UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

January 27, 2017

Mr. Daniel G. Stoddard
Senior Vice President and Chief Nuclear Officer
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, VA 23060-6711

SUBJECT: NORTH ANNA POWER STATION – NRC INTEGRATED INSPECTION REPORT 05000338/2016004 AND 05000339/2016004

Dear Mr. Stoddard:

On December 31, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your North Anna Power Station, Units 1 and 2. On January 18, 2017, the NRC inspectors discussed the results of this inspection with Mr. L. Lane and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

The NRC inspectors did not identify any findings or violations of more than minor significance.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at http://www.nrc.gov/reading-rm/adams.html and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Anthony D. Masters, Chief
Reactor Projects Branch 5
Division of Reactor Projects

Docket Nos.: 05000338, 05000339
License Nos.: NPF-4, NPF-7

Enclosure:
IR05000338/2016004 and 05000339/2016004
w/Attachment: Supplemental Information

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Letter to Daniel G. Stoddard from Anthony D. Masters dated January 27, 2017

SUBJECT: NORTH ANNA POWER STATION – NRC INTEGRATED INSPECTION REPORT 05000338/2016004 AND 05000339/2016004

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REGION II

Docket Nos:	50-338, 50-339
License Nos:	NPF-4, NPF-7
Report No:	05000338/2016004 and 05000339/2016004
Licensee:	Virginia Electric and Power Company (VEPCO)
Facility:	North Anna Power Station, Units 1 & 2
Location:	Mineral, Virginia 23117
Dates:	October 1, 2016 through December 31, 2016
Inspectors:	G. Croon, Senior Resident Inspector G. Eatmon, Resident Inspector D. Lanyi, Senior Operations Engineer
Approved by:	Anthony D. Masters, Chief Reactor Projects Branch 5 Division of Reactor Projects

Enclosure

SUMMARY

IR 05000338/2016004, 05000339/2016004; 10/01/2016 – 12/31/2016; North Anna Power Station, Units 1 and 2. Routine Integrated Inspection Report.

The report covered a three-month period of inspection by resident inspectors. No NRC-identified or self-revealing findings were identified. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 6.

REPORT DETAILS

Summary of Plant Status

Unit 1 began the inspection period offline for a planned refueling outage. Unit 1 restarted on October 16, 2016, returned to rated thermal power (RTP) on October 24, and operated at RTP for the remainder of the inspection period.

Unit 2 began the period at approximately RTP and operated at RTP for the remainder of the inspection period.

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R04 Equipment Alignment

.1 Partial Walkdowns

a. Inspection Scope

The inspectors conducted four equipment alignment partial walkdowns, listed below, to evaluate the operability of selected redundant trains or backup systems with the other train or system inoperable or out of service. The inspectors reviewed the functional systems descriptions, Updated Final Safety Analysis Report (UFSAR), system operating procedures, and Technical Specifications (TS) to determine correct system lineups for the current plant conditions. The inspectors performed walkdowns of the systems to verify the operability of a redundant or backup system/train or a remaining operable system/train with a high risk significance for the current plant configuration (considering out-of-service, inoperable, or degraded condition); or a risk-significant system/train that was recently realigned following an extended system outage, maintenance, modification, or testing; or a risk-significant single-train system. The inspector conducted the reviews to ensure that critical components were properly aligned, and to identify any discrepancies which could affect operability of the redundant train or backup system. Documents reviewed are listed in the attachment to this report.

- Unit 1 and Unit 2 instrument air
- Unit 1 Outside Recirculating Spray System, Train B
- Spent Fuel Pool Cooling, Train A
- Unit 2 Motor Driven Auxiliary Feedwater, Train B

b. Findings

No findings were identified.

