



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30303

Report Nos.: 50-338/84-27 and 50-339/84-27

Licensee: Virginia Electric and Power Company
Richmond, VA 23261

Docket Nos.: 50-338 and 50-339 License Nos.: NPF-4 and NPF-7

Facility Name: North Anna 1 and 2

Inspection Dates: July 6 - August 5, 1984

Inspectors:

M. W. Branch
M. W. Branch Senior Resident Inspector

8/21/84
Date Signed

J. G. Luehman
J. G. Luehman Resident Inspector

8/21/84
Date Signed

Approved by:

S. A. Elrod
S. A. Elrod, Section Chief
Division of Reactor Projects

8/21/84
Date Signed

SUMMARY

Scope: This routine inspection by the resident inspectors involved 211 inspector hours onsite in the areas of maintenance, surveillance, refueling activities, licensee event reports, ESF walkdowns, off-site review organization, followup of previously identified items and licensee action on previous inspection findings.

Results: Of the eight areas inspected, one violation and one deviation were identified in the ESF Walkdown area discussed in paragraph 8.

8411140132 841018
PDR ADOCK 05000338
Q PDR

REPORT DETAILS

1. Persons Contacted

Licensee Employees

- E. W. Harrell, Station Manager
- *G. E. Kane, Assistant Station Manager
- *M. L. Bowling, Assistant Station Manager
- L. Johnson, Superintendent, Technical Services
- J. R. Harper Superintendent, Maintenance
- R. O. Enfinger, Superintendent, Operations
- A. L. Hogg, Jr., QC Manager
- *S. B. Eisenhart, Licensing Coordinator
- J. R. Hayes, Operations Coordinator
- J. P. Smith, Engineering Supervisor
- F. Terminella, Engineering Supervisor
- M. G. Pinion, Engineering Supervisor
- A. H. Stafford, Health Physics Supervisor
- E. C. Tuttle, Electrical Supervisor
- R. A. Bergquist, Instrument Supervisor
- D. E. Thomas, Mechanical Maintenance Supervisor
- L. B. Jones, Chemistry Supervisor
- *F. P. Miller, QC Supervisor
- J. A. Smith, QC Supervisor
- *D. B. Roth, Independent Operational Event Review Supervisor
- *R. C. Bilyeu, Licensing Coordinator Surry Power Station

Other licensee employees contacted included technicians, operators, mechanics, security force members and office personnel.

*Attended Exit Interview

2. Exit Interview

The inspection scope and findings were summarized on August 2, 1984, with those persons indicated in Paragraph 1 above. The licensee acknowledged the inspection findings.

3. Licensee Action on Previous Inspection Findings

(Closed) Violation 338 and 339/84-04-02 Failure to Follow Temporary Modification (Jumper) Procedures. The licensee's response to this violation dated May 11, 1984, has been reviewed. Additionally, the inspectors verified that the "corrective steps which will be taken to avoid further violations" have been accomplished. North Anna Power Station Administrative procedure ADM. 3.9 "Evaluation for Potential Unreviewed Safety Questions" dated May 17, 1984, is in place; all operations supervisors have been reinstructed in the importance of complete reviews; the Safety Engineering

Staff (SES) has completed their review of the jumpers in place greater than six months and revised evaluations are being done.

4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve violations or deviations. A new unresolved item identified during this inspection is discussed in paragraph 10.

5. Plant Status

Unit 1

During this inspection period the unit continued a scheduled refueling outage.

Unit 2

The unit entered the inspection period operating at or near 100% power. On July 14, 1984, a rampdown to 75% power was commenced and the unit was taken off the line on August 3, 1984. This refueling shutdown commenced approximately two weeks earlier than scheduled due, in part, to fuel burnup coastdown, however, a secondary reason was to place the plant in a shutdown condition while a painting problem in the containment was being evaluated.

6. Licensee Event Report (LER) Followup

The following LER's were reviewed and closed. The inspector verified that reporting requirements had been met, causes had been identified, corrective actions appeared appropriate, generic applicability had been considered, and the LER forms were complete. Additionally, for those reports identified by asterisk, a more detailed review was performed to verify that the licensee had reviewed the event, corrective action had been taken, no unreviewed safety questions were involved, and violations of regulations or Technical Specification conditions had been identified.

