



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA STREET, N.W.
ATLANTA, GEORGIA 30323

Report Nos.: 50-338/87-04 and 50-339/87-04

Licensee: Virginia Electric & 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 Conducted: February 20 - March 17, 1987

Inspectors:	<u><i>R.P. Cantrell FOR</i></u>	<u>3/31/87</u>
	J. L. Caldwell, Senior Resident Inspector	Date Signed
	<u><i>R.P. Cantrell FOR</i></u>	<u>3/31/87</u>
	L. P. King, Resident Inspector	Date Signed
Approved by:	<u><i>R.P. Cantrell FOR</i></u>	<u>3/31/87</u>
	F. S. Cantrell, Section Chief	Date Signed
	Division of Reactor Projects	

SUMMARY

Scope: This routine inspection by the resident inspectors involved the following areas: plant status, licensee event report (LER) followup, review of inspector followup items, monthly maintenance observation, monthly surveillance observation, ESF walkdown, operational safety verification, health physics and environmental qualification problems.

Results: No violations or deviations were identified.

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REPORT DETAILS

1. Licensee Employees Contacted

- *E. W. Harrell, Station Manager
- *R. C. Driscoll, Quality Control (QC) Manager
- *G. E. Kane, Assistant Station Manager
- *E. R. Smith, Assistant Station Manager
- *R. O. Enfinger, Superintendent, Operations
- *M. R. Kansler, Superintendent, Maintenance
- *A. H. Stafford, Superintendent, Health Physics
- *J. A. Stall, Superintendent, Technical Services
- J. L. Downs, Superintendent, Administrative Services
- J. R. Hayes, Operations Coordinator
- D. A. Heacock, Engineering Supervisor
- D. E. Thomas, Mechanical Maintenance Supervisor
- G. D. Gordon, Electrical Supervisor
- R. A. Bergquist, Instrument Supervisor
- F. T. Terminella, QA Supervisor
- J. P. Smith, Superintendent, Engineering
- D. B. Roth, Nuclear Specialist
- J. H. Leberstein, Engineer
- *G. G. Harkness, Licensing Coordinator

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

*Attended exit interview

2. Exit Interview (30703)

The inspection scope and findings were summarized on March 13, 1987, with those persons indicated in paragraph 1 above. The licensee acknowledged the inspectors findings. The licensee did not identify as proprietary any of the material provided to or reviewed by the inspectors during this inspection.

3. Plant Status

Unit 1

At the beginning of the inspection period and throughout the period, Unit 1 operated at approximately 100% power. Unit 1 has been on line continuously for 137 days as of the close of this inspection period.

Unit 2

At the beginning of the inspection period, Unit 2 was operating at 100% power. Unit 2 reduced power on two occasions to make repairs to secondary system leaking heat exchangers and valves. The unit ended the inspection period operating at 100% power with a total of 151 days of continuous on line operation.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Licensee Event Report (LER) Followup (90712)

The following LERs were reviewed and closed. The inspector verified that reporting requirements had been met, that causes had been identified, that corrective actions appeared appropriate, that generic applicability had been considered, and that the LER forms were complete. Additionally, the inspectors confirmed that no unreviewed safety questions were involved and that violations of regulations or Technical Specification (TS) conditions had been identified.

(Closed) LER 338,339/87-001: Diesel Driven Fire Pump Out of Service Greater than Seven Days. The diesel driven fire pump was returned to service on February 13, 1987.

(Closed) LER 339/86-01: High Lift Setpoints on Main Steam Safety Valves. The valves have been tested at Wyle Laboratories and reset.

(Closed) LER 338,339/86-11: Environmental Sample from WHTF Exceeded Reporting Level. The licensee has revised the ODCM to take into account the recirculation of station effluents. The contractor has been instructed to comply with the applicable requirements and water quality personnel have been contacted and agree to establish an additional control station and increase fish sampling to quarterly for multiple species.

(Closed) LER 338/85-24: Incorrect Setpoints Used for Containment Radiation Monitors During Refueling. Health Physics Procedure 3.3.7 has been modified in section 4.1 to calculate setpoints for entry into Mode 6.

(Closed) LER 338/86-18: Failed Firing Card/Reactor Trip Breakers Opened. The licensee has replaced the faulty firing card.

