



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
245 PEACHTREE CENTER AVENUE N.E., SUITE 1200
ATLANTA, GEORGIA 30303-1200

August 11, 2020

Mr. Daniel G. Stoddard
Senior Vice President and Chief Nuclear Officer
Innsbrook Technical Center
5000 Dominion Boulevard
Glen Allen, VA 29060

SUBJECT: NORTH ANNA POWER STATION – INTEGRATED INSPECTION REPORT
05000338/2020002 AND 05000339/2020002; 07200016/2020001

Dear Mr. Stoddard:

On June 30, 2020, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at North Anna Power Station and discussed the results of this inspection with Mr. Larry Lane and other members of your staff. Additionally, on July 29, 2020, a re-exit meeting was conducted with Mr. James Jenkins, and other members of your staff to discuss the final results of the **inspection. The results of this inspection are documented in the enclosed report.**

No findings or violations of more than minor significance were identified during this inspection.

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 Title 10 of the *Code of Federal Regulations* 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Stewart N. Bailey, Chief
Reactor Projects Branch 4
Division of Reactor Projects

Docket Nos. 05000338 and 05000339
07200016

License Nos. NPF-4 and NPF-7

Enclosure:
As stated

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05000338/2020002 AND 05000339/2020002; 07200016/2020001
DATED: AUGUST 11, 2020

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OFFICE	RII:DRP	RII:DRP	RIII:DRS	RII:DRP	RII:DRP
NAME	MTobin	GEatmon	VPetrella	DJackson	SBailey
DATE	8/10/2020,	8/10/2020	8/7/2020	8/7/2020	8/11/2020

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

Docket Numbers: 05000338 and 05000339
07200016

License Numbers: NPF-4 and NPF-7

Report Numbers: 05000338/2020002 and 05000339/2020002
07200016/2020001

Enterprise Identifier: I-2020-002-0066
I-2020-001-0113

Licensee: Virginia Electric & Power Co.

Facility: North Anna Power Station

Location: Mineral, VA

Inspection Dates: April 01, 2020 to June 30, 2020

Inspectors: M. Tobin, Senior Resident Inspector
G. Eatmon, Resident Inspector
V. Petrella, Reactor Inspector, Acting

Approved By: Stewart N. Bailey, Chief
Reactor Projects Branch 4
Division of Reactor Projects

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting an integrated inspection at North Anna Power Station, 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.

List of Findings and Violations

No findings or violations of more than minor significance were identified.

Additional Tracking Items

None.

PLANT STATUS

Unit 1 began the inspection period at rated thermal power (RTP). On June 2, 2020, the unit was down powered to 88 percent RTP to repair condenser tube leaks on the secondary side. On June 7, 2020, the unit was returned to RTP and remained at or near RTP for the remainder of the inspection period.

Unit 2 began the inspection period at RTP. On April 8, 2020, the unit was shut down due to identified reactor coolant system (RCS) pressure boundary leakage. Following repairs, the unit returned to RTP on April 20, 2020. On May 26, 2020, the reactor was reduced to 25 percent RTP and the turbine was taken offline to initiate repairs on a switchyard transformer. The unit was returned to RTP on May 28, 2020, and remained at or near RTP for the remainder of the 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.

Starting on March 20, 2020, in response to the National Emergency declared by the President of the United States on the public health risks of the coronavirus (COVID-19), resident inspectors were directed to begin telework and to remotely access licensee information using available technology. During this time the resident inspectors performed periodic site visits each week and during that time conducted plant status activities as described in IMC 2515, Appendix D; observed risk significant activities; and completed on site portions of IPs. In addition, resident and regional baseline inspections were evaluated to determine if all or portion of the objectives and requirements stated in the IP could be performed remotely. If the inspections could be performed remotely, they were conducted per the applicable IP. In some cases, portions of an IP were completed remotely and on site. The inspections documented below met the objectives and requirements for completion of the IP.

REACTOR SAFETY

71111.01 - Adverse Weather Protection

Seasonal Extreme Weather Sample (IP Section 03.01) (1 Sample)

- (1) The inspectors evaluated summer readiness prior to the onset of seasonal hot temperatures for the material condition of the licensee's offsite AC power system and onsite AC power systems, including the switchyard and transformers, mini-switchyard, and the emergency diesel generators on June 30, 2020.

