



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION II
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ATLANTA, GEORGIA 30303-1200

February 13, 2020

Mr. Daniel G. Stoddard
Senior Vice President and Chief Nuclear Officer
Dominion Energy
Innsbrook Technical Center
5000 Dominion Blvd., Floor: IN-2SW
Glen Allen, VA 29060

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION – INTEGRATED INSPECTION
REPORT 05000395/2019004 AND INDEPENDENT SPENT FUEL STORAGE
INSTALLATION INSPECTION (ISFSI) REPORT 07201038/2019001

Dear Mr. Stoddard:

On December 31, 2019, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Virgil C. Summer Nuclear Station. On January 28, 2020, the NRC inspectors discussed the results of this inspection with Mr. George Lippard and other members of your staff. The results of this inspection are documented in the enclosed report.

One Severity Level IV violation without an associated finding is documented in this report. We are treating this violation as a non-cited violation (NCV) consistent with Section 2.3.2 of the Enforcement Policy.

No NRC-identified or self-revealing findings were identified during this inspection.

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

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/

Randall A. Musser, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Docket Nos. 05000395 and 07201038
License No. NPF-12

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV®

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION – INTEGRATED INSPECTION REPORT 05000395/2019004 AND INDEPENDENT SPENT FUEL STORAGE INSTALLATION INSPECTION (ISFSI) REPORT 07201038/2019001 dated February 13, 2020

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NAME	A. Wilson	N. Morgan	J. Dolecki	D. Lanyi	R. Musser
DATE	2/12/2020	2/12/2020	2/12/2020	2/12/2020	2/13/2020

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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Inspection Report

Docket Number: 05000395 and 07201038

License Number: NPF-12

Report Number: 05000395/2019004 and 07201038/2019001

Enterprise Identifier: I-2019-004-0019 and I-2019-001-0149

Licensee: Dominion Energy

Facility: Virgil C. Summer Nuclear Station

Location: Jenkinsville, SC

Inspection Dates: October 01, 2019 to December 31, 2019

Inspectors: E. Hilton, Resident Inspector
D. Lanyi, Senior Operations Engineer
N. Morgan, Reactor Inspector
T. Nazario Cruz, Senior Resident Inspector
A. Wilson, Project Engineer

Approved By: Randall A. Musser, Chief
Reactor Projects Branch 3
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 Virgil C. Summer Nuclear 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

Inaccurate Fire Watch Documentation			
Cornerstone	Significance	Cross-Cutting Aspect	Report Section
Not Applicable	NCV 05000395/2019004-01 Open/Closed	Not Applicable	71111.05Q
The inspectors identified a Severity Level IV Non-cited Violation (NCV) of 10 CFR 50.9, "Completeness and Accuracy of Information," when the licensee failed to conduct and accurately document 20-minute roving fire watches as a compensatory action, as required by procedure SAP-131, "Fire Protection Program."			

Additional Tracking Items

None.

REPORT DETAILS

PLANT STATUS

The unit began the inspection period at 100 percent power and operated at full power until November 7, 2019 when the unit was shut down to repair reactor building cooling unit (RBCU) fans and a safety injection (SI) check valve. The unit was returned to rated power on November 21, 2019 following the repairs. Additionally, on November 28, 2019 the unit shutdown to Mode 3 to repair the 'A' steam generator (SG) wide range level instrumentation and returned to rated power on November 30, 2019. Unit 1 remained at or near 100 percent power 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 performed plant status activities described in IMC 2515, Appendix D, "Plant Status," and conducted routine reviews using IP 71152, "Problem Identification and Resolution." 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

Seasonal Extreme Weather Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated readiness for seasonal extreme weather conditions prior to the onset of cold temperatures during walkdowns of the condensate storage tank and refueling water storage tank areas on November 12, 2019.

External Flooding Sample (IP Section 03.04) (1 Sample)

- (1) The inspectors evaluated readiness to cope with external flooding on November 27, 2019.

