UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
101 MARIETTA ST., N.W., SUITE 3100
ATLANTA, GEORGIA 30303

Report Nos. 50-338/81-15 and 50-339/81-12

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

Facility Name: North Anna Units 1 and 2

Docket Nos. 50-338 and 50-339

License Nos. NPF-4 and NPF-7

Inspection at North Anna Site near Mineral, Virginia

Inspector: W B Shymlock Jr — July 6, 1981
E. H. Webster, Senior Resident Inspector — Date Signed

Approved by: H C Dance — 7/7/81
H.C. Dance, Section Chief, Division of Resident and Reactor Project Inspection — Date Signed

SUMMARY

Inspection on May 6 -8 and May 26 - June 5, 1981

Unit 1 Areas Inspected

This routine inspection by the resident inspector involved 18 inspector-hours onsite in the areas of operational safety, surveillance, maintenance, IE Bulletins, licensee event reports, and previous concerns.

Unit 1 Findings

Of the six areas inspected, no violations or deviations were identified.

Unit 2 Areas Inspected

This routine inspection by the resident inspectors involved 19 inspector-hours on site in the areas of operational safety, maintenance, surveillance, IE Bulletins, plant trips, licensee event reports and previous concerns.

Unit 2 Findings

Of the seven areas inspected, no violations or deviations were identified.

REPORT DETAILS

1. Persons Contacted

Licensee Employees

*W. R. Cartwright, Station Manager
*E. W. Harrell, Assistant Station Manager
*J. A. Hanson, Superintendent - Technical Services
J. R. Harper, Superintendent - Maintenance
S. L. Harvey, Superintendent -Operations
*J. M. Mosticone, Operations Coordinator
*J. P. Smith, Engineering Supervisor
F. T. Termunella, Engineering Supervisor
D. B. Roth, Engineering Supervisor
A. K. White, Engineer
*M. E. Fellows, Staff Assistant

Other licensee employees contacted included three technicians, five operators, and several office personnel.

Other Organizations

Westinghouse Nuclear Services Division
G. Williams, Resident Westinghouse Engineer

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on June 5, 1981, with those persons indicated in paragraph 1 above.

3. Licensee Action on Previous Inspection Findings

(Open) Violations (338/81-05-05 and 339/81-03-05) Failure to assure corrective actions were completed for the Axial Power Distribution Monitoring System (APDMS). The licensee implemented Administrative Procedure ADM 29.17 on April 24, 1981, which requires operator review of the APDMS recorder prinout every eight hours. The action provides additional assurance of incore detector performance beyond that committed to in IE Report 338/81-03 and 339/81-02 (described more completely in paragraph 7.d). Therefore the corrective actions required for the APDMS have been verified complete. The issue of implementing a program to assure completion of corrective actions for conditions adverse to quality is still open. The licensee's response letter, serial number 255 dated May 5, 1981, commits to up-grading the Commitment Tracking System by January 1, 1982. The inspector pointed out the necessity that these changes include QA verification that corrective action is complete. This verification program needs to be implemented by procedures which define the interaction and scope of QA

involvement in the Commitment Tracking System. These items remain open pending completion of these procedures.

4. Unresolved Items

Unresolved items were not identified during this inspection.

5. Unit 1

During this inspection period, Unit 1 was shutdown for a scheduled maintenance outage from May 9 through May 20 for modifications required by the TMI Task Action Plan, and general maintenance. The unit experienced two trips during the recovery on May 20 and 22, but was restored to full load operation on May 23.

a. Amendement 7 to License NPF-7

Amendment 7 to NRC Operating License NPF-7 was issued April 29, 1981, to authorize a one time extension of thirty days to the battery discharge surveillance frequency. The surveillances, required by Technical Specifications 4.8.2.3.2.d and 4.8.2.4.2 would have exceeded the allowable frequency requirement of Technical Specification 4.0.2(a) on May 1, 1981, but Amendment 7 authorized conduct after before May 31, 1981.