71111.04 - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (4 Samples)

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

- (1) Unit 2 motor driven auxiliary feedwater system on May 21, 2020
- (2) Unit 1 turbine driven auxiliary feedwater system on May 21, 2020
- (3) Unit 1 high head safety injection train A and C during preventative maintenance on train B on June 15, 2020
- (4) Station blackout diesel system on June 28, 2020

71111.05 - Fire Protection

Fire Area Walkdown and Inspection Sample (IP Section 03.01) (5 Samples)

The inspectors evaluated the implementation of the fire protection program by conducting a walkdown and performing a review to verify program compliance, equipment functionality, material condition, and operational readiness of the following fire areas:

- (1) Unit 1 safeguards building on April 20, 2020
- (2) Unit 2 safeguards building on April 20, 2020
- (3) Unit 1 quench spray building on April 20, 2020
- (4) Unit 2 quench spray building on April 20, 2020
- (5) Service water pump house on June 26, 2020

71111.11Q - Licensed Operator Regualification Program and Licensed Operator Performance

Licensed Operator Regualification Training/Examinations (IP Section 03.02) (1 Sample)

- (1) The inspectors observed and evaluated operator simulator training that occurred on June 2, 2020.

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (1 Sample)

The inspectors evaluated the effectiveness of maintenance to ensure the following structures, systems, and components (SSCs) remain capable of performing their intended function:

- (1) Unit 1 and Unit 2 transformer deluge system on June 25, 2020

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (3 Samples)

The inspectors evaluated the accuracy and completeness of risk assessments for the following planned and emergent work activities to ensure configuration changes and appropriate work controls were addressed;

- (1) Unit 1 and Unit 2 service water pump house tornado missile modification risk mitigation plan on May 26, 2020
- (2) Unit 1 risk profile and associated risk plan actions during 9-year maintenance on charging pump 'B', 1-CH-P-1B, commenced on June 8, 2020
- (3) Unit 1 and Unit 2 in high risk during Unit 1B service water header outage for maintenance on June 26, 2020

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (6 Samples)

The inspectors evaluated the licensee's justifications and actions associated with the following operability determinations and functionality assessments:

- (1) Unit 1 'J' emergency diesel generator batteries following low voltage alarm in the control room on April 6, 2020
- (2) Unit 1 'H' emergency diesel generator operability following trip on April 27, 2020
- (3) Units 1 and 2 service water pump house ventilation system with dampers inoperable on May 14, 2020
- (4) Unit 2, reactor coolant system low hydrogen concentration trend on May 28, 2020
- (5) Unit 2 Pressure Boundary Leak on 2A reactor coolant pump seal injection line on June 12, 2020
- (6) Unit 1 snubber operability on May 12, 2020

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (6 Samples)

The inspectors evaluated the following post maintenance test activities to verify system operability and functionality:

- (1) Post maintenance testing of the 'B' main condensate pump, 02-CN-P-1B-PUMP, work order 59203303843
- (2) Post maintenance testing on the repair of the cracked weld on the seal injection line for the 'A' reactor coolant pump, 02-RC-P-1A-PUMP, work order 59203306992
- (3) Post maintenance testing after the hose replacement on the service air compressor, 02-SA-C-1-BLOWER, work order 59203302925
- (4) Post maintenance testing of the 1JA emergency diesel generator starting air compressor, 01-EG-C-1JA-BLOWER, work order 59203306749
- (5) Post maintenance testing of the service water pump house exhaust fan motor, 01-HV-F-49A-MOTOR, after the breaker was found tripped, work order 59203306632
- (6) Post maintenance testing of the Unit 1 ATWS (anticipated transient without scram) mitigating system actuation circuitry following repairs, work order 59203305111

71111.20 - Refueling and Other Outage Activities

Refueling/Other Outage Sample (IP Section 03.01) (1 Partial)

- (1) (Partial)
The inspectors evaluated the Unit 2 forced outage due to pressure boundary RCS leakage from April 9, 2020 to April 17, 2020. This sample is being documented as a

partial sample due to COVID-19 restrictions; the resident inspectors were unable to complete a containment closeout walkdown and instead reviewed the results of the licensee containment closeout procedure.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (2 Samples)