(Closed) LER 338,339/86-12: Fire Detection System Out of Service Greater than 14 Days. This appears to have been an isolated event, and the necessary corrective action has been taken.

(Closed) LER 338,339/86-05: Ingress of Authorized, Unbadged and Unsearched Employee. This event was investigated and documented in Inspection Report 338/339-86-08. The licensee has taken corrective action to prevent this incident from reoccurring.

(Closed) LER 338/86-02: Reactor/Turbine Trip - Turbine Control System Malfunction. The licensee has taken the necessary steps to troubleshoot the EHC system and no primary cause has been found. This incident has not resulted in a reoccurring problem.

(Closed) LER 339/86-10: Excessive Primary Coolant Unidentified Leakage. The licensee has taken the necessary action to repair the leaks.

6. Review of Inspector Followup Items (92701)

(Closed) IFI 338,339/85-31-01: Procedure Modification, Multiple Valve Lifts. Main steam valve testing is to include two lifts of the valve. PT-70 has been revised to include two lifts of the valve.

(Closed) IFI 339/85-31-02: ESF Walkdown, Valve Discrepancies. The inspectors reviewed the responses to the ESF walkdown comments on diesel starting air and all four items have been corrected.

(Closed) IFI 338/86-17-02: Design Info on Sola Transformers. The licensee has provided the information which was satisfactory.

(Closed) UNR 338/84-16-01: Determine if the Doble Model F35 Unit Calibration Records Are Current. The calibration certificate for the instrument was valid per 5/29/84 letter from Doble Engineering Company.

(Closed) IFI 338,339/84-01-04: Calibration Problems with Emergency Diesel Generator Level Gage. Day tank level indicator was out of tolerance. The instrument department has implemented EWR 83-169 to correct the problem.

7. Monthly Maintenance (62703)

Station maintenance activities affecting safety related systems and components were observed/reviewed, to ascertain that the activities were conducted in accordance with approved procedures, regulatory guides and industry codes or standards, and in conformance with Technical Specifications.

The inspectors observed the performance of MMP-P-EG-1.5 "Mechanical Maintenance Procedure for Piston Pin Bushing Clearance" for emergency diesel generator 2J. The initial two pistons checked were very close to the last clearances taken indicating that no further extrusion of the bushings had taken place.

The inspectors observed replacement of 1-BR-P-10A "A Stripper Pump Mechanical Seal". The associated RWP 87-1181 was reviewed on 3/4/87.

The 3A Aux Feed Pump for Unit 1 was placed in an action statement due to an inboard pump bearing oil leak. The level in the sump was lowered, the oil vent cleaned, and the pump restarted. No leakage was noted, and the pump was declared operable.

The inspectors observed the performance of the ten-year hydro (1-PT-171.1) on the 1-CH-P-2C boric acid pump.

No violations or deviations were identified.

8. Monthly Surveillance (61726)

The inspectors observed/reviewed technical specification required testing and verified that testing was performed in accordance with adequate procedures, that test instrumentation was calibrated, that limiting conditions for operation (LCO) were met and that any deficiencies identified were properly reviewed and resolved.

2-CH-P-1A has been in alert since 11/26/86. The frequency of the surveillance has been increased to a six-week interval. It has been in alert on vibration and low oil level. The vibration alert was removed on 2/5/87. The low oil pressure is still in alert from the last test which was performed on 2/26/87. The inspectors will monitor future surveillances.

The inspectors observed performance of 1-PT-77.1A "Safeguards Area Ventilation System Flow Test for Train A".

On March 6, 1987, the inspectors witnessed portions of ICP-P-F-940 "Instrumentation Calibration Procedure Hot Leg Safety Injection Header Flow".

No violations or deviations were identified.

9. ESF System Walkdown (71710)

The following selected ESF systems were verified operable by performing a walkdown of the accessible and essential portions of the systems on March 11, 1987:

Valve Checkoff 2-OP-7.1A for the Low Head Safety Injection System.

No violations or deviations were identified.

10. Operational Safety Verification (71707)

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 inspectors verified compliance with selected Technical Specification (TS) and Limiting Conditions for Operations.

In the course of the monthly activities, the resident inspectors included a review of the licensee's physical security program. The performance of various shifts of the security force was observed in the conduct of daily activities to include: protected and vital areas access controls, searching of personnel, packages and vehicles, badge issuance and retrieval, escorting of visitors, patrols and compensatory posts. In addition, the resident inspectors observed protected area lighting, protected and vital areas barrier integrity and verified an interface between the security organization and operations or maintenance.