The inspector reviewed the previous surveillance documented in Periodic Test 2-PT-87 conducted June 14, 1979, and the surveillance conducted May 11, 1981, with associated deviation report 81-335. The test results appeared to be satisfactory and met the surveillance requirements of the forementioned Technical Specifications. Item 339/81-10-01 is closed and the Office of Nuclear Reactor Regulation, NRC was informed that the conditions of Amendment 7 have been met.

b. Westinghouse Valve Modifications

Design change DC 81-S33 was completed during the May outage to rectify the design problems discussed in IE Report 339/81-07 paragraph 6a. This design change modified the worm gears in the valve operators for valves MOV 2536 and 2370, and replaced the torque limit switch from the valve operator 'close' circuitry to a position limit switch. Valve MOV 2289B had its valve operator changed from a type SMB 000 to a modified SMB 00, which provides higher torque, and its 'close' torque limit switch was also replaced by a position limit switch.

Westinghouse Electro-mechanical Division Specification number 730 RP495 "Field Modification of 3GM78/3GM88 Valves" issued March 27, 1981, and an internal Westinghouse memo dated April 30, 1981, concerning 3GM99 valve modifications were also reviewed by the inspector and revealed

that further testing is underway to assure that these modifications satisfactorily eliminate valve jamming. Followup of the results of this testing and further modification, if necessary, is identified as previously identified item (339/81-07-03).

Another issue which arose during review of these modifications is the fuse sizing for the motor operator to valve MOV 2536. Licensee engineering staff also committed to evaluate the rating of the fuses, which are presently 19 amp, to protect the containment electrical penetration, whereas, motor locked-rotor amperage is 15 amps. This present design provides protection from burning up the valve operator motor, should the disc jam during a shutting operation. This will be followed up with the other issues mentioned above. With the exception of the fuse issue, the above mentioned modifications were described in the licensees letter serial no. 313 of May 22, 1981, in response to IE Bulletin 81-02. In that letter the licensee committed to also modify the valve stem on valve MOV 2289B during the October 1981 outage, a modification which Westinghouse is still testing. Licensee management was informed that should this modification be found not to be necessary as a result of the ongoing testing, that a supplemental report will be necessary. This additional modification, or the supplemental report, shall be followed up as a separate item (339/81-12-1).

7. Both Units/Site

a. TMI Task Action Plan Items

1) Task item II.E.4.2.6, Containment purge valve operability. The licensee's letters, serial no. 846/092779 of October 26, 1979, and serial no. 922/103079 of December 20, 1979, were reviewed and found to be acceptable by the Office of Nuclear Reactor Regulation (ONRR). Owing to the operating requirement to maintain a sub-atmospheric containment and the Technical Specifictions which dictate maximum containment pressure anytime the reactor coolant system (RCS) temperature is above 200°F, the containment purge valves are maintained shut. As a result, the licensee meets the staff interim position of October 23, 1979, and a Safety Evaluation Report from ONRR, dated January 6, 1981, confirms that no further operability testing, to assure the purge valve are capable of closing under design basis accident conditions, is necessary.

It should also be noted that Technical Specification 3.6.5.1 requires the steam jet air ejector suction lines be isolated when the RCS temperature is above 200°F. As a result, the containment ventilation system is isolated from direct discharge to the atmosphere in all conditions except cold shutdown. The inspector reviewed the licensee's procedures to implement these requirements and observed adequate controls in force. This item is closed for both units.

2) Task item II.E.4.2.7, Containment purge valve response to high radiation signals. The inspector verified by review of drawings, logic diagrams, and completed functional tests that the containment purge valves automatically shut on Hi-Hi radiation signals from either the containment particulate monitor, the containment gaseous monitor, or the crane wall radiation monitor. Calibration of each of these monitors is surveilled routinely and functional testing conducted monthly (in mode 6). Licensee management was informed that this item is closed for both units.

b. Volume Control Tank Level Transmitter

On May 21, 1981, NRC was informed by Westinghouse of a potential protection system interaction deficiency caused by the control circuitry design for the volume control tank (VCT) level instrumentation. This problem was related to this licensee on May 22 and was found to apply to both Units at North Anna. This was reported as a prompt LER (LER 81-042) on that same day.

