UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW, SUITE 23T85
ATLANTA, GEORGIA 30303-8931

October 12, 2007

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

SUBJECT: NORTH ANNA POWER STATION - NRC PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION REPORT 05000338/2007008 AND 05000339/2007008

Dear Mr. Christian:

On August 31, 2007, the U. S. Nuclear Regulatory Commission (NRC) completed a team inspection at your North Anna Power Station, Units 1 and 2. The enclosed inspection report documents the inspection findings, which were discussed on August 31, 2007, and again on October 5, 2007, with Mr. Daniel Stoddard and other members of your staff during an exit meeting.

This inspection was an examination of activities conducted under your licenses as they relate to the identification and resolution of problems, and compliance with the Commission's rules and regulations and the conditions of your operating licenses. Within these areas, the inspection involved examination of selected procedures and representative records, observations of activities, and interviews with personnel.

On the basis of the samples selected for review, the team concluded that problems were generally being properly identified, evaluated, and corrected. There was one Green finding identified during this inspection associated with the storage of safety-related components and material in an uncontrolled, unlocked, unmonitored, and environmentally unregulated container. This finding was determined to be a violation of NRC requirements. However, because of its very low safety significance and because it has been entered into your corrective action program, the NRC is treating this finding as a non-cited violation, in accordance with Section VI.A.1 of the NRC's Enforcement Policy. If you deny this non-cited violation, you should provide a response with the basis for your denial, within 30 days of the date of this inspection report, to the U. S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington DC 20555-0001, with copies to the Regional Administrator, Region II; the Director, Office of Enforcement, U. S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the North Anna Power Station.

In accordance with 10 CFR 2.790 of the NRC's "Rules of Practice," a copy of this letter, its enclosure and your response, if any, 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/

Eugene F. Guthrie, Chief
Reactor Projects Branch 5
Division of Reactor Projects

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

Enclosure: Inspection Report 05000338/2007008 and 05000339/2007008
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

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/

Eugene F. Guthrie, Chief
Reactor Projects Branch 5
Division of Reactor Projects

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

Enclosure: Inspection Report 05000338/2007008 and 05000339/2007008
w/Attachment: Supplemental Information

cc w/encl: (See page 3)

X PUBLICLY AVAILABLE ☐ NON-PUBLICLY AVAILABLE ☐ SENSITIVE X NON-SENSITIVE

ADAMS: X Yes ACCESSION NUMBER:_____

OFFICE	RII:DRS	RII:DRP	RII:DRS	RIII:DRS		
SIGNATURE	/RA/	/RA By LGarner for/	/RA By LGarner for/	/RA By LGarner for/		
NAME	SSanchez	JDodson	RFanner	WLewis		
DATE	10/12/07	10/12/07	10/12/07	12/12/07		
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO		

OFFICIAL RECORD COPY DOCUMENT NAME: G:\RPB5\North Anna\REPORTS\2007\NA 07-08\NA 2007008.wpd

cc w/encl:
Chris L. Funderburk, Director
Nuclear Licensing and
  Operations Support
Virginia Electric and Power Company
Electronic Mail Distribution

D. G. Stoddard, Site Vice President
North Anna Power Station
Electronic Mail Distribution

Executive Vice President
Old Dominion Electric Cooperative
Electronic Mail Distribution

County Administrator
Louisa County
P. O. Box 160
Louisa, VA 23093

Lillian M. Cuoco, Esq.
Senior Counsel
Dominion Resources Services, Inc.
Electronic Mail Distribution

Attorney General
Supreme Court Building
900 East Main Street
Richmond, VA 23219

Report to David A. Christian from Eugene Guthrie dated October XX, 2007.

SUBJECT: NORTH ANNA POWER STATION - NRC PROBLEM IDENTIFICATION AND RESOLUTION INSPECTION REPORT 05000338/2007008 AND 05000339/2007008

Distribution w/encl:
S. P. Lingam, NRR
Richard Jervey, NRR
C. Evans (Part 72 Only)
L. Slack, RII EICS
OE Mail (email address if applicable)
RIDSNRRDIRS
PUBLIC

U. S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket Nos.:	05000338, 05000339
License Nos.:	NPF-4 and NPF-7
Report Nos.:	05000338/2007008 and 05000339/2007008
Licensee:	Virginia Electric and Power Company (VEPCO)
Facility:	North Anna Power Station, Units 1 & 2
Location:	1022 Haley Drive Mineral, Virginia 23117
Dates:	August 6 - 31, 2007
Inspectors:	S. Sanchez, Resident Inspector, Lead Inspector J. Dodson, Senior Project Engineer R. Fanner, Reactor Inspector W. Lewis, Reactor Inspector
Approved by:	Eugene Guthrie, Chief Reactor Projects Branch 5 Division of Reactor Projects

Enclosure

SUMMARY OF FINDINGS

IR 05000338/2007-008 and 05000339/2007-008; on 8/6/2007 - 8/31/2007; North Anna Power Station, Units 1 & 2; biennial baseline inspection of the identification and resolution of problems.

The inspection was conducted by one Senior Project Engineer, one Resident Inspector, and two Reactor Inspectors. One finding was identified by the NRC, which was determined to be a Non-Cited Violation (NCV). The significance of most findings is indicated by their color (Green, White, Yellow, Red) using Inspection Manual Chapter (IMC) 0609, "Significance Determination Process" (SDP). Findings for which the SDP does not apply may be Green or be assigned a severity level after NRC management review. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 4, dated December 2006.

