UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
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ATLANTA, GEORGIA 30303-8931

July 19, 2002

Virginia Electric and Power Company
ATTN: Mr. David A. Christian
Sr. Vice President and
Chief Nuclear Officer
Innsbrook Technical Center - 2SW
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

SUBJECT: NORTH ANNA POWER STATION - NRC INTEGRATED INSPECTION REPORT NOS. 50-338/02-02 AND 50-339/02-02

Dear Mr. Christian:

On June 29, 2002, the NRC completed an inspection at your North Anna Power Station, Units 1 and 2. The enclosed report documents the inspection findings which were discussed on July 10, 2002, with Mr. D. Heacock and other members of your staff.

The inspection examined activities conducted under your license as they relate to safety and compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selective procedures and records, observed activities, and interviewed personnel.

No findings of significance were identified.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Kerry D. Landis, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Docket Nos.: 50-338, 50-339
License Nos.: NPF-4, NPF-7

Enclosures: NRC Integrated Inspection Reports
Nos. 50-338/02-02, 50-339/02-02

cc w/encls.: See page 2

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	50-338, 50-339
License Nos.:	NPF-4, NPF-7
Report Nos.:	50-338/02-02, 50-339/02-02
Licensee:	Virginia Electric and Power Company (VEPCO)
Facilities:	North Anna Power Station, Units 1 & 2
Location:	1022 Haley Drive Mineral, Virginia 23117
Dates:	March 31, 2002 through June 29, 2002
Inspectors:	M. Morgan, Senior Resident Inspector J. Canady, Resident Inspector K. Green-Bates, Project Engineer, RII (Sections 1R06 and 4OA5) E. Lea, Senior Reactor Engineer, RII (Section 1R11.2)
Approved by:	K. Landis, Chief, Reactor Projects Branch 5 Division of Reactor Projects
Attachment:	Supplemental Information

Enclosure

SUMMARY OF FINDINGS

IR 05000338-02-02, IR 05000339-02-02, on 03/31-06/29/2002, Virginia Electric and Power Co., North Anna Power Station Units 1 & 2. Resident Inspector Integrated Report.

The inspection was conducted by the resident inspectors and regional senior reactor and project engineers. No findings of significance were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described at its Reactor Oversight Process website at *http://www.nrc.gov/NRR/OVERSIGHT/ASSESS/index.html*.

A. Inspector Identified Findings

None

B. Licensee Identified Violations

None

Report Details

Summary of Plant Status

Unit 1 began the inspection period at 100% power. On April 17, power was reduced to 74% due to a loss of unit generator isophase bus duct cooling. The problem was corrected and power was restored to 100% on April 18. Unit 1 operated at or near this power level for the remainder of the inspection period. Unit 2 began the inspection period at 100% power and operated at or near this power level for the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, Barrier Integrity

1R04 Equipment Alignment

.1 Partial System Walkdowns

a. Inspection Scope

The inspectors performed partial walkdowns of systems, structures, and components (SSC) to determine if they were correctly aligned in accordance with appropriate procedures and drawings. The partial walkdowns were performed on a redundant train/system while the other was out of service. The following SSCs were assessed for their correct alignment:

- 2H Emergency Diesel Generator (EDG) A Starting Air Sub-System (2-OP-6.7A, “Valve Checkoff - Diesel Air,” and Drawing 12050-FM-107A, Sheet 1); and,
- 1H EDG Control Panel Alignment (1-OP-6.6A, “Emergency Generator Pre-Operational Check for 1H and 1J Diesel”).

b. Findings

No findings of significance were identified.

.2 Complete System Walkdown

a. Inspection Scope

The inspectors performed a complete walkdown of the Unit 1 Quench Spray System structures and components located in the refueling water storage tank area, the quench spray pump house, the safeguards building penetration area, and the Unit 1 main control room. Observations were made to determine if the components were correctly aligned in accordance with Procedure 1-OP-7.4A, "Valve Checkoff-Quench Spray System," and Drawing 11715-FM-091A, Sheets 1 through 4. The inspectors also assessed the availability of electrical power, component labeling adequacy, and the material condition of hangers and supports.

b. Findings

No findings of significance were identified.

1R05 Fire Protection

a. Inspection Scope

The inspectors assessed the implementation of the fire protection program using "NAPS Appendix R Report" and Virginia Power Administrative Procedure (VPAP)-2401, "Fire Protection Program." The inspectors checked the control of transient combustibles and the material condition of the fire detection and fire suppression systems in the following areas:

- Unit 2 Instrument Rack and Air Conditioning Chiller Rooms;
- Unit 2 Vital Battery Rooms 2-II and 2-IV;
- Unit 1 and Unit 2 Fuel Oil Pump House Areas;
- Unit 1 and Unit 2 Main Control Room Areas; and,
- Unit 1 and Unit 2 Auxiliary Building 280' Elevation - Rod Control Center (RCC)/Motor Control Center (MCC) Rooms.

b. Findings

No findings of significance were identified.

