UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
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June 7, 2001

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

SUBJECT: NORTH ANNA POWER STATION - NRC PROBLEM IDENTIFICATION AND RESOLUTION REPORT 50-338/01-06 AND 50-339/01-06

Dear Mr. Christian:

On May 11, 2001, 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 May 11, 2001, with Mr. C. Funderburk and other members of your staff.

The inspection was an examination of activities conducted under your license as they relate to the identification and resolution of problems, compliance with the Commission's rules and regulations and with the conditions of your license. The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel.

Based on the sample selected for review, there were no findings of significant identified during this inspection. The inspectors concluded that, in general, problems were properly identified, evaluated, and corrected. An example was identified of not thoroughly reviewing an operating experience item concerning possibly defective material used for security facilities.

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/NRC/ADAMS/index.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

Enclosure: (See page 2)

Enclosure: Inspection Report 50-338, 339/01-06

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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.:	50-338/01-06, 50-339/01-06
Licensee:	Virginia Electric and Power Company (VEPCO)
Facilities:	North Anna Power Station, Units 1 & 2
Location:	1022 Haley Drive Mineral, Virginia 23117
Dates:	April 23-27 and May 7-11, 2001
Inspectors:	M. Morgan, Senior Resident Inspector C. Rapp, Senior Project Engineer P. Van Doorn, Senior Reactor Inspector (Lead)
Approved by:	K. Landis, Chief, Reactor Projects Branch 5 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000338-01-06, IR 05000339-01-06, on 4/23-5/11/2001, Virginia Electric and Power Co., North Anna Power Station Units 1 & 2, annual baseline inspection of the identification and resolution of problems.

The inspection was conducted by a Region II Senior Reactor Inspector and Senior Project Engineer, and the North Anna Senior Resident Inspector. 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/index.html.

Identification and Resolution of Problems:

The inspectors determined that the licensee was generally effective at identifying problems and initiating corrective action documents. A low threshold for individual problem identification was demonstrated. Overall, licensee self-assessment processes were multi-faceted and effective in identifying areas for improvement. Minor issues occasionally were not entered into the corrective action process. Issues were typically properly characterized, prioritized, and evaluated. Root cause evaluations were thorough. The licensee exhibited a strong safety-conscious work environment.

The inspectors identified an example involving a lack of a thorough review of an operating experience item. The licensee failed to identify that possible defective material used for security facilities had been utilized. Subsequent reviews resulted in a determination that the material was acceptable.

Report Details

4. OTHER ACTIVITIES

4OA2 Problem Identification and Resolution

a. Effectiveness of Problem Identification

(1) Inspection Scope

To assess the effectiveness of the licensee's corrective action program (CAP), the inspectors reviewed corrective action documents for selected risk significant systems and other areas including air operated valves (AOVs); and heating, ventilation, and air conditioning (HVAC) problems. The reviews included various significance levels and both equipment and human performance issues. Selected systems included High Head Safety Injection (HHSI), Vital DC Power, Auxiliary Feedwater (AFW) and Emergency Diesel Generators (EDGs). The review included examination and evaluation of plant issue reports, functional failure information, system health reports and corrective maintenance information and samples of associated documentation for each of these areas and systems. The review of documents was performed to determine if individual and repeat problems had been captured and documented in the licensee's CAP.

The inspectors reviewed the results of the licensee's process for evaluating operating experience (OE) items and reviewed documentation associated with selected examples. Self-assessments, audits, trend reports, and management observations were also reviewed to assess the effectiveness of problem identification and documentation.

The inspectors reviewed procedures and documents associated with the CAP and self-assessment processes and compared licensee performance to the procedures and documentation requirements to ensure the requirements were being met. The inspectors also attended four daily management meetings involving the CAP and discussed initiation threshold expectations with various personnel.

Procedures and major documents reviewed are listed in Attachment 2 of this inspection report.

(2) Findings

The licensee's CAP was appropriately organized to provide for three levels of significance, appropriate levels of review according to significance, and included reviews at both the initiation and completion stages. The inspectors determined that the licensee was generally effective at identifying problems and initiating corrective action documents. A low threshold for individual problem identification was demonstrated.

Trending was generally effective in identifying repetitive equipment and performance problems. Quarterly trends of upper tier cause codes and equipment problems were conducted and included a comparison of standard deviations from the previous six quarter average. The inspectors noted that this was a "snapshot" type review of standard deviations from averages versus a graphical type trend presentation and a

gradual increase in average numbers could be masked. Also, the licensee did not include event code trending, e.g., mispositioning events, in the quarterly trend which is common industry practice and has been shown to be of value in identifying problem trends. However, the inspectors noted that event type evaluation was performed via a quarterly "Windows" report. This report included an evaluation against specific criteria for each department and events such as mispositioning problems were included. This was also a snapshot type approach but established thresholds to trigger additional reviews were low. The inspectors noted, however, that the operations department had begun chart/graphic type trending for selected areas and radiation protection had performed personnel proficiency analyses.