Identification and Resolution of Problems

The team concluded that, in general, problems were properly identified, evaluated, and corrected. The licensee was effective at identifying problems and entering them in the corrective action program (CAP) for resolution. Generally, issues were prioritized and evaluated appropriately, and in a timely fashion. The evaluations of significant problems were in general of sufficient depth to determine the likely root or apparent causes, as well as, address the potential extent of the circumstances contributing to the problem and provide a clear basis to establish corrective actions. Corrective actions that addressed the causes of problems were generally identified and implemented. Reviews of operating experience information were comprehensive. Licensee audits and assessments were found to be adequately broad based and an effective tool for identifying adverse trends. Previous noncompliance issues documented in inspection reports as non-cited violations were properly tracked and resolved via the corrective action program. Based on discussions with plant personnel and the low threshold for items entered in the corrective action program database, the inspectors concluded that workers at the site were free to raise safety concerns to their management without fear of retaliation.

A. NRC-Identified and Self-Revealing Findings

Cornerstone: Mitigating Systems

- Green. A non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XIII, Handling, Storage and Shipping, was identified by the NRC. Specifically, the licensee failed to ensure adequate controls for the storage and preservation of safety-related material and equipment in accordance with plant instructions. Emergency diesel generator (EDG) parts were stored in an uncontrolled, unmonitored, and environmentally unregulated storage container on an open pad outside the Protected Area, but within the Owner Controlled Area.

  The failure to ensure adequate controls were in place to store safety-related EDG parts was considered a performance deficiency. The finding was considered more than minor because if left uncorrected, it would become a more significant safety concern because of the possible use of these parts in safety-related

equipment. The finding was determined to be of very low safety significance because it did not represent an actual malfunction or inoperability of an EDG system or component. This finding has a cross-cutting aspect of safety or risk-significant decision making in the area of human performance because the organization knowledgeable of quality assurance storage requirements was not included in the decision for the relocation of the storage container.

B. Licensee-Identified Violations

None

REPORT DETAILS

4 OTHER ACTIVITIES (OA)

4OA2 Problem Identification and Resolution

The team based the following conclusions, in part, on issues that were identified in the assessment period, which ranged from February 1, 2005, (the last biennial problem identification and resolution inspection) to the end of the inspection on August 31, 2007. In addition, the team reviewed problems for selected systems identified outside the planned assessment period whose significance might be age dependent.

a. Assessment of the Corrective Action Program

(1) Inspection Scope

The team reviewed procedures associated with the corrective action program (CAP) which described the administrative process for initiating and resolving problems using plant issues (PIs) and/or condition reports (CRs). The team also reviewed NRC inspection reports that documented NRC reviews over the last two years. This review was performed to verify that problems were being properly identified, appropriately characterized, and entered into the CAP. Where possible, the team independently verified that the corrective actions were implemented as intended. The team also reviewed common causes and generic concerns to determine if they had been appropriately addressed.

The team conducted a detailed review, primarily focused on selected issues associated with five risk significant systems: Service Water (SWS), Emergency Diesel Generators (EDG), Reactor Protection (RPS), Safety Injection (SI), and Safety-Related Electrical Breakers, specifically 4160 and 480 Volt. For these systems and associated components, the team reviewed PIs/CRs, system health reports, maintenance history, and completed Work Orders (WOs). The team conducted plant walkdowns of these systems to assess the material condition and to identify any deficiencies that had not been entered into the CAP.

The team reviewed selected industry operating experience items, including NRC generic communications, to verify that they were appropriately evaluated for applicability and that issues identified through these reviews were entered into the CAP.

To help ensure that samples were reviewed across all cornerstones, the team selected a representative number of PIs/CRs that were identified and assigned to the major plant departments, including operations, maintenance, engineering, health physics, chemistry, emergency preparedness, outage and planning, and security. These PIs/CRs were reviewed to assess each department's threshold for identifying and documenting plant problems, thoroughness of evaluations, and adequacy of corrective actions.

The team reviewed licensee audits and self-assessments, including those which focused on problem identification and resolution, to determine if these audits and assessments

were effective in identifying deficiencies and areas for improvement, and to determine if appropriate corrective actions were developed and implemented. Action Category 1, 2, and 3, PIs/CRs were reviewed to assess the adequacy of the root/apparent cause evaluations of the selected problems. The team reviewed the root/apparent cause evaluations against the description of the problem in the PI/CR and the guidance in procedure PI-AA-300, Rev. 0, Cause Evaluation Program. The team attended various plant meetings to observe management oversight functions of the corrective action process. These included morning meetings, Corrective Action Review Board (CARB) meetings, Corrective Action Review Team (CART) meetings, and Condition Report Review Team (CRT) meetings. The team also held discussions with various personnel to evaluate their threshold for identifying issues and entering them into the CAP. Documents reviewed are listed in the Attachment.

(2) Assessment

Identification of Issues. The team determined that the licensee was generally effective at identifying problems and entering them into their CAP. PIs/CRs normally provided complete and accurate characterization of the subject issues. Where they did not, the team observed the CRT flag them for return to the initiator or make changes based upon clarifying discussion. In general, the threshold for initiating PIs/CRs was low as evidenced by the continued large number of CRs entered annually into the CAP. Employees were encouraged by management to initiate PIs/CRs. Site management was actively involved in the CAP and focused appropriate attention on significant plant issues. The team's independent review did not identify any significant adverse conditions which were not in the CAP for resolution. Futhermore, previous noncompliance issues documented in inspection reports as non-cited violations were properly tracked and resolved via the corrective action program.