1R06 Flood Protection Measures

a. Inspection Scope

The inspectors reviewed the licensee's flooding mitigation plans and equipment to determine consistency with design requirements and the risk analysis assumptions. Walkdowns were conducted of the roofs and interior and exterior walls of the intake structure, screen pump house, turbine building and the service building. The Unit 1 and 2 emergency switchgear and rack rooms were also toured to verify compliance with calculated flood platform heights, penetration, and water barrier requirements. The documents reviewed are listed in the Attachment.

b. Findings

No findings of significance were identified.

1R11 Licensed Operator Requalification

.1 Quarterly Observation

a. Inspection Scope

On June 5, the inspectors observed licensed operator requalification training involving strike contingency-designated group supervisors. The inspectors observed simulator training for one group of operations department supervisors. The inspectors observed drills involving: 1) a simulated piping leak from one of the pressurizer (PZR) level sensing lines, 2) a simulated loss of coolant from the PZR sensing line, and 3) a subsequent rapid unit shutdown and reactor trip/safety injection. The inspectors focused on procedure usage, communication effectiveness, control board manipulations and emergency preparedness classifications.

b. Findings

No findings of significance were identified.

.2 Annual Operating Test Results

a. Inspection Scope

The inspectors reviewed the overall pass/fail results of individual job performance measures operating tests, and simulator operating tests (required to be given per 10 CFR 55.59(a)(2)) administered by the licensee during calender year 2002. The biennial written examination was administered during calender year 2001.

b. Findings

No findings of significance were identified.

1R12 Maintenance Rule (MR) Implementation

a. Inspection Scope

The inspectors reviewed implementation of the Maintenance Rule (10 CFR 50.65) using VPAP 0815, “Maintenance Rule Program,” and Engineering Transmittal (ET) CEP-97-0018, “North Anna Maintenance Rule Scoping and Performance Criteria Matrix.” The reviews focused on the characterization of failures, the appropriateness of the associated a(1) or a(2) classification, and the appropriateness of either the associated a(2) performance criteria or the associated a(1) goals and corrective actions. The plant issues and associated equipment issues reviewed were:

- N-2002-0693-E2 - Unit 2 Containment Isolation Valve 2-CC-TV-205A - Placed into a(1) status due to continued unreliability; numerous stroke time failures;

- N-2002-0805 - Unit 2 Main Control Room Chiller 2-HV-E-4B - Initially determined to have exceeded unavailability hours; however, some hours noted were double counted;

- N-2002-0674-E1 - Unit 2 Steam Dump Valve 2-MS-TCV-2408B - Placed into a(1) status due exceeding the Maintenance Rule unavailability criteria;

- N-2002-0807 - Unit 1 Component Cooling Water Pump 1B - Maintenance Rule evaluation approved by Working Group to remove from a(1) status;

- N-2000-2600-E1 - Inspectors reviewed 3-year, no-failure, a(1) criteria for control room bottled air after current modifications; and,

- N-2002-1125-E2 - Unit 1 Control and Relay Room Air Conditioning System Condenser Pump 1-HV-P-22C - Placed into a(1) status due to continued unavailability and reliability issues.

b. Findings

No findings of significance were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors reviewed the licensee's scheduled or emergent work activities to assess the management of plant risk. The inspectors evaluated if the assessments of risk were performed in accordance with requirements of 10CFR50.65 (a)(4) and plant procedures. Additionally, the inspectors reviewed the licensee's actions to minimize the probability of initiating events, maintain the functional capability of mitigating systems, and maintain barrier integrity. The risk impact of performing the following work activities was assessed:

- Work Order 00465312-01 - Unit 1 1H EDG Maintenance Activities Concurrent with Unit 2 B Steam Dump and 1B Component Cooling Pump Work Activities;

- Work Order 00463595-01 - Unit 2 A Low Head Safety Injection (LHSI) Pump Maintenance Activities Concurrent with Unit 2 B Steam Dump and 2 B Control Room Chiller Work Activities;

- Work Order 00459725-01 - Unit 2 A Instrument Air Compressor Cleaning/Repair Activities Concurrent with Unit 2 A Solid State Protection Channel Testing, Unit 2 Component Cooling System Preventative Maintenance and Unit 2 Steam Dump Repair;

- Work Order 00462556-02 - Unit 2 B Charging Pump Circuit Breaker Refurbishment Work Concurrent with Site Switchyard Inspection Activities; and,

- Engineering Vendor Procedure LDS-NAPS-2, “Instructions for Valve Acoustic Leak Monitoring,” - Unit 2 A High Head Safety Injection (HHSI) Pump Proposed Predictive Maintenance Activities Concurrent with Unit 2 A Steam Dump Work.

b. Findings

No findings of significance were identified.