*338/80-44 Blown control power fuses on the containment particulate and gas radiation monitors

*338/83-79 Excessive leakage caused by boric acid corrosion of valve bonnet studs

(Closed) 338/LER 80-44 Blown Control Power Fuses on the Containment Particulate and Gas Radiation Monitors After Restarting Sample Pump. The power supply fuses were replaced and an engineering study was done to determine why the fuses kept blowing. The study recommended another type of fuse be used to allow for higher starting currents, this change was subsequently made.

(Closed) 338/LER 83-79 Excessive Leakage Caused by Boric Acid Corrosion of Valve Bonnet Studs. The following valve maintenance procedures have been updated to include the requirement for checking for stud degradation when valve maintenance is performed:

MMP-C-GV-1	Power Operated and Automatic Valves in General
MMP-C-GV-1.1	Manual Valves in General
MMP-C-GV-1.2	Check Valves in General
MMP-C-GV-2	Safety and Relief Valves
MMP-C-GC-3	Grinell Diaphragm Valves

7. Followup of Previously Identified Items

(Closed) IFI 339/83-24-02 Subcomponent Procurement Procedures for the Hydrogen Recombiners. The licensee has taken a number of steps to resolve this issue. First, North Anna Power Station Administrative Procedure ADM 2.1 "Classification of Systems, Components and Structures" has been revised. This revision by itself did not resolve the problem fully because in many cases the breakdown of systems and components is not in great detail. Additionally, the licensee now has the Site Emergency Office (SEO) and Quality Assurance (QA) reviewing purchase orders for new equipment and parts. Finally, in conjunction with the licensee's response to Generic Letter 83-28, a long term program is being devised to provide detailed component/parts procurement guidelines.

8. ESF System Walkdown

The following Selected Engineered Safety Feature (ESF) system was verified operable by performing a walkdown of the accessible and essential portions of the system. The system selected was the service water system (1-OP-49.1A) and it was walked down on July 20, 1984.

During the inspection a number of problems were identified with the system. It appears that the labelling of the valves for the two pumps that supply RMSW-107 (Radiation Monitor for Service Water Return From the Component Cooling Water Heat Exchangers) was reversed and 1-SE-503 was missing a label. Correction of these deficiencies is identified as Inspector Followup Item 338, 339/84-27-01.

In the Service Water Pump House, the pump that supplies RMSW-109 (1-SW-P-11) was isolated and has been since February 9, 1983. The resulting inoperable status of the radiation monitor is a deviation from the commitment in paragraph 11.4.2.9 North Anna Power Station Updated Final Safety Analysis Report (UFSAR) which states in part "This channel continuously monitors the service-water discharge to the service-water reservoir" and is identified as Deviation 338, 339/84-27-02.

Followup inspection of the radiation monitoring for the Service Water System revealed additional problems. RMSW-108 (Radiation monitor for Service Water discharge to Lake Anna) had a Work Request Sticker (#027452) dated July 2, 1984, affixed to the monitor drawer in the control room. Discussions with

plant instrumentation personnel showed they considered the monitor inoperable, however a check of the plant Action Statement Log showed the Technical Specification action statement had not been entered.

From the evening of June 23, 1984, until the afternoon of July 9, 1984, the plant was discharging Service Water to Lake Anna. Because the action statement for RMSW-108 had not been entered from July 2, 1984, until July 9, 1984, the 12 hour grab samples required with the monitor inoperable when discharging to the lake, were not taken. This is a violation of Technical Specification 3.3.3.10 (3.3.3.9 - Unit 2) and is identified as Violation 338, 339/84-27-03.

Other radiation monitors on the Service Water System discussed in the UFSAR are not required by Technical Specifications or stated to be continuously on the line as are RMSW-108 and RMSW-109 however, the radiation monitors on the Service Water from the component cooling water heat exchangers (CCHX) and the recirculation spray coolers can provide backup to the effluent monitors. For various amounts of time while RMSW-108 and RMSW-109 were out of service so were RMSW-107 (CCHX Service Water Return), RM125 (Recirc. Spray Cooler SW Outlet B) and RM127 (Recirc. Spray Cooler SW Outlet D). Conversations with the plant instrumentation supervisor indicated that a large number of radiation monitors were out of service due to a lack of replacement parts but that the parts were on order.

9. Maintenance (62703)

The use of the proper method for setting and verifying the torque switch settings on limitorque motor operated valves was discussed in inspection reports 338 and 339/84-19. Because of the potential for improper setting on these valves, during this inspection period the licensee updated the procedures by which these switches are set and verified. Additionally, the licensee checked the torque switch settings on a selected group of these valves.