- (1) 1-PT-36.1B, Train B Reactor Protection and ESF Logic Actuation Logic Test, work order 59203300006
- (2) 2-PT-36.9.1J, Degraded Voltage/Loss of Voltage Operational Test: 2J Bus, work order 59203301639

RCS Leakage Detection Testing (IP Section 03.01) (1 Sample)

- (1) Unit 2 RCS leak detection when leakage exceeded tier 3 action levels on April 10, 2020

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

MS07: High Pressure Injection Systems (IP Section 02.06) (2 Samples)

- (1) Unit 1 (April 2019 – March 2020)
- (2) Unit 2 (April 2019 – March 2020)

MS10: Cooling Water Support Systems (IP Section 02.09) (2 Samples)

- (1) Unit 1 (April 2019 - March 2020)
- (2) Unit 2 (April 2019 - March 2020)

BI02: RCS Leak Rate Sample (IP Section 02.11) (2 Samples)

- (1) Unit 1 (April 2019 – March 2020)
- (2) Unit 2 (April 2019 – March 2020)

71152 - Problem Identification and Resolution

Semiannual Trend Review (IP Section 02.02) (1 Sample)

- (1) The inspectors reviewed a selection of human errors that have occurred on site to determine if a larger trend exists due to the limited on-site crews during the COVID-19 restrictions. After careful review of all documented human errors on site, the inspectors have determined that while there is no increasing trend of significant human errors on site, human errors are slightly elevated in comparison to previous timeframes with similar amounts of work being completed. The inspectors noted that,

although all work is going through approved processes and being correctly assigned and completed, the lack of informal peer checks due to increased personnel separation may be a contributor.

OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

60855 - Operation of an Independent Spent Fuel Storage Installation (ISFSI)

Operation of an ISFSI (1 Sample)

- (1) The inspectors evaluated the licensee's activities related to long-term operation and monitoring of their independent spent fuel storage installation on June 22, 2020.

INSPECTION RESULTS

No findings were identified.