1R14 Nonroutine Plant Evolutions

a. Inspection Scope

On April 24, the inspectors held various discussions with both operations and licensing department personnel and reviewed control room logs associated with an April 17 unplanned Unit 1 power reduction. The inspectors focused on problem resolution, abnormal procedure usage, equipment configuration and plant response. Power was reduced because the primary isophase bus duct cooling blower unit had failed. The power reduction affected the unplanned power change performance indicator.

b. Findings

No findings of significance were identified.

1R15 Operability Evaluations

a. Inspection Scope

The inspectors evaluated the technical adequacy of operability evaluations to ensure that operability was properly justified and the subject component or system remained available such that no unrecognized increase in risk occurred. The reviewed operability evaluations were described in the following plant issues:

- N-2002-0916 - Unit 1 and Unit 2 Steam Generator (S/G) Mid-Deck Plate Pressure Drop Issues (NSSS vendor issues - NSALs 02-3, 02-4, and 02-5) - Licensee initially failed to thoroughly identify adverse test criteria affects in initial calculations;

- N-2002-0018 - Unit 2 Residual Heat Removal (RHR) Valve 2-RH-MOV-2720B - Manual over-torque of valve disk into the seat - Engineering Transmittal (ET) N02-019 discussion and document reviewed for operability;

- N-2002-1123 - Unit 2 C Main Feed Regulating Valve - MOV driver card failure impacted operability of the valve;

- N-2002-1261 - Unit 2 B RHR Pump Breaker 2-EE-BKR-25J14 - Breaker would periodically fail to meet trip criteria of less than 30 milliseconds; and,

- Periodic Test (PT) 210.25, “Valve Inservice Testing S/G PORV 1-MS-PCV-101A” - 101A declared inoperable due to a slow stroke time.

b. Findings

No findings of significance were identified.

1R16 Operator Work-Arounds (OWAs)

a. Inspection Scope

Procedure 0-GOP-5.3, “Review of Operator Work-Arounds,” described methods for determining both the cumulative and aggregate effects of OWAs and distractions. The inspectors assessed 97-OWA-A22C, ECCS Leakage Calculations and OWA-A01, Unit 1 G12 Main Turbine-Generator Output Breaker Issues, for conformance to 0-GOP-5.3.

b. Findings

No findings of significance were identified.

1R19 Post-Maintenance Testing

a. Inspection Scope

The inspectors reviewed the following post-maintenance test (PMT) procedures and activities associated with repair or replacement of the following components to determine if the procedures and test activities were adequate to verify operability and functional capability of the equipment:

- Unit 1 Control Room Chiller 1-HV-E-4A Test (1-PT-77.11A, “Control Room Chiller 1-HV-E-4A Pump and Valve Test”);
- Unit 2 Quench Spray Pump A Pump Oil Test (2-PT-63.1A, “Quench Spray System - “A” Subsystem”);
- Unit 2 Low Head Safety Injection Pump (LHSI) 2-SI-P-1B Test (2-PT-57.1B, “Emergency Core Cooling Subsystem - LHSI Pump (2-SI-P-1B)”);
- Unit 2 Service Water (SW) Check Valve Test (2-PT-213.2C.1, “Valve Inservice Inspection for SW Supply Check Valves to 2-CH-P-1C Lube Oil and Gear Box Coolers”); and,
- Unit 2 Emergency Diesel Generator 2H Test (2-PT-82H, “2H Emergency Diesel Generator Slow Start Test”).

b. Findings

No findings of significance were identified.

1R22 Surveillance Testing

a. Inspection Scope

For the surveillance tests listed below, the inspectors examined the test procedure and either witnessed the testing and/or reviewed test records to determine whether the scope of testing adequately demonstrated that the affected equipment was functional and operable:

- 1-PT-57.1A, “Emergency Core Cooling Subsystem - Low Head Safety Injection Pump (1-SI-P-1A)”;
- 1-PT-17.1, “Control Rod Operability;”
- 1–PT-63.1A, “Quench Spray System - “A” Subsystem;”
- 1-PT-82H, “1H Emergency Diesel Generator Slow Start Test;” and,
- 2-PT-71.3Q, “2-FW-P-3B Motor-Driven AFW Pump & Valve Test.”

b. Findings

No findings of significance were identified.

1R23 Temporary Plant Modifications

a. Inspection Scope

The inspectors reviewed the details of the following temporary modification (TM) to determine whether system operability/availability was affected, configuration control was maintained, and the associated safety evaluation adequately justified implementation:

TM 2002 N2-1147 - Reconfigured steam dump pneumatics to allow the cooldown capability of steam dump 2-MS-TCV-2408D as a substitution for the B steam dump.

b. Findings

No findings of significance were identified.