On a regular basis, radiation work permits (RWP) were reviewed and the specific work activity was monitored to assure the activities were being conducted per the RWPs. Selected radiation protection instruments were periodically checked and equipment operability and calibration frequency was verified.

The inspectors kept informed, on a daily basis, of overall status of both units and of any significant safety matter 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 inspectors 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 recorder readings, annunciator alarms, and housekeeping.

The following comments were noted:

As discussed in inspection report 338,339/87-01 under section 11, the licensee had adjusted the Emergency Diesel Generator (EDG) governor load limit to the 3000 KW setpoint. This adjustment was made during the performance of surveillance testing to prevent electrically overloading the EDG while paralleled to the grid. Following the surveillance, the governor load limiter was supposed to be returned to maximum. However, as reported by the licensee on February 9, 1987, the 2J and 2H EDG governors were left for several weeks at the 3000 KW setting.

The licensee has requested Fairbanks Morse to determine if the diesels will perform in compliance with Technical Specifications with the governor adjusted to control at 3000 KW. Fairbanks Morse will be performing this evaluation by use of a computer model. This evaluation is expected to be available for NRC review on April 15, 1987.

During a review of the correspondence relating to the EDG problems, the inspector discovered a list of mandatory recommendations submitted by Fairbanks Morse to the licensee in May 1985. This list of mandatory recommendations was again endorsed by a Fairbanks Morse letter, dated May 28, 1986, in response to a request from the licensee for help in resolving the diesel problems. In a letter dated July 14, 1986, from the licensee to Region II, the licensee stated that the recommendations from Fairbanks Morse referenced in the May 28, 1986 letter had been addressed and appropriately implemented. This list included a mandatory recommendation to adjust the load limit knob on the governor to a rack reading of 8.1 (3000 KW) during surveillance testing to prevent overloading the diesels and to return the governor to the maximum position following testing. Even though the licensee was aware of the recommendation in May 1985 and appeared to have committed to have already implemented the recommendation in the July 14, 1986 letter, it was not until December 1986 that the first diesel governor was adjusted to the 3000 KW setting. The licensee informed the inspector that they had a safety concern with placing the governor at any setting other than maximum. This concern was addressed in an Engineering Work Request (EWR) 86-154, dated March 20, 1986, requesting an engineering evaluation on the safety significance of placing the governor at the 3000 KW setting during surveillance testing. This EWR, which was not answered until August 22, 1986, stated that it was acceptable to place the diesel governor at the 3000 KW setting during testing. However, the appropriate procedures which performed the EDG testing were not changed for performance until sometime in December 1986.

Based on the failure of the operators to return the governor load limiter back to the maximum position on the 2H and 2J diesels following testing in January 1987, the licensee has taken the position that the governor setting will remain at the maximum position for all EDG operations including testing. The inspector has requested the licensee to submit a letter to the NRC clarifying the fact that they have not and, for the time being, do not intend to comply with the Fairbanks Morse mandatory recommendation to lower the governor setting during testing. This letter should also provide their technical justification for this decision. At present, the licensee uses a dedicated operator to monitor the diesel any time it is paralleled to the grid in order to minimize the time and level at which the diesel may become electrically overloaded. The licensee has committed to document any electrical overload events and when appropriate to perform an engineering evaluation of the diesel for the purpose of determining operability.

The July 14, 1986 letter from the licensee to the NRC discussed above also committed the licensee to a piston bushing gap measurement program, consisting of inspections every six months or 40 hours of diesel operation (whichever comes first). The previous letter dated March 25, 1986, which first committed to the diesel inspection program stated that the inspection would be performed approximately every six months or every 40 hours of operation, whichever comes first. The licensee interpreted this commitment to mean the inspection would be performed during the first scheduled surveillance around the six month time frame assuming the diesel run time was less than 40 hours. Therefore, the 2H EDG whose six month period ended March 3, 1987, was not scheduled to be inspected until March 25, 1987, at which time the surveillance was scheduled to be performed. During discussions with the licensee, the inspector became aware of the situation with the 2H EDG inspection, and the licensee's interpretation of their commitment. The inspector discussed with the Region II staff the fact that the licensee had exceeded the six month time limit for performance of the 2H EDG gap measurement inspection. The Region II staff concurred that this was acceptable for the 2H EDG as long as the monthly oil samples for the 2H diesel did not indicate any problems. The licensee has informed the inspector that the oil samples for the 2H diesel are satisfactory. The inspector has requested the licensee to submit a letter to the NRC clarifying their interpretation of the six month inspection commitment if they intend to exceed the six month period in the future.