During the system reviews and walkdowns, the team determined that system deficiencies were, generally, being identified and placed in the CAP and that the system engineers were appropriately tracking and trending these issues. The team identified the following minor deficiencies for which CRs had not previously been written:

- A drawing update was not performed as required by procedure. The licensee documented this condition in CR018989 and indicated an extent of condition review would be performed to ensure compliance with procedures.

- Corrective action CA004296 assigned to Maintenance was inappropriately closed out. The licensee documented this condition in CR017917 and reopened the corrective action.

- Heat exchanger test procedures did not specify design basis acceptance criteria. The licensee documented this condition in CR018908 and determined this was a procedural deficiency. In addition, the licensee determined, and the team agreed, that the heat exchangers were fully capable of meeting their intended safety-related function based upon Engineering evaluations.

- Electrical breaker procedures may not contain the proper Quality Assurance hold points. The licensee documented this condition in CR018965.

The team determined, during interviews, that the licensee had overlooked notification and familiarization of plant personnel for a recently implemented corporate CAP procedure involving the anonymous CR submittal process. The licensee provided a site-wide communication during the inspection to address the lack of familiarization by site personnel and external contractors.

Prioritization and Evaluation of Issues. The team determined that the licensee had adequately prioritized issues entered into the CAP consistent with established procedures. This was confirmed through the review of audits conducted by the licensee and the assessment conducted by the inspection team during the inspection period. The licensee performed timely evaluations that were technically accurate and of sufficient depth to determine the likely root or apparent causes, as well as, address the potential extent of the circumstances contributing to the problem and provide a clear basis to establish corrective actions. The team determined that site trend reports were thorough and that a low threshold was established for evaluation of potential trends. Use of trending at the site was comprehensive and effective.

The team determined that the station conducted appropriate type of root cause evaluations as specified by established procedures. A variety of causal analysis techniques were used depending on the type and complexity of the issue. For root causes that were selected for review, the licensee appropriately developed corrective actions to prevent recurrence (CAPR). The team further determined that operability, reportability, and degraded or non-conforming condition determinations were consistent with the guidance contained in PI-AA-200, Rev. 0, Corrective Action.

The team concluded that CAP-related meetings were attended by the appropriate personnel who were prepared for the meetings. Assignment of significance level and investigation types to PIs/CRs were in accordance with CAP procedures and guidance. In general, there was good discussion and interaction among the meeting members that the team observed with the proper focus on reactor safety.

Effectiveness of Corrective Action. Based on a review of numerous PI/CR corrective actions and their implementation, the team found, in general, that the licensee's corrective actions were timely, effective, and commensurate with the safety significance of the issues. Effectiveness reviews for CAPRs and audits were sufficient to ensure corrective actions were properly implemented and were effective.

The team identified an example where corrective actions lacked justification for on-going degraded conditions of the service water (SW) system. Piping deterioration, corrosion, defects, and de-lamination of internal coatings had been a long-standing problem which had not been fully resolved. There were numerous condition reports from 1999 to the present where problems were identified with service water system piping deterioration and the resulting heat exchanger fouling. Although corrective actions taken were sufficient to maintain or return the SW system and heat exchangers to an operable

condition, some of the developed corrective actions appeared to be untimely and in others the corrective actions were postponed and not implemented. Although the licensee had taken some action on each individual PI/CRs, only recently had the licensee issued a CR which identified the need to address the overall on-going degrading conditions. Furthermore, the team identified that a justification for acceptability of operating with the on-going degradation had not been developed. The licensee responded to the team's concern by providing preliminary justifications and by establishing a plan and schedule to develop and document a more thorough justification. For the SW issues, the team concluded that CAP actions lacked rigor and were not well documented.

(3) Findings

Introduction. A Green, non-cited violation (NCV) of 10 CFR 50, Appendix B, Criterion XIII, Handling, Storage and Shipping, was identified by the NRC. Specifically, the team determined that the licensee failed to ensure adequate controls for the storage and preservation of safety-related material and equipment in accordance with plant instructions by maintaining emergency diesel generator (EDG) parts in an uncontrolled, unmonitored, and environmentally unregulated storage container on an open pad in the Owner Controlled Area (OCA). The NCV was associated with the Mitigating Systems Cornerstone.

Description. The licensee implemented a work process change involving the utilization of large storage containers for staging essential parts and tools to support EDG overhaul and maintenance. Previously, personnel had to be dispatched for parts and tools, introducing delays and increased opportunity for human error deficiencies. During the actual maintenance, the containers were stored within the protected area (PA) in the alleyway immediately outside of the EDG spaces. Following the maintenance, the containers were relocated to a remote pad outside the PA but within the OCA.

During this inspection, the team found the containers to be wholly exposed to the elements, with locks other than those provided when the containers had been inside the protected area. Closer inspection revealed that the lock placed on the parts container, while found loosely wrapped in duct tape, was actually unsecured and thus compromised traceability of the parts. The parts container was found to contain numerous Level B and C controlled components from the licensee's stock inventory. The team determined that there was no process or procedure that would have prevented the future use of the parts or material.

