



UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, ILLINOIS 60532-4352

June 27, 2024

David Rhoades
Senior Vice President
Constellation Energy Generation, LLC
President and Chief Nuclear Officer (CNO)
Constellation Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3
NRC INITIAL LICENSE EXAMINATION REPORT 05000237/2024301
05000249/2024301

Dear David Rhoades:

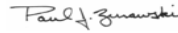
On June 7, 2024, the U.S. Nuclear Regulatory Commission (NRC) completed the initial operator licensing examination process for license applicants employed at your Dresden Nuclear Power Station. The enclosed report documents the results of those examinations. Preliminary observations noted during the examination process were discussed on May 17, 2024, with George Baxa, Senior Manager Site Training, and other members of your staff. An exit meeting was conducted by teleconference on June 11, 2024, between Carolyn Joseph, Site Vice President of your staff, and Gregory Roach, Chief Operator Licensing Examiner, to review the proposed final grading of the written examination for the license applicants. During the telephone conversation, the NRC resolutions of any post-examination comments submitted by the facility, initially received by the NRC on June 7, 2024, were discussed.

The NRC examiners administered an initial license examination operating test during the week of May 13, 2024. The written examination was administered by training department personnel on May 20, 2024. Four Senior Reactor Operator and three Reactor Operator applicants were administered license examinations. The results of the examinations were finalized on June 25, 2024. Seven applicants passed all sections of their respective examinations. Four were issued senior operator licenses and three were issued operator licenses.

The as-administered written examination and operating test, as well as documents related to the development and review (outlines, review comments and resolution, etc.) of the examination will be withheld from public disclosure until June 7, 2026. The enclosure contains details of this report.

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*, Part 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,



Signed by Zurawski, Paul
on 06/27/24

Paul J. Zurawski, Chief
Operations Branch
Division of Operating Reactor Safety

Docket Nos. 50-237; 50-249
License Nos. DPR-19; DPR-25

Enclosure:

1. Examination Report 05000237/2024301;
05000249/2024301
2. Post-Examination Comments,
Evaluation, and Resolutions
3. Simulator Fidelity Report

cc: Distribution via LISTSERV®
George M. Baxa III, Sr. Manager Site

Letter to David Rhoades from Paul J. Zurawski dated June 27, 2024.

SUBJECT: DRESDEN NUCLEAR POWER STATION, UNITS 2 AND 3
NRC INITIAL LICENSE EXAMINATION REPORT 05000237/2024301
05000249/2024301

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U.S. NUCLEAR REGULATORY COMMISSION

REGION 3

Docket Nos: 50-237; 50-249

License Nos: DPR-19 and DPR-25

Report No: 05000237/2024301
05000249/2024301

Enterprise Identifier: L-2024-OLL-0007

Licensee: Constellation Energy Generation, LLC

Facility: Dresden Nuclear Power Station, Units 2 and 3

Location: Morris, IL

Dates: May 13, 2024 to June 7, 2024

Examiners: G. Roach, Senior Operations Engineer
K. Kirchbaum, Senior Operations Engineer
T. Wingfield, Operations Engineer

Approved by: Paul J. Zurawski, Chief
Operations Branch
Division of Operating Reactor Safety

SUMMARY OF FINDINGS

ER 05000237/2024301; 05000249/2024301; 05/13/2024-06/07/2024; Constellation Energy Generation, LLC, Dresden Nuclear Power Station, Units 2 and 3. Initial License Examination Report.

The announced initial operator licensing examination was conducted by regional Nuclear Regulatory Commission (NRC) examiners in accordance with the guidance of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 12.

Examination Summary:

Seven of seven applicants passed all sections of their respective examinations. Four applicants were issued senior operator licenses, and three applicants were issued operator licenses. (Section 40A5.1).

