



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

Report Nos.: 50-338/88-21 and 50-339/88-21

License: 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: June 11 - July 15, 1988

Inspectors:	<u>Mike Scott for</u>	<u>8-12-88</u>
	J. L. Caldwell, SRI	Date Signed
	<u>Mike Scott for</u>	<u>8-12-88</u>
	L. P. King, RI	Date Signed
Approved by:	<u>F. S. Cantrell</u>	<u>8/12/88</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 follow-up items, monthly maintenance observation, monthly surveillance observation, operator safety verification, and public document room. During the performance of this inspection, the resident inspectors conducted reviews of the licensee's backshift operations on the following days: June 27, 28 and July 8, 14, and 15.

Results: In the areas inspected, no violations or deviations were identified.

## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*M. Bowling, Assistant Station Manager
- J. Downs, Superintendent, Administrative Services
- \*R. Driscoll, Quality Control Manager
- R. Enfinger, Assistant Station Manager
- G. Gordon, Electrical Supervisor
- L. Hartz, Instrument Supervisor
- D. Heacock, Superintendent Technical Services
- G. Kane, Station Manager
- M. Kansler, Superintendent Maintenance
- T. Porter, Superintendent Engineering
- \*D. Quarz, Licensing
- J. Stall, Superintendent, Operations
- A. Stafford, Superintendent, Health Physics
- F. Terminella, Quality Assurance Supervisor
- D. Thomas, Mechanical Maintenance Supervisor

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

#### \*Attended exit interview

NRC Management Site Visit: On July 11, F. S. Cantrell, Section Chief from Region II, visited the North Anna Power Station. Mr. Cantrell's visit included a tour of the station and a meeting with the licensee to discuss several points of mutual interest.

### 2. Plant Status

#### Unit 1

Unit 1 began and ended the inspection period operating at approximately 100% power.

#### Unit 2

Unit 2 began and ended the inspection period operating at approximately 100% power.

#### Both Units

On June 28, 1988, North Anna conducted the annual emergency drill. Twenty-six NRC Region II personnel participated in the drill as on-site players and 19 personnel participated from the Region II office incident response center. The control room, technical support center (TSC), and local emergency operations facility (LEOF) were staffed by NRC and licensee personnel.

On July 7, the licensee visited the Region II office in Atlanta to participate in an enforcement conference. The subject of the conference was the discovery by the licensee on May 19 that both Unit 2 emergency diesel generators (EDG) had been technically inoperable for approximately 38 hours. This violation of technical specifications was caused by the failure of the 2H EDG output breaker to close due to the closing spring charging motor becoming unmounted from the breaker frame (see Inspection Report 338,339/88-16 for details).

### 3. Licensee Event Report (LER) Follow-Up (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 no violations of regulations or Technical Specification (TS) conditions had been identified.

(Closed) LER 339/87-14: Inadvertent Discharge of Accumulator into Reactor Coolant System. A meeting was held by the Vice President of Nuclear Operations with appropriate station management and operating personnel to discuss this event. Administrative Procedure 5.8, Temporary Changes/Procedure Deviations, has been revised to clearly state that all deviations to the initial conditions of safety related procedures will require "prior to use" approval by the Station Nuclear Safety and Operating Committee.

(Closed) LER 338/88-05: Automatic Reactor Trip Due to Hi-Hi Steam Generator (S/G) Level. Operating Procedure 2.1, Unit Power Operation Mode 2 to Mode 1 was revised to include a caution "If feedwater temperature is excessively low, then severe S/G level oscillations may occur when the main generator is placed in service".

### 4. Review of Inspector Follow-up Items (92701)

(Closed) Unresolved Item 338/87-24-04: Verbatim Compliance with Emergency Operating Procedures. This item is closed based on a review by the inspector of the circumstances involved and conversation with the shift supervisor on duty during the tube rupture event. An operations standard has been issued by the licensee discussing the use of procedures, and the requirement for verbatim compliance. The inspector has concluded that the actions taken by the operators were in compliance with the emergency operating procedures.

