



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

July 27, 2020

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

SUBJECT: NORTH ANNA POWER STATION – TRIENNIAL INSPECTION OF
EVALUATION OF CHANGES, TESTS AND EXPERIMENTS BASELINE
INSPECTION REPORT 05000338/2020010 AND 05000339/2020010

Dear Mr. Stoddard:

On July 10, 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. Jim Jenkins and other members of your staff. 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/

James B. Baptist, Chief
Engineering Branch 1
Division of Reactor Safety

Docket Nos. 05000338 and 05000339
License Nos. NPF-4 and NPF-7

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV®

SUBJECT: NORTH ANNA POWER STATION – TRIENNIAL INSPECTION OF
EVALUATION OF CHANGES, TESTS AND EXPERIMENTS BASELINE
INSPECTION REPORT 05000338/2020010 AND 05000339/2020010
DATED JULY 27, 2020

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ADAMS ACCESSION NUMBER: **ML20209A007**

OFFICE	RII/DRS	RII/DRS	RII/DRS		
NAME	M. Greenleaf	B. Collins	J. Baptist		
DATE	7/21/2020	7/23/2020	7/27/2020		

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U.S. NUCLEAR REGULATORY COMMISSION
Inspection Report

Docket Numbers: 05000338 and 05000339

License Numbers: NPF-4 and NPF-7

Report Numbers: 05000338/2020010 and 05000339/2020010

Enterprise Identifier: I-2020-010-0042

Licensee: Virginia Electric & Power Company

Facility: North Anna Power Station

Location: Mineral, VA

Inspection Dates: July 06, 2020 to July 10, 2020

Inspectors: P. Carman, Senior Reactor Inspector
B. Collins, Senior Reactor Inspector
M. Greenleaf, Reactor Inspector

Approved By: James B. Baptist, Chief
Engineering Branch 1
Division of Reactor Safety

Enclosure

SUMMARY

The U.S. Nuclear Regulatory Commission (NRC) continued monitoring the licensee's performance by conducting a triennial inspection of evaluation of changes, tests and experiments baseline 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.

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

71111.17T - Evaluations of Changes, Tests, and Experiments

Sample Selection (IP Section 02.01) (23 Samples)

The inspectors reviewed the following evaluations, screenings, and/or applicability determinations for 10 CFR 50.59 from May 1, 2017 to July 10, 2020.

- (1) 50.59 Evaluation: NA-11-01082, Main Steam Radiation Monitor Replacement
- (2) 50.59 Evaluation: NA-12-00106, Fuel Oil Pump House High Pressure CO2 Fire Protection System Replacement
- (3) 50.59 Evaluation: NA-15-00050, Local Control Room Data Acquisition System
- (4) 50.59 Evaluation: NA-15-00058, Solid State Protection System Digital Card Replacement - Unit 1
- (5) 50.59 Evaluation: NA-15-00061, Installation of Voltage Unbalance Protection (1H)
- (6) 50.59 Evaluation: NA-15-00071, Unit 2 Main Turbine Controls Replacement
- (7) 50.59 Evaluation: NA-16-00013, Unit 1 SOLA Regulator Removal
- (8) 50.59 Evaluation: NA-16-00014, Instrument Air Compressor (2-IA-C-1) Digital Timing Relays
- (9) 50.59 Evaluation: NA-16-00047, Unit 2 Feedwater Bypass NTD Dual Circuit Cards
- (10) 50.59 Evaluation: ETE-NAF-2017-0122, Technical and Regulatory Basis for the Revision of VEP-FRD-42A to Revision 2, Minor Revision 2, Including the Basis for the Addition of the CMS5 Topical Report SSP-14-P01/028-TR Into the Reload Nuclear Design Methodology
- (11) 50.59 Screen: NA-12-00096, Repair Reactor Coolant Loop Stop Valve 1-RC-MOV-1595
- (12) 50.59 Screen: NA-14-00032, Emergency Diesel Generator Standby Jacket Cooling Circulating Pump Replacement
- (13) 50.59 Screen: NA-16-00058, Removal of Weko Pipe Seals in the "B" Service Water Supply Header (36"-WS-2-151-Q3)
- (14) 50.59 Screen: NA-17-00112, Semi-Vital Bus Uninterruptible Power Supply
- (15) 50.59 Screen: NA-17-00158, Pressurizer Head Vent Equivalent Solenoid Valves
- (16) 50.59 Screen: NA-17-00166, Pressurizer Steam Space Small Branch Lines Safety Class Changes
- (17) 50.59 Screen: NA-17-00194, 2-SW-TV-201A Valve Replacement
- (18) 50.59 Screen: NA-17-00195, Vital Bus 1-I Non-Safety Branch Circuit Fuse Installation
- (19) 50.59 Screen: NA-17-00220, Unit 1 2018 Flow-Accelerated Corrosion (FAC) Program Piping Replacements