Licensee procedure VPAP-0703, Revision 15, Storage, Handling and Shipping Requirements for Plant Materials, classified these containers as satellite storage, a designation for which none of the procedural requirements were in place to support the plant's quality assurance requirements (i.e., the containers be controlled, monitored, and environmentally regulated to support the material stored inside). In accordance with the licensee's Quality Assurance requirements, Level B components are not to be subjected to temperatures in excess of 140 degrees Fahrenheit (°F) or less than 40 °F. The containers were found exposed to the Virginia climate where both extremes might be

expected over the interval between container utilization. Level C components were required to be stored in a well ventilated storage space. The containers were found to have no ventilation. Given the recent nature of this work process change, none of the parts in question had been utilized in the performance of safety-related maintenance on the plant's EDGs.

Analysis. The team determined that the licensee failed to ensure adequate controls for the storage and preservation of safety-related material and equipment in accordance with plant instructions. The finding was in the Mitigating Systems Cornerstone. The finding was considered more than minor because if left uncorrected, it would become a more significant safety concern because of the possible use of these parts in safety-related equipment. The finding was determined to be of very low safety significance (Green) in accordance with NRC Inspection Manual Chapter 0609, Appendix A, Attachment 1, SDP Phase 1 screening worksheet because it did not represent an actual malfunction or inoperability of an EDG system or component, in that, the parts had not actually been utilized in the performance of safety-related maintenance of the plant's EDGs. The team determined that this finding had a cross-cutting aspect of safety or risk-significant decision making in the area of human performance (H.1(a)). The licensee failed to obtain adequate "interdisciplinary input and reviews on safety-significant or risk-significant decisions" prior to the container's long-term relocation, in that, personnel familiar with quality assurance storage requirements for safety-related equipment were not involved in the relocation decision.

Enforcement. 10 CFR Part 50, Appendix B, Criterion XIII, Handling, Storage and Shipping, states, in part, that measures shall be established to control the handling, storage, shipping, cleaning and preservation of material and equipment in accordance with work and inspection instructions to prevent damage or deterioration. Contrary to the above, on August 30, 2007, the NRC identified that the licensee had maintained safety-related components in an uncontrolled, unlocked, unmonitored, and environmentally unregulated storage container, exposed to the elements which could damage or deteriorate the material. Because this finding is of very low safety significance and was entered into the licensee's corrective action program as CR018990, this violation is being treated as an NCV, consistent with Section VI.A of the NRC Enforcement Policy. This item will be tracked as NCV 05000338, 339/2007008-01, Failure to Ensure Adequate Control and Storage of Safety-Related EDG Parts.

b. Assessment of the Use of Operating Experience

(1) Inspection Scope

The team conducted a review of the licensee's Operating Experience (OE) program to verify actions were completed in accordance with licensee procedures DNAP-3002, Dominion Nuclear Operating Experience Program, and PI-AA-100-1007, Operating Experience Program. The team reviewed a sampling of the items the licensee had submitted for OE to verify the information accurately reflected the events, were appropriately evaluated, and documented in their CAP. The team also focused on NRC generic communications and OE items associated with the five systems selected for a

detailed review to verify issues were appropriately evaluated for applicability and whether issues identified through these reviews were entered into the CAP.

(2) Assessment

The licensee was generally effective in evaluating internal and external industry OE items as well as NRC generic communications for applicability and entering issues into the CAP. Industry OE was evaluated at either the corporate or plant level depending on the source and type of the document. Relevant information was then forwarded to the applicable department for further action or informational purposes. Any documents requiring action were entered into the CAP for tracking and closure. Additionally, OE was regularly included in System Health Reports and CRs associated with station events as part of the causal investigations and corrective action development process.

(3) Findings

No findings of significance were identified.

c. Assessment of the Self-Assessment and Audits

(1) Inspection Scope

The team conducted a review of the licensee's self-assessment and audit program to verify actions were completed in accordance with licensee procedures PI-AA-100-1004, Formal Self Assessments, PI-AA-100-1005, Informal Self Assessments, and PI-AA-100-1006, Benchmarking. The team reviewed samples of self-assessments and audits to verify that identified deficiencies and areas needing improvement were entered into the CAP tracking system. The documents reviewed are listed in the attachment.

(2) Assessment

The team determined that the scopes of assessments and audits were adequate. Department self-assessments were generally detailed and critical. Corrective actions developed as a result of these assessments were incorporated into the CAP and tracked to completion. The team also determined that the licensee had adequately prioritized issues entered in to the CAP. Generally, the licensee performed evaluations that were technically accurate. Site trend reports were thorough and a low threshold was established for evaluation of potential trends. The team concluded that the self-assessments and audit were an effective tool to identify adverse trend.

(3) Findings

No findings of significance were identified.

d. Assessment of Safety-Conscious Work Environment

(1) Inspection Scope

The team conducted interviews with the plant staff to determine if any conditions existed that would cause employees to be reluctant to raise safety concerns and to develop a general sense of the safety conscious work environment at the site. Interviewees were questioned on their understanding and their willingness to initiate CRs or raise safety concerns. The team reviewed the licensee's Employee Concerns Program (ECP) which provides an alternate method to the CAP for employees to raise concerns. The program is defined by licensee procedure ECP-GL-1, Nuclear Employee Concerns Program. The team interviewed the ECP Coordinator and reviewed ECP reports and associated corrective actions to verify that concerns were being properly reviewed and that identified deficiencies were being resolved and entered into the CAP when appropriate.

