



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

May 8, 2018

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

**SUBJECT: NORTH ANNA POWER STATION – NRC INTEGRATED INSPECTION
REPORT 05000338/2018001 AND 05000339/2018001**

Dear Mr. Stoddard:

On March 31, 2018, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your North Anna Power Station, Units 1 and 2. On April 18, 2018, the NRC inspectors discussed the results of this inspection with Mr. L. Lane, Site Vice President, and other members of your staff. Inspectors documented the results of this inspection in the enclosed inspection report.

NRC inspectors documented one self-revealing finding of very low safety significance (Green) in this report. This finding involved a violation of NRC requirements. The NRC is treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2.a of the Enforcement Policy.

If you contest the violation or the significance of the violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the Nuclear Regulatory Commission, ATTN.: Document Control Desk, Washington DC 20555-0001; with copies to the Regional Administrator Region II; the Director, Office of Enforcement, and the NRC Resident Inspector at the North Anna Power Station.

If you disagree with a cross-cutting aspect assignment in this report, you should provide a response within 30 days of the date of this inspection report, with the basis for your disagreement, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001; with copies to the Regional Administrator, Region II; and the NRC resident inspector at the North Anna Power Station.

D. Stoddard

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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/

Steven D. Rose, Chief
Reactor Projects Branch 4
Division of Reactor Projects

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

Enclosure:
IR 05000338/2018001 and 05000339/2018001

cc w/ encl: Distribution via ListServ

D. Stoddard

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REPORT 05000338/2018001 AND 05000339/2018001 May 8, 2018

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DATE	5/1/2018	5/7/2018	5/7/2018	5/1/2018	5/3/2018	5/4/2018	5/1/2018
OFFICE	RII:DRS	RII:DRP	RII:DRP	RII:DRP			
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DATE	5/1/2018	5/08/2018	5/08/2018	5/8/2018			

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**U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report**

Docket Numbers: 50-338, 50-339

License Numbers: NFP-4, NFP-7

Report Numbers: 05000338/2018001 and 05000339/2018001

Enterprise Identifier: I-2018-001-0059

Licensee: Virginia Electric and Power Company

Facility: North Anna Power Station, Units 1 and 2

Location: Mineral, VA

Dates: January 1, 2018 to March 31, 2018

Inspectors: G. Croon, Senior Resident Inspector
G. Eatmon, Resident Inspector
N. Hobbs, Resident Inspector (Acting)
W. Deschaine, Senior Project Engineer (Acting)
M. Meeks, Senior Operations Engineer
J. Bundy, Operations Engineer
R. Carrion, Senior Reactor Inspector
P. Cooper, Reactor Inspector

Approved by: Steven D. Rose, Chief
Reactor Projects Branch 4
Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring licensee's performance by conducting a quarterly integrated inspection at North Anna Power Station, Units 1 and 2 in accordance with the Reactor Oversight Process. The Reactor Oversight Process is the NRC's program for overseeing the safe operation of commercial nuclear power reactors. Refer to <https://www.nrc.gov/reactors/operating/oversight.html> for more information. NRC and self-revealed findings, violations, and additional items are summarized in the table below.

List of Findings and Violations

Failure to Assure Service Water Pump Sheds from Emergency Bus upon LOOP or SBO			
Cornerstone	Significance	Cross-cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000338/2018001 2018001-01 Closed	H.12 – Avoiding Complacency	71111.22
A self-revealing Green non-cited violation (NCV) of Technical Specification (TS) 5.4.1.a, was identified for the licensee's failure to have adequate written procedures for assuring proper configuration control in areas affected by maintenance or plant modifications. Specifically, the licensee failed to detect and correct a disconnected lead from contact C1 on 1-SW-62-1SWEB03. This directly led to the failure of the 1B service water (SW) pump to shed from the 1J emergency bus during performance of maintenance procedure 1-PT-83.2 on March 11, 2018.			

PLANT STATUS

Unit 1 began the inspection period at 100 percent rated thermal power. On March 10, 2018, the unit was shut down for a routine refuel outage and remained there for the remainder of the inspection period.

Unit 2 operated at or near 100 percent rated thermal power for the entire inspection period.

INSPECTION SCOPES

Inspections were conducted using the appropriate portions of the inspection procedures (IPs) in effect at the beginning of the inspection unless otherwise noted. Currently approved IPs with their attached revision histories are located on the public website at <http://www.nrc.gov/reading-rm/doc-collections/insp-manual/inspection-procedure/index.html>. Samples were declared complete when the IP requirements most appropriate to the inspection activity were met consistent with Inspection Manual Chapter (IMC) 2515, "Light-Water Reactor Inspection Program - Operations Phase." The inspectors reviewed selected procedures and records, observed activities, and interviewed personnel to assess licensee performance and compliance with Commission rules and regulations, license conditions, site procedures, and standards.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

Impending Severe Weather (2 Samples)

The inspectors evaluated readiness for impending adverse weather conditions for severe winter storm conditions on January 4, 2018.

