



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

Report Nos.: 50-338/85-33 and 50-339/85-33

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 Conducted: November 12-15, 1985

Inspectors:

*for* L. E. Nicholson Frank Jape

12/3/85  
Date Signed

*for* K. W. VanDyne Frank Jape

12/3/85  
Date Signed

Approved by:

*for* F. Jape  
F. Jape, Section Chief

12/3/85  
Date Signed

Engineering Branch  
Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection entailed 50 inspector-hours onsite in the areas of moderator temperature coefficient determination, containment isolation valve test witnessing, surveillance test procedure review and followup of previously identified inspection findings.

Results: No violations or deviations were identified.

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## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*R. Enfinger, Superintendent, Operations
- G. Flowers, Station Licensing
- \*J. R. Harper, Superintendent, Maintenance
- D. A. Heacock, Reactor Engineer, Supervisor
- \*J. Leberstein, Licensing Coordinator
- \*G. Ponnell, Licensing Supervisor
- \*D. L. Reid, Reactor Engineer
- \*E. R. Smith, Assistant Station Manager
- \*J. A. Stall, Superintendent, Technical Services
- A. G. Neufer, Refueling Coordinator

Other licensee employees contacted included engineers, technicians, operators, and office personnel.

#### NRC Resident Inspectors

- \*M. Branch

- \*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on November 15, 1985, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings. A new item identified during this inspection is listed below.

Unresolved Item 339/85-33-01, Inadequate Justification for Rejecting Test Results, paragraph 6.

The licensee agreed that the documentation supporting the rejection of a completed test was inadequate, but commented on several possible causes for the unsatisfactory test results.

After a revision by RII management, the licensee was notified in a November 20, 1985 telephone discussion, that the item will be classified Unresolved instead of Inspector Followup as stated in the original exit interview. See paragraph 6 for details.

The licensee did not identify as proprietary any of the materials provided to or reviewed by the inspectors during this inspection.

3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

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. One new unresolved item identified during this inspection is discussed in paragraph 6.

5. Containment Leak Rate Testing (CILRT) Unit 2 (61720)

The inspectors witnessed Type C local leak rate testing on primary grade water and steam generator blowdown sampling valves as defined in 10 CFR 50 Appendix J. Two methods of determining the leakage rate were employed depending on system configuration. One method, the "make-up" method, measures the flow rate of dry air or nitrogen required to maintain test pressure; in this test case, test pressure was 40 psig. The "leak through" method determines flow via a rotameter installed downstream of the valve under test.

Type C leak rate testing is accomplished by test procedure 1-PT-61.3 at North Anna. To ensure the adequacy of the testing, the following items were reviewed:

- a. Testing was conducted in accordance with approved procedures.
- b. Latest revision of the test procedure was available and in use by testing personnel.
- c. All test prerequisites were met.
- d. Required test equipment was calibrated and in service.
- e. All data were collected for final analysis.
- f. Test results indicated preliminary acceptance criteria were met or properly documented.

No violations or deviations were identified in the areas inspected.

6. Unit 2 Moderator Temperature Measurement at Power (61708)

The moderator temperature coefficient (MTC) was measured using 2-PT-13 (Revision 2), Moderator Temperature Coefficient at Power. This end of life test was initially performed at 306 effective full power days (EFPD) with a resulting MTC of  $-32.3$  pcm/F°. Technical Specification 3/4.1.1.4 requires:

- a. A remeasurement of the MTC every 14 EFPD subsequent to a measurement more negative than  $-31$  pcm/F°.

- b. Reactor to be in hot shutdown within 12 hours with a MTC more negative than  $-40 \text{ pcm/F}^\circ$ .

The second measurement was performed at 321 EFPD with a resulting MTC of  $-41.2 \text{ pcm/F}^\circ$ . This result was rejected by classifying the test "terminated", and a third test was performed. The third test resulted in an MTC of  $-32.6 \text{ pcm/F}^\circ$ , which was accepted by the licensee. The third test was performed approximately 15 3/4 hours after the second test was rejected.

The inspector reviewed the test data from both the second and third tests to verify all prerequisites were met, precautions observed, and plant conditions maintained within specified limits. All specified parameters appeared to have been met and no obvious cause for rejecting the second test result was detected.

The licensee's reason given for rejecting the test result, as stated on the periodic test critique cover sheet, was that the measured MTC differed between boron addition and boron dilution by more than  $2 \text{ pcm/F}^\circ$ . The difference in these same MTC values from the accepted third test, however, was slightly greater than  $4 \text{ pcm/F}^\circ$ . Although several variables (e.g., load swing, temperature swing, boron analysis) were suggested to the inspector by plant management as potential causes of the unsatisfactory results, they appear to be speculation unsupported by the actual test data. Further discussion of this matter was held with the licensee by telephone on November 2, 1985. The licensee agreed to review their reason for rejecting the test and to document their findings. Until the reason for obtaining unsatisfactory test results is better defined, this item is identified as Unresolved Item (50-339/85-33-01), Inadequate Justification for Rejecting Test Results.

#### 7. Complex Surveillance (61701) Unit 1

The inspectors reviewed the data package for test procedure 1-PT-147.1, Valve Inservice Inspection (Relief Valves) completed on May 16, 1984. This procedure tested the relief valves in accordance with IWV-3510 of ASME Section XI, 1974 edition for the following systems:

- Emergency Core Cooling
- CVCS
- Residual Heat Removal
- Service Water
- Feedwater
- Emergency Fuel Oil

The data was reviewed to verify that test changes were approved in accordance with administrative procedures, actions required by test changes had been completed, deficiencies had been resolved, and individual test steps and data sheets were completed properly. Additionally, acceptance of test results was verified complete.

No violations or deviations were identified in the areas inspected.

8. Followup of Inspector Identified Items (92701)

- a. (Closed) IFI 338/84-20-01, Unknown Cause of Failed Fuel Assemblies During First Cycle. The licensee's August 30, 1984 LER provides a description of Unit 1 Cycle 4 fuel examination results. Based on discussions with plant operations personnel and LER 84-007 this item is considered closed. It appears from the licensee's examination and evaluation that foreign debris induced fretting is the most likely mode of fuel element failure. The foreign material recovered during the fuel assembly cleaning process is being analyzed to determine its exact source. This item is closed.
- b. (Closed) IFI (338,339/84-37-01), 1/2-PT-13 and NFO TI-2.10 to be Fully Compatible By March 31, 1985. The analysis originally performed by NFO TI-2.10 has been incorporated into 1/2-PT-13 and NFO TI-2.10 subsequently cancelled.