



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

Report Nos. 50-338/81-26, 50-339/81-23

Licensee: Virginia Electric and Power Company  
Richmond, Virginia 23261

Facility Name: North Anna

Docket Nos. 50-338, 50-339

License Nos. NPF-4, NPF-7

Inspection at North Anna site near Mineral, VA

Inspector:

*Nick Economos*  
N. Economos

*11/6/81*  
Date Signed

Approved by:

*A. Herdt*  
A. Herdt, Section Chief  
Engineering Inspection Branch  
Engineering and Technical Inspection Division

*11/10/81*  
Date Signed

SUMMARY

Inspection on October 26-28, 1981

Areas Inspected

This routine, unannounced inspection involved 31 inspector-hours on site in the areas of licensee actions on previous inspection findings; licensee identified items; flow splitter UT examination results; RC stop valve stud corrosion; service water supply header pipe leak (LER's 81-24, 81-46).

Results

Within these areas no deviations or violations were identified.

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## REPORT DETAILS

### 1. Persons Contacted

#### Licensee Employees

- \*W. R. Cartwright, Station Manager
- \*J. R. Harper, Maintenance Superintendent
- K. B. Chrisman, Jr., Welding Foreman
- \*J. Stratten, Mechanical Supervisor
- \*M. A. Harrison, Resident QC Engineer
- \*H. L. Travis, NDE Supervisor
- \*D. L. Smith, Director QA Operations
- \*D. E. Flemming, Maintenance Engineer

#### NRC Resident Inspector

M. Shymlock

- \*Attended exit interview

### 2. Exit Interview

The inspection scope and findings were summarized on October 28, 1981 with those persons indicated in paragraph 1 above. Those findings discussed in detail with the licensee are listed below. The licensee had no dissenting comments.

- a. (Open) Unresolved Item 338/81-26-01 Preservice Inspection Records of RC Loop Stop Valve Replacement Studs-paragraph 6.

### 3. Licensee Action on Previous Inspection Findings

- a. (Closed) Violation 338/81-04-01: Indoctrination of Welding Personnel. Virginia Electric Power Company (VEPCO) letter of response dated April 3, 1981 has been reviewed and determined to be acceptable by Region II. The inspector held discussions with the maintenance superintendent and cognizant field supervisor and examined the corrective actions as stated in the letter of response. The inspector concluded that VEPCO had determined the full extent of the subject noncompliance, performed the necessary survey and follow-up actions to correct the present conditions and developed the necessary corrective actions to preclude recurrence of similar circumstances. The corrective actions identified in the letter of response have been implemented.
- b. (Closed) Violation 338/81-04-02: Welding Material Control. VEPCO letter of response dated April 3, 1981 has been reviewed and determined to be acceptable by Region II. The inspector held discussions with the

maintenance superintendent and cognizant field supervisor and examined the corrective actions as stated in the letter of response. The inspector concluded that VEPCO had determined the full extent of the subject noncompliance, performed the necessary survey and follow-up actions to correct the present conditions and developed the necessary corrective actions to preclude recurrence of similar circumstances. The corrective actions identified in the letter of response have been implemented.

- c. (Open) Unresolved Item 338/81-04-03: Applicable Welding Code Discrepancies. Discussions with cognizant licensee personnel disclosed that field supervision (welding foreman) has been provided with copies of welding and pipe fabrication codes. The licensee's welding manual is undergoing revision; therefore this item will remain open pending its review by RII.

#### 4. Unresolved Items

Unresolved items are matters about which more information is required to determine whether they are acceptable or may involve noncompliance or deviations. One new unresolved item identified during this inspection is discussed in paragraph 6.

#### 5. Licensee Identified Items

##### a. Flow Splitter Inspection

As a result of cracking detected in the Unit 2 reactor coolant pump section flow splitters in March 1979, Amendment 10 to license NPF-4 was issued on April 27, 1979 requiring examination of the Unit 1 flow splitter plates every 18 months (not to exceed 22.5 months). In February 1981, the licensee conducted ultrasonic tests of all six flow splitters (plates) and identified six indications on the A loop plate (wall side) and several less significant indications in the other five (5) plates. Reinspection of these plates conducted on October 15, 1981 showed the indications in Loop A (wall side) flow splitter had grown significantly over the last eight months in that two of the indications appeared to have combined and increased in length from 5½ inches to a total of 12 inches for a net increase of 6.5 inches. A new indication with a length of approximately seven (7) inches was identified in loop B, reactor side plate. Indication growth, but to a lesser degree, was recorded in loop A and B plates. Also, it was noted that in three of the five plates the indications grew away from the leading edge and towards the center which is contrary to stress analysis calculations. This analysis had predicted that the indications (cracks) would propagate in the directions of high stress or the leading edges of the plates and not towards the center.