The inspectors evaluated readiness for impending adverse weather conditions for high winds and extended rain conditions on March 2-4, 2018.

71111.04 - Equipment Alignment

Partial Walkdown (3 Samples)

The inspectors evaluated system configurations during partial walkdowns of the following systems/trains:

- (1) Unit 2 boron recovery system on January 11, 2018
- (2) Unit 2 emergency diesel generator (EDG) air start system on January 24, 2018
- (3) Unit 1 outside safety injection, 'A' train, on February 24, 2018

Complete Walkdown (1 Sample)

The inspectors evaluated system configurations during a complete walkdown of the following system:

- (1) Unit 2, outside recirculation spray system, 'A' train on March 26, 2018

71111.05AQ - Fire Protection Annual/Quarterly

Quarterly Inspection (5 Samples)

The inspectors evaluated fire protection program implementation in the following selected areas:

- (1) Unit 1 'H' EDG room on January 3, 2018
- (2) Station blackout (SBO) diesel room on February 2, 2018
- (3) Fuel oil pump house room #1 on February 7, 2018
- (4) Unit 2 safeguards building on February 12, 2018
- (5) Unit 2 cable spreading room on March 20, 2018

71111.06 - Flood Protection Measures

Cables (1 Sample)

The inspectors evaluated cable submergence protection in:

- (1) 1-BLD-MBAR-2MH03, electrical manhole #2 on January 30, 2018

71111.08 - Inservice Inspection Activities (1 Sample)

The inspectors evaluated pressurized water reactor non-destructive testing by reviewing the following examinations from March 19 to 23, 2018:

- (1) Liquid Penetrant (PT)
 - a) Report No. BOP-PT-18-043, 01-RC-ICV-3196-Valve / ½"-ICN9 (Welds W and X), ASME Code Class 1. This review involved a pressure boundary weld. (reviewed)
 - b) Report No. BOP-PT-18-044, 01-RC-ICV-3197-Valve / ½"-ICN9 (Weld Y), ASME Code Class 1. This review involved a pressure boundary weld. (reviewed)
 - c) Report No. BOP-PT-18-046, 01-RC-ICV-3196-Valve / ½"-ICN9 (Weld V Final), ASME Code Class 1. This review involved a pressure boundary weld. (reviewed)
 - d) Report No. BOP-PT-18-047, 01-RC-ICV-3197-Valve / ½"-ICN9 (Weld Z Final), ASME Code Class 1. This review involved a pressure boundary weld. (reviewed)
 - e) Report No. BOP-PT-18-080, service water valve 1-SW-1470-VALVE, 1" pipe-to-valve weld (Final Weld 96), ASME Code Class 1. This review involved a pressure boundary weld. (observed)
- (2) Ultrasonic (UT)
 - a) Report No. UT-18-021, Reactor Vessel Closure Head Studs, Component Id: 11715-WMKS-RC-R-/1-RC-R-1/S-001-058, ASME Class 1, (observed UT of Stud Nos. 21 through 30)
- (3) Visual (VT-3)
 - a) Report No. VT-18-041, spring hanger, Component Id: 11715-WMKS-0103AU/2-CH-94/SH-21, ASME Code Class 1. (observed)
 - b) Report No. VT-18-042, anchor, Component Id: 11715-WMKS-0113D/10-RH-32/A-15A, ASME Code Class 2. (observed)

The Inspectors evaluated the licensee's boric acid control program performance.

The Inspectors evaluated the licensee's steam generator inservice inspection activities.

71111.11 - Licensed Operator Requalification Program and Licensed Operator Performance

Operator Requalification (1 Sample)

The inspectors observed and evaluated operator requalification activity LORP 2018-1, Scenario 4, with a failure of the pressurizer spray, a failure of the steam generator flow control, continuous rod insertion, ending with leakage from the reactor coolant system on February 2, 2018.

Operator Performance (1 Sample)

The inspectors observed and evaluated control room Unit 1 shutdown from Mode 1 to Mode 3 for a scheduled refueling outage on March 10, 2018.

Operator Requalification Program (1 Sample)

The inspectors evaluated the operator requalification program from January 22, 2018, to January 26, 2018.

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness (2 Samples)

The inspectors evaluated the effectiveness of routine maintenance activities associated with the following equipment and/or safety significant functions:

- (1) Performance testing on the Unit 1 Anticipated Transient Without Scram Mitigating System Actuation Circuitry (AMSAC) system after failure on January 10, 2018
- (2) Replacement of Westinghouse 7300 series process card CB-450 after failure on January 5, 2018

71111.13 - Maintenance Risk Assessments and Emergent Work Control (5 Samples)

The inspectors evaluated the risk assessments for the following planned and emergent work activities:

- (1) Unit 1 elevated risk due to instrument air packing adjustment on January 17, 2018
- (2) Unit 2 elevated risk due to crimping of bearing cooling upper generator cooling vent line on January 18, 2018
- (3) Unit 1, Modify Main Control Room Bench board near reserve station service transformer (RSST) during Unit 1 Refueling Outage on March 19, 2018
- (4) Elevated risk due to SW header valve replacement on March 29, 2018
- (5) Unit 1 elevated risk due to installation of components associated with Unit 1 design change, RSST 'A' to 'G'; Bus Feeder Installation (DC NA-13-01199A) on March 11, 2018

