



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

Report No.: 50-338/78-42

Docket No.: 50-338

License No.: NPF-4

Licensee: Virginia Electric and Power Company
P. O. Box 26666
Richmond, Virginia 23261

Facility Name: North Anna Power Station, Unit 1

Inspection at: North Anna Power Station, Mineral, Virginia

Inspection conducted: December 11-15, 1978

Inspector: T. J. McHenry

Approved by: H. C. Dance
H. C. Dance, Chief
Reactor Projects Section No. 1
Reactor Operations and Nuclear Support Branch

1/5/79
Date

Inspection Summary

Inspection on December 11-15, 1978: (Report No. 50-338/78-42)

Areas Inspected: Routine unannounced inspection of plant operations, limiting conditions for operation, and plant tour. The inspection involved 31 inspector-hours on site by one NRC inspector.

Results: Of the three areas inspected, two items of noncompliance were identified in two areas (Infraction: Failure to perform surveillance test, 338/78-42-01; Infraction: Failure to review and approve temporary procedure changes with 14 days, 338/78-42-02).

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DETAILS I

Prepared by: Thomas J. McHenry
 T. J. McHenry, Reactor Inspector
 Reactor Projects Section No. 1
 Reactor Operations and Nuclear
 Support Branch

1/4/79
 Date

Dates of Inspection: December 11-15, 1978

Reviewed by: H. C. Dance
 H. C. Dance, Chief
 Reactor Projects Section No. 1
 Reactor Operations and Nuclear
 Support Branch

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1. Individuals Contacted

a. Virginia Electric Power Company

W. R. Cartwright, Station Manager
 J. D. Kellams, Superintendent, Station Operations
 *S. L. Harvey, Operating Supervisor
 *E. R. Smith, Jr., Supervisor, Engineering Services
 *D. M. Hopper, Health Physics Supervisor
 *S. Sarver, System Health Physicist
 *D. C. Woods, NRC Coordinator
 *D. L. Smith, Resident QC Inspector, Operations
 *M. D. Tower, Quality Assurance Supervisor, Maintenance and
 Operation
 Several Control Room Operators and Operating Personnel

b. Nuclear Regulatory Commission

*M. S. Kidd, Resident Inspector
 *G. R. Jenkins, Radiation Specialist

*Denotes those present at the Exit Interview.

2. Licensee Action on Previous Inspection Findings

No previous items of noncompliance or deviations were reviewed during this inspection.

3. Unresolved Items

No new unresolved items were identified during this inspection.

4. Exit Interview

A meeting was held on December 15, 1978, with Mr. W. R. Cartwright, Station Manager, and his staff members denoted in paragraph 1. The scope and findings presented in these Details which related to the inspection activities were discussed. Items of noncompliance were discussed, including station management's response and planned actions. Also, four open items identified in the Details were discussed, including station management's response and planned actions.

5. Review of Plant Operations

The inspector reviewed the following Unit 1 logs and records for October through November 1978, to ascertain whether operation was in conformance with the Technical Specifications and established administrative requirements:

- Log-11, Action Statement Status log
- Log-6A, Control Room log
- Log-6B, Emergency Diesel and Boiler log
- Log-6C, Turbine Building log
- Log-6D, Auxiliary Building log
- Log-6E, Outside log
- Log-1, Shift Supervisor log
- Log-2, Control Room Operators' log
- Log-4, Operators' Surveillance Sheet
- Log-12, Diesel Generator Running log
- Log-8A, Liquid Waste log
- Log-8B, Boron Recovery log
- Log-8C, Gaseous Waste log
- Plant Jumper log
- Deviation Reports

a. Turbine Generator Auto Stop Oil Functional Test

Technical Specification 4.3.1.1.1, Table 4.3-1, Item 18.A requires that a functional test of Auto Stop Oil be performed prior to reactor startup if not performed within the previous seven days. During the review of the Control Room Log for October 25, 1978, it was determined that PT-34.1, Turbine Generator Auto Stop Oil Functional Test, had been performed subsequent to reactor startup. The inspector discussed the performance of this test with control room personnel who indicated that this test was performed routinely following reactor startup since it was performed as prescribed by the turbine startup procedure which follows reactor startup. The performance of this functional test subsequent to reactor startup was discussed with the Operations Supervisor, who acknowledged that an oversight of the prior to reactor startup requirement had occurred and corrective measures would be taken to correct this

item. Licensee representatives stated at the exit interview that even though PT-34.1 had not been performed, the functional operability of the Auto Stop Trip was available due to existence of trip status light for Auto Stop Oil prior to reactor start. The inspector indicated that failure to perform Auto Stop Oil Functional Test prior to reactor start was an apparent item of noncompliance with Technical Specification 4.3.1.1.1, Table 4.3-1, Item 18.A and is identified as an infraction (338/78-42-01).