(Closed) Unresolved Item 338,339/87-19-02: Potential Violation of 10CFR20 for Failure to Perform a Radiation Survey. This unresolved item involved the failure to perform or require the performance of a radiation survey following a resin discharge which resulted in an unlocked and improperly posted radiation area of approximately 2 R/HR. This item is considered closed based on an inspection of the incident by the radiation control group from Region II.

A review by the resident inspector indicated that the addition of a spool piece to help prevent future problems had been requested previously by an engineering work request but has not been installed. The addition of this spool piece will be monitored by the inspectors and identified as Inspector Follow-up Item (IFI 338,339/88-21-01).

5. 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 inspector observed the installation of a modification to the steam driven auxiliary feedpump steam trip valves located in the main steam valve house. This modification was performed because of Appendix R lighting concerns, involving the ability to operate the trip valves from the safeguards building basement. As a result, the licensee installed isolation and vent valves in the air lines to the trip valves in the main steam valve house. This allows the trip valves to be operated from the main steam valve house instead of the safeguards building basement. (Additional followup in this area is discussed in Inspection Report 50-338, 339/88-13).

On July 16, 1988, the inspectors observed maintenance involving the repair of the switch for 1-CH-P-2A, boric acid transfer pump. The control switch knob had become detached from the switch body and a new switch was installed. The inspector reviewed the work package. No problems were identified.

Also on July 16, the inspector observed portions of the quarterly preventive maintenance on the 2H emergency diesel generator using procedure M-20-D/Q-1. The inspector also reviewed procedure MMP-P-EG-1, which was used to replace worn tubing from the oil strainer to the filter. No problems were identified.

No violations or deviations were identified.

## 6. 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.

On June 24, 1988, the inspectors witnessed 2-PT-34.3, Turbine Valve Freedom Test. During the test, the intercept valve to 2-MS-E-1D reheater failed to close. This failure to close was due to the solenoid test valve sticking. This solenoid test valve is located in the control box next to the intercept valve. The box was manually agitated and the intercept valve 2-MS-E-10 closed. The licensee considers the intercept valve operable because it would still close on loss of electro-hydraulic control fluid following a turbine trip signal even if the solenoid test valve sticks. The test solenoid actuates to remove hydraulic pressure from the intercept valve, but its failure does not interfere with the pressure relief path for a turbine trip signal.

Also, on June 24, 1988, the inspectors witnessed 2-PT-71.3, the motor driven auxiliary feedwater pump test. During the performance of this test, the recirculation flow is monitored to determine operability of the pump. The recirculation feed flow indicator is in a common line from the the discharge of both motor driven feedpumps. This flow indicator does not necessarily represent the total flow from the operating pump because there is indication that some backflow exists through the recirculation line of the idle pump. The recirculation flow indication is a measure of acceptance criteria for the test, and it is important that the flow through the meter be indicative of the recirculation flow from the pump. The licensee has committed to installing check valves in each of the pump recirculation lines to prevent backflow through the idle pump. The completion of check valve installation will be tracked as IFI 50-338,339/88-21-02.

During the operation of one of the motor driven auxiliary feedwater pumps, the inspector noted that the forward pump gland was operating hot. The inspector notified the licensee, and a work request was initiated. The inspector determined that the gland was not hot enough to affect operability of the pump, but must have been adjusted too tightly during maintenance. The packing gland requires some water leakage to keep cool, and it appeared to the inspector that the leakage was less than normal.

The inspectors witnessed partial performance of the 2H bus under-voltage test, 2-PT-36-9.1.H. During the performance of the test, the licensee failed to perform step 4.6.18 which required a test switch to be returned to the normal position. The licensee discovered this problem a few steps later when a light indication was improper. The steps were backtracked, and the problem was corrected without any adverse actions.

