 10, the inspectors performed a detailed tour of all accessible structures located within the plant's radiological controlled area. The inspectors observed that the areas were generally clean, well posted, and strictly controlled as required. The inspectors performed the tour with the "on-shift" Health Physics Shift Supervisor (HPSS). The HPSS was very knowledgeable of plant radiological conditions and emphasized keeping dose as low as reasonably achievable throughout the inspection.

V. Management Meetings

X1 Exit Meeting Summary

The inspectors presented the inspection results to members of licensee management at the conclusion of the inspection on November 14. 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.

X3 Management Meeting Summary - Meeting with Local Officials

On November 7, 1996, the resident inspectors met with local government officials from two of the counties within the plant's ten mile emergency preparedness zone. Specifically, meetings were held with the County Administrators from Surry County (the host county for Surry Power Station), Mr. Terry Lewis, and Isle of Wight County, Mr. Douglas Caskey. The residents discussed their daily duties and responsibilities, the roll of the NRC regional office, and the overall interface with the licensee. Both officials expressed their appreciation for the meetings and all parties agreed to have a continued free exchange of information.

PARTIAL LIST OF PERSONS CONTACTED

Licensee

R. Blount, Superintendent, Maintenance
D. Christian, Station Manager
M. Crist, Superintendent, Operations
J. McCarthy, Assistant Station Manager, Operations & Maintenance
B. Shriver, Assistant Station Manager, Nuclear Safety & Licensing
T. Sowers, Superintendent, Engineering
B. Stanley, Director, Nuclear Oversight
J. Swientoniewski, Supervisor Station Nuclear Safety
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NRC

G. Belisle, Chief, Branch 5, Division of Reactor Projects, Region II
G. Edison, Surry Project Manager, Office of Nuclear Reactor Regulation
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INSPECTION PROCEDURES USED

IP 37551:	Onsite Engineering
IP 40500:	Effectiveness of Licensee Controls in Identifying, Resolving, and Preventing Problems
IP 61726:	Surveillance Observation
IP 62703:	Maintenance Observations
IP 62707:	Maintenance Observations
IP 71707:	Plant Operations
IP 71714:	Cold Weather Preparations
IP 71750:	Plant Support Activities
IP 92903:	Followup - Engineering

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened

50-280, 281/96011-01	VIO	spent fuel pit cooling valve out of position (Section 01.3).

Closed

None

Discussed

None