.2 Complete Walkdowns

a. Inspection Scope

The inspectors performed a detailed walkdown and inspection of the two systems, listed below, to assess proper alignment and to identify discrepancies that could impact its availability and functional capacity. The inspectors assessed the physical condition and position of each recirculation spray and casing cooling valve, whether manual, power operated or automatic, to ensure correct positioning of the valves. The inspection also included a review of the alignment and the condition of support systems including fire protection, room ventilation, and emergency lighting. Equipment deficiency tags were reviewed and the condition of the system was discussed with the engineering personnel.

- U1 containment vacuum system
- U2 containment vacuum system

b. Findings

No findings were identified.

1R05 Fire Protection

.1 Quarterly Fire Protection Walkdowns

a. Inspection Scope

The inspectors conducted focused tours of the four areas listed below that are important to reactor safety to verify the licensee's implementation of fire protection requirements as described in fleet procedures CM-AA-FPA-100, "Fire Protection/Appendix R (Fire Safe Shutdown) Program," Rev. 10, CM-AA-FPA-101, "Control of Combustible and Flammable Materials," Rev. 8, and CM-AA-FPA-102, "Fire Protection and Fire Safe Shutdown Review and Preparation Process and Design Change Process," Rev. 5. The inspectors evaluated, as appropriate, conditions related to: (1) licensee control of transient combustibles and ignition sources; (2) the material condition, operational status, and operational lineup of fire protection systems, equipment, and features; and, (3) the fire barriers used to prevent fire damage or fire propagation. Other documents reviewed are listed in the attachment to this report.

- U1 cable vault
- U2 emergency switchgear room
- Technical support center
- SBO diesel

b. Findings

No findings were identified.

.2 Fire Protection – Drill Observation

a. Inspection Scope

During a fire protection drill on December 1, 2016, at the U1 cable vault room, the inspectors assessed the timeliness of the fire brigade in arriving at the scene, the firefighting equipment brought to the scene, the donning of fire protection clothing, the

effectiveness of communications, and the exercise of command and control by the scene leader. The inspectors also assessed the acceptance criteria for the drill objectives and reviewed the licensee's corrective action program for recent fire protection issues.

b. Findings

No findings were identified.

1R06 Flood Review

Cables in Manholes/Underground Bunkers

a. Inspection Scope

The inspectors performed an annual review of cables located in underground bunkers/manholes. The inspectors evaluated, as appropriate, the security and electrical cable vaults for the following: (1) verified by direct observation that the cables were not submerged in water; (2) verified by direct observation that cables and/or splices appeared intact; (3) verified that drainage or an appropriate dewatering device (sump pump) was in operation; and, (4) verified that level alarm circuits were set appropriately to ensure that the cables would not be submerged. Documents reviewed are listed in the attachment to this report.

b. Findings

No findings were identified.

1R11 Licensed Operator Requalification Program and Licensed Operator Performance

.1 Resident Inspector Quarterly Review

a. Inspection Scope

The inspectors reviewed a licensed operator performance on December 28, 2016, during a simulator scenario. The scenario required classifications and notifications that were counted for NRC performance indicator (PI) input. The inspectors observed the following elements of crew performance in terms of communications: (1) ability to take timely and proper actions; (2) prioritizing, interpreting, and verifying alarms; (3) correct use and implementation of procedures, including the alarm response procedures; (4) timely control board operation and manipulation, including high-risk operator actions; and, (5) oversight and direction provided by the shift supervisor, including the ability to identify and implement appropriate TS actions. The inspectors observed the post training critique to determine that weaknesses or improvement areas revealed by the training were captured by the instructor and reviewed with the operators.

b. Findings

No findings were identified.

.2 Quarterly Control Room Operator Performance Observations

a. Inspection Scope

During the inspection period, the inspectors conducted two observations of licensed reactor operators actions and activities to ensure that the activities were consistent with the licensee procedures and regulatory requirements. These observations took place during both normal and off-normal plant working hours. As part of this assessment, the inspectors observed the following elements of operator performance: (1) operator compliance and use of plant procedures including technical specifications; (2) control board/in-plant component manipulations; (3) use and interpretation of plant instruments, indicators and alarms; (4) documentation of activities; (5) management and supervision of activities; and, (6) communication between crew members.