(2) Assessment

The team determined that a safety conscious work environment existed where people felt free to raise issues without fear of retaliation. The team concluded that licensee management fostered a safety conscious work environment by emphasizing safe operations and encouraging problem reporting through multifaceted communications and training programs. The investigations conducted by the ECP were thorough, complete and the recommended corrective actions were appropriately focused to address the actions needed to resolve the individual concerns.

(3) Findings

No findings of significance were identified.

4OA6 Management Meetings

On August 31, 2007, the team presented the inspection results to Mr. Daniel Stoddard and other members of his staff who acknowledged the findings. On October 5, 2007, the team re-exited on the inspection results with Mr. Daniel Stoddard and other members of his staff. The team confirmed that proprietary information was returned following the inspection.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTARY INFORMATION

KEY POINTS OF CONTACT

Licensee personnel

T. Huber, Director, Nuclear Engineering
S. Hughes, Manager, Nuclear Operations
P. Kemp, Supervisor, Licensing
M. King, Employee Concern Program Coordinator
J. Kirkpatrick, Manager, Nuclear Maintenance
R. Klearman, Supervisor, Station Nuclear Safety
G. Lear, Manager, Organizational Effectiveness
G. Marshall, Manager, Nuclear Outage and Planning
C. McClain, Manager, Nuclear Training
F. Mladen, Manager, Nuclear Site Services
G. Salomone, Licensing Technician
M. Sartain, Director, Nuclear Safety and Licensing
B. Scanlon, Manager, Nuclear Oversight
D. Stoddard, Site Vice President

NRC personnel

J. Reece, Senior Resident Inspector, North Anna
R. Clagg, Resident Inspector, North Anna
E. Guthrie, Chief, Reactor Projects Branch 5

LIST OF ITEMS OPENED, CLOSED, AND DISCUSSED

Opened and Closed

05000338, 339/2007008-01	NCV	Failure to Ensure Adequate Control and Storage of Safety-Related EDG Parts

Closed

None

Discussed

None

LIST OF DOCUMENTS REVIEWED

Procedures:

DNAP-0110, Identifying and Addressing Nuclear Safety and Quality Concerns, Rev.1
DNAP-3002, Dominion Nuclear Operating Experience Program, Rev. 1
DNAP-1604, Cause Evaluation Program, Rev. 6
ECP-GL-1, Nuclear Employee Concerns Program, Rev. 3
PI-AA-100, Performance Monitoring, Rev. 0
PI-AA-100-1001, Nuclear Business Plan Performance Indicators, Rev. 0
PI-AA-100-1002, Focus on Four, Rev. 3
PI-AA-100-1004, Formal Self Assessments, Rev. 0
PI-AA-100-1005, Informal Self Assessments, Rev. 0
PI-AA-100-1006, Benchmarking, Rev. 0
PI-AA-100-1007, Operating Experience Program, Rev. 0
PI-AA-200-2002, Effectiveness Reviews, Rev. 0
PI-AA-200, Corrective Action, Rev. 0
PI-AA-300, Cause Evaluation, Rev. 0
VPAP-0102, Station Nuclear Safety and Operating Committee, Rev. 11
VPAP-1501, Deviations, Rev. 18
VPAP-1601, Corrective Action, Rev. 23
VPAP-0213, Abbreviations, Acronyms, and Action Verbs, Rev. 4
2-PT-66.3, Containment Depressurization Test, Rev. 35-OTO2
1-PT-77.13A, Control Room Chiller Equipment Performance Test (1-HV-E-4A), Rev. 12
2-PT-74A, Component Cooling Heat Exchanger 2-CC-E-1A Performance Test, Rev. 4-P1
2-PT-74A, Component Cooling Heat Exchanger 2-CC-E-1A Performance Test, Rev. 07
2-PT-74B, Component Cooling Heat Exchanger 2-CC-E-1B Performance Test, Rev. 08
2-PT-75.6, Service Water System Flow Balance, Rev. 16
NASES-3.20, Generic Letter (GL) 89-13 Programs, Rev. 2
0-PT-75.15, GL 89-13 Service Water System Testing Requirements Coordination, Rev. 5
1-PT-14.1, Operations Periodic Test, Charging Pump 1-CH-P-1A, Rev. 45
1-PT-14.5, Venting ECCS Lines, Rev. 009
2-PT-14.5, Venting ECCS Lines, Rev. 010
1-ES-0.2A, Rev. 21, Natural Circulation Cooldown With CRDM Fans
2-ICP-MS-F-2474, Rev. 21, Steam Generator A Steam Flow and Feed Flow Protection Channel III (2-MS-F-2474 & 2-FW-F-2477) Calibration
1-ICP-MS-P-1485, Rev. 5, Steamline B Steam Pressure Protection Channel III (1-MS-P-1485) Calibration
0-FCA-0, Rev. 10, Fire Protection Response
0-FCA-1, Rev. 31, Control Room Fire
1-AP-20, Rev. 21, Operation from the Auxiliary Shutdown Panel
0-AP-10, Rev. 55, Loss of Electrical Power
ENAP-0025, Rev. 1, Post-Modification Testing
1-PT-36.1A, Rev. 56, Train A Reactor Protection and ESF Logic Actuation Test
2-PT-36.4.2, Rev. 17, Reactor Protection and ESF Circuitry Response-Time Testing For Cycles 14B, 17A, 20B, 23A
2-PT-36.4.3, Rev. 15, Reactor Protection and ESF Circuitry Response-Time Testing For Cycles 15A, 18B, 21A, 24B