In the first group of valves checked, two valves in the Service Water System (1-MOV-SW-103A,-B) were found to be set improperly. Further investigation revealed that either these valves had been set correctly to values required by an Engineering Work Request (EWR) and the EWR was in error or the EWR was correct and the setpoint document had not been updated with the correct EWR values. Because checking the first group of valves was considered inconclusive, additional valves were checked. Along with two electricians and a QC inspector, the resident inspector verified the torque switch settings on 1-MOV-FW-100D (Auxiliary Feedwater to 1A Steam Generator), 1-MOV-FW-100A (Auxiliary Feedwater to 1A Steam Generator), MOV-1885C (Safety Injection Pump 1A Min. Flow and Test Line Isolation), MOV-1286A (Discharge Valve 1A Charging Pump), MOV-1270A (Suction Valve 1C Charging Pump).

On 1-MOV-FW-100A the close torque switch setting was set below the design setting while on MOV-1270A the open torque switch setting was set above the design maximum setting. The as-found conditions indicate both a problem in the technique of setting the torque switch settings and in selecting the

correct setting. Final resolution of the problems in this area will be tracked as inspector followup items IFI 338, 339/84-19-02.

At 4 p.m. on July 9, 1984, an auto start of the 1J Emergency Diesel Generator (EDG) occurred. Relay testing was in progress at the time and the normal supply breakers to the 1J emergency bus were in test. The technician doing the testing mistakenly tripped the alternate power supply to the bus causing the auto start of the EDG. As a result of this event and those documented in paragraph 10 of inspection reports 338 and 339/84-19 the Resident Inspector and the Reactor Projects Section 2C Section Chief met on July 26, 1984, with licensee management representatives from control operations to discuss the problems and envisioned corrective actions.

10. Offsite Review Committee (40701)

The licensee's offsite review organization was inspected to ensure conformance with the requirements of Technical Specification 6.5.2 as well as ANSI N18.7-1976. During the course of the inspection a number of supervisory personnel involved with offsite review were interviewed and numerous documents including VEPCO Safety Evaluation and Control Administrative Procedures, Quality Assurance Engineering Audit 84-07, and the NRC Performance Appraisal for Surry Power Station dated November 13, 1983, were reviewed.

The first problem area encountered in the inspection was the disparity in the name used by the licensee for the group designated to conduct the independent reviews and the name used in the Technical Specifications. Technical Specifications refer to the Safety Evaluation and Control (SEC) staff as the offsite independent review organization. The SEC exists in the licensee's corporate structure but the group encompasses a much larger scope than just independent review.

The group within the licensee's SEC that is actually designed to fulfill the Technical Specification requirements is named Independent Operational Event Review.

Inspection of selected completed independent reviews shows the Director of Safety Evaluation and Control is the approving authority on all independent reviews (though he actually delegates the task to the supervisor of the Independent Operational Event Review Group). This appears to be inconsistent with requirement of ANSI N18.7-1976 4.3.3 which states in part that the "management representative who is assigned authority and responsibility for effective functioning of the unit" be someone "who is not immediately responsible for performance of the activities to be reviewed." In the case of the Director of SEC, who is recognized by Technical Specifications, he is also assigned responsibility for the licensing group which performs "some of the activities to be reviewed." Additionally, the supervisor of Independent Operational Event Review who actually approves reviews is not recognized in the Technical Specifications.

The inspectors also noted that in some cases licensing personnel performed the first of the two reviews done on items required to be reviewed. Although an individual from Independent Operational Event Review group did the second review, the practice of using licensing personnel runs contrary to the separation implied by Technical Specification 6.5.2.1.

Technical Specification 6.5.2.5 requires that a monthly meeting of the SEC staff be held. It is not specified in Safety Evaluation and Control Administrative Procedure SEC 2.6 Rev. 3 "SEC/SES Monthly Report and SEC Monthly Meeting" who must be in attendance to meet the minimum requirements of the Technical Specification. This is of concern because here again the SEC is considered in the larger corporate sense and licensing as well as plant personnel are included as members in the meeting which is suppose to fulfill an independent review function.

Finally, the inspectors concluded that based on their observations the following comments extracted from the NRC's November 13, 1983 Performance Appraisal Inspection are still valid.