Cornerstone: Emergency Preparedness

1EP6 Drill Evaluation

a. Inspection Scope

The inspectors reviewed EPIP-1.01, “Emergency Manager Controlling Procedure,” EPIP 1.06, “Protective Action Recommendations,” and North Anna Emergency Plan, Section 9, “Recovery,” prior to the licensee conducting a planned in-house exercise on June 18.

The inspectors also reviewed the Drill and Exercise Performance Indicator Evaluation Form. Additionally, discussions were held with emergency preparedness personnel that facilitated the drill. The drill involved a simulated earthquake followed by a loss of all feedwater and steam in the turbine and service buildings.

b. Findings

No findings of significance were identified.

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

Safety System Unavailability PI (Mitigating Systems)

a. Inspection Scope

The inspectors performed a periodic review of the Safety System Unavailability - High Pressure Injection System (HPSI) and Safety System Unavailability - Heat Removal System (AFW) PIs for Units 1 and 2. Specifically, the inspectors reviewed PI data for the third quarter of 2001 through the first quarter of 2002. The data reviewed was compared to that displayed on the NRC's web site. The documents reviewed included monthly operating reports, licensee event reports, and the licensee's corrective action database. The inspectors also discussed the PI with licensee personnel responsible for the PI data input and reporting to the NRC.

b. Findings

No findings of significance were identified.

4OA5 Other

Licensee Strike Contingency Plans

a. Inspection Scope

The inspectors reviewed the content of licensee's strike contingency plans to determine if reactor operation, facility security and fire protection were to be maintained consistent with site technical specifications and regulatory requirements in the event of a strike. The contingency actions were described in the 2002 Nuclear Business Continuity Plan which were reviewed by the Station Nuclear Safety and Operating Committee on June 19.

In addition, interviews were conducted with operations, maintenance, security, emergency preparedness and fire brigade personnel to determine if the minimum number of qualified personnel would be available as required for the proper operation and safety of the facility.

b. Findings

No findings of significance were identified.

4OA6 Meetings

Exit Meeting Summary

The inspectors presented the inspection results to Mr. D. Heacock, Site Vice President, and other members of the licensee's staff on July 10, 2002. The inspectors asked the licensee whether any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

D. Christian, Senior Vice President and Chief Nuclear Officer
K. Barnette, Supervisor, Site Industrial Safety/Fire Protection
J. Crossman, Supervisor, Nuclear Engineering
J. Davis, Director, Station Nuclear Safety and Licensing
M. Dunston, Manager, Site Services
T. Fredette, Electrical Engineering (Emergency Diesel Generator) Systems Engineer
C. Funderburk, Director, Station Operations and Maintenance
D. Heacock, Site Vice President
E. Hendrixson, Manager, Station Engineering
P. Kemp, Manager, Nuclear Oversight
L. Lane, Manager, Operations
T. Maddy, Manager, Station Security
J. Martin, Engineering Supervisor
D. McGawan, Mechanical Engineering (Safety Injection) Systems Engineer
F. Mladen, Manager, Maintenance
P. Naughton, Mechanical Engineering (Service Water/Component Cooling) Systems Engineer
Q. Parker, Maintenance Rule Coordinator
W. Renz, Director, Security and Emergency Preparedness
H. Royal, Manager, Nuclear Training
A. Stafford, Manager, Radiological Protection
M. Whalen, Supervisor Licensing

ITEMS OPENED, CLOSED AND DISCUSSED

None

LIST OF DOCUMENTS REVIEWED

Section 1R06:

Procedures:
0-AP-39.2, “Auxiliary Building Flooding”
0-OP-40, “Low Level in North Anna Reservoir (Lake) With 4 Attachments”
0-OP-41, “Severe Weather Conditions”
0-MOP-49.11, “Service water Flooding in Auxiliary Building”
VPNO CE-1490, “Probable Minimum Precipitation on the Turbine Building”

Corrective Action Reports:
Plant Issues N-2002-0175, N-2002-1221, N-2001-2611, N-2000-1041, N-1999-0342, N-1999-1655, N-1999-3449 and N-1990-0020

Miscellaneous Documents:
Root Cause Evaluation Response - N-1999-1655 - E1
Root Cause Evaluation Response- N-1999-0342 - E1
Operability Evaluation N-1990-0020 - E1

Work Task No. 00467370-01 dated 5/15/02
Work Task No. 00458247-01 dated 11/29/01

Updated Final Safety Analysis Report Sections 2.4.2, “Floods,” 2.4.3.4, “Probable Maximum Flood Flow,” 2.4.11, “ Low Flow Considerations,” and 3.4, “Water Level (Flood) Design Criteria”

North Anna Power Station IPE, dated 12/15/92; Sections 3.3.7 “Internal Flood Analysis,” and 6.2, “Plant Improvements.”