The plant issue trend reports for the last two quarters of 2000 identified that the numbers of plant issues had decreased from around 700 per quarter to around 500 per quarter. The licensee was still evaluating the cause of the decrease; however, the inspectors noted that management was appropriately emphasizing a low threshold and the inspectors noted that low threshold items were being entered into the system. The Station Nuclear Safety (SNS) group reviewed plant issues daily which included a review for repeat problems and assignment of preliminary significance level, required reviews, and department responsibility. A second level management review called the Plant Issue Review Team (PIRT) was conducted to confirm/adjust the assignments and add appropriate comments. These meetings were beneficial and confirmed a management desire for proper significance assignments and thorough reviews. The inspectors did not identify significant trends which the licensee failed to identify.

Overall, self-assessment processes were diverse and effective in identifying areas for improvement. Audits and self-assessments of the CAP resulted in beneficial identification of problems and implementation/initiation of corrective actions. A line organization self-assessment program was established with appropriate procedure guidelines and goals. However, goals and guidelines were not always met in several areas. These included the number of assessments, thoroughness, methodology, and documentation. The licensee had recognized these problems and had initiated improvements. The licensee had also implemented a management observation program which provided for field activity management observations for human performance deficiencies and other problems.

The inspectors noted that, occasionally, minor problems identified via self-assessments and management observations did not result in initiation of plant issues in accordance with licensee expectations; however, documentation usually showed that corrective actions had been initiated or implemented.

b. Prioritization and Evaluation of Issues

(1) Inspection Scope

Selected corrective action documents were reviewed to determine if the significance levels were assigned appropriately and evaluations were thorough, including root cause, as described in licensee procedures. The inspectors also reviewed daily plant issues initiated and observed PIRT meetings to confirm significance level and assignment of

required reviews. The inspectors also attended a Station Nuclear Safety and Operating Committee (SNSOC) meeting where selected completed plant issues were reviewed.

(2) Findings

Issues were typically properly characterized, prioritized and evaluated. Root cause evaluations were thorough. The inspectors did not identify any risk significant issues which went uncorrected. The daily management meeting was a good initiative to establish ownership and assure appropriate evaluations were initiated. The SNSOC provided a thorough review of several completed plant issues

The inspectors noted a relatively large number of plant issues associated with HVAC systems, AOVs, EDGs, and HHSI pumps. A review of licensee actions, however, indicated that appropriate actions had been implemented or initiated.

One example was identified regarding a lack of a thorough review of an OE item. This item involved a problem with vendor supplied material used for security facilities as described in Information Notice (IN) 00-18, "Substandard Material Supplied by Chicago Bullet Proof System." The licensee reviewed corporate purchase records and did not identify any material purchased from this vendor or its subsidiary. However, site security personnel did identify that this vendor had supplied material for the secondary access portal. The licensee stated that the secondary access portal was purchased as a non-safety grade item and such purchase records were not always retained. This OE item had been closed with no further evaluation based on a letter from the vendor certifying the material complied with the industry standard. However, as stated in the IN, the vendor had not performed testing to independently determine if the material met the industry standard. The licensee reopened the item and conducted subsequent testing which confirmed the material met the industry standard. This example did not involve a violation.

c. Effectiveness of Corrective Actions

(1) Inspection Scope

The inspectors reviewed selected CAP documents listed in Attachment 2 and actions associated with selected Non-Cited Violations (NCVs) and Licensee Event Reports (LERs) to evaluate the effectiveness of corrective actions. The inspectors also reviewed additional potentially significant (second level) plant issues covering a variety of issues. The inspectors evaluated if the corrective actions appropriately addressed the cause, were thorough, and were implemented in a timely manner. The inspectors also confirmed that the extent of condition was appropriately considered. The inspectors conducted a review of open corrective actions to confirm that a risk significant condition did not exist. The inspectors held discussions with licensee personnel regarding their perceptions of the program effectiveness. The inspectors also reviewed the process for review of completed plant issues.

(2) Findings

Based on the sample reviewed, the inspectors found that the licensee's corrective actions were typically thorough, addressed root causes, and considered generic implications. The SNS group was conducting reviews of completed plant issues with qualified personnel. A sample of plant issues assigned to engineering indicated thorough reviews were conducted, in that, about 10% were rejected by SNS personnel for various reasons. These reasons were usually minor which indicated a low threshold for rejecting incomplete evaluations or documention.

d. Assessment of Safety-Conscious Work Environment

(1) Inspection Scope

The inspectors reviewed the Employee Concerns Program (ECP) documents listed in Attachment 2 and interviewed various licensee personnel to determine if an environment conducive to the identification of concerns existed. In addition, the inspectors discussed the ECP with the ECP coordinator, reviewed issues resulting from the ECP, and reviewed ECP procedure guidance and promotional materials.

