

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

April 3, 2024

John Krakuszeski, Site Vice President Brunswick Steam Electric Plant Duke Energy Progress, LLC 8470 River Rd. SE Southport, NC 28461

SUBJECT: BRUNSWICK STEAM ELECTRIC PLANT – NRC OPERATOR LICENSE EXAMINATION REPORT 05000325/2024301 AND 05000324/2024301

Dear John Krakuszeski:

During the period February 12 - 16, 2024, the Nuclear Regulatory Commission (NRC) administered operating tests to employees of your company who had applied for licenses to operate the Brunswick Steam Electric Plant. At the conclusion of the tests, the examiners preliminary findings related to the operating tests and the written examination submittal with those members of your staff identified in the enclosed report. The written examination was administered by your staff on February 20, 2024.

All applicants passed both the operating test and written examination. There were no postexamination comments. A Simulator Fidelity Report is included in this report as Enclosure 2.

The initial examination submittal was within the range of acceptability expected for a proposed examination. All examination changes agreed upon between the NRC and your staff were made according to NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 12.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosures will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of the NRC's document system (ADAMS).

ADAMS is accessible from the NRC Website at <u>http://www.nrc.gov/reading-rm/adams.html</u> (the Public Electronic Reading Room).

If you have any questions concerning this letter, please contact me at (404) 997-4703.

Sincerely,

/**RA**/

Thomas Stephen, Chief Operations Branch Division of Reactor Safety

Docket Nos: 50-325, 50-324 License Nos: DPR-71, DPR-62

Enclosures:

- 1. Report Details
- 2. Simulator Fidelity Report

cc: Distribution via Listserv

SUBJECT: BRUNSWICK STEAM ELECTRIC PLANT - NRC OPERATOR LICENSE EXAMINATION REPORT 05000325/2024301 AND 05000324/2024301 DATED APRIL 03, 2024

DISTRIBUTION:

T Stephen, RII M Kennard, RII

OFFICE

NAME

DATE

RII/DRS/OB

K.Wallace

4/01/2024

 \square Yes ACCESSION NUMBER: ML24095A200 \square SUNSI REVIEW COMPLETE \square FORM 665 ATTACHED

OFFICIAL RECORD COPY

□ NON-PUBLICLY AVAILABLE □ SENSITIVE PUBLICLY AVAILABLE

RII/DRS/OB

M. Kennard

4/01/2024

RII/DRS/OB

T. Stephen

4/03/2024

NON-SENSITIVE ADAMS:

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Examination Report

Docket No.:	50-325, 50-324
License No.:	DPR-71, DPR-62
Report No.:	05000325/2024301, 05000324/2024301
Enterprise Identifier:	L-2024-OLL-0026
Licensee:	Duke Energy Progress, Inc.
Facility:	Brunswick Steam Electric Plant, Units 1 and 2
Location:	Southport, NC
Dates:	Operating Test – February 12 – 16, 2024 Written Examination – February 20, 2024
Examiners:	Michael Kennard, Chief Examiner, Senior Operations Engineer Michael Meeks, Senior Operations Engineer Joe Viera, Senior Operations Engineer Andreas Goldau, Operations Engineer
Approved by:	Tom Stephen, Chief Operations Branch Division of Reactor Safety

SUMMARY

ER 05000325/2024301, 05000324/2024301; operating test February 12 – 16, 2024 & written exam February 20, 2024; Brunswick Steam Electric Plant, Units 1 and 2; Operator License Examinations.

Nuclear Regulatory Commission (NRC) examiners conducted an initial examination in accordance with the guidelines in Revision 12, of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors." This examination implemented the operator licensing requirements identified in 10 CFR §55.41, §55.43, and §55.45, as applicable.

Members of the Brunswick Steam Electric Plant staff developed both the operating tests and the written examination. The initial operating test, written RO examination, and written SRO examination submittals met the quality guidelines contained in NUREG-1021.

The NRC administered the operating tests during the period February 12 – 16, 2024. Members of the Brunswick Steam Electric Plant training staff administered the written examination on February 20, 2024. Six Reactor Operator (RO) and eight Senior Reactor Operator (SRO) applicants passed both the operating test and written examination. All applicants were issued licenses commensurate with the level of examination administered.

There were no post-examination comments.

No findings were identified.

REPORT DETAILS

4. OTHER ACTIVITIES

4OA5 Operator Licensing Examinations

a. Inspection Scope

The NRC evaluated the submitted operating test by combining the scenario events and JPMs in order to determine the percentage of submitted test items that required replacement or significant modification. The NRC also evaluated the submitted written examination questions (RO and SRO questions considered separately) in order to determine the percentage of submitted questions that required replacement or significant modification, or that clearly did not conform with the intent of the approved knowledge and ability (K/A) statement. Any questions that were deleted during the grading process, or for which the answer key had to be changed, were also included in the count of unacceptable questions. The percentage of submitted test items that were unacceptable was compared to the acceptance criteria of NUREG-1021, "Operator Licensing Standards for Power Reactors."

The NRC reviewed the licensee's examination security measures while preparing and administering the examinations in order to ensure compliance with 10 CFR §55.49, "Integrity of examinations and tests."

The NRC performed an audit of license applications during the preparatory site visit in order to confirm that they accurately reflected the subject applicants' qualifications in accordance with NUREG-1021.