71111.04Q - Equipment Alignment

Partial Walkdown Sample (IP Section 03.01) (2 Samples)

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

- (1) 'A' RBCU during startup and following outage on November 17, 2019
- (2) 'A' residual heat removal (RHR) during startup and following outage on November 18, 2019

71111.04S - Equipment Alignment

Complete Walkdown Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated system configurations during a complete walkdown of the 'A' charging pump room within the chemical and volume control system (CVCS) on October 31, 2019.

71111.05A - Fire Protection (Annual)

Annual Inspection (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated fire brigade performance during a drill conducted on October 10, 2019.

71111.05Q - Fire Protection

Quarterly Inspection (IP Section 03.01) (5 Samples)

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

- (1) Charging pump rooms 'A', 'B' and 'C' (fire zones AB01.05, AB01.06, AB01.07) on October 11, 2019
- (2) Containment (fire zone RB01) on November 8, 2019
- (3) Auxiliary building 388 feet (ft.) and 397 ft. elevations (fire zone AB01.04) on November 18, 2019
- (4) Auxiliary building 436 ft. elevation (fire zones AB01.18.01, AB01.18.02) on November 22, 2019
- (5) Control building 482 ft. elevation (fire zones CB22, CB23) on November 22, 2019

71111.11A - Licensed Operator Requalification Program and Licensed Operator Performance

Requalification Examination Results (IP Section 03.03) (1 Sample)

- (1) 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." During the week of November 25, 2019, the inspector performed an in-office review of the overall pass/fail results of the individual operating examinations, the crew simulator operating examinations, and the biennial written 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.

The inspectors reviewed and evaluated the licensed operator examination failure rates for the requalification annual operating exam and biennial written examination completed on August 22, 2019.

71111.11Q - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Performance in the Actual Plant/Main Control Room (IP Section 03.01) (1 Sample)

- (1) The inspectors observed and evaluated licensed operator performance in the control room during solid state protection system (SSPS) testing on October 18, 2019; Special Order (SO 19-01) RBCU operation impact on RBCU drain flow alarm on October 21, 2019; 'B' emergency diesel generator (EDG) operability test on October 22, 2019; and reactor shutdown from Startup to Hot Standby (Mode 2 to Mode 3) on November 7, 2019.

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

- (1) The inspectors observed and evaluated just in time training in the simulator as part of preparation for reactor shutdown from Startup to Hot Standby (Mode 2 to Mode 3) on November 6, 2019.

71111.12 - Maintenance Effectiveness

Routine Maintenance Effectiveness Inspection (IP Section 02.01) (2 Samples)

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

- (1) SG blowdown (condition report (CR)-19-02648), completed on November 6, 2019
- (2) Train 'A' RBCU fan (CR-19-03975, CR-19-03976, CR-19-03977, CR-19-03979), completed on December 2, 2019

71111.13 - Maintenance Risk Assessments and Emergent Work Control

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

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

- (1) Yellow risk for 'A' train SSPS actuation test logic and relay test (Work Order (WO) 1912701) on October 18, 2019
- (2) Emergent work associated with 'A' train RBCU fans inoperable (WOs 1916923, 1916924, 1916930, 1916933) on November 16, 2019
- (3) Emergent work associated with battery XBA1X (WO 1917089), using system operating procedure (SOP) 311, on November 16, 2019

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 02.02) (4 Samples)

The inspectors evaluated the following operability determinations and functionality assessments:

- (1) CR-19-03437, Missing fire watches, fire service inoperable, inspection completed on October 24, 2019
- (2) CR-19-03222, 'A' EDG fuel rack, inspection completed on November 25, 2019
- (3) CR-19-03975, CR-19-03976, CR-19-03977, CR-19-03979, 'A' train RBCU fan, inspection completed on November 26, 2019
- (4) CR-19-03971, SI loop 'A' high head hot leg header 6-inch check valve, inspection completed on November 26, 2019

71111.18 - Plant Modifications

Temporary Modifications and/or Permanent Modifications (IP Section 03.01 and/or 03.02) (2 Samples)

The inspectors evaluated the following temporary or permanent modifications:

- (1) The inspectors evaluated a temporary modification, installation of swage cap on RBCU cooling coil (WO 1916925), on November 25, 2019
- (2) The inspectors evaluated a permanent modification, repairs to RBCU fans (WOs 1916894, 1916923, 1916930, and 1916933), on November 26, 2019

71111.19 - Post-Maintenance Testing

Post-Maintenance Test Sample (IP Section 03.01) (4 Samples)

The inspectors evaluated the following post maintenance tests:

- (1) 'A' chiller XHX0001A (WO 1816970), completed on November 2, 2019
- (2) RBCU fans (WOs 1916894, 1916923, 1916930, 1916933, 1916971), completed on November 19, 2019
- (3) SI loop 'A' high head hot leg header 6-inch check valve XVC08993A (WO 1916908), completed on November 26, 2019
- (4) Battery XBA1X (WO 1917089), completed on November 27, 2019

71111.20 - Refueling and Other Outage Activities

Refueling/Other Outage Sample (IP Section 03.01) (2 Samples)

- (1) The inspectors evaluated a forced outage due to a shutdown to repair RBCU fans, as well as perform maintenance and repair activities on an SI check valve, from November 7 to November 21, 2019. The unit was returned to rated power on November 21, 2019 following the repairs.
- (2) The inspectors evaluated a forced outage beginning on November 28, 2019, to repair the 'A' SG wide range level instrumentation. The unit was returned to returned to rated power on November 30, 2019.

71111.22 - Surveillance Testing

The inspectors evaluated the following surveillance tests:

Surveillance Tests (other) (IP Section 03.01) (3 Samples)

- (1) STP 302.041, "NIS Power Range N44 Operational Test," on October 16, 2019

- (2) STP 106.001, "Movable Rod Insertion Test," (WO1912613), on October 24, 2019
- (3) STP 125.002B, "Diesel Generator B Operability Test," (WO1912675), on October 22, 2019

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

MS05: Safety System Functional Failures (SSFFs) Sample (IP Section 02.04) (1 Sample)

- (1) Unit 1 for the period of October 1, 2018, through September 30, 2019

MS08: Heat Removal Systems (IP Section 02.07) (1 Sample)

- (1) Unit 1 for the period of October 1, 2018, through September 30, 2019

MS10: Cooling Water Support Systems (IP Section 02.09) (1 Sample)

- (1) Unit 1 for the period of October 1, 2018, through September 30, 2019

71152 - Problem Identification and Resolution

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

- (1) The inspectors reviewed the licensee's corrective action program (CAP) for potential adverse trends and also reviewed the licensee's Station Trend Report, Second Tertile 2019 Aggregate Analysis, for indication of a more significant safety issue. The review covered the period from May 1, 2019 to August 31, 2019. No adverse trends were identified.

Annual Follow-up of Selected Issues (IP Section 02.03) (2 Samples)

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

- (1) CR-19-03633, CR-19-03459, CR-19-03373, CR-19-03165, CR-19-03130, elevated unidentified reactor coolant system leakage
- (2) CR-19-03971, leaking safety injection system check valve (XVC08993A-SI)

OTHER ACTIVITIES – TEMPORARY INSTRUCTIONS, INFREQUENT AND ABNORMAL

60855.1 - Operation of an Independent Spent Fuel Storage Installation at Operating Plants

Operation of an Independent Spent Fuel Storage Installation at Operating Plants (1 Sample)

- (1) The inspectors evaluated the licensee's activities related to long-term operation and monitoring of their independent spent fuel storage installation completed November 26, 2019.