1-OP-26.1, Rev. 24, Transferring 4160-Volt Busses
0-PT-80, Rev. 11, AC Sources Operability Verification
1-MOP-55.74, Rev. 9, Delta T/T AVE Protection Instrumentation
VPAP-0710, Rev. 2, Uniquely Tracked Commodities (UTC)
VPAP-0703, Rev. 15, Storage, Handling, and Shipping Requirements for Plant Materials
VPAP-0602, Rev. 6, Vendor Technical Manual Control
0-ECM-0301-01, Rev. 10, Troubleshooting and Repair of 480-Volt Motor Control Center Breaker Assemblies and 480-Volt Air Circuit Breakers
0-ECM-0302-01, Rev. 7, Troubleshooting and Repair of 4160-Volt Air Circuit Breakers
0-ECM-0308-01, Rev. 11, Troubleshooting and Repair of Reactor Trip and Bypass Breakers
0-ECM-2005-01, Rev. 1, Replacement / Testing of Cell Switch Assemblies on Reactor Trip Breakers
0-ECM-2005-02, Rev. 3, Replacement / Testing of Cell Switch Assemblies on Reactor Trip Bypass Breakers
0-EPM-0302-01, Rev. 35, BBC/ITE 4160-Volt Type 5HK Breaker and Associated Switchgear Cubicle Maintenance
0-EPM-0302-02, Rev. 35, 480-Volt K-Line Breaker and Associated Switchgear Cubicle Maintenance
0-EPM-0302-03, Rev. 27, BBC/ITE 4160-Volt Type 5HK Breaker 9-Year Inspection
0-EPM-0302-04, Rev. 23, BBC/ITE 480-Volt K-Line Breaker 9-Year Inspection
0-EPM-0303-01, Rev. 29, Reactor Trip and Bypass Breaker Refueling Maintenance
1/2-EPM-0311-01, Rev. 4/6, Testing of Cell Switch on Reactor Trip and Bypass Breakers

Plant Issues (PIs):

N-2006-0139-R4	N-2006-2400-R2	N-2005-0605-R3	N-20050504
N-2006-0504	N-2005-2636	N-2005-2565	N-2002-1850
N-2002-3216	N-2003-1060	N-2003-4337	N-2004-0219
N-2004-1030	N-2004-1248	N-2004-3989	N-2005-0036
N-2005-0988	N-2005-2533	N-2005-4009	N-2005-5197
N-2005-5310	N-2005-5333	N-2006-0508	N-2006-0820
N-2006-1663	N-2006-2892	N-2006-2968	N-2006-3217
N-2006-3218	N-2005-3936-R1	N-2005-3936-R6	N-2005-3283
N-2005-2813-E1	N-2005-0412	N-2005-2193	N-2006-1018
N-2005-5258-R23	N-2005-1615-R14	N-2006-1990	N-2006-2845
N-2005-5560	N-2005-4947	N-2005-0697	N-2005-2141
N-2005-2092	N-2005-2636	N-2005-2636-E1	N-2005-2636-R2
N-2005-2636-R3	N-2005-2636-R4	N-2005-2636-R5	N-2005-2636-R6
N-2005-2636-R7	N-2005-2636-R8	N-2005-2636-R9	N-2006-3253
N-2006-3253-R1	N-2005-3283	N-2005-3016-RCE	N-2006-1232
N-2005-3016	N-2004-2410-E1	N-2006-1112	N-2006-1682
N-2006-1729	N-2006-2436	N-2006-2840	N-2006-3267
N-2005-1615	N-2005-3274	N-2006-1297	N-2006-2115
N-2005-0845	N-2005-1462	N-2005-3401	N-2005-3462
N-2005-3633	N-2005-4516	N-2005-4836	N-2005-5211
N-2005-5416	N-2006-1056		

Condition Reports (CRs):

CR016112	CR008068	CR000263	CR000445	CR000570	CR000590
CR000716	CR000764	CR000784	CR001170	CR001766	CR002002
CR002028	CR003269	CR003474	CR004701	CR005076	CR005207
CR005561	CR005814	CR005938	CR006418	CR006802	CR007129
CR007540	CR007569	CR007723	CR008917	CR009532	CR009718
CR009779	CR010246	CR010584	CR010622	CR011420	CR011918
CR011987	CR013761	CR014987	CR015207	CR015658	CR017687
CR015722	CR015846	CR016796	CR016867	CR017024	CR019385
CR003018	CR018661	CR018679	CR015926	CR013591	CR010084
CR018686	CR018738	CR009972	CR17857	CR003580	CR008853
CR007078	CR004458	CR010083	CR008734	CR015375	CR004545
CA005161	CR003203	CR017036	CR017656	CR016320	CR017297
CR001943	CR001357	CR008355	CR011859	CR004961	CR004966
CR004971	CR011706	CR001098	CR001100	CR001125	CR001851
CR002130	CR002164	CR003126	CR003560	CR003676	CR003695
CR003935	CR004018	CR004484	CR005777	CR006804	CR008829
CR009485	CR009565	CR009567	CR009602	CR009792	CR009798
CR009803	CR009835	CR009920	CR009967	CR010097	CR010221
CR010226	CR010227	CR010321	CR010363	CR010374	CR010422
CR010616	CR010643	CR010723	CR012127	CR012138	CR012498
CR014464	CR000282	CR001319	CR001969	CR003076	CR003081
CR003488	CR003632	CR003982	CR003986	CR005412	CR005935
CR007667	CR007692	CR010418	CR011452	CR012189	CR012282