71111.15 - Operability Determinations and Functionality Assessments (5 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) Unit 2 'H' EDG entering phosphate action level 2 on January 10, 2018
- (2) SBO diesel properly aligned in droop mode when aligning to active bus on January 28, 2018
- (3) Unit 1 refueling water storage tank (RWST) flow switch able to measure flow for required function on February 18, 2018
- (4) Unit 2 cable room door properly latching to maintain required fire barrier on February 24, 2018
- (5) Unit 1 'J' EDG meeting required surveillance SR 3.8.1.17 on February 28, 2018

71111.18 - Plant Modifications (2 Samples)

The inspectors evaluated the following temporary or permanent modifications:

- (1) Unit 1, 'C' reactor coolant pump seal replacement (DC NA-12-0111) on March 30, 2018
- (2) Containment penetration integrity after installation of new cables through feedthrough (DC-16-00003) on March 29, 2018

71111.19 - Post Maintenance Testing (7 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) Unit 2, 2-SD-LCV-203A post maintenance testing after troubleshoot & repair failure to maintain level control on January 4, 2018
- (2) Unit 1 1H EDG & 1-EG-P-1-HA post maintenance testing after repair of radiator fluid leak on February 7, 2018
- (3) Unit 1 charging flow transmitter '4B' post maintenance testing after change out of filters on February 28, 2018
- (4) Unit 1, source range detector assembly, NI-31 replacement and calibration on March 12, 2018
- (5) Unit 1 safety injection manually operated valve 1869 breaker replacement on March 27, 2018
- (6) Unit 1 '1C' reactor coolant pump seal leak off after check valve replacement on March 28, 2018
- (7) Unit 1 vital battery 1-5 replacement on March 22, 2018

71111.20 - Refueling and Other Outage Activities (Partial Sample)

The inspectors evaluated Unit 1 refueling outage 26 activities from March 10, 2018, to March 31, 2018. Inspectors performed the following samples:

- Observed control room during shutdown
- Containment walkdown
- Post maintenance tests
- Emergent work control
- Routine plant status walkdowns

- RCS leakage
- Observed usually inaccessible locations (key way)
- Observe decay heat removal parameters to verify proper system operation
- Observed risk management during periods of reactor coolant system reduced inventory

This constitutes a partial sample, which will be counted in the 2018002 inspection report.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Routine (2 Samples)

- (1) Unit 1 and Unit 2, 0-PT-159.1, MOV Test on March 23, 2018
- (2) Unit 1, 0-PT-83.2, Simulated Loss of Offsite Power (LOOP) and ESF Actuation on March 12, 2018

In-service (1 Sample)

- (1) Unit 1 and Unit 2, 0-PT-213.19 Auxiliary Service Water, on February 26, 2018

Containment Isolation Valve (3 Samples)

- (1) Unit 1, 1-PT-57.5A, Leak Rate Test, on March 23, 2018
- (2) Unit 1, 1-PT-215.1, 1-CH-MOV-115A on March 28, 2018
- (3) Unit 1, 1-PT-215.1, 1-CH-MOV-115B on March 26, 2018

71114.06 - Drill Evaluation

Emergency Planning Drill (1 Sample)

The inspectors evaluated the full site emergency planning drill which consisted of repeated earthquakes with increasing system failure, leading to a general emergency on February 20, 2018

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification (6 Samples)

The inspectors verified licensee performance indicators submittals listed below for the period from April 2016 through December 2017.

- (1) Units 1 and 2 Unplanned Scrams per 7000 Critical Hours
- (2) Units 1 and 2 Unplanned Scrams with Complications
- (3) Units 1 and 2 Unplanned Power Changes per 7000 Critical Hours

71152 - Problem Identification and Resolution

Semiannual Trend Review (1 Sample)

The inspectors reviewed the licensee's corrective action program for trends that might be indicative of a more significant safety issue.

- (1) The inspectors reviewed the licensee's implementation of its corrective action program related to Unit 1 and Unit 2 safeguard equipment malfunction and repair.

Annual Follow-up of Selected Issues (1 Sample)

The inspectors reviewed the licensee's implementation of its corrective action program related to the following issues:

- (1) Worker entry into the radiologically controlled area with complications - CRs 1082372 and 1081463

Safety Conscious Work Environment

NRC inspectors conducted an assessment of the Safety Conscious Work Environment (SCWE) for the electrical maintenance department at North Anna Power Station. During the inspection, inspectors assessed whether issues exist that may represent challenges to the free flow of information, and whether underlying factors exist that would produce a reluctance to raise nuclear safety concerns. Interviews were conducted with a sampling of about eighty-five percent of the electrical maintenance group.

Based on inspection interviews and insights obtained from safety culture questionnaires the inspectors concluded that the conditions at the site, specifically in the electrical maintenance group, were conducive to a Safety Conscious Working Environment. Most personnel were comfortable using the corrective action program, and all were willing to report nuclear safety and other concerns using any and all processes available.