The inspectors observed and assessed licensed operator performance during the following events:

- October 15, 2016 during U1 start up activities
- October 23, 2016 during U1 start up activities

b. Findings

No findings were identified.

.3 Licensed Operator Requalification

a. Inspection Scope

Annual Review of Licensee Requalification Examination Results: On February 5, 2016, the licensee completed the annual requalification operating examinations required to be administered to all licensed operators in accordance with Title 10 of the Code of Federal Regulations 55.59(a)(2), "Requalification Requirements," of the NRC's "Operator's Licenses." The inspectors performed an in-office review of the overall pass/fail results of the individual operating examinations and the crew simulator operating examinations in accordance with Inspection Procedure (IP) 71111.11, "Licensed Operator Requalification Program." These results were compared to the thresholds established in Section 3.02, "Requalification Examination Results," of IP 71111.11

b. Findings

No findings were identified.

1R13 Maintenance Risk Assessments and Emergent Work Control

a. Inspection Scope

The inspectors evaluated, as appropriate, the four activities listed below for the following: (1) effectiveness of the risk assessments performed before maintenance activities were conducted; (2) management of risk; (3) appropriate and necessary steps taken to plan and control the resulting emergent work activities upon identification of an unforeseen situation; and, (4) adequate identification and resolution of maintenance risk

assessments and emergent work problems. The inspectors reviewed these maintenance activities to verify that the licensee was in compliance with the requirements of 10 CFR 50.65 (a)(4) and the data output from the licensee's safety monitor associated with the risk profile of Units 1 and 2. The inspectors reviewed the corrective action program to verify that deficiencies in risk assessments were being identified and properly resolved. Documents reviewed are listed in the attachment to this report.

- Work week schedule during the switchyard H502 breaker replacement 1-PT-33.13
- Maintenance activities during performance testing of the quench spray vales 2-PT-212.34 H/J, 2-QS-202-A/B
- Maintenance activities during the identification and repair of the leak on 2H EDG fuel oil line B
- Work week schedule during simultaneous repack of 1-CN-P-1C and 1-SP-P-1A, Unit 1 Condensate Pump C and High Pressure Feedwater Drain Pump A

b. Findings

No findings were identified.

1R15 Operability Determinations and Functionality Assessments

.1 Operability and Functionality Review

a. Inspection Scope

The inspectors reviewed four operability determinations (OD) and functionality assessments, listed below, affecting risk-significant mitigating systems, to assess, as appropriate: (1) the technical adequacy of the evaluations; (2) whether continued system operability was warranted; (3) whether other existing degraded conditions were considered as compensatory measures; (4) whether the compensatory measures, if involved, were in place, would work as intended, and were appropriately controlled; and (5) where continued operability was considered unjustified, the impact on TS Limiting Conditions for Operation and the risk significance in accordance with the SDP. No samples of operator work arounds (OWA) were reviewed because there were no OWAs existing for either unit during the calendar year 2016. The inspectors' review included a verification that ODs were made as specified by procedure OP-AA-102, "Operability Determination," Rev. 13. Other documents reviewed are listed in the attachment to this report.

- Review of CR1041935, 1-SD-LC-124B stuck float
- Review of 2-PT-17.1, U2 Control rod operability test
- Review of CR1052675, 1K-B1 Voltage regulator non-critical failure
- Review of CR1050399, Unit 1 Turbine auxiliary feedwater pump outboard bearing casing water intrusion

b. Findings

No findings were identified.