EXIT MEETINGS AND DEBRIEFS

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

- On June 30, 2020, the inspectors presented the integrated inspection results to Mr. Larry Lane and other members of the licensee staff.
- On July 29, 2020, the inspectors conducted a re-exit meeting with Mr. James Jenkins, Director of Nuclear Safety and Licensing, and other members of the licensee staff to discuss the final results of the integrated inspection.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Procedures	0-AP-08	Response to Grid Instability	14
71111.04	Drawings	11715-FM-070A Sheet 3	Flow/Valve Operating Numbers Diagram Main Steam System North Anna Power Station Unit 1 Virginia Power	47
		11715-FM-070B Sheet 1	Flow/Valve Operating Numbers Diagram Main Steam System North Anna Power Station Unit 1 Virginia Power	45
		11715-FM-070B Sheet 2	Flow/Valve Operating Numbers Diagram Main Steam System North Anna Power Station Unit 1 Virginia Power	45
		11715-FM-070B Sheet 3	Flow/Valve Operating Numbers Diagram Main Steam System North Anna Power Station Unit 1 Virginia Power	48
		11715-FM-074A Sheet 1	Flow/Valve Operating Numbers Diagram Feedwater System North Anna Power Station Unit 1 Virginia Power	56
		11715-FM-074A Sheet 3	Flow/Valve Operating Numbers Diagram Feedwater System North Anna Power Station Unit 1 Virginia Power	48
		12050-FM-074A Sheet 1	Flow/Valve Operating Numbers Diagram Feedwater System North Anna Power Station Unit 2 Virginia Power	54
		12050-FM-074A Sheet 3	Flow/Valve Operating Numbers Diagram Feedwater System North Anna Power Station Unit 2 Virginia Power	44
	Procedures	1-OP-7.2A	Operating Procedure, Valve Checkoff - High Head Safety Injection	20
		1-PT-57.1C	Operations Periodic Test, ECCS Subsystem (Valves)	11
Work Orders	59203301985		5/28/2020	
71111.05	Corrective Action Documents Resulting from Inspection	1145155	Rags Identified in Unit 1 Safeguards During NRC Walkdown	04/21/2020
		1145903	NRC Walkdown Identified Inconsistencies on U1 QSPH, U2 QSPH, and U1 Safeguards Pre-Fire Plans	04/30/2020
	Procedures	1-FS-QS-1	Quench Spray Building (SG-74) Unit 1	5
		1-FS-SG-1	Safeguards Area Safe Shutdown Equipment Unit 1	6
		1-FS-SW-1	Service Water Pump House Units 1&2	
		2-FS-QS-1	Quench Spray Building (SG-74) Unit 2	4
2-FS-SG-1	Safeguards Area Safe Shutdown Equipment Unit 2	5		
71111.11Q	Miscellaneous	SEG-7G		
		SEG-9C		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.12	Corrective Action Documents	CR1118928		
71111.13	Miscellaneous		NAPS Phonix Risk Modeling for 200613A Schedule Evaluation on 6/12/2020 at 10:17	6/12/2020
			NAPS Phonix Risk Modeling for 200613A Schedule Evaluation on 6/11/2020 at 11:59	6/11/2020
	Procedures	OP-NA-601	Protected Equipment	16
71111.15	Corrective Action Documents	CR 11475958	Unit 2 RCS Hydrogen concentration trending down	5/21/2020
		CR1145601		
	Corrective Action Documents Resulting from Inspection	CR1143018	ER-NA-ISI-SN-615 Attachment 4 Safety Related Snubbers, lacks supporting document	03/11/2020
	Miscellaneous		Determination of Proper Snubber Reservoir Level for 1-FW-HSS-213	
			H2 Team Meeting Notes	5/28/2020
			Troubleshooting Unit 2 RCS Hydrogen Trend	
			NAPS Unit 1 Pressurizer Pressure Response for Energizing Pressurizer Backup Heaters	5/26/2020
		#183816	IRIS Experience Report: Oconee Unit 2, Low Hydrogen Concentration in the Reactor Coolant System	6/14/2000
		CA3037190	Root Cause Evaluation CA3037190: Socket Weld Failure on Unit 2 'C' Reactor Coolant Pump Seal Return Line	
	CA7902143	Level of Effort Evaluation	05/13/2020	
Procedures	ER-NA-ISI-SN-615	Safety Related Snubbers	3	
71111.19	Work Orders	59203302925	Hose Replacement	04/17/2020
		59203303843	Uncouple/Recouple 2-CN-P-1B	04/25/2020
		59203306632	Breaker found Tripped	03/28/2020
		59203306749	eWP / Repair Compressor	04/02/2020
		59203306992	FORCED OUTAGE - Repair of Cracked Weld	04/20/2020
71111.22	Work Orders	59203300006	Train B Reactor Protection and ESF Logic Actuation Logic Test	04/21/2020
		59203301639	Degraded Voltage/Loss of Voltage Operational Test: 2J Bus	04/22/2020

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71151	Miscellaneous		North Anna Unit 2 March 2020 RCS Leakage Performance Indicator Data	
			North Anna Unit 2 March 2020 MSPI Performance Indicator Data	
			North Anna Unit 2 February 2020 RCS Leakage Performance Indicator Data	
			North Anna Unit 2 February 2020 MSPI Performance Indicator Data	
			North Anna Unit 2 January 2020 RCS Leakage Performance Indicator Data	
			North Anna Unit 2 January 2020 MSPI Performance Indicator Data	
			North Anna Unit 1 March 2020 RCS Leakage Performance Indicator Data	
			North Anna Unit 1 March 2020 MSPI Performance Indicator Data	
			North Anna Unit 1 February 2020 RCS Leakage Performance Indicator Data	
			North Anna Unit 1 February 2020 MSPI Performance Indicator Data	
			North Anna Unit 1 January 2020 RCS Leakage Performance Indicator Data	
			North Anna Unit 1 January 2020 MSPI Performance Indicator Data	
			North Anna December 2019 Performance Indicator Data	
			North Anna November 2019 Performance Indicator Data	
			North Anna October 2019 Performance Indicator Data	
			North Anna September 2019 Performance Indicator Data	
			North Anna August 2019 Performance Indicator Data	
			North Anna July 2019 Performance Indicator Data	
			North Anna June 2019 Performance Indicator Data	
			North Anna May 2019 Performance Indicator Data	
	North Anna April 2019 Performance Indicator Data			
71152	Corrective Action	CA7670551		

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
	Documents	CA7856580		
		CR1118708		
		CR1129411		
	Corrective Action Documents Resulting from Inspection	CR1150228		