In discussing this matter the inspectors stressed the need for establishing a limiting point for removing the plates in order to avoid

the costs and delay which will result upon failure. In response the licensee stated that steps have been taken and discussions are underway with W to devise a method for removing.

- b. (Open) 339/78-36-03 High Density Spent Fuel Racks, Unit 2. This item refers to a licensee report, S/N666B February 7, 1979 on a 10 CFR 5e.55(e) matter concerning the possible weld burn-through and the resulting spatter on the interior surfaces of the High Density Spent Fuel Racks of Unit-2. The report described the planned repair effort (rework) and stated that "This work will be completed prior to installation of the racks in the spent fuel pool." In order to close this item the inspectors requested the licensee to produce objective evidence to verify that the "rework" was performed and completed as stated. Cognizant licensee personnel assured the inspectors the work had been performed but requested additional time to retrieve these records. The inspectors stated this item would continue to remain open pending RII review of the aforementioned documents.
- c. (Closed) LER 338/81-024, 81/-046 Service Water Supply Header Pipe Leak. On May 18 and June 22, 1981 the licensee reported finding a pinhole type leak in the supply line (3"-WS-74-151-03) to the "B" Service Water Supply Header for Units 1 and 2. At the time of the report it was suspected that the leak may have been caused by sulfate reducing bacteria within the service water piping system. The report stated that a study would be conducted to determine the actual failure. A review of the metallurgical investigation report disclosed that the leak was caused by bacteria assisted attack. The report made three recommendations to help alleviate the problem: (1) water treatment using sodium hypochlorite to kill the bacteria, (2) remove existing deposits from the pipe system by using polyacrylamide, (3) reduce water aggressiveness by using a polysilicate inhibitor. The licensee stated that the corrective action has been implemented. Within these areas no deviations or violations were identified.

#### 6. Independent Inspection Effort.

- a. Preservice Inspection Records of RC Loop Stop Valve Replacement Studs, Unit-1.

Replacement of the corroded studs from loop C stop valve had been completed at the time of this inspection. The unit was being prepared for resumption to power which precluded an inspection of the valve and replacement studs. Two of the corroded studs were inspected and photographed for future reference.

The inspectors reviewed replacement material quality records, W Quality Release Form #-21258, receipt inspection reports, installation procedure and related QA/QC records.

Within these areas the inspectors noted that the licensee elected to use the vendor's W, UT inspection in place of a preservice inspection. In discussing this matter the inspectors requested that the licensee provide a copy of the UT procedure and records of inspection results and other related documents; e.g. personnel qualification instrument calibration records etc. The licensee agreed to retrieve these records and stated that the bolts will be UT inspected to VEPCO's UT procedure on a future outage and thereby - establish a new baseline. The inspectors stated that this matter would be identified as an unresolved item 338/81-26-01, Replacement RC Stop Valve Bolt Preservice Inspection Report, pending review of the aforementioned vendor UT records by RII on a future inspection.

b. Steam Generator Support Augmented Inspection.

Visual Inspection of the steam generator supports was completed on October 12, 1981, the inspection was performed using VEPCO procedure 15.1 with results recorded on Form NDT-VT-form 1.

Within the areas inspected no deviations or violations were identified.

7. Inspector Followup Items (IFI)

a. (Closed) Inspector Followup Item (IFI), 338/81-04-04: Identification of Welds and Welders on Weldments

The licensee, through procedural revision, has provided specific guidelines on this matter to the field.

b. (Closed) IFI 339/78-21-01: ISI Procedure 205 Straight Beam Examination. An indepth review of code requirements on straight beam examination of pipe welds during ISI inspection has been conducted and it has been concluded that Westinghouse procedure ISI-205, is consistent with Code requirements.

c. (Open) IFI 338/81-04-05: Section XI Weld Repair Program. The inspectors and the licensee held additional discussions on this subject. Following these discussion the licensee agreed to explore the matter further.

d. (Open) IFI 338/81-20-01: 339/81-17-01 Radiography of RPV Control Rod Drive Penetration Tubes. Discussions with the licensee disclosed that W has reviewed the suspect radiographs for compliance with applicable code requirements. The licensee stated that W is expected to submit an evaluation report by November 15, 1981. The inspectors stated this item would remain open pending a review of the evaluation by RII personnel on a future inspection.