.2 Operator Work-Around Review

a. Inspection Scope

The inspectors performed a detailed review of the licensee's operator work-around, operator burden, and control room deficiency lists for the station in effect on December 15, 2016 to verify that the licensee identified operator workarounds at an appropriate threshold and entered them in the corrective action program. The inspectors verified that the licensee identified the full extent of issues, performed appropriate evaluations, and planned appropriate corrective actions. The inspectors also reviewed compensatory actions and their cumulative effects on plant operation. Documents reviewed are listed in the attachment to this report.

b. Findings

No findings were identified.

1R19 Post Maintenance Testing

a. Inspection Scope

The inspectors reviewed five post maintenance test procedures and/or test activities, listed below, for selected risk-significant mitigating systems to assess whether: (1) the effect of testing on the plant had been adequately addressed by control room and/or engineering personnel; (2) testing was adequate for the maintenance performed; (3) acceptance criteria were clear and adequately demonstrated operational readiness consistent with design and licensing basis documents; (4) test instrumentation had current calibrations, range, and accuracy consistent with the application; (5) tests were performed as written with applicable prerequisites satisfied; (6) jumpers installed or leads lifted were properly controlled; (7) test equipment was removed following testing; and, (8) equipment was returned to the status required to perform in accordance with VPAP-2003, "Post Maintenance Testing Program," Rev. 14. Documents reviewed are listed in the attachment to this report.

- WO 59103017332, 1-HV-F-SA repair
- WO 59103030038, 1-FW-P-1B terry turbine repair
- WO 59103034667, 0-ACC-BKR-OM1-2 breaker repair
- WO 59103044597, 2-EP-BKR-24B1-3 Supply breaker repair
- WO 59103041722, 1-QS-LS-104A repair

b. Findings

No findings were identified.

1R20 Outage Activities

Unit 1 Refueling Outage

a. Inspection Scope

The inspectors reviewed the Outage Safety Review (OSR) and contingency plans for the Unit 1 refueling outage, which began September 10, 2016, to confirm that the licensee

had appropriately considered risk, industry experience, and previous site-specific problems in developing and implementing a plan that assured maintenance of defense-in-depth. The inspectors also confirmed that the licensee had mitigation/response strategies in place for any losses of key safety functions. Using NRC inspection procedure 71111.20, "Refueling and Outage Activities," the inspectors observed portions of the refueling, and maintenance activities to verify that the licensee maintained defense-in-depth commensurate with the outage risk plan and applicable TS. The inspectors monitored licensee controls over the outage activities listed below.

- Licensee configuration management, including daily outage reports, to evaluate maintenance of defense-in-depth commensurate with the OSR for key safety functions and compliance with the applicable TS when taking equipment out of service.
- Implementation of clearance activities and confirmation that tags were properly hung and equipment appropriately configured to safely support the work or testing.
- Installation and configuration of Reactor Coolant System instrumentation for system pressure, level, and temperature to provide accurate indication, and an accounting for instrument error.
- Implementation of licensee procedures for foreign material exclusion.
- Controls over the status and configuration of electrical systems to ensure that TS and outage safety plan requirements were met, and controls over switchyard activities.
- Controls to ensure that outage work was not impacting the ability of the operators to operate the spent fuel pool cooling system.
- Reactor inventory controls including flow paths, configurations, and alternative means for inventory addition, and controls to prevent inventory loss.
- Controls over activities and SSCs which could affect reactivity.
- Fatigue management in accordance with meeting the rule requirements for each process.
- Refueling activities, including fuel handling operations (inspection, sipping, reconstitution and insertion), and fuel assemblies tracking, including new fuel, from core offload through core reload.
- Refueling activities, including fuel handling operations (inspection, sipping, reconstitution and insertion), and fuel assemblies tracking, including new fuel, from core offload through core reload.
- Controls over containment penetrations, per TS, such that containment closure could be achieved at all times.
- Licensee identification and resolution of problems related to refueling outage activities.
- Startup and ascension to full power operation, tracking of startup prerequisites, walkdown of the containment to verify that debris had not been left which could block emergency core cooling system strainers, and the review of reactor physics testing.

b. Findings

No findings were identified.

