



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

November 1, 2023

Eric S. Carr, President,
Nuclear Operations and Chief Nuclear Officer
Dominion Energy
Innsbrook Technical Center
5000 Dominion Blvd., Floor: IN-3SE
Glenn Allen, VA 23060

SUBJECT: VIRGIL C. SUMMER NUCLEAR STATION – INTEGRATED INSPECTION
REPORT 05000395/2023003

Dear, Eric Carr:

On September 30, 2023, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at Virgil C. Summer Nuclear Station. On October 12, 2023, the NRC inspectors discussed the results of this inspection with Mr. Robert Justice, Site Vice President, 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,

A handwritten signature in black ink that reads "David E. Dumbacher".

Signed by Dumbacher, David
on 11/01/23

David E. Dumbacher, Chief
Reactor Projects Branch 3
Division of Reactor Projects

Docket No. 05000395
License No. NPF-12

Enclosure:
As stated

cc w/ encl: Distribution via LISTSERV

VIRGIL C. SUMMER NUCLEAR STATION – INTEGRATED INSPECTION REPORT
 05000395/2023003 DATED NOVEMBER 01, 2023

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NAME	J. Hickey	P. Meier	E. Rosario	B. Bishop	D. Dumbacher
DATE	10/19/23	10/18/23	10/23/23	11/01/23	11/01/23

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

Docket Number: 05000395

License Number: NPF-12

Report Number: 05000395/2023003

Enterprise Identifier: I-2023-003-0043

Licensee: Dominion Energy

Facility: Virgil C. Summer Nuclear Station

Location: Jenkinsville, SC

Inspection Dates: July 01, 2023, to September 30, 2023

Inspectors: S. Battenfield, Operations Engineer
B. Bishop, Senior Project Engineer
B. Caballero, Senior Operations Engineer
J. Hamman, Senior Project Engineer
J. Hickey, Senior Project Engineer
T. McGowan, Senior Resident Inspector
P. Meier, Senior Resident Inspector
M. Read, Senior Resident Inspector
E. Rosario, Resident Inspector
J. Zeiler, Senior Resident Inspector

Approved By: David E. Dumbacher, 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

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

Additional Tracking Items

None.

PLANT STATUS

The unit operated at or near 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 performed activities described in IMC 2515, Appendix D, "Plant Status," observed risk significant activities, and completed on-site portions of IPs. 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 Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated the adequacy of the overall preparations to protect risk-significant systems from impending severe weather associated with Hurricane Idalia on August 30, 2023.

71111.04 - 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) Safety-related chilled water system in the control building on July 11, 2023
- (2) 'A' emergency diesel generator system on July 12, 2023

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) Control building elevation 425 feet on August 1, 2023
- (2) Control building elevation 448 feet on August 2, 2023
- (3) Control building elevation 463 feet on August 8, 2023
- (4) Intermediate building elevation 412 feet on August 9, 2023

- (5) Intermediate building elevation 436 feet on September 13, 2023

Fire Brigade Drill Performance Sample (IP Section 03.02) (1 Sample)

- (1) The inspectors evaluated the onsite fire brigade training and performance during an unannounced fire drill on September 27, 2023.

71111.11B - Licensed Operator Requalification Program and Licensed Operator Performance

Licensed Operator Requalification Program (IP Section 03.04) (1 Sample)

Licensed Operator Requalification Program (IP Section 03.04) (1 Sample)

The inspectors completed an inspection to verify the licensee's ability to evaluate the performance of their licensed operators during the conduct of examinations, to assess their ability to properly develop and administer requalification annual operating tests and biennial written examinations, to evaluate the performance of the control room simulator and their testing and maintenance of the simulator, to ensure that licensed individuals satisfy the conditions of their licenses, and to assess their effectiveness in ensuring that operator license conditions are satisfied.

(1) Biennial Requalification Written Examinations

The inspectors evaluated the quality of the licensed operator biennial requalification written examination administered on August 3, 2023.

Annual Requalification Operating Tests

The inspectors evaluated the adequacy of the facility licensee's annual requalification operating test.

Administration of an Annual Requalification Operating Test

The inspectors evaluated the effectiveness of the facility licensee in administering requalification operating tests required by 10 CFR 55.59(a)(2) and that the facility licensee is effectively evaluating their licensed operators for mastery of training objectives.

Requalification Examination Security

The inspectors evaluated the ability of the facility licensee to safeguard examination material, such that the examination is not compromised.