During Periodic Test 2-PT-71.2 for the Unit 1 steam driven auxiliary feedwater pumps, the inspector noted that the steam traps leading to the Terry turbine were blown down before conducting the test. The inspector expressed concern to the assistant shift supervisor, and later, to the operations superintendent that if the pumps were needed in an emergency, the operator would not have time to blow down the traps. The operations superintendent informed the inspectors that this was not the normal practice, and had only been performed because the steam lines had been isolated for maintenance. The operations superintendent went on to assure the inspectors that station operators would not have blown down the steam traps prior to routine testing of the steam driven auxiliary feedwater pumps to prove operability.

On July 5, the inspector witnessed the filling and venting of the outside recirculation spray pump, 2-RS-P-2A, performed in accordance with 2-PT-64.1A, Recirculation Spray Subsystem "A" Pump. The procedure was deviated to require closure of the vent valve prior to starting the pump. On July 6, the inspector witnessed the operation of the other outside recirculation spray pump, 2-RS-P-2B in accordance with procedure 2-PT-64.1B. Both tests were performed with satisfactory results.

On July 16, the inspector also observed the performance of 2-PT-80, Offsite AC Sources. This procedure is required to be performed by technical specifications when an emergency diesel generator (EDG) is taken out of service. The inspector did not identify any problems. The inspector also observed the start of the 2H EDG using 2-OP-6.8, Slow Start Operation of 2H Emergency Diesel Generator. When the diesel control was transferred to the control room, the operation of the control room speed controller was erratic. The diesel was shut down and inspected. The licensee discovered that the vernier needed to be adjusted on the diesel governor. The governor vernier was adjusted, the diesel was restarted, and speed control from the control room operated satisfactory.

On July 15, the inspector witnessed the performance of 2-PT-57.1B, the periodic test of the 2-SI-P-1B low head safety injection pump. This test was conducted without the identification of any problems.

No violations or deviations were identified.

#### 7. 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 specifications 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; and badge issuance and retrieval.

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 support equipment; and confirming valve positions, instrument and recorder readings, annunciator alarms, and housekeeping.

On July 12, the inspector witnessed operability test 1-MISC-20.1 of the security uninterruptable power supply. This was accomplished by deenergizing the main security power supply breakers. The security diesel started immediately. The diesel was operated for several hours to coordinate with preventive maintenance on the breaker.

No violations or deviations were identified.

8. Public Document Room (94600)

The Public Document Room located in the Alderman Library at the University of Virginia, Charlottesville, Virginia, was visited on June 28, 1988. The NRC documents, publications, reports, etc., on file were observed to determine what is available to the public. All material appears to be filed accurately according to the NRC index in the "Guide to US Government Publications".

9. Allegation Followup

During the weeks of February 16 and 22, 1988, regional based inspectors reviewed the facility's Instructor Certification Program. The inspectors reviewed the technical qualification requirements contained in the Corporate Training Systems Manual, and the North Anna Power Station Training Administrative Guidelines (Section 2.3.2, Certification of Instructors). In addition, reviews of instructor development records and discussions with instructors were conducted.

The procedures reviewed by the inspectors require that a supervisor review a prospective instructor's credentials. Based on the review, the supervisor recommends awarding technical certification of the instructor, in specific areas, to the training superintendent. The inspectors reviewed qualification records for two instructors who no longer teach

licensed operators or licensed candidates. The records reflect that a supervisory review of their credentials was completed. However, several topics which the instructors subsequently taught were not among those where technical certification had been awarded. Consistent with the Commission Policy Statement on Training and Qualification of Nuclear Power Plant Personnel (50 Fed. Reg. 11147), no Notice of Violation will be issued. Appropriate corrective action for this violation has been taken by the licensee.

10. Exit Interview (30703)

The inspection scope and findings were summarized on July 18, 1988, with those persons indicated in paragraph 1 above. The licensee acknowledged the inspector's findings. The licensee did not identify as proprietary any of the material provided to or reviewed by the inspectors during this inspection.

(Open) Inspector Follow-up Item (IFI) 338,339/88-21-01: Follow-up to ensure installation of a spool piece to enhance resin discharge capabilities.