b. Review of Deviation Reports

The inspector reviewed Plant Deviation Reports for period October through November 1978 to confirm there were no violation of Technical Specification limiting conditions for operations and reporting requirements. Several Plant Deviation Reports were caused by exceeding Technical Specification 6.8.3.c requirement that the Station Nuclear Safety and Operating Committee (SNSOC) review and station manager approve temporary procedure changes within 14 days. The inspector determined that many failures to meet the 14 day review and approval requirement had been identified by the licensee and noted by an NRC inspector during inspection 338/78-18 on June 13-16, 1978, and that the licensee had taken corrective action to correct and prevent recurrence. The inspector discussed the apparent ineffectiveness of the licensee corrective action with a licensee representative who stated that the problem had been corrected, and felt that only a small percentage of isolated items existed. The inspector reviewed the SNSOC meeting minutes for the period of September 8-November 7, 1978 and determined that 15 temporary changes had been identified by the licensee in excess of the 14 day requirement. The inspector discussed this item with licensee representatives at the exit interview. Licensee representative stated that the record of late 14 day reviews and approvals should be reviewed as it was felt that the percentage of these items had significantly improved since June 1978. The inspector left this item unresolved at the exit, pending a detailed review of identified overdue 14 day reviews and approvals by the NRC Resident Inspector. The Resident Inspector review of SNSOC meeting minutes within the period of July 3 through November 27, 1978, indicated that for that period, 23 of 290 temporary procedure changes were identified by the licensee to have exceeded the 14 day requirement. Even though the failure to review these temporary procedure changes had been identified by the licensee, the number and percentage of the occurrences of this item indicates that corrective actions to prevent recurrence have not been effective. This matter was discussed with the Plant Manager by telephone on December 21, 1978, at which time the inspector indicated that this item is an apparent item of noncompliance with Technical Specification 6.8.3.c and is identified as an infraction (338/78-42-02).

c. Functional Tests with Inputs to Solid State Protection System

During the review of PT-34.1, Turbine-Generator Auto Stop Oil Trip Functional Test (noted in paragraph 5.a), the inspector found that PT-34.1 did not verify input trip functions to both Train A and B, Solid State Protection Systems (SSPS). The inspector discussed instrumentation functional tests with a licensee representative who indicated that the tripping of both Trains of SSPS was verified in instrumentation group periodic tests in that both the trip status light and computer outputs were verified. Licensee representatives question the inspectors' concern since SSPS is functionally tested as required by Technical Specifications. The inspector stated that functional testing of SSPS functionally tested input circuitry within the SSPS but did not functionally test the input circuitry from the process instrumentation. Therefore, functional testing which inputs to SSPS must include functional operability of inputs to both Trains of Solid State Protection. This matter was discussed at the exit interview. The licensee stated that PT's 34.1 and 34.3 would be revised to provide required functional checking of inputs to both Trains of Solid State Protection. Further, the licensee stated that a review of other functional tests which input SSPS would be conducted. The inspector indicated this item would remain open pending licensee corrective action and subsequent review by an inspector at a future inspection (338/78-42-03).

6. Review of Safety Limits, Limiting Safety System Settings and Limiting Conditions for Operation

The inspector reviewed plant logs, startup procedures and observed plant operations to assure reactor operations were in conformance with Technical Specification requirements for safety limits, limiting safety system settings and limiting conditions for operation.

a. Plant Startup Procedure Review

The inspector reviewed OP-1.5, Unit Startup from Hot Standby procedures which were completed between July through November 1978. During this review, the inspector noted that there was a wide variance in the method used for the inverse multiplication approach to criticality plots. The inspector discussed the inverse multiplication startup plots with control room operators, who stated that no procedure for performing the inverse multiplication plots existed and the guidance for such plots was obtained via the training program. The inspector discussed the lack of approved procedural guidance for inverse multiplication plots with the Operations Supervisor. The inspector stated that since the

use of an inverse multiplication plot is only required when uncertainty exists about the calculated critical data, procedural guidance should be provided to assure the startup does not result in critical conditions outside the limits established by the Technical Specifications. This item was discussed at the exit interview and licensee representatives stated that the matter would be reviewed and procedural guidance for the performance of inverse multiplication plots would be developed. The inspector stated that this item would remain open pending licensee development of approved procedural guidance for inverse multiplication plots and subsequent review by an inspector during a future inspection (338/78-42-04).

b. Wind Direction Channel Check

The review of Log-6A, Unit One Control Room log, indicated that wind directions were routinely logged with a 60 to 100 degree difference in direction between the indicator at 35 feet and 150 feet elevations. In addition, no notation had been made on the log indicating that one indicator could be possibly malfunctioning even though Technical Specification 4.3.3.4 requires a daily channel check. The inspector observed the wind direction recorders during a plant tour and discussed the logged data with control room personnel. Observation of wind direction recorders indicated that instantaneous wind direction does vary; however, observation of the recorder for sufficient time to estimate the average wind directions indicated the average directions being approximately equal. A control room operator also stated that when the wind speed is low the wind direction tends to vary to higher degrees. The inspector discussed the lack of explanation on log-6A, when wind speed variance between the two channels was high, with the Operations Supervisor who stated that the log would be reviewed and revised as necessary. The inspector stated this item would remain open pending a review during a future inspection of the licensee's corrective action to ensure an adequate performance and record of the wind direction channel check (338/78-42-05).

c. Power Calorimetric Review

The inspector reviewed completed copies of PT-24, Calorimetric, for period of September through November 1978 to ascertain that reactor power levels were maintained within the limits of the Technical Specifications. The inspector discussed the methods for obtaining the calorimetric data necessary for the power calculation with control room operators. It was determined from control room operators that feed flow data was obtained directly from the

computer. The inspector ascertained from plant personnel that feed flow output from the computer is routinely calibrated; however, the accuracy of the computer output could not be established. This item was discussed at the exit interview. The inspector stated that the concern was whether the feed flow accuracy from the computer was adequate to meet the assumption that the calorimetric was accurate to plus or minus 5.0 percent in the FSAR accident analysis. The licensee stated that an engineering evaluation of the accuracy of the computer feed flow channel would be conducted. The inspector indicated that this item would remain open pending the licensee review and subsequent NRC inspection of review data. (338/78-42-06).

7. Plant Tour

The inspector toured portions of the facility including the auxiliary building, turbine building and control room to ascertain the general state of cleanliness and housekeeping. Control room operations, including observation of operations following an unscheduled reactor trip were observed and discussed with control room personnel to assure compliance with Technical Specifications. No problems were identified.