71153 - Follow-up of Events and Notices of Enforcement Discretion

Events (1 Sample)

- (1) The inspectors evaluated the Unit 2 1-E-A feedwater level transient and licensee's response on February 7, 2018

INSPECTION RESULTS

Failure to Assure Service Water Pump Sheds from Emergency Bus upon LOOP or SBO			
Cornerstone	Significance	Cross-cutting Aspect	Report Section
Mitigating Systems	Green NCV 05000338/2018001-01 Closed	H.12 - Avoiding Complacency	71111.22
<p>A self-revealing Green NCV of TS 5.4.1.a, was identified for the licensee's failure to have adequate written procedures for assuring proper configuration control in areas affected by maintenance or plant modifications. Specifically, the licensee failed to detect and correct a disconnected lead from contact C1 on 1-SW-62-1SWEB03. This directly led to the failure of the 1B service water pump to shed from the 1J Emergency bus during performance of 1-PT-83.2 on March 11, 2018.</p>			
<p><u>Description:</u> On March 11, 2018, while North Anna Unit 1 was in Mode 5 for a refueling outage, procedure 1-PT-83.2 "Simulated Loss of Offsite Power (LOOP) and ESF Actuation," was performed as part of Surveillance Requirement 3.8.1.17b, "Load Shedding from Emergency Buses." During the surveillance, the relevant acceptance criteria of 1-PT-83.2 contained in Steps 7.1.1.a, b were not met. Specifically, the acceptance criteria states that upon de-energization of the 1J emergency bus, under a simulated LOOP or SBO, nonsafety-related loads will automatically shed from the bus. This did not occur when the 1B service water (SW) pump failed to shed and remained on the emergency bus during auto start of the 1J EDG. The operators stopped the surveillance, declared the 1J EDG inoperable, and entered TS 3.8.1 Condition E, for the 1J EDG being inoperable for the performance of 1-PT-83.2.</p> <p>Troubleshooting identified that a wire was disconnected from contact C1 on 1-SW-62-1SWEB03. This condition would prevent the 62X relay from energizing and thereby, the trip relay coil on the 1B SW pump would not energize to shed the pump on a 'J' emergency bus under voltage. The XS5 lead was re-landed, and 1-PT-83.2 was re-performed on March 12, 2018, with all acceptance criteria being met. The licensee determined the 1J EDG to have been inoperable but functional for this surveillance. It was determined that the SW pump was not a significant load on the bus that would cause the EDG to be non-functional. The operators exited TS 3.8.1, Condition E, prior to the Action Statement expiration.</p> <p>Maintenance activities last occurred around the affected relay during design change DC-NA-13-00065, "Replace U1 "J" Bus NGV relays," the week of September 9, 2016. Procedure 0-GEP-52, "Conduct Post Modification Testing" was in effect and was followed by personnel. This procedure is a guide for testing and monitoring equipment after a modification. The procedure lacked any provisions calling for the review of the work area to assure proper component configuration was restored.</p> <p>Corrective Actions: Corrective actions planned and completed included performing troubleshooting of the equipment, an extended condition inspection of similar relays on both units, a revision to procedure 0-GEP-52 to include post maintenance review of the immediate job area, and an apparent cause evaluation. The licensee returned the affected system to normal configuration after troubleshooting identified the problem the day after the failed surveillance. The licensee also plans to submit a licensee event report to the NRC.</p> <p>Corrective Action References: CRs 1001753 and 1091778</p>			

Performance Assessment:

Performance Deficiency: The inspectors concluded that the failure to provide adequate instructions in procedure 0-GEP-52 to include post maintenance review of the immediate job area to identify and correct incorrect equipment configurations was a performance deficiency. This issue was reasonably within the licensee's ability to foresee and correct and should have been prevented.

Screening: The inspectors determined the performance deficiency was more than minor because it adversely affected the configuration control attribute of the Mitigating Systems cornerstone's objective to ensure the availability, reliability, and capability of systems that respond to initiating events to prevent undesirable consequences (i.e., core damage). Specifically, the procedure guidance failed to ensure the required configuration for proper load shedding of the 1B SW pump in the event of a LOOP or SBO.

Significance: The inspectors assessed the significance of the finding using IMC 0609, Appendix G, Attachment 1, "Shutdown Operation Significance Determination Process (SDP)," issued on May 5, 2014, and determined it screened as Green because the deficiency did not cause the loss of operability or functionality of any structures, systems and components.

Cross-cutting Aspect: This finding had a cross-cutting aspect in the component of Avoid Complacency, H.12, because the organization did not recognize and plan for the possibility of mistakes, latent issues, and inherent risk, even while expecting successful outcomes. Specifically, maintenance personnel did not inspect the immediate work area for challenges to configuration management, uninsulated loose hanging conductors and foreign material, nor submit a condition report for noted discrepancies.