1R22 Surveillance Testing

a. Inspection Scope

For the four surveillance tests listed below, the inspectors examined the test procedures, witnessed testing, or reviewed test records and data packages, to determine whether the scope of testing adequately demonstrated that the affected equipment was functional and operable, and that the surveillance requirements of TS were met. The inspectors also determined whether the testing effectively demonstrated that the systems or components were operationally ready and capable of performing their intended safety functions. Documents reviewed are listed in the attachment to this report.

Surveillance Tests:

- 0-PT-172.6, Early Warning System Sirens Activation Monitoring
- 2-SI-P-1A, U2 low head safety injection PT
- 2-PT-82H, 2H EDG slow start
- 2-PT-84D, 25H14 relay functional test

b. Findings

No findings were identified.

Cornerstone: Emergency Preparedness

4. OTHER ACTIVITIES

4OA1 Performance Indicator (PI) Verification

Initiating Events

a. Inspection Scope

The inspectors performed a periodic review of the two Unit 1 and 2 PIs listed below to assess the accuracy and completeness of the submitted data and whether the performance indicators were calculated in accordance with the guidance contained in Nuclear Energy Institute (NEI) 99-02, "Regulatory Assessment Performance Indicator Guideline," Rev. 7. The inspection was conducted in accordance with NRC inspection procedure 71151, "Performance Indicator Verification." Specifically, the inspectors reviewed the Unit 1 and Unit 2 data reported to the NRC for the period April 1, 2014 through March 31, 2015. Documents reviewed included applicable NRC inspection reports, licensee event reports, operator logs, station performance indicators, and related CRs. Documents reviewed are listed in the attachment to this report.

Cornerstone: Mitigating Systems

- Emergency AC (2 units)
- Residual Heat Removal (2 units)

For the period of January 1, 2016, through December 31, 2016, the inspectors reviewed operating logs, train unavailability data, maintenance records, maintenance rule data, PIPs, consolidated derivation entry reports, and system health reports to verify the accuracy of the PI data reported for each PI.

b. Findings

No findings were identified.

4OA2 Problem Identification and Resolution

.1 Review of Items Entered into the Corrective Action Program

As required by NRC inspection procedure 71152, "Identification and Resolution of Problems," and in order to help identify repetitive equipment failures or specific human performance issues for follow-up, the inspectors performed a daily screening of items entered into the licensee's CAP. This review was accomplished by reviewing daily CR report summaries and periodically attending daily CR Review Team meetings.

.2 Operator Work Arounds

a. Inspection Scope

The inspectors performed a detailed review of the licensee's operator work-around, operator burden, and control room deficiency lists for the station in effect on December 15, 2016 to verify that the licensee identified operator workarounds at an appropriate threshold and entered them in the corrective action program. The inspectors verified that the licensee identified the full extent of issues, performed appropriate evaluations, and planned appropriate corrective actions. The inspectors also reviewed compensatory actions and their cumulative effects on plant operation.

b. Findings and Observations

No findings were identified.

.3 In Depth Review: Review of CR 1047115, "1J EDG Coolant Leak During 24 Hour Run"

a. Inspection Scope

The inspectors performed a review regarding the licensee's assessments and corrective actions for CR1047115 to ensure that the full extent of the issue was identified, an appropriate evaluation was performed, and appropriate corrective actions were specified and prioritized. The inspectors also evaluated the CR against the requirements of the licensee's CAP as specified in licensee procedure, PI-AA-200, "Corrective Action Program," Rev. 25 and 10 CFR 50, Appendix B.

b. Findings and Observations

No findings were identified.