(2) Findings

The licensee exhibited a strong safety-conscious work environment. The threshold for identification of issues was low. The ECP was actively communicated and periodically assessed for effectiveness.

4OA6 Meetings

Exit Meeting Summary

The inspectors presented the inspection results to Mr. C. Funderburk, Manager, Station Operations and Maintenance, and other members of the licensee's staff on May 11, 2001. The inspectors asked the licensee if any of the material examined during the inspection should be considered proprietary. No proprietary information was identified.

SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

J. Breeden, Supervisor, Radiation Analysis and Material Control
J. Crossman, Manager, Licensing
L. Curfman, Employee Concerns Program Coordinator
J. Davis, Manager, Station Nuclear Safety and Licensing
L. Eagan, Operating Experience North Anna Coordinator
C. Funderburk, Manager, Station Operations and Maintenance
D. Heacock, Site Vice President
E. Hendrixson, Superintendent, Station Engineering
L. Jones, Assistant Superintendent, Radiation Protection
L. Lane, Superintendent, Operations
R. Rasnick, Engineering Manager
R. Shears, Superintendent, Maintenance
A. Stafford, Superintendent, Radiological Protection

ITEMS OPENED, DISCUSSED AND CLOSED

None

LIST OF DOCUMENTS REVIEWED

Procedures

VPAP-1501, Deviations, Revision 12
VPAP-1601, Corrective Action, Revision 13
VPAP-1604, Root Cause Evaluation Program, Revision 3
VPAP-3002, Operating Experience Program, Revision 8
VPAP-0104, NBU Management Self Assessment Program, Revision 7
Nuclear Employee Concerns Program Guideline dated February 15, 2001

Miscellaneous Documents of Oversight Activities

Quarterly Trend Reports for Year 2000
Windows Report for Fourth Quarter 2000
Nuclear Oversight Audit 00-09, Corrective Action
Department Level Self-Assessment Report (DLSA), Category 2 Root Cause Effectiveness, January 21, 2000
DLSA, Implementation of Electronic Corrective Action System at NAPS, February 22, 2000
Station SA, Corrective Action Effectiveness Assessment Report, November 29, 2000
SA 00-ENG-01, EPIX Program Assessment
SA 00-ENG-02, REA Process Effectiveness
SA 00-ENG-04, Review of IST Pump Instrument Accuracy Calculations
SA 00-MAINT-06, Maintenance Department Annual Self-Assessment
SA 00-OPS-01, Operations 2nd Quarter 2000 Self-Assessment
SA 00-OPS-02, Operations 4th Quarter 2000 Self-Assessment
SA 01-OPS-01, Operations 1st Quarter 2001 Self-Assessment
SA 00-RP-06, Solid Radioactive Waste, Year 1999
SA 00-RP-08, Chemistry Program Self-Assessment
SA 00-RP-09, External Exposure Control

Operating Experience Documents

OE-10459, 10186, 11579, 11410, 11248, 12006, 12008, 11947, 11970, 11850, and PT-21 00-03, IN 99-29, and SEN 211

LERs

N1/2-2001-001-00
N2-2001-002-00
N2-2000-001-00
N2-2000-002-00
N1-2000-002-00
N1/2-2000-003-00
N1-2000-004-00
N1/2-1999-007-00

NCVs

NCV 50-338/00-07-01
NCV 50-338, 339/00-08-01

HHSI Documents

Plant Issue Nos. N-2000-1667, 2001-0495, 2001-0443, and Category 1 Root Cause Evaluation for N-2000-1667

Vital DC Power Documents

Plant Issue Nos. N-2000-1034, and N-1999-2947
Engineering System Health Report

EDG Documents

Plant Issue Nos. N-2001-1155, 2001-1029, 2001-0955, 2001-0082, 2000-2390, 1998-1807, and 1997-0643
Engineering System Health Report

AFW Documents

Plant Issue Nos. N-2001-0061, 2001-0067, 2001-0374, 2001-0584, 2001-0656, 2000-0093, 2000-0528, 2000-0815, 2000-0826, 2000-1382, 2000-1975, 2000-2460, 2000-2531, 1999-2430, 1998-1578, and 1996-2677
Engineering System Health Report

HVAC Documents

Plant Issue Nos. N-2001-1322, 2001-0840, 2000-1940, 2000-1472, 2000-0695, and 2000-0676
Engineering System Health Report

Air Operated Valve Documents

Plant Issues Nos. N-2000-1959 and 2000-0183. SER 1-99, Air Operated Valve Performance

Miscellaneous Potentially Significant Issues

Plant Issue Nos. N-2001-0175, 2001-0484, 2001-0567, 2001-1148, 2000-1559, 2000-2438, and 1999-2890