Enforcement:

Violation: North Anna TS 5.4.1.a, requires, in part that, "applicable procedures recommended in Regulatory Guide (RG) 1.33, Revision 2, Appendix A, February 1978, shall be established, implemented, and maintained." Section 9(e) of RG 1.33 calls for, "procedures for control of ... modification work." Licensee procedure 0-GEP-52, governs post modification testing.

Contrary to the above, on March 11, 2018, it was identified that procedure 0-GEP-52 provided inadequate guidance to maintenance crews, following post modification testing on September 9, 2016. This resulted in leaving an electrical lead disconnected from maintenance performed on the 1J EDG rendering the EDG inoperable but functional.

Disposition: This violation is being treated as a non-cited violation, consistent with Section 2.3.2.a of the Enforcement Policy."

EXIT MEETINGS AND DEBRIEFS

The inspectors verified no proprietary information was retained or documented in this report.

The inspectors confirmed that proprietary information was controlled to protect from public disclosure.

- On April 18, 2018 the inspector presented quarterly resident inspector inspection results to Mr. Larry Lane, Site Vice President, and other members of the licensee staff.

DOCUMENTS REVIEWED

71111.01 - Adverse Weather Protection

Procedures

- 0-AP-41, "Severe Weather Conditions," Revision 70
- 0-GOP-4, "Cold Weather Operations," Revision 56
- 0-GOP-4.2, "Extreme Cold Weather Operations," Revision 36
- 0-GOP-4.2A, "Extreme Cold Weather Daily Checks," Revision 8

Condition Reports

- CR1088318, 1-SA-TIS-104 reading off scale low during cold weather, 1/21/2018
- CR1086918, 1-HT-HTT-ET-497 alarming low during ext cold weather cond, 01/21/2018
- CR1085071, 48M weather vane is bent down ~40deg, 12/14/2017

71111.04 - Equipment Alignment

Procedures

- 2-OP-7.5A, Operating Procedure, Valve Checkoff – Outside Recirculation Spray System, Revision 9
- 2-E-0, Emergency Procedure, Reactor Trip or Safety Injection, Revision 54

Condition Reports

- CR1061288, 1-FW-P-2 seal leakoff drain piping partially clogged, 3/1/2017
- CR1053107, 1-FW-P-2 Exceeded MRule Unavailability hours, 11/7/2016
- CR1050038, Hole identified in 90 deg elbow – SW-AFW cross-connect, 10/9/2016

Drawings

- Figure 26-4, Feedwater System, Control Room Operator Dev. Plan
- 11715-FM-086A SH1, Flow Operating Numbers Diag. Boron Recovery Sys, Rev 36, 2/17/2016
- 11715-FM-086A SH2, Flow Operating Numbers Diag. Boron Recovery Sys, Rev 32, 5/10/2011
- 11715-FM-086A SH3, Flow Operating Numbers Diag. Boron Recovery Sys, Rev 20, 5/11/2011
- 11715-FM-086A SH4, Flow Operating Numbers Diag. Boron Recovery Sys, Rev 25, 5/11/2011
- 11715-FM-086A SH5, Flow Operating Numbers Diag. Boron Recovery Sys, Rev 25, 6/6/2011
- 11715-FM-086A SH6, Flow Operating Numbers Diag. Boron Recovery Sys, Rev 24, 6/6/2011
- 12050-FM-107A SH1, Flow Emergency Diesel Air Service Sys. Rev 14, 7/15/2015
- 12050-FM-107A SH2, Flow Emergency Diesel Air Service Sys. Rev 13, 7/15/2015
- 12050-FM-107A SH3, Flow Emergency Diesel Air Service Sys. Rev 15, 12/19/2017
- 12050-FM-107A SH4, Flow Emergency Diesel Air Service Sys. Rev 14, 12/19/2017
- 11715-FM-096A SH1, Flow Operating Numbers Diag. Safety Injec. Sys, Rev 44, 9/23/2015
- 11715-FM-096A SH2, Flow Operating Numbers Diag. Safety Injec. Sys, Rev 43, 9/23/2015
- 11715-FM-096A SH3, Flow Operating Numbers Diag. Safety Injec. Sys, Rev 40, 10/25/2011
- 11715-FM-091A SH3, Flow Operating Numbers Diag. Recirc Spray. Sys, Rev 44, 9/23/2015
- 11715-FM-091A SH4, Flow Operating Numbers Diag. Recirc Spray. Sys, Rev 44, 9/23/2015

71111.05AQ - Fire Protection Annual/Quarterly

Drawings

- 0-FS-CT-1, "Cable Tray Spreading and Battery Room 2-1, 1-1, 2-3, 1-3," Revision 4
- 1-FS-DR-1, "Diesel Rooms 1J & 2J and 1H & 2H Units 1 & 2", Revision 6
- 1-FS-SBO-2, "Station Blackout Building", Revision 6
- 2-FS-SG-1, "Safeguards Area Unit-2", Revision 4
- 1-FS-FO-1, "Fuel Oil Pump House & MCC Room 1 & 2", Rev 4