.4 Semi-Annual Trend Review

a. Inspection Scope

The inspectors performed a review of the licensee's corrective action program documents to identify trends that could indicate the existence of a more significant safety

issue. The inspectors' review was focused on repetitive equipment and corrective maintenance issues but also considered the results of daily inspector corrective action program item screening discussed in Section 4OA2.1. The review included issues documented outside the normal corrective action program in system health reports, corrective maintenance work orders, component status reports, site monthly meeting reports, and maintenance rule assessments. The inspectors' review nominally considered the six month period of January 2015 through June 2015, although some examples expanded beyond those dates when the scope of the trend warranted.

The inspectors compared and contrasted their results with the results contained in the licensee's latest integrated quarterly assessment report. Corrective actions associated with a sample of the issues identified in the licensee's trend report were reviewed for adequacy. Trends noted by the inspectors were previously identified by the licensee and addressed in their CAP.

b. Assessment and Observations

No findings were identified. In general, the licensee has identified trends and has addressed the trends with their corrective action program.

4OA5 Other Activities

.1 Review of the Operation of an Independent Spent Fuel Storage Installation – Selected Records Review (Inspection Procedure 60855 and Inspection Procedure 60855.1)

a. Inspection Scope

Inspectors reviewed the normal operation of the Independent Spent Fuel Storage Installation (ISFSI). The inspectors walked down the ISFSI pad to assess the material condition of the casks, the installation of security equipment, and the performance of monitoring systems. The inspector reviewed procedure 0-OP-4.54, "Transfer Cask/Dry Shielded Canister Transfer to ISFSI and Dry Shielded Canister Transfer Cask to Horizontal Storage Module," Revision 9. The inspector reviewed applicable procedures documented in the attachment. The inspector reviewed records pertaining to each fuel assembly placed in casks which were most recently transferred to the ISFSI. Documents reviewed are listed in the attachment to this report.

c. Findings

No findings were identified.

.2 (Closed) Unresolved Item (URI) 05000338 & 05000339/2015008-02, ECST Level Indication/Setpoints and Associated Operator Action

a. Inspection Scope

During an NRC Triennial Fire Protection Inspection (TFPI), as documented in NRC Inspection Report 05000338, 339/2015008, inspectors documented a URI regarding emergency condensate storage tank (ECST) level indication/setpoints and associated operator actions that ensures the auxiliary feedwater (AFW) pumps have an adequate suction source.

Inspectors reviewed the plant's licensing and design basis, associated calculations, and had discussions with plant personnel in order to assure that the AFW pumps would maintain net positive suction head from the ECST in response to a main steam or main feedwater line break.

For main steam line and main feedwater line breaks, the plant's licensing and design basis stated that no operator action was required for at least 30 minutes after initiation of the postulated event. However, inspectors noted that the licensee's Calculation ME-0584, "Maximum AFW Pump Flow and NPSH Analysis," (dated 11/04/1999) determined that AFW flow reduction was required within the initial 30 minutes of an event to ensure that the pumps had sufficient net positive suction head. In response to the team's question, the licensee developed an addendum to calculation ME-0584. The addendum agrees with the original calculation that operation with the theoretical max flow for 30 minutes with no operator action to reduce flow would result in inadequate net positive suction head (NPSH), but notes that the original calculation contained a high degree of conservatism. Documents reviewed are listed in the attachment to this report.

b. Findings

No findings were identified. Inspectors identified a minor violation associated with this issue. The licensee entered this item into their CAP as CR 1044971.

4OA6 Meetings, Including Exit

On January 18, 2017, the resident inspectors presented the inspection results to Mr. L. Lane and other members of the staff. The inspectors verified no proprietary information was retained by the inspectors or documented in this report.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee personnel:
M. Becker, Manager, Nuclear Outage and Planning
L. Lane Site Vice President
B. Gaspar, Manager, Nuclear Site Services
R. Hanson, Manager, Nuclear Protection Services
E. Hendrixson, Director, Nuclear Site Engineering
L. Hilbert, Plant Manager
J. Jenkins, Manager, Nuclear Maintenance
J. Leberstien, Technical Advisor, Licensing
J. Plossl, Supervisor, Nuclear Station Procedures
J. Schleser, Manager, Nuclear Organizational Effectiveness
J. Slattery, Manager, Nuclear Operations
W. Standley, Director, Nuclear Station Safety & Licensing
D. Taylor, Manager, Station Licensing
B. Thompson, Manager, Nuclear Training
M. Whalen, Technical Advisor, Licensing