- a. A major disadvantage of a staff review is the loss of the committee interaction between individuals of multi-disciplines and experiences.
- b. One weakness evident in the two-person review process was the difficulty in identifying trends in equipment problems, operating and maintenance activities, procedural problems or personnel errors. An individual reviewer saw only a fraction of the review items and this could not establish meaningful trends on those items reviewed.
- c. Interviews indicated that as a matter of policy staff members did not conduct tours of the plant, interview operators, or witness plant operations or maintenance activities...nor did an SEC staff member attend a SNSOC meeting on occasion.
- d. A strength in the management oversight was the Nuclear Overview Committee (NOC). This committee was composed of senior VEPCO executives who met quarterly to focus attention on problems at the two nuclear stations.

This area is unresolved item 338, 339/84-27-05 pending review by NRC Region II.

11. Refueling Activities (60710)

During this inspection period, the inspectors witnessed the transfer of a number of fuel elements from the fuel building through the transfer canal and into the core. Because a number of bowed fuel elements were encountered during the refueling procedure, the inspectors also witnessed changes in the refueling sequence in order to "box in" the locations where the bowed elements were to be placed. Overall, the inspectors observed the movement of elements G-33, E-39, F-27, 5-58, F-56 and F-45.

Along with verifying that refueling manning and communications requirements were being met, housekeeping in the refueling area as well as control of potentially loose foreign objects were monitored.

No violations or deviations were identified in this area.

12. Service Water Reservoir

Inspection of the Service Water Reservoir revealed numerous spray users on the four spray headers that were damaged or displaced. The inspectors expressed their concern about this condition to the licensee because the UFSAR states that "The service water reservoir spray system is a Seismic Class I system," yet it is continually needing substantial repairs under normal operating conditions. The UFSAR additionally states that "Loss of the spray headers will not jeopardize the supply of service water but will affect the heat removal capability of the system."

Conversations with licensee management and engineering personnel revealed that a major source of the problems with the spray users is the winter time ice build-up on the stays and guys provided for riser earthquake protection. Furthermore, some of the risers have been found cracked as have some of the submerged headers supplying the users.

In summary, it is recognized that the service water reservoir contains a 100% redundancy in spray header capacity, however, with the degradation of the system that is occurring under normal conditions, it is not clear that the design spray capacity would be available after a design basis seismic event. This is identified as IFI 383, 339/84-27-04.

13. Reactor Coolant System Pressure/Temperature Limits

During this inspection period, the licensee identified that the requirements of Technical Specification Surveillance Requirement 54.4.9.12 and 10 CFR 50 Appendix H had not been met for Unit 1. The required reactor vessel material irradiation surveillance specimen had been removed and tested (Babcock and Wilcox Report BAW1638, May 1981) as required by the Technical Specification Surveillance but the results had not been analyzed as required to determine if the RCS Temperature-Pressure Heatup and Cooldown Limitations (Figures 3.4.2 and 3.4.3) needed to be updated. Further, the test results were not forwarded to the Office of Nuclear Reactor Regulation (NRR) as required by 10 CFR 50 Appendix H.

Subsequent to the identification of these problems, the licensee made a technical evaluation of the data and determined the Technical Specification figures did not need to be modified. The required report to NRR was being finalized at the end of the inspection period.

These violations have been evaluated and have been found to meet the criteria of 10 CFR 2 Appendix C for licensee identified violations, thus no Notice of Violation will be issued.

14. Routine Inspection

By observations during the inspection period, the inspectors verified that the control room manning requirements were being met. In addition, the inspectors observed shift turnover to verify that continuity of system status was maintained. The inspectors periodically questioned shift personnel relative to their awareness of plant conditions.

Through log review and plant tours, the inspector verified compliance with selected Technical Specifications and Limiting Conditions for Operations.

During the course of the inspection, observations relative to protected and vital area security were made, including access controls, boundary integrity, search, escort, and badging.

On a regular basis, radiation work procedures (RWPs) were reviewed and the specific work activity was monitored to assure the activities were being conducted per the RWPs. Radiation protection instruments were verified operable and calibration/check frequencies were reviewed for completeness.

The inspector kept informed, on a daily basis, of the overall status of both units and of any significant safety matters related to plant operations. Discussions were held with plant management and various members of the Operations staff on a regular basis. Selected portions of operating logs and data sheets were reviewed daily.

The inspector conducted various plant tours and made frequent visits to the control room. Observations included: witnessing work activities in progress, verifying the status of operating and standby safety systems and equipment, confirming valve positions, instrument and recording readings, annunciator alarms, housekeeping and vital area controls.

No violations or deviations were identified in these areas.