The NRC administered the operating tests during the period February 12 – 16, 2024. The NRC examiners evaluated six Reactor Operator (RO) and eight Senior Reactor Operator (SRO) applicants using the guidelines contained in NUREG-1021. Members of the Brunswick Steam Electric Plant training staff administered the written examination on February 20, 2024. Evaluations of applicants and reviews of associated documentation were performed to determine if the applicants, who applied for licenses to operate the Brunswick Steam Electric Plant, met the requirements specified in 10 CFR Part 55, "Operators' Licenses."

The NRC evaluated the performance or fidelity of the simulation facility during the preparation and conduct of the operating tests.

b. Findings

No findings were identified.

The NRC developed the written examination sample plan outline. Members of the Brunswick Steam Electric Plant training staff developed both the operating tests and the written examination. All examination material was developed in accordance with the guidelines contained in Revision 12, of NUREG-1021. The NRC examination team reviewed the proposed examination. Examination changes agreed upon between the NRC and the licensee were made per NUREG-1021 and incorporated into the final version of the examination materials.

The NRC determined, using NUREG-1021, that the licensee's initial written examination and operating test submittal was within the range of acceptability expected for a proposed written examination and operating test.

All applicants passed both the operating test and written examination and were issued licenses.

During the simulator scenario portion of the operating test the simulator failed on the first run of the first day of examination. The simulator issue was researched and believed to have been corrected prior to the second run of the scenario. The simulator failed again during the second run of the scenario. The simulator failures resulted in a partial run of scenario 4 and an abbreviated run of the spare scenario (scenario 1A) for two crews. At the time of the first simulator malfunction the scenario was allowed to continue with inaccurate indications. The failure during the second run of scenario 4 was catastrophic, resulting in the scenario being stopped. At this point no further attempts were made to administer scenario 4. Scenario 1 (spare scenario) was abbreviated to remove events that were not needed to complete the simulator portion of the operating test for two crews. The abbreviated scenario was then labeled as scenario 1A. The remaining crews scheduled to be administered scenario 4 were given the unabbreviated scenario 1.

The simulator failed again during administration of the second day during the first Run of the scenario. This failure resulted in the simulator going to freeze during a crew brief and was able to be recovered without any applicants noticing the momentary freezing of the simulator. After this run the simulator staff at Brunswick determined that the computer that normally runs the simulator had degrading hardware issues and was replaced by the development computer. The scenario was then revalidated and determined to be fit to administer the remaining scenarios. All remaining simulator scenarios ran as expected.

During the administration of one JPM a breaker on the simulator tripped open making the simulator go to freeze. The applicant was sequestered, the issue was resolved the applicant was then brought back into the simulator to resume the JPM.

Due to the simulator issues, the exam schedule was adjusted to allow for administrative JPMs and other JPMs to be conducted while the facility attempted to resolve the simulator issues. Once the simulator issue was definitively identified. The remaining simulator portions of the examination were evaluated against the simulator deficiencies then administered.

Copies of all individual examination reports were sent to the facility Training Manager for evaluation of weaknesses and determination of appropriate remedial training.

The licensee did not submit any post-examination comments. A copy of the final written examination and answer key, with all changes incorporated, may be accessed not earlier than February 20, 2026, in the ADAMS system (ADAMS Accession Number(s) ML204072A333 and ML204073A336.

4OA6 Meetings, Including Exit

Exit Meeting Summary

On February 16, 2024, the NRC examination team discussed generic issues associated with the operating test with Mr. John Krakuszeski, Site Vice President, and members of the Brunswick Steam Electric Plant staff. The examiners asked the licensee if any of the examination material was proprietary. No proprietary information was identified.

KEY POINTS OF CONTACT

Licensee personnel

John Krakuszeski, Site Vice President Jay Ratliff, Plant General Manager Jerry Pierce, Training Manager Mike Fiorino, Operations Manager Andrew Freed, Superintendent Operator Training Matthew Waldecker, Superintendent Operator Training John Rizzo, Exam Author, Operations Instructor Tom Sherrill, Regulator Affairs Senior Engineering Technologist

NRC personnel

Gale Smith, Senior Resident Inspector Coleman Curran, Resident Inspector

SIMULATOR FIDELITY REPORT

Facility Licensee: Brunswick Steam Electric Plant

Facility Docket No.: 05000325, 05000324

Operating Test Administered: February 12 -16, 2024.

This form is to be used only to report observations. These observations do not constitute audit or inspection findings and, without further verification and review in accordance with Inspection Procedure 71111.11 are not indicative of noncompliance with 10 CFR 55.46. No licensee action is required in response to these observations.

While conducting the simulator portion of the operating test, examiners observed the following:

During the administration of the BNP ILT 24-1 NRC Exam, the Simulator experienced failures, resulting in delays in the exam administration. The NRC exam schedule was revised to allow resolution of the simulator issues and completion of the operating exam. All of the simulator failures are documented in simulator trouble tickets and tracked by NCR.

Item (NCR 02505646)	Description
TT-17776	Breaker 4 in P601 tripped during administration of a JPM.
TT-1777	Plant Computer display and pump indication on control board did not match.
TT-1778	Reptile crash during reset of simulator.
TT-1779	Reptile crash during scenario.
TT-1780	Core Model Dropped out during scenario.