Condition Reports Initiated for NRC Identified Issues:

CR018990, Improper Storage of Safety-Related Parts in Sealand Container
CR018965, Breaker Procedures May Not Contain Proper QA Hold Points
CR018989, Drawing Update Was Not Performed as Required by Procedure
CR018908, Heat Exchanger Performance Test Procedures Lack Acceptance Criteria
CR017917, CA004296 Was Inappropriately Closed Out

Work Orders:

WO 00131733	WO 00117414	WO 00132315	WO 00117127
WO 00117106	WO 00117085	WR00133269	

LERs:

50-338/2005-001-00, Condition Prohibited by Technical Specification - LTOP
50-339/2005-001-00, Automatic Reactor Trip Due to Lightning Strike
50-338/2006-001-00, Manual Reactor Trip Due to Shutdown Bank “A” Group 2 Step Counter Inoperable
50-339/2006-001-00, Reactor Trip Due to Steam Generator Low Level Coincident With a Steam Flow Feed Flow Mismatch
50-338/2007-001-00, Reactor Trip Due to Steam Generator Low Level Coincident With a Steam Flow Feed Flow Mismatch
50-339/2007-001-00, Damper Leakby During PREACS Testing Results in Unanticipated Power Reduction

50-339/2007-002-00, Automatic Start of 2H EDG on Loss of “B” Reserve Station Service Transformer Due to Cable Fault

Self Assessments:
SA-04-01, Problem Identification and Resolution
Focused Self-Assessment of the Corrective Action Program, February 2005
QSL-CA-04-04, Corrective Action Functional Area Audit, August 2004
QAS-CA-05-1, Corrective Action Program, November 2005

System Health Reports:
02 Chemical and Volume Control System, 2006-2, Unit 1
02 Chemical and Volume Control System, 2006-2, Unit 2
52 4.16 KV Switchgear Breakers, 2006-2, Unit 1
63 Reactor Protection System, 2006-2, Unit 1
63 Reactor Protection System, 2006-2, Unit 2
Service Water System
Safety Injection System
RPS Health Report 2007
SBO Health Report 2007
EDG Health Report 2006
EDG Health Report 2007
Fire Protection Health Report 2006
Fire Protection Health Report 2007
North Anna Power Station 06Q4 Program Executive Summary
North Anna Power Station 07Q1 Program Executive Summary
North Anna Power Station 07Q2 Program Executive Summary
North Anna Power Station 06Q4 System Executive Summary
North Anna Power Station 07Q1 System Executive Summary
North Anna Power Station 07Q2 System Executive Summary
North Anna Power Station 06Q4 Component Executive Summary
North Anna Power Station 07Q1 Component Executive Summary
North Anna Power Station 07Q2 Component Executive Summary
North Anna Power Station 07Q2 AAC Overall Assessment
North Anna Power Station 07Q2 AAC Detail
North Anna Power Station 07Q2 EE Overall Assessment
North Anna Power Station 07Q2 EE Detail
North Anna Power Station 07Q2 EG Overall Assessment
North Anna Power Station 07Q2 EG Detail
North Anna Power Station 07Q2 EP Overall Assessment
North Anna Power Station 07Q2 EP Detail
North Anna Power Station 07Q2 Breakers Overall Assessment
North Anna Power Station 07Q2 Breakers Detail

Apparent and Root Cause Analyses:
ACE 000222, Increased seal leakage on 2-CH-P-1A
ACE 000248, 1-CH-P-1C secured due to lube oil leak
ACE 000454, Oil leaking from sight glass 2-SI-P-1A

ACE 000498, 1-CH-P-1B1 High Vibes
N-2002-3216-E1, The interior coating of SW supply/return lines to the RSHXs for both units
N-2003-4337, Improper Assembly of 1-CH-P-1B1 Gear Box Heat Exchanger
N-2005-2533-E1, 2-CH-P-1C after disassembly of the outboard seal
N-2005-3213-E1, Data taken during 2-PT-77.13A on 8/17/2005 was insufficient to demonstrate the ability of 2-HV-E-4A to achieve its designed cooling capacity
N-2006-1663-E1, 1-SI-MOV-1867C did not go open when pushbutton was depressed from control room
RCE000033, SW flow restricted through RSHX during CDA functional testing
RCE000042,Reactor Trip/Safety Injection NAPS/ Unit 2 7300 Card Failures
RCE000031, North Anna “B” RSST Trip and Lockout
N-2005-1615, 1-EE-MCC-1J1-2N Failure
N-2005-2636, 1-EE-BKR-14J5 Fault
N-2005-3225, 2-EE-BKR-24J1-4 (2-QS-P-1B) Breaker Failure
RCE000004, Failure of Breaker 2-EE-BKR-24H1-4 During Performance of 2-PT-63.1A
N-2005-3401, Diesel Fuel Oil Particulates
N-2005-4516, Unit 2 Emergency Diesel Generator (2-EE-EG-2J) 24-Hour Performance Test Failure