No violations or deviations were identified.

11. Health Physics (71707)

The inspectors reviewed the Offsite Dose Calculation Manual (ODCM) Section 6 for "Gaseous Effluent Radiation Monitor Setpoints" and Section 4 for "Liquid Effluent Dose Limits". A review was performed on form HP 3.2.2 "Gaseous Effluent Dose Projections". These dose projections were performed between 8/1/86 thru 12/31/86. A review was also conducted of form HP 3.2.13 "Accidental Unplanned or Uncontrolled Gaseous Releases". These releases took place in February; specifically the unplanned release of Waste Gas Decay Tank A on February 15, 1987.

The variable displacement pump 1-LW-P-28 that is used to determine the activity of liquid discharged to the lake has not been operating correctly. On 1/15/87 it was tagged out to incorporate an EWR Engineering Work Request and on 2/13/87 it was tagged out for failing to control the flow rate. The pump has been out of service since 3/3/87. The technical specifications allow grab samples to be taken every 12 hours when the pump is out of service. The results of the grab sample are used to determine the amount of activity discharged. The pump takes a small amount of each gallon discharged and pumps it to a sample tank. Every morning, a sample is taken from this tank and analyzed. The result of this analysis is used to determine the activity of the liquid discharged.

There appears to be ongoing problems associated with the design of the liquid discharge sample pump (1-LW-P-28) system. These problems have required the licensee to take grab samples to be in compliance with Technical Specifications. However, the intent of Technical Specifications is to have a continuous monitor of effluent releases to the lake. The licensee should pursue a more permanent solution to the sample pump problem so that the system is more reliable.

On 3/3/87, the inspectors reviewed HP 3.2.4, the liquid effluent release dose assessment record for February.

No violations or deviations were identified.

12. Environmental Qualification Problems (71707)

The licensee's corporate engineering department has been conducting a review of their EQ records. During the performance of the review, the licensee discovered a number of Limitorque MOVs whose identification numbers did not match the normal numbering scheme used by the motor manufacturers typically used by the Limitorque. The licensee then requested information from Limitorque who responded in a letter dated February 25, 1987, that these valves when ordered were not required to be manufactured in accordance with any specific qualification. Limitorque felt that these MOVs were qualified, but there was no documentation available to confirm this. Therefore, Limitorque recommended that these MOVs be replaced with certified motors to obtain assurance that the actuators retain their qualifications. The corporate engineering department prepared a Justification for Continued Operation (JCO) dated February 27, 1987, for those valves whose qualification could not be verified. Six of these valves were containment isolation valves associated with the service water supply and return headers to the recirculation spray heat exchangers. A deviation report was written on March 2, 1987, notifying the plant staff on March 3, 1987, of the EQ problem. The plant staff's position was that there was no reason to believe that these MOVs were unqualified, but an inspection of one of these valves would be performed to make that determination. The inspection was performed and a new JCO was written on March 5, 1987, stating that the inspection of one of the questionable MOVs revealed no evidence of material in the MOV which would cause the motor to be unqualified. Therefore, the JCO concludes that there is reasonable assurance that these motors are equal to or better than commercial grade

motors and should be considered operable. The JCO goes on to recommend that these MOVs be replaced with certified EQ MOVs at the earliest opportunity.

The inspector reviewed both JCOs. The JCO initiated by the corporate engineering staff on February 27, 1987 did not address the operability of the valves associated with these motors nor the Technical Specification requirements associated with these valves if considered inoperable. The second JCO which was influenced by the plant staff is based on an inspection of one of the motors and provides some assurance that these MOVs are operational. Even though the second JCO addressed the actual operability question, it was not initiated until approximately seven days after the licensee was made aware of the potential for unqualified Technical Specification related valves. The difference in these two JCOs may illustrate the need for information potentially affecting the operability of safety related equipment to be communicated to the plant staff in a more timely manner to ensure proper operability evaluation.

No violations or deviations were identified.