- (20) 50.59 Screen: NA-17-00257, PORV N2 Supply Upgrade
- (21) 50.59 Screen: NA-18-00026, Auxiliary Feedwater Pump Steam Turbine Upgrades (1-FW-T-2)
- (22) 50.59 Screen: ETE-NAF-2018-0009, Allowed CMS5 Software Versions and Model Options for Use in Production Reload Nuclear Design Activities
- (23) 50.59 Equivalency: NA-14-01024, Replacement of CRDM, RPI, and Core Exit Thermocouple Cable Sections / North Anna 1 & 2

INSPECTION RESULTS

No findings were identified.

EXIT MEETINGS AND DEBRIEFS

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

- On July 10, 2020, the inspectors presented the triennial inspection of evaluation of changes, tests and experiments baseline inspection results to Mr. Jim Jenkins and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.17T	Calculations	13075.58-NPB-1-X6	Pressurizer Vent System - Stress Analysis	Rev. 001
		13075.58-NPB-1-X6 Addendum 00B	Evaluation of Replacement Solenoid Valves per DC NA-10-00152	10/27/2010
		13929.08-NPB-1-X6 Addendum 00B	Replacement of the 1" pressurizer head vent solenoid operated valves 2-RC-SOV-202A1, 202A2, 202B1 and 202B2 per DC NA-17-00158	05/16/2019
		CE-1641	Analysis of the As-Built Configuration of the Piping and Pipe Supports of the Reactor Vessel Head Vent Line at North Anna Power Station Unit 1	Rev. 0
		CEM-0199	Evaluation of PORV Nitrogen Accumulator Installed Per DC NA-17-00257	Rev. 0
		DAR-ME-14-9	Qualification Summary Report for the Core Exit Thermocouple System Flexible Mineral Insulated Support Tray Cable Assemblies at North Anna Units 1 and 2	Rev. 0
	Corrective Action Documents Resulting from Inspection	CR1151192	2020 NRC 10CFR50.59 Inspection-Incorrect Calc Identified in DC NA-17-00158	07/08/2020
	Drawings	1700112-11715-FE-1W	Semi-Vital Buses and Panel 1-EP-CB-16D North Anna Power Station Unit 1	Rev. 1
		59-2-S935-722441	Sectional Assembly 8"-150R	Rev. 0
		59-2-S935-722442	Dimensional Arrangement 8"-150R	Rev. 0
	Engineering Changes	14-3188	Replacement of CRDM, RPI and Core Exit Thermocouple Cable Sections / North Anna 1 & 2	09/02/2014
		14-3194	Replacement of CRDM, RPI and Core Exit Thermocouple Cable Sections / North Anna 1 & 2	09/19/2014
		15-3010	Replacement of CRDM, RPI and Core Exit Thermocouple Cable Sections / North Anna 1 & 2	01/13/2015