REPORT DETAILS

40A5 Other Activities

.1 Initial Licensing Examinations

a. Examination Scope

The NRC examiners and members of the facility licensee's staff used the guidance prescribed in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 12, to develop, validate, administer, and grade the written examination and operating test. The written examination outlines were prepared by the NRC staff and were transmitted to the facility licensee's staff. Members of the facility licensee's staff developed the operating test outlines and developed the written examination and operating test. The NRC examiners validated the proposed examination during the week of April 8, 2024, with the assistance of members of the facility licensee's staff. During the on-site validation week, the examiners audited four license applications for accuracy. The NRC examiners, with the assistance of members of the facility licensee's staff, administered the operating test, consisting of job performance measures and dynamic simulator scenarios, during the period of May 13, 2024, through May 16, 2024. The facility licensee administered the written examination on May 20, 2024.

On June 7, 2024, the licensee submitted documentation noting that there was one post-examination comment for consideration by the NRC examiners when grading the operating test. The post-examination comment and the NRC resolution for the post-examination comment, is provided in Enclosure 2 to this report.

b. Findings

(1) Written Examination

The NRC examiners determined that the written examination, as proposed by the licensee, was within the range of acceptability expected for a proposed examination. Less than 20 percent of the proposed examination questions were determined to be unsatisfactory and required modification or replacement.

During validation of the written examination, several questions were modified or replaced. All changes made to the proposed written examination, were made in accordance with NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," and documented on Form 2.3-5, "Written Examination Review Worksheet." The Form 2.3-5, the written examination outlines, and both the proposed and final written examinations, will be available electronically in the NRC Public Document Room or from the Publicly Available Records component of NRC's Agencywide Documents Access and Management System (ADAMS) on June 7, 2026, (ADAMS Accession Numbers ML22251A216, ML22251A215, ML22251A214, and ML22251A220 respectively).

The NRC examiners graded the written examination on June 3, 2024, and conducted a review of each missed question to determine the accuracy and validity of the examination questions. Post-examination analysis revealed generic weaknesses in applicant performance with three Emergency and Abnormal Plant Evolutions, one Plant Systems, and four Generic Knowledge and Abilities questions with more than 50 percent of applicants answering incorrectly.

(2) Operating Test

The NRC examiners determined that the operating test, as originally proposed by the licensee, was within the range of acceptability expected for a proposed examination. Less than 20 percent of the proposed operating test portion of the examination was determined to be unsatisfactory and required modification or replacement.

During the validation of the operating test, several Job Performance Measures (JPMs) were modified or replaced, and some modifications were made to the dynamic simulator scenarios. Changes made to the operating test portion of the examination, were made in accordance with NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," and documented on Form 2.3-3, "Operating Test Review Worksheet." The Form 2.3-3, the operating test outlines, and both the proposed and final as administered dynamic simulator scenarios and JPMs, will be available electronically in the NRC Public Document Room or from the Publicly Available Records component of NRC's ADAMS on June 7, 2026, (ADAMS Accession Numbers ML22251A216, ML22251A215, ML22251A214, and ML22251A220 respectively).

The NRC examiners completed operating test grading on June 7, 2024.

Post-examination analysis revealed generic weaknesses in applicant performance in the area(s) of Emergency Operating Procedure entry criteria and reading and understanding signage on components being operated. It is expected that significant delta training will be conducted.

(3) Examination Results

Four applicants at the Senior Reactor Operator (SRO) level and three applicants at the Reactor Operator (RO) level were administered written examinations and operating tests. Seven applicants passed all portions of their examinations and were issued their respective operating licenses on June 25, 2024.

.2 Examination Security

a. Scope

The NRC examiners reviewed and observed the licensee's implementation of examination security requirements during the examination validation and administration to assure compliance with Title 10 of the *Code of Federal Regulations*, Section 55.49, "Integrity of Examinations and Tests." The examiners used the guidelines provided in NUREG 1021, "Operator Licensing Examination Standards for Power Reactors," to determine acceptability of the licensee's examination security activities.

b. Findings

None.

4OA6 Meetings

.1 Debrief

The chief examiner presented the examination team's preliminary observations and findings on May 17, 2024, to George Baxa, Senior Manager Site Training and other members of the Dresden Nuclear Power Station Operations and Training Department staff.