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

Closed

05000338,339/2015008-02	URI	ECST Level Indication/Setpoints and Associated Operator Action (Section 4OA5.2)

LIST OF DOCUMENTS REVIEWED

Section 1R04: Equipment Alignment

Procedures, Guidance Documents, and Manuals

1-OP-7.5A, Valve Checkoff – Outside Recric Spray System, Unit 1, Rev 10
0-OP-16.1A, Valve Checkoff – Spent Fuel Cooling, Rev 6
2-OP-31.2A, Valve Checkoff – Auxiliary Feedwater, Unit 2, Rev 23
1-OP-19A, Valve Checkoff – Containment Vacuum System, Unit 1, Rev 11
2-OP-19A, Valve Checkoff – Containment Vacuum System, Unit 2, Rev 9

Section 1R05: Fire Protection

Procedures, Guidance Documents, and Manuals

0-FPMP-2.12, Dry Chemical Fire Extinguisher Maintenance, Rev 3
0-FPMP-2.6, Fire Extinguisher and Hose Station Inspection – Aux Buildings, Fuel Building, Clean Change, Health Physics, and Units 1 and 2 Instrument Shop, Rev 2
CM-AA-FPA-10, Fire Protection/Appendix R (Fire Shutdown) Program, Rev 2
1-FS-S-3, Unit 1 Emergency Switchgear Instrument Rack and Air Conditioning Rooms Service Building, Elev. 254 ft (S-54) Safe Shutdown Equipment, Rev 13
North Anna Ignition Source Permit for Hot Work in Auxiliary Building, 8/1/2016-8/5/2016
1-FS-AB-1, Auxiliary Building Firefighting Strategy Safe Shutdown Equipment, Rev 6
1-AP-20, Operation from the Auxiliary Shutdown Panel, Rev 27
1-FS-S-3, Unit 1 Emergency Switchgear Instrument Tack and Air Conditioning Rooms Service Building Elev. 254 Safe Shutdown Equipment, Rev 13
NAPS Appendix R Report, Table 7-1 Exemption Request Status, Rev 38
1-FS-S-4, Fire Fighting Preplan for Unit 1 & 2 Normal Switchgear Rooms Service Building Elev. 307", Rev 5
CM-AA-FPA-101, Control of Combustible and Flammable Materials, Rev 8

Section 1R06 Flood Review

Procedures, Guidance Documents, and Manuals

O-MPM-1207-03, Semi-Annual Pumping of Security and Electrical Cable Vaults, Rev 7
NA-W-SUB-800, 34.5KV Cable Manhole Inspection, Rev 0

Work Order

WO 59102900772
WO 59102913538

Corrective Action Documents

CR1041109

Section 1R13: Risk Assessment

Procedures, Guidance Documents, and Manuals

2-PT-33.13, Reactor Trip System Channel Operations test Coolant Pump Buses 1A, 1B, and 1C Undervoltage, Rev 1
2-PT-212.34 H, Valve Inservice Inspection (2-QS-202A), Rev 9
2-PT-212.34 J, Valve Inservice Inspection (2-QS-202B), Rev 9

Records and Data

North Anna Power Station Work Week Coordinator Morning Report for 10/20/2016
High Risk Contingency Plan Actions for simultaneous Pump Maintenance

Work Schedule for Unit 1 'A' High Pressure Heater Drain Pump Maintenance
Work Schedule for Unit 1 'C' Condensate Pump Maintenance