71111.06 - Flood Protection Measures

Condition Reports

CR1089020, Received annunciator 1A-H8 (Manhole No. 2 Flooding), 01/30/2018

Drawings

1-BLD-MBAR-2MH03, ELEC MANHOLE #2 MISSILE SHIELD COVER

71111.08 - Inservice Inspection Activities

Procedures:

ER-AA-NDE-120, Dominion Written Practice for Certification of Nondestructive Examination Procedure, Revision 6

ER-AA-NDE-VT-603, VT-3 Visual Examination Procedure, Revision 6

ER-AA-NDE-UT-805, Straight Beam Ultrasonic Examination of Studs and Bolts in Accordance with ASME Section XI, Section VIII

ER-AP-BAC-10, Boric Acid Corrosion Control Program, Rev. 12

ER-AP-BAC-101, Boric Acid Corrosion Control Program (BACCP) Inspections, Rev. 12

ER-AP-BAC-102, Boric Acid Corrosion Control Program (BACCP) Evaluations, Rev. 13

Self-Assessments:

ETE- SAR002813, Boric Acid Corrosion Control Program (BACCP) Self-Assessment, dated 25 Nov. 2014

PIR1030006, Self-Assessment of Steam Generator Program, Feb 2017

Work Orders/Work Requests:

WO 59103012968: Program Weld Map 01-RC-ICV-3196-Valve, Welds V, W, and X, dated 3-15-18

WO 59103095698: Program Weld Map 01-RC-ICV-3197-Valve, Welds Y and Z, dated 3-15-18

WO 59103067944: Program Weld Map 01-SW-1470-Valve, Welds W, 95, 96, and 97 dated 11/8/2017

Dominion Nuclear Welding Program Weld Data Record (WO59103012968), Welds V, W, and X, dated 3/15/2018

Dominion Nuclear Welding Program Weld Data Record (WO59103095698), Welds Y and Z, dated 3/15/2018

Dominion Nuclear Welding Program Weld Data Record (WO59103067944), Welds W, 95, 96, and 97 dated 11/8/2017

Dominion Nuclear Welding Program Weld Material Field Control Record (WO59103012968), Welds V, W, and X, dated 3-14-18 and 3-15-18

Dominion Nuclear Welding Program Weld Material Field Control Record (WO59103095698), Welds Y and Z, dated 3-14-18 and 3-15-18

Dominion Nuclear Welding Program Weld Material Field Control Record (WO59103067944), Welds W, 96, and 97, dated 01/26/2018 and 3-21-18

Condition Reports:

CA269049, Feeding of Steam Generator A, 10/15/13

CR1049115, ISI Exam – Support R-5 Insufficient Threat Engagement

CR1057931, Degrading Trend on Unit 1 Reactor Coolant System Identified Leakage Engagement

CR1072652, 1-HV-364 (1-HV-TD-114 Outlet Isolation Valve) Has a Pin Hole Leak in Valve Body

CR1083835, Repair/Replace P4 on 1-SV-RM-121-Detect

CR1088548, Follow Up on a Non-Relevant Indication from 2009 10-Year Reactor Vessel Examination
CR1091851, Excessive Boric Acid at the Packing of 1-RC-172
CR1091904, Dry Excessive Discolored Boric Acid Found on 1-RH-42
CR1091906, Dry, Excessive, Discolored Boric Acid Found on 1-RC-1057
CR1091970, Excessive, Dry, Discolored Boric Acid on 1-RC-ICV-3233
CR1092133, Excessive Discolored Boric Acid at 1-SI-99
CR526074, UT Exam were conducted on the feeding of Steam Generator A, 9/15/13

Miscellaneous Documents:

101, Procedure Qualification Record, Rev. 5
102, Procedure Qualification Record, Rev. A
103, Procedure Qualification Record, dated 1/28/85
105, Procedure Qualification Record, Rev. 4
135, Procedure Qualification Record, dated 8/27/02
51-9281043-000, Qualified Eddy Current Examination Techniques for North Anna Unit 1, 1R26, 1/15/18
51-9281366-000, North Anna Unit 1 – 1R26 ECT Inspection Plan, 1/15/2018
801, Procedure Qualification Record, Rev. 2
805, Procedure Qualification Record, Rev. 3
831, Procedure Qualification Record, dated 7/20/01
Certificate of Authenticity, Zetec Probes: SN 707229, 715404, 715402, 715405, 715409, 715408, 715403, 715406, 715410, 733541, 733543, 733546, 733542, 733544, 640960
Certificate of Certification – Spotcheck Cleaner, SKC-S, Batch # 16C14K, dated 04/11/2016
Certificate of Certification – Spotcheck Developer, SKD-S2, Batch # 17D11K, dated 04/19/2017
Certificate of Certification – Spotcheck Penetrant, SKC-S, Batch # 16C14K, dated 04/11/2016
Certificate of Certification – Spotcheck Penetrant, SKC-S, Batch # 17D11K, dated 04/19/2017
Certificate of Certification – Spotcheck Penetrant, SKL-SP2, Batch # 17J16K, dated 09/25/2017
Certificate of Certification – Ultragel II, Batch # 17F087, dated 06/30/2017
Certificate of Personnel Qualifications: Bailey, DA; Black, LM; Bowyer, CE; Bowyer, PB; Brooks-Crocker, WE; Colado, LE; Conner, CJ; Craft, WQ; Deadrich, RT; Evans, Jr., DR.; Grigsby, JC; Howard, JM; Johnson, KL; Keyes, III, LE; Knight, CS; LaReau, KS; Mason, JR; Mercer, JT; Page, JA; Regney, DM; Vojvodic, R; Vornhagen, JW; Vouyioukas, KN; Wells, DB
Certificate of Vision Examination: Bailey, DA; Black, LM; Bowyer, CE; Bowyer, PB; Brooks-Crocker, WE; Colado, LE; Conner, CJ; Craft, WQ; Deadrich, RT; Evans, Jr., DR.; Grigsby, JC; Howard, JM; Johnson, KL; Keyes, III, LE; Knight, CS; LaReau, KS; Mason, JR; Mercer, JT; Page, JA; Regney, DM; Vojvodic, R; Vornhagen, JW; Vouyioukas, KN; Wells, DB
Certification Report for Stud UT Calibration Block RPV-1, dated 4/2/14
Character Resolution Card Certification
Dominion Measuring and Test Equipment Calibration Certificate – Thermometer, Digital (ATK-3), dated 05/02/2017
ETE-NA-2013-0050, Steam Generator Condition Monitoring and Operational Assessment, Rev. 0
ETE-NA-2018-0002, North Anna Unit 1 Spring 2018 Steam Generator Degradation Assessment, Rev. 0
Examination Technique Specification Sheet: 96004.1 R13, 27091.2 R2, 96041.1 R5, 96910.1 R11, 10908.4 R1
NAP-SGPMS-001, North Anna Site Specific Eddy Current Analysis Guidelines, Rev. 18
NDE Personnel Qualification and Certification Records for M. Grell, L. Humphrey, L. Moore, J. Odegard

North Anna 1R26 Steam Generator Eddy Current Examination/Acquisition/Analyst Approval,
Rev. 0

Repair/Replacement Plan 2017-137, Replace Instrument Control Valve, dated 10/30/17

Repair/Replacement Plan 2017-138, Replace Instrument Control Valve, dated 10/30/17

Repair/Replacement Plan 2017-170, Add Valve for Inspection Port, dated 11/13/17

Staveley Transducer Pulse Characterization for Transducer serial number 8494, dated 12/4/07

Welder Qualification Records for R. Anderson, J. Coleman, J. Crawley, C. Kauffman, and
C. Smith

Welding Technique Sheet No. 103, Revision 8

Welding Technique Sheet No. 810, Revision 10

71111.11 - Licensed Operator Requalification Program and Licensed Operator

Performance

Procedures

2018-1 LORP Scenario #4, Rev 11, 2/1/2018

1-OP-3.7, Operating Procedure, Unit Shutdown from Mode 1 to Mode 5 for Refueling,
Revision 45

Simulator Exam, LORP 2018-1 SXG# 45, Rev. 6

Simulator Exam, LORP 2018-1 SXG# 60, Rev. 8

Simulator Exam, LORP 2018-1 SXG# 29, Rev. 13

Simulator Exam, LORP 2018-1 SXG# 9, Rev. 11

Written Exam, 2017 E Shift SRO Part B

Written Exam, 2017 E Shift SRO Freeze

JPM 10412, LORP 18-1 JPM 11/08/2017

JPM 12277, LORP 18-1 JPM 11/08/2017

JPM 15589, LORP 18-1 JPM 11/08/2017

JPM N921, LORP 18-1 JPM 11/08/2017

JPM N1585, LORP 18-1 JPM 11/08/2017

JPM R589, LORP 18-1 JPM 11/08/2017

JPM S94, LORP 18-1 JPM 11/08/2017

JPM 13355, LORP 18-1 JPM 11/08/2017

JPM N476, LORP 18-1 JPM 11/08/2017

JPM N971, LORP 18-1 JPM 11/08/2017

JPM N1700, LORP 18-1 JPM 11/08/2017

JPM S94.1, LORP 18-1 JPM 11/08/2017

Self-Assessment PIR2016, Determine preparation for January 2018, 71111.11 evaluation

71111.12 - Maintenance Effectiveness

Procedures

1-PT-36Q, AMSAC SYSTEM LOGIC TEST, Rev 12

Work Orders

WO59103131676, PT: AMSAC SYSTEM LOGIC TEST, 04/19/2018

WO59102779778, IPM/02-MS-P-201A (TRANS AND 7300 PROC RACK CAL), 01/24/2018

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Procedures

WM-AA-301, Administrative Procedure, Operational Risk Assessment, Revision 18

WM-AA-301-Attachment 14, Medium Risk Plan Action, Modifying 1-EI-CB-02, MCR benchboard 1-2 for the installation of the new turbine control system (DC NA-14-00058) and the new moisture separator reheater controls (DC NA-17-00130). This work will occur during the defueled window