.2 Exit Meeting

The chief examiner conducted an exit meeting on June 11, 2024, with Carlyne Joseph, Site Vice President by teleconference. The NRC's final disposition of the station's grading of the written examination and post-examination comments were disclosed and discussed during the telephone. The chief examiner asked the licensee whether any of the retained submitted material used to develop or administer the examination should be considered proprietary. No proprietary or sensitive information was identified during the examination or debrief/exit meetings.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

C. Joseph, Site Vice President
H. Patel, Plant Manager
G. Baxa, Senior Manager Site Training
J. Condrey, Operations Training Manager
D. Siuda, Lead Exam Author
J. Chapman, Operations Exam Facility Representative

U.S. Nuclear Regulatory Commission

J. Steffes, Senior Resident Inspector
C. St. Peters, Resident Inspector
G. Roach, Chief Examiner
K. Kirchbaum, Senior Operations Engineer (RII)
T. Wingfield, Operations Engineer

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened, Closed, and Discussed

None

LIST OF ACRONYMS USED

ADAMS	Agencywide Document Access and Management System
LCO	Limiting Condition for Operation
NRC	U.S. Nuclear Regulatory Commission
RO	Reactor Operator
SR	Surveillance Requirement
SRO	Senior Reactor Operator
SWR	Simulator Work Request

SRO Admin JPM A-N-3-S

Applicant Comment:

JPM Number A-N-3-S (Review Core Spray Surveillance and Identify Tech Specs) asks the applicant to review DOS 1400-05, CORE SPRAY SYSTEM PUMP OPERABILITY AND QUARTERY IST TEST WITH TORUS AVAILABLE, correct any mistakes (if applicable), and evaluate Tech Spec required actions (if applicable) for the 2A Core Spray Pump. Upon review of the paperwork, it is determined that Data Sheet 1 is filled out improperly, and that the 2A Core Spray pump differential pressure is 264.8 instead of the given 254.8. The applicant compares this value to the DOS 1400-05 DISACM and determines the pump differential pressure is outside the DISACM acceptable range of 214.5 – 262.1.

The Task Standard for the JPM states that the applicant will declare the 2A Core Spray pump inoperable and enter Tech Spec 3.5.1, Condition B for the “inoperable” 2A Core Spray pump, with the required action of restoring the 2A Core Spray pump to OPERABLE within 7 days.

It is recommended to accept the evaluation that the 2A Core Spray pump is still OPERABLE as the correct outcome to the JPM, as the provided DOS 1400-05 Data Sheet 1 parameters satisfy all surveillance requirements and acceptance criteria impacting operability of Tech Spec 3.5.1 and DOS 1400-05, respectively.

OP-AA-108-104, Technical Specification Compliance states, “A Technical Specification, ATR, TRM, ISFSI, or ODCM related SSC is considered to be INOPERABLE when:

- It is not capable of meeting all of the requirements of the Technical Specification, ATR, TRM, ISFSI, or ODCM Definition for OPERABILITY, or
- It is not capable of meeting all of the applicable Technical Specification, ATR, TRM, ISFSI, or ODCM Surveillance Requirements for the current OPERATIONAL CONDITION/MODE, or
- All of the applicable Technical Specification Surveillance, ATR, TRM, ISFSI, or ODCM Requirements for the current OPERATIONAL CONDITION/MODE have not been completed within the required time interval, or
- Equipment unable to initiate on an auto initiation signal, unless allowed by the Technical Specification, ATR, TRM, ISFSI, or ODCM.”

The applicable Tech Spec 3.5.1 Surveillance Requirements for Core Spray are as follows:

- SR 3.5.1.1: Verify, for each ECCS injection/spray subsystem, locations susceptible to gas accumulation are sufficiently filled with water.
- SR 3.5.1.2: Verify each ECCS injection/spray subsystem manual, power operated, and automatic valve in the flow path, that is not locked, sealed, or otherwise secured in position, is in the correct position.
- SR 3.5.1.5 Verify the following ECCS pumps develop the specified flow rate against a test line pressure corresponding to the specified reactor pressure.
 - o Core Spray: Flow rate \geq 4500 gpm, Number of pumps: 1, Test Line pressure \geq 90 psig.
- SR 3.5.1.8: Verify each ECCS injection/spray subsystem actuates on an actual or simulated automatic initiation signal, except for valves that are locked, sealed, or otherwise secured in the actuated position.