INSPECTION RESULTS

Inaccurate Fire Watch Documentation			
Cornerstone	Severity	Cross-Cutting Aspect	Report Section
Not Applicable	Severity Level IV NCV 05000395/2019004-01 Open/Closed	Not Applicable	71111.05Q
<p>The inspectors identified a Severity Level IV Non-Cited Violation (NCV) of 10 CFR 50.9, "Completeness and Accuracy of Information," when the licensee failed to conduct and accurately document 20-minute roving fire watches as a compensatory action as required by procedure SAP-131, "Fire Protection Program."</p>			
<p><u>Description:</u> On September 26, 2019, the inspectors made observations at the 374 ft. and 388 ft. elevations of the Auxiliary Building and identified that personnel were not entering the area to perform roving fire watches in accordance with SAP 131, "Fire Protection Program." During this time, the licensee established a 20-minute roving fire watch in areas of the Auxiliary Building due to the fire service being out of service. Specifically, the auxiliary building (AB) hose station and preaction system (i.e., suppression systems) were inoperable due to piping repair and replacement. Automatic fire detection capability was not lost with the fire service out of service. The inspectors reviewed the completed logs for September 26, 2019 and discovered multiple discrepancies when compared to the observations that the inspectors made at specific hose reel locations in the Auxiliary Building. The fire watch log readings were recorded as being completed at times and locations when the NRC inspectors observed that fire watches had not been conducted.</p> <p>In response, VC Summer opened an internal investigation and determined there were two individuals who signed the log for the fire watch as being completed, however they failed to conduct the fire watches in accordance with the site procedures.</p> <p>Corrective Actions: Corrective actions included restoration of the fire watch, stand-downs, extent of condition review, assessment of fire watch training, and causal evaluation.</p> <p>Corrective Action References: CR 19-03437 and CR 19-03444</p>			
<p><u>Performance Assessment:</u> The inspectors determined this violation was associated with a minor performance deficiency. The inspectors consulted Region II fire protection experts and determined that the fire risk remained low for the missed fire watch areas because adequate fire detection was maintained, and the licensee immediately reestablished the appropriate fire watch.</p>			
<p><u>Enforcement:</u> The ROP's significance determination process does not specifically consider the regulatory process impact in its assessment of licensee performance. Therefore, it is necessary to address this violation which impedes the NRC's ability to regulate using traditional enforcement to adequately deter non-compliance.</p> <p>Severity: The Enforcement Policy violation examples for inaccurate and incomplete information provides that a violation is characterized as Severity Level III if the accurate information would have caused the NRC to reconsider a regulatory position or undertake further inquiry (Enforcement Policy Section 6.9(c)(1)). There are no corresponding Severity Level IV examples. The inspectors reviewed Enforcement Policy, Section 2.3.11, "Inaccurate and Incomplete Information," and considered that the NRC identified the issue and that the licensee promptly corrected the issue after the NRC raised questions regarding the accuracy of the information. Additionally, the inspectors determined that had accurate information been</p>			

provided, the NRC would not have reconsidered a regulatory position or undertaken further inquiry (a threshold for Severity Level III). Therefore, the violation was characterized as Severity Level IV.

Violation: 10 CFR 50.9(a) states, in part, that information required by the Commission's regulations, orders, or license conditions to be maintained by the licensee shall be complete and accurate in all material respects.

Contrary to the above, on September 26, 2019, the licensee maintained records of fire watch logs that were not complete and accurate in all material respects. Specifically, fire watch patrol documentation, as required by SAP-131, "Fire Protection Program", Revision 10, annotated that fire watches were completed, when on multiple occasions such fire watches had not been performed. The fire watch patrol data is material to the NRC in that it provides evidence of compliance with regulatory requirements.

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

EXIT MEETINGS AND DEBRIEFS

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

- On January 28, 2020, the inspectors presented the integrated inspection results to Mr. George Lippard and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.05Q	Fire Plans	FP1AB-388	Auxiliary Building	Revision 2
		FP1AB-436	Auxiliary Building	Revision 2
		FP1CB-482	Control Building	Revision 1
71111.12	Corrective Action Documents	CR-19-03975		
		CR-19-03976		
		CR-19-03977		
		CR-19-03979		
71111.13	Work Orders	1916923		
		1916924		
		1916930		
		1916933		
71111.15	Corrective Action Documents	CR-19-03971		
71152	Miscellaneous	Station Trend Report	Second Tertile 2019 Aggregate Analysis	