Remedial Training and Re-examinations

The inspectors evaluated the effectiveness of remedial training conducted by the licensee, and reviewed the adequacy of re-examinations for licensed operators who did not pass a required requalification examination.

Operator License Conditions

The inspectors evaluated the licensee's program for ensuring that licensed operators meet the conditions of their licenses.

Control Room Simulator

The inspectors evaluated the adequacy of the facility licensee's control room simulator in modeling the actual plant, and for meeting the requirements contained in 10 CFR 55.46.

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 main control room during boration and auto makeup to the volume control tank on July 30, 2023.

71111.12 - Maintenance Effectiveness

Maintenance Effectiveness (IP Section 03.01) (1 Sample 1 Partial)

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

- (1) Effectiveness of maintenance rule (a)(1) action plans to address failures of reactor building atmosphere (gaseous) radiation monitor (RM-A2), review completed on August 17, 2023
- (2) (Partial)
Chiller compressor replacement and degraded condition of HVAC system mechanical water chiller 'B' on September 19, 2023

71111.13 - Maintenance Risk Assessments and Emergent Work Control

Risk Assessment and Management Sample (IP Section 03.01) (2 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) Elevated risk during maintenance on the 'A' motor-driven emergency feedwater pump on August 15, 2023
- (2) Elevated risk during a drain line repair on the 'A' reactor building spray pump on September 11, 2023 (WO 88201711262)

71111.15 - Operability Determinations and Functionality Assessments

Operability Determination or Functionality Assessment (IP Section 03.01) (8 Samples)

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

- (1) Condition report (CR) 1232275, 'C' chiller test acceptance criteria not met, review completed on July 6, 2023
- (2) CR 1223382, 'B' steam generator turbine driven emergency feedwater pump flow control valve (IFV03546-EF) failed required closing stroke time, review completed on August 18, 2023
- (3) CR 1234242, low megger reading on three NAOH spray system heat tracing control panel 'B' circuits, performed on August 22, 2023
- (4) CR 1234402, diesel fire pump heat exchanger coolant leak, performed on August 24, 2023
- (5) CR 1234895, reactor building sump level increase during pumping evolution to RHUT #1, performed on August 25, 2023
- (6) CR 1236885, dry boric acid identified on the drain line socket weld coming from the 'A' reactor building spray pump casing, on September 2, 2023
- (7) CR 1235165, 'A' emergency diesel generator jacket water heat exchanger thermal performance testing anomaly, completed sample on September 6, 2023
- (8) CR 1235171, APN41014 back up pressurizer heater panel hot spots, completed sample on September 7, 2023

71111.24 - Testing and Maintenance of Equipment Important to Risk

The inspectors evaluated the following testing and maintenance activities to verify system operability and/or functionality:

Post-Maintenance Testing (PMT) (IP Section 03.01) (5 Samples)

- (1) STP-220.001A-XPP0021B, 'B' MDEFW Pump Test, following scheduled maintenance on August 3, 2023
- (2) SOP-211, Emergency Feedwater System, Section III.A., for operating the 'A' MDEFW pump, following preventive maintenance activities on August 15, 2023
- (3) SOP-220, Station and Backup Instrument Air Systems, Section III.B., for operating the 'A' instrument air compressor, following emergent maintenance repairs on August 17, 2023
- (4) WO 88201711267, 'A' reactor building spray pump, following a pump casing discharge side drain line repair on September 12, 2023
- (5) SOP-102, Chemical and Volume Control System, Section III.B, for operating the 'A' charging pump, following planned maintenance on September 14, 2023

Surveillance Testing (IP Section 03.01) (3 Samples)

- (1) STP-125.013A, 'A' Emergency Diesel Generator Semiannual Testing, on July 12, 2023
- (2) PTP-102.001, Main Turbine Trip Test, on August 21, 2023
- (3) STP-125.002B, Diesel Generator 'B' Operability Test, on September 20, 2023

Reactor Coolant System Leakage Detection Testing (IP Section 03.01) (1 Sample)

- (1) Operational leakage issue due to suspect results during the leak rate calculation, identified on September 7, 2023

Diverse and Flexible Coping Strategies (FLEX) Testing (IP Section 03.02) (1 Sample)

- (1) ERMP-100.003, Quarterly Diesel Start and Minor Maintenance, on September 27, 2023

71114.06 - Drill Evaluation

Select Emergency Preparedness Drills and/or Training for Observation (IP Section 03.01) (1 Sample)

- (1) On July 19, 2023, the inspectors observed the D-ERO team perform an emergency preparedness drill, which contained various events leading the station to declare a general emergency (FG1.1).