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		18-0140	Replacement of CROM, RPI and Core Exit Thermocouple Cable Sections / North Anna 1 & 2	03/31/2018
		NA-11-01082	Main Steam Radiation Monitor Replacement	12/10/2013
		NA-12-00096	Repair Reactor Coolant Loop Stop Valve 1-RC-MOV-1595	11/27/12
		NA-12-00106	Fuel Oil Pump House High Pressure CO2 Fire Protection System Replacement	8/27/15
		NA-14-00032	EDG Standby Jacket Cooling Circulating Pump Replacement	3/10/15
		NA-14-01024	Replacement of CRDM, RPI and Core Exit Thermocouple Cable Sections / North Anna 1 & 2	08/05/2014
		NA-15-00050	Local Control Room Data Acquisition System	05/03/2016
		NA-15-00058	Solid State Protection System Digital Card Replacement - Unit 1	12/15/2015
		NA-15-00061	Installation of Voltage Unbalance Protection (1H)	06/06/2017
		NA-15-00071	Unit 2 Main Turbine Controls Replacement	12/15/16
		NA-16-00013	Unit 1 SOLA Regulator Removal	03/15/2016
		NA-16-00014	Instrument Air Compressor (2-IA-C-1) Digital Timing Relays	11/9/16
		NA-16-00047	Unit 2 Feedwater Bypass NTD Dual Circuit Cards	03/10/2017
		NA-16-00058	Removal of Weko Pipe Seals in the "B" Service Water Supply Header (36"-WS-2-151-Q3)	Rev. 1
		NA-17-00112	Semi-Vital Bus Uninterruptible Power Supply	Rev. 5
		NA-17-00158	Pressurizer Head Vent Equivalent Solenoid Valves / NAPS / Unit 2	Rev. 1
		NA-17-00166	Pressurizer Steam Space Small Branch Lines Safety Class Changes	Rev. 1
		NA-17-00194	2-SW-TV-201A Valve Replacement	Rev. 1
		NA-17-00195	Vital Bust 1-I Non Safety Branch Circuit Fuse Installation	Rev. 6
		NA-17-00220	Unit 1 2018 Flow Accelerated Corrosion (FAC) Program – Piping Replacements	Rev. 2
		NA-17-00257	PORV N2 Supply Upgrade	Rev. 1
		NA-18-00026	Auxiliary Feedwater Pump Steam Turbine Upgrade (1-FW-T-2)	Rev. 0
	Engineering Evaluations	CA7907881	Substantial Safety Hazard Evaluation - CR1144961	05/12/2020
		ETE-NAF-2017-	Technical and Regulatory Basis for the Revision of VEP-	Rev. 0

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		0122	FRD-42-A to Revision 2, Minor Revision 2, Including the Basis for the Addition of CMS5 Topical Report SSP-14-P01/028-TR Into the Reload Nuclear Design Methodology	
		ETE-NAF-2018-0009	Allowed CMS 5 Software Versions and Model Options for Use in Production Reload Nuclear Design Activities	Rev. 0
	Miscellaneous	DOWG 16-01	Resource Manual for IP-ENG-001, Standard Design Process	March 1, 2017
		EPRI 1011881	Nuclear Maintenance Applications Center: Westinghouse Full-Length Rod Control System - Life Cycle Management Planning Sourcebook	04/01/2006
		G-955186	Equipment Specification: Solenoid Operated Globe and Throttle Valves ASME Boiler and Pressure Vessel Code Section III Class 1, 2 and 3	Rev. 1
		ML14260A143	FINAL SAFETY EVALUATION BY THE OFFICE OF NUCLEAR REACTOR REGULATION TOPICAL REPORT WCAP-17867-P, REVISION 1, "WESTINGHOUSE SSPS BOARD REPLACEMENT LICENSING SUMMARY REPORT" PRESSURIZED WATER REACTOR OWNERS GROUP TAC NOS. MF3550 AND MF4655	09/19/2014
		PO 4500320548-00001-000000263403	Westinghouse Repair & Replacement	10/24/2017
		SDBD-NAPS-EV	System Design Basis Document for Emergency Power and Vital Bus (120-240V) System North Anna Power Station	Rev. 19
		SS-14-P01/028-TR-P-A	Generic Application of the Studsvik Scandpower Core Management System to Pressurized Water Reactors	Rev. 0
	Procedures	CM-AA-400	10 CFR 50.59 and 10 CFR 72.48 - Changes, Tests, and Experiments	Rev. 13
		CM-AA-DDC-201	Design Changes	Rev. 22
		CM-AA-SDP-201	Standard Design Process Interface	Rev. 2
		DNES-AA-GN-1003	Design Effects and Considerations	Rev. 21
		DNES-AA-GN-1007	Digital Modification Considerations	Rev. 4

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		DNES-VA-GN-0038	Seismic Qualification of Equipment	Rev. 0
		IP-ENG-001	Standard Design Process	Rev. 1
		NF-AA-PRA-410	Probabilistic Risk Assessment Procedures and Methods: PRA Configuration Control Program	Rev. 10
	Work Orders	59203140109	Damaged RPI coils	Rev. 0
		59203140118	Damaged RPI coils	Rev. 0