The licensee issued a standing order, number 79 to identify the symptoms of the failure mechanicsm to the operators and provided a brief procedure to preclude charging pump damage, and insure safety injection operation, should a single VCT level transmitter fail high. The licensee is evaluating a modification to the VCT level circuitry to alleviate the problem, but this interim measure appears adequate until Westinghouse completes recommendations to correct the design. Followup of the vendor and the licensees long-term corrective action is identified as items (338/81-15-01 and 339/81-12-02).

c. Technical Specification Changes

During this reporting period, Amendments 27, 28, 29, 30, 31, and 32 to license NPF-4 were issued. These amendments affected licensee organization, full enrichment, hydraulic shock and sway absorbers required for operation, clarification of licensee conditions, and TMI category "A" requirements.

1) Amendment 32 to licensee NPF-4 issued Technical Specifications governing the following TMI task items:

II.E.1.2	AFW flow indication
II.E.3.1	Pressurizer heater power supply
II.E.4.2	Containment isolation system
II.F.2	Instrumentation for inadequate core cooling
II.G.1	Power for pressurizer PORV block valves and level indiation
II.K.3.3	Reporting SV and PORV challenges
III.D.1.1	Integrity of systems outside containment
III.D.3.3	Iodine monitoring system

The NRC action to implement Technical Specifications for these items are therefore closed for Unit 1. Unit 2 Technical Specifications included these items from initial licensing, and are also closed.

2) The inspector noted that copies of issued amendments were not promulgated promptly to plant staff. Amnendment 30 to license NPF-4 and amendment 11 to license NPF-7, dated May 22, became effective May 29, but was not onsite until June 5, when the resident inspector got a copy. Corporate licensee staff and ONRR were contacted on this matter and the licensee staff committed to transmit a copy of the original amendments to the plant to assure more timely receipt.

3) Distribution of license amendments onsite was discussed with the plant staff. Copies of amendments are made and given to all plant supervisors for review. Operations staff make further copies for the control room, but do not insert them into the control room copies of Technical Specifications. Instead, the operations supervisor places the amendment in "Required Reading" and, if he deems necessary, marks the control room copy of Technical Specification and/or makes a night order entry on the change. As a result, the control room copies of Technical Specifications in use are now six amendments behing for Unit 1 and four amendments behind for Unit 2. Licensee management readily agreed to revise their proceudre for updating the working copies of technical specifications. This will be followed up (338/81-15-02 and 339/81-12-03).

4) During review of Amendment 32, the inspector identifeid four typographical errors affecting TS Tables 3.3-4, and 4.3-2 and TS 6.9.1.1. These errors were pointed out to the licensee and ONRR. Followup of correction is identified (338/81-15-03).

d. Previously Identified Items

1) Axial Power Distribution Monitoring System Followup

Licensee identified problems with the Axial Power Distribution Monitoring System (APDMS) have been thoroughly described in IE Reports 338/79-1, 79-09, 79-16, and 81-02 (all Unit 1 numbers). Analysis and identification of corrective actions the licensee was to take to provide adequate assurance of the system's operation was identified in IE Report 338/81-03 and 339/81-02.

Since that time the licensee has changed surveillance procedures 1-PT-26.3 and 2-PT-26.3 to require the APDMS be run in 'Alternate' mode or that the FQSURVEY computer program be run weekly. Further, plaques have been placed on the faces of the APDMS units to identify the requirement to run the computer program if APDMS is not in 'Alternate' mode.

The inspector also reviewed the most recent APDMS limit setpoint documents used to set the alarm setpoints in APDMS by station engineers. This form, forwarded from corporate Fuel Resources Group upon analysis of incore flux maps, now identifies that the detector background signal readings were satisfactory.

The inspector had no further questions in this area and informed station management that followup items (338/79-16-01, 338/81-03-01, 338/81-03-02, 338/81-03-03, 339/79-14-03, 339/81-02-01, 339/81-02-02, and 339/81-02-03) were closed. Further item (339/79-14-02) was closed based on the licensees submittal of February 27, 1979.

2) Battery Procedure

(Closed) items (338/81-05-03, 338/81-05-04, 339/81-03-02 and 339/81-03-03) Battery surveillance and charging procedures. The inspector reviewed the recent revisions to procedures 1-PT-86 and 2-PT-86, governing quarterly battery surveillance testing and new procedures EMP-C-BY-2 and EMP-P-BY-3, governing battery charging and had no further questions.