Drill/Training Evolution Observation (IP Section 03.02) (2 Samples)

The inspectors assessed:

- (1) Shift B crew in the simulator as an emergency preparedness drill, using simulator exercise guide (SEG# O-LOR-SIM-SA-035R), on July 26, 2023
- (2) Shift C crew in the simulator as an emergency preparedness drill, using simulator exercise guide (SEG# O-LOR-SIM-SA-082R), on August 01, 2023

OTHER ACTIVITIES – BASELINE

71151 - Performance Indicator Verification

The inspectors verified licensee performance indicators submittals listed below:

MS06: Emergency AC Power Systems (IP Section 02.05) (1 Sample)

- (1) Unit 1 (July 1, 2022 through June 30, 2023)

MS07: High Pressure Injection Systems (IP Section 02.06) (1 Sample)

- (1) Unit 1 (July 1, 2022 through June 30, 2023)

MS09: Residual Heat Removal Systems (IP Section 02.08) (1 Sample)

- (1) Unit 1 (July 1, 2022 through June 30, 2023)

71152S - Semiannual Trend Problem Identification and Resolution

Semiannual Trend Review (Section 03.02) (1 Sample)

- (1) The inspectors reviewed the licensee's corrective action program for potential adverse trends in chillers failing to start or run that might be indicative of a more significant safety issue. The review was completed on June 22, 2023.

INSPECTION RESULTS

No findings were identified.

EXIT MEETINGS AND DEBRIEFS

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

- On October 12, 2023, the inspectors presented the integrated inspection results to Mr. Robert Justice, Site Vice President, and other members of the licensee staff.

DOCUMENTS REVIEWED

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
71111.01	Corrective Action Documents Resulting from Inspection	CR 1236667	Potential Missile Hazards Identified by NRC During Plant Walkdown in Preparation for Hurricane Idalia	08/30/2023
	Procedures	EPP-0015	Natural Emergency	Rev. 2
		GMP-100.032	Switchyard Severe Weather Preparation	Rev. 0
		OAP-109.1	Guidelines for Severe Weather	Rev. 6
71111.05	Fire Plans	FP1CB-412	Control Building (Elevation 412)	Rev. 3
		FP1CB-425	Control Building (Elevation 425)	Rev. 4
		FP1CB-463	Control Building (Elevation 463)	Rev. 4
		FP1IB-412	Intermediate Building (Elevation 412)	Rev. 6
	Procedures	SI-AA-115	Conduct of Fire Drills	Rev. 8
71111.11Q	Procedures	SOP-106	Reactor Water Makeup	Rev. 12
71111.12	Corrective Action Documents	CR 1233584	HVAC System Mechanical Water Chiller 'B' Tripped	07/19/2023
		CR 1233630	'B' Chiller Making Unusual Loud Noise Upon Starting	07/20/2023
	Engineering Changes	VC-23-00021	'B' Chiller Compressor Replacement	Rev. 0
	Work Orders	88201712195	PTP-113.002B, HVAC Chiller 'B' Post Maintenance Performance Test	09/19/2023
71111.24	Corrective Action Documents	CR 1237159	Suspect Flag During Performance of STP-114.002 Operational Leakage Calculation	09/07/2023
		CR 1238833	FX Aluma Base Station and Portable Radio Tower (XMT0001) Tire Needing Replacement	09/25/2023
	Procedures	EMP-295.015	Charging Pump Motor Maintenance	Rev. 10
		ERMP-100.003	FX Aluma Base Station and Portable Radio Tower Preventive Maintenance	Rev. 3
		ERMP-100.011	FX 1MW Combustion Turbine Generator Preventive Maintenance	Rev. 4
		STP-125.002B	Diesel Generator 'B' Operability Test	Rev. 3
	Work Orders	88101029504	Perform Ten Year Inspection on Charging Pump 'A' Motor	Rev. 0
71114.06	Miscellaneous	O-LOR-SIM-SA-035R	Simulator Exercise Guide	07/26/2023

Inspection Procedure	Type	Designation	Description or Title	Revision or Date
		O-LOR-SIM-SA-082R	Simulator Exercise Guide	08/01/2023
	Procedures	EP-AA-500	Conduct of Drills and Exercises	Rev. 0
	Self-Assessments	VMAY23TD	VC Summer Training Drill (D-ERO Drill Team)	Rev. 0
71151	Miscellaneous	TR-03300-001	NRC Mitigating Systems Performance Index (MSPI) Basis Document	Rev. 11