Condition Reports

CR1093690, No position indication on benchboard for 1-CC-TV-116A, 3/19/2018

Work Orders

WO59203131368, 2-BC-LT-223 Failed for a short time. – TROUBLESHOOT, 1/18/2018

WO59103029534, 36M PT: SERVICE WATER - AFW EMERG SUPPLY HEADER, 4/4/2018

71111.15 - Operability Determinations and Functionality Assessments

Condition Reports

CR1087394, U1 RWST flow switch frozen, 1/8/2018

CR1024711, 01-HT-HTT-ET-439N-HEATER, 01/21/2016

CR1088093, 2-BLD-STR-S54-9 inconsistent latch, 01/17/2018

CR502361, Performance of SR 3.8.1.2 when one EDG is inoperable, as required by TS 3.8.1
1/14/2018

CR10930712-SA-C-oil is discolored 3/26/2018

CR1097584, U2 EDG phosphate analysis, 2/20/2018

CR1089979, 2-HV-UH-70B fail to energize when thermostat was adjusted for 2-PT-83.5J,
2/14/2018

Work Orders

WO59103044022, Programmatic Work order from REA-NA-2016-036, 9/12/2017

WO59103085124, Programmatic Work order from REA-NA-2016-036, 9/12/2017

WO59102927505, 01-HT-HTT-ET-439N-HEATER thermocouple repair, 9/14/2017

WO59203132277, 2-BLD-STR-S54-9 inconsistent latch, 01/17/2018

Other Documents

Engineering Log Entry, 7-6-17

Operation Log Entry, 1-1-18,

Maintenance Log Entry, 1-2-18,

71111.18 - Plant Modifications

Procedures

NA-16-00003, Replace pressure transmitters, Rev 0.

NA-DC-12-0111, Unit 1 RCP Seal Replacement Project, Rev 38

NA-12-01110, Unit 1 Reactor Coolant Pump Seal Replacement, March 27, 2013

Work Orders

WO59102487616, 01-RC-P-IA-PUMP, 9/11/2017

WO59102523957, Replace Transmitter, 3/9/2015

71111.19 - Post Maintenance Testing

Condition Report

CR1091703, N31 failed low

Work Orders

WO59203137439, 2-SD-LCV-203A, normal level control valve had failed closed and the high level divert had come open, 3/21/18
WO59203138007, Repair of Control Side Coolant Leak, 2/18/2018
WO59102850148, Replace filter per Chemistry IAW SCORT 10 days after unit returned to 100% power, 2/28/2018
WO59103063366, *FTPM* IPM/01-NI-CHA-N-31 (FUSE REPLACEMENTS), 3/31/2017,
WO59101619622, AS FOUND PERIODIC VERIFICATION MOV TESTI, 3/27/2018
WO59103104567, REPLACEMENT OF EXHAUST EXT PIPING INS PADS, 2/14/2018
WO59203139204, Source/Intermediate Range Detector Assembly Replacement

71111.20 - Refueling and Other Outage Activities

Other Documents

2018 Outage Plan Safety Review, North Anna Unit 1, March 8, 2018
1-OP-1B, Containment Checklist, Rev 62

71151 - Performance Indicator Verification

Other Documents

LI-AA-500, NRC/INPO/WANO Performance Indicator and MOR Reporting, Revision 2
NEI 99-02, Regulatory Assessment Performance Indicator Guideline, Revision 7
North Anna Units 1, 2, and Common NRC (ROP) Performance Indicator Status by Month

71152 - Problem Identification and Resolution

Condition Reports

CR1091929, Individual was temporarily separated from his SRD while in an RCA, 03/13/2018
CR1091919, Purple magenta 7/16 DW socket found outside the RCA, 03/13/2018
CR1091744, An NSS Electrician working in Unit 1 SFGDS, with SRD on PAUSE, 03/11/2018
CR1082372, Worker alarmed RCA exit monitors in the PDA, 10/27/2017
CR1081463, Person entered RMA and RCA with SRD on pause, 10/19/2017
CR1074424, Supp. Electrician entered an RCA boundary door without dosimetry, 07/26/2017
CR1090893, Chains installed for fall protection in Safeguards, 02/27/2018
CR1086884, U-2 safeguards valve pit water intrusion, 12/31/2017
CR1086884, U-2 safeguards valve pit water intrusion, 12/31/2017
CR1084224, Door to Unit 2 Safeguards is difficult to operate, 11/17/2017
CR1079233, SAFEGUARDS AREA SUMP PUMP Degraded, 09/27/2017
CR1076999, Groundwater Intrusion into Unit 2 Safeguards Valve Pit, 09/01/2017
CR1076997, Ground water in leakage to unit 1 Safeguard valve pit, 09/01/2017

71153 - Follow-up of Events and Notices of Enforcement Discretion

Condition Report

CR1086380, U2 power increase due to 1A feedwater heater level control failure, 12/20/2017

Other Documents

Engineering Log Entry, 7-6-17
Operation Log Entry, 1-1-18,
Maintenance Log Entry, 1-2-18