Other Documents:
SAR 000117, Corrective Action and Root Cause/Pre-PI&R Assessment
Corrective Action Trend Report 1st Quarter 2007
Corrective Action Trend Report 2nd Quarter 2007
TE 000936, Trend for possible rework on 1-CH-P-1C compression fitting
North Anna UFSAR Chapter 9, Rev. 42
North Anna UFSAR Table 5.2-22, Rev. 42; Reactor Coolant Pressure Boundary Materials
Engineering Transmittal, ET-N-06-0069, Revision 0; Evaluation and Report of Reconciliation for Pressurizer Manway Cover Closure Configuration
Engineering Transmittal, ET-CME-98-0006, Rev. 0; Component Cooling Heat Exchanger, 2-CC-E-1A Post Installation Performance Test, North Anna Power Station, Unit 2
Engineering Transmittal, ET-CME-99-0039, Rev. 0; Component Cooling Heat Exchanger,
Periodic Test 2-PT-74A, Rev. 5, 6/14/99, Engineering Evaluation, North Anna Power Station
SM-1542, Revision 0; GOTHIC Containment Analysis to Support Evaluation of As-Found Condition of North Anna Unit 2 Service Water Side Debris in Recirculation Spray Heat Exchangers
Configuration Management Trend Reports 2nd Quarter 2006, 3rd Quarter 2006, 4th Quarter 2006, 1st Quarter 2007
Virginia Electric and Power Company Response to Generic Letter 89-13, January 29, 1990
Virginia Electric and Power Company Generic Letter 89-13 Activities, April 30, 1991
Virginia Electric and Power Company Generic Letter 89-13 Activities Revision, October 18, 1991
Technical Report No. ME-0025, Rev. 2, 11/30/1994, NRC Generic Letter 89-13 Activities
Technical Report No. ME-0062, Rev. 0, 07/14/1992, Periodic Test 1-PT-74B of CCHX 1-CC-E-1B
Technical Report No. ME-0093, Rev. 0, Component Cooling Heat Exchanger Performance Test Periodic Test 1-PT-74A
SDBD-NAPS-EG, Rev. 11, System Design Basis Document for EDG System

SDBD-NAPS-EG, Rev. 8, System Design Basis Document for Reactor Protection System
DCP 07-112, Replace Group 2 and 3 NLP 7300 Cards with Group 5 (U-2)
DCP 07-136, 7300 Process Rack NLP and NCB Card Modification/NAPS/Unit 1
Technical Report NO. EE-0079, Rev. 0
NITDP-13-AG/APE-10.1, Rev. 0, NLP Card Front Edge Alignment
NITDP-13-LP-10, Rev. 1, NLP Loop Power Supply Card
NAPS UFSAR, Rev. 42
Information Notice No. 91-52: Nonconservative Errors in Overtemperature Delta-Temperature (OtdT) Setpoint Caused By Improper Gain Settings
Dominion Nuclear Facility Quality Assurance Program Description, DOM-QA-1, Rev. 2
VPAP-0602, Rev. 6, Vendor Technical Manual Control
NA-VTM-00-59-W893-00085, Rev. 11, Solid State Protection System
NA-DW-6007D01, Rev. 3, Sh.1, Master Reference Drawing Units 1 & 2
NA-DW-6008D12, Rev. 0, Sh.1, Feedwater System First Stage Loop # 1 Feedwater Control System Control II
NA-DW-6008D48, Rev. 1, Sh.1, Feedwater System Turbine First Stage Pressure Loop #2 Feedwater Control System Control III Units 1&2
North Anna Power Station Updated Final Safety Analysis Report, Rev. 42, dtd 8/15/07
Dominion Cause Evaluation Handbook, Rev. 7, dtd 3/22/07
Dominion Nuclear Facility Quality Assurance Program Description, DOM-QA-1, Rev. 2
NEETRAC ltr to Dominion Virginia Power Re: Kerite Cable Failure, NEETRAC Project No. 07-32, dtd 8/2/2007
NA-VTM-000-59-I145-00001, Rev. 4, Low-Voltage Power Circuit Breakers Type K-225 Thru 2000 and K-600S Thru 2000S Stationary Mounted and Drawout Mounted
NA-VTM-000-59-I145-00002, Rev. 5, Medium-Voltage Power Circuit Breakers Installation/Maintenance Instructions
NA-VTM-000-59-I145-00003, Rev. 1, Instructions Metal-Enclosed Low-Voltage Power Circuit Breaker Switchgear
NA-VTM-000-59-I145-00004, Rev. 2, Type 5HK, 7.5HK, and 15HK Metal-Clad Switchgear 5000, 7000 and 15000 Volt
North Anna Power Station Corrective Action Program Station Due Date Policy
North Anna Power Station Apparent Cause Evaluations (ACEs) Station Expectations
North Anna Power Station Corrective Action Program Station Expectations for Department Manager's Role in the Corrective Action Process
North Anna Power Station Nuclear Safety (SNS) Common Cause Analysis Guideline
North Anna Power Station Corrective Action Program Effectiveness Review Guideline
Dominion Trend Analysis Manual, Rev. 0
North Anna Power Station Outage and Planning Department Self Assessments Standard
North Anna Power Station Maintenance Information Bulletin 06-09, NDAP-2000 Minor Work