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

Report No.: 50-338/85-34

Licensee: Virginia Electric and Power Company
Richmond, VA 23261

Docket No.: 50-338 License No.: NPF-4

Facility Name: North Anna 1

Inspection Conducted: December 2-5, 1985

Inspector: J. L. Mathis 12/30/85
J. L. Mathis Date Signed

Approved by: Frank Jape 12/30/85
F. Jape, Section Chief Date Signed
Engineering Branch
Division of Reactor Safety

SUMMARY

Scope: This routine, unannounced inspection entailed 34 inspector-hours on site in the areas of preparation for refueling, refueling activity and spent fuel pool activity.

Results: No violations or deviations were identified.

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REPORT DETAILS

1. Persons Contacted

Licensee Employees

*E. W. Harrell, Station Manager
*J. H. Leberstein, Licensing Coordinator
A. Neufer, Refueling Coordinator
F. P. Miller, Supervisor Quality Control (QC)
J. Smith, Testing Performing Engineer
J. A. Stall, Superintendent, Technical Service

Other licensee employees contacted included construction craftsmen, engineers, technicians, operators, mechanics, security force members, and office personnel.

NRC Resident Inspectors

M. Branch, Senior Resident Inspector

*Attended exit interview

2. Exit Interview

The inspection scope and findings were summarized on December 5, 1985, with those persons indicated in paragraph 1 above. The inspector described the areas inspected and discussed in detail the inspection findings. No dissenting comments were received from the licensee.

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

3. Licensee Action on Previous Enforcement Matters

This subject was not addressed in the inspection.

4. Unresolved Items

Unresolved items were not identified during the inspection.

5. Preparation for refueling (60705) Unit 1

During the inspection period, North Anna Unit 1 was being reloaded for cycle 6. The inspector verified that the plant was in compliance with selected Technical Specification (TS) requirements for mode 6 during refueling. The inspector verified that testing of equipment used for refueling was performed in accordance with adequate procedures, test instrumentation was calibrated, limiting conditions for operation (LCO) were met, removal and restoration of affected components were properly

accomplished, test results met requirements and were reviewed by personnel other than the individual directing the test, and that any deficiencies identified during the testing were properly reviewed and resolved by appropriate management personnel.

Technical Specification 6.8.1.b requires that written procedures be established, implemented and maintained for refueling operations. During this inspection period, the inspector reviewed the following Unit 1 refueling procedures:

1-OP-4.2 Reactor vessel head preassemble preparation

1-OP-4.3 Reactor head removal

1-OP-4.4 Receipt and storage of new fuel

1-PT-92.1 Manipulator crane operability (hoist)

1-PT-92.2 Manipulator crane operability (Aux. hoist)

1-PT-96.3 Refueling system circuit test-manipulation crane with dummy fuel assembly

ICP-RM-1-RMS-152 New fuel storage area radiation monitor calibration.

ICP-RM-1-RMS-153 Fuel pit bridge area radiation monitor calibration.

ICP-RM-1-RMS-162, Manipulator crane area radiation monitor calibration.

ICP-RM-1-RMS-163, Reactor containment area radiation monitor calibration.

ICP-RM-1-RMS-164, Incore instrument area radiation monitor calibration.

ICP-RM-1-PMS-165, Containment high range radiation monitor.

Within the areas inspected, no violations or deviations were identified.

6. Refueling Activity (60710)

The cycle 6 reload core was analyzed in accordance with methodology documented in VEPCO topical VEP-FRD-42, Rev. 1, "Reload Nuclear Design Methodology". This methodology is consistent with that documented in Westinghouse topical report WCAP-9272, entitled "Westinghouse Reload Safety Evaluation Methodology". The reload analysis results predict a positive moderator temperature coefficient (MTC) for beginning of cycle and unrodded core condition at hot zero power.

A review has been performed by both the station Nuclear Safety and Operating Committee and the Safety Evaluation and control staff. It has been determined that no unreviewed safety question as defined in 10 CFR 50.59 will exist as a result of cycle 6 reload core.

The inspector witnessed various refueling evolutions during reloading of fuel assemblies from the spent fuel pool to the reactor vessel for Unit 1. These evolutions included transfer of several fuel assemblies from the spent fuel pool to the transfer cart, verification of the proper fuel assembly by visual observation of identification number, proper operation and control of transfer equipment used during fuel movement and transfer of several fuel assemblies from the transfer cart to the reactor vessel core area in the reactor building.

The inspector interviewed licensee personnel performing the fuel assembly handling evolutions to ensure that personnel were properly trained and were following approved procedures. The inspector also verified that adequate housekeeping, radiological and accountability controls were established and implemented. Staffing during reload appeared to meet requirements.

No violations or deviations were identified during this inspection.

7. Spent Fuel Pool Activity (86700)

The inspector observed fuel handling operations during reload for Unit 1, cycle 6 in the spent fuel pool area and reviewed procedures related to fuel handling to verify that procedures included the following.

a. A limitation on the number of fuel assemblies that can be out of safe geometry locations at the same time.

b. Provisions for verifying prior to fuel assembly handling that the spent fuel pool area crane interlock or physical stops will prevent the crane from passing over fuel storage locations.

c. Provisions for verifying prior to fuel handling that the spent fuel pool area ventilation system is operable.

d. Provisions for verifying that minimum water level requirements are monitored during fuel handling operation.

e. Provisions for verifying that the spent fuel pool radiation and airborne radioactivity monitors are operable.

f. Provisions for verifying that the spent fuel pool cooling and clean-up system is operable.

No violations or deviations were identified in the areas inspected.