Section 1R15: Operability Determinations and Functionality Assessments

Procedures, Guidance Documents, and Manuals

1-OP-31.2, Steam Generator Auxiliary Feedwater System, Rev 36
0-MPM-1905-01, Component Lube Oil Filtering using the Lube Oil Conditioning Cart, Rev 4
2-PT-17.1, U2 Control Rod Operability, Rev 39

Corrective Action Documents

CA3042204
CR1041935
CR1050399
CR1050399
CR1050439
CR1050701
CR1052675

Work Order

WO59101613557

Other

Unit 1 Work-Around Log
Unit 2 Work-Around Log

Section 1R19: Post Maintenance Testing

Work Orders

WO59103034667
WO59103044597
WO 59103041722
WO59103017332

Section 1R22: Surveillance Testing

Procedures, Guidance Documents, and Manuals

0-PT-172.6, Early Warning System Sirens Activation Monitoring, Completed 9/6/2016 for Primary System Activation
0-PT-172.6, Early Warning System Sirens Activation Monitoring, Completed 9/6/2016 for Secondary System Activation
0-PT-172.6, Early Warning System Sirens Activation Monitoring, Completed 8/18/2016 for partial Primary System Activation
0-PT-172.6, Early Warning System Sirens Activation Monitoring, Completed 5/19/2016 for Primary System Activation
0-PT-172.6, Early Warning System Sirens Activation Monitoring, Completed 2/18/2016 for Secondary System Activation
0-PT-172.7, Early Warning System Polling Functional Test, Completed 9/6/2016 for Secondary System Activation
2-PT-82H, Emergency Diesel Generator Slow Start Test, Rev 64
2-PT-84D, Breaker 25H14 Inspection, Preventative Maintenance, and Timing Test, Rev 3

Corrective Action Documents
CR1046137
CR1044971

Section 4OA1: Performance Indicator Verification
Records and Data
North Anna Power Station Engineering Department MSPI and WANO Data for January, 2016
North Anna Power Station Engineering Department MSPI and WANO Data for February 2016
North Anna Power Station Engineering Department MSPI and WANO Data for March, 2016
North Anna Power Station Engineering Department MSPI and WANO Data for April, 2016
North Anna Power Station Engineering Department MSPI and WANO Data for May, 2016
North Anna Power Station Engineering Department MSPI and WANO Data for June, 2016
North Anna Power Station Engineering Department MSPI and WANO Data for July, 2016
North Anna Power Station Engineering Department MSPI and WANO Data for August, 2016
North Anna Power Station Engineering Department MSPI and WANO Data for September, 2016
North Anna Power Station Engineering Department MSPI and WANO Data for November, 2016

Section 4OA2: Problem Identification and Resolution
Corrective Action Documents
CR 1047115

Section 4OA5: Other Activities
Procedures, Guidance Documents, and Manuals
Radiation Protection, RP-AA-201, Access Controls for High and Very High Radiation Areas, Rev 8
Health Physics, 0-HSP-ISIFSI-001, Independent Spent Fuel Storage Installation (ISFSI) Health Physics TLD Survey Surveillance, Rev 7
Health Physics, 0-HSP-ISIFSI-002, "Nuhoms Dry Spent Fuel Storage System; Preparation, Loading, Transport, and Technical Specifications Surveillances Surveys, Rev 5
Radiation Protection, RP-AA-202, Radiological Posting, Rev 8
Health Physics, C-HP-1032.080, Controlled Area and Restricted Area Radiological Surveys, Rev 9
Operating Procedure, 0-OP-4.54, Transfer Cask/Dry Shielded Canister Transfer to ISFSI and Dry Shielded Canister Transfer From Transfer Cask To Horizontal Storage Module, Rev 9
Operations Periodic Test, 0-PT-4.51, Horizontal Storage Module Thermal Performance Verification, Rev 2
ISFSI Alarm logs

Calculations
ME-0584, "Maximum AFW Pump Flow and NPSH Analysis," (dated 11/04/1999)