DOS 1400-05, Acceptance Criteria also states:

- The Core Spray Pump is considered OPERABLE when it can be started and achieves a discharge pressure of > 235 psig, while delivering a flow rate of between 4600 and 4650 gpm. (SR 3.5.1.5)

The provided parameters on Data Sheet 1 for the 2A Core Spray pump of 4600 gpm and 270 psig satisfy the requirements of the Tech Spec Surveillance Requirements, therefore 2A Core Spray pump is still OPERABLE. The pump differential pressure falling outside of the DISACM range should still be recorded in an IR and trended by System Engineering, however it does not impact operability of the 2A Core Spray pump, as the DISACM values for pump differential pressure are not referenced in the Tech Spec 3.5.1 Surveillance Requirement, nor the Tech Spec 3.5.1 Bases.

Facility Position on Applicant Comment:

Following the challenge of JPM A-N-3-S critical task to declare 2A Core Spray Pump inoperable, the station agrees that the data provided in the JPM would not require declaration of 2A Core Spray Pump inoperable. Data provided for the 2A Core Spray Pump satisfies Tech Spec 3.5.1 SR 3.5.1.5 for flow and pressure and thus the 2A Core Spray Pump remains operable.

NRC Determination:

The facility Technical Specifications, specifically Surveillance Requirement (SR) 3.0.1, states in part, "SRs shall be met during the MODES or other specified conditions in the Applicability for individual LCOs, unless otherwise stated in the SR. Failure to meet a Surveillance, whether such failure is experienced during the performance of the Surveillance or between performances of the Surveillance, shall be failure to meet the LCO." While performing DOS 1400-05, CORE SPRAY SYSTEM PUMP OPERABILITY AND QUARTERY IST TEST WITH TORUS AVAILABLE, among other assessment items the procedure is designed to ensure that SR 3.5.1.5 is met and is considered a partial assessment of SR 3.5.1.8. The data that was provided for the applicant to review indicated that the 2A Core Spray pump exceeded the minimum requirements of SR 3.5.1.5 for flow rate and discharge pressure and was able to actuate upon demand per SR 3.5.1.8. The differential pressure identified by the applicant as existing within the In-Service Testing program Required Action Range is not a Technical Specification Surveillance Requirement assessment tool and as such LCO 3.5.1 and all its associated Surveillance Requirements were still met for the 2A Core Spray pump.

Therefore, the NRC staff concluded that the determination that LCO 3.5.1, Condition B, Required Action B.1 was required to be entered in JPM step 4 was incorrect. As a result, the JPM performance standard should be modified to indicate that LCO 3.5.1 was met and that the abnormal differential pressure should be entered into the corrective action program for engineering evaluation of possible long term component degradation.

SIMULATION FACILITY FIDELITY REPORT

Facility Licensee: Dresden Nuclear Power Station

Facility Docket No: 50-237, 50-249

Operating Tests Administered: May 13-16, 2024

The following documents observations made by the NRC examination team during the initial operator license examination. These observations do not constitute audit or inspection findings and are not, without further verification and review, indicative of non-compliance with the Title 10 of the *Code of Federal Regulations* 55.45(b). These observations do not affect NRC certification or approval of the simulation facility other than to provide information which may be used in future evaluations. No licensee action is required in response to these observations.

During the conduct of the simulator portion of the operating tests, the following items were observed:

ITEM	DESCRIPTION
SWR 0139012	There have been intermittent issues with the Dresden Rod Worth Minimizer regarding the appearance of insert/withdraw blocks while driving rods during Power Reduction mode.
SWR 0139106	Currently with a loss of Reactor Building Closed Cooling Water no real change is noted to the temperatures of the Reactor Recirculation pumps. In order for the Reactor Recirculation pump temperatures to be changed the transmitters need to be manipulated.
SWR 0139108	Update SER0279 and SER0295 in SmartAction and when 2A & 2B Recirc Drive Trip alarm tiles are clicked in JADE. SER0279 should be "2A Recirc Drive Trip" and SER0295 should be "2B Recirc Drive Trip."
SWR 0139109	Currently alarm tile 902-3 E-6 is blank and alarm tile 902-3 E-9 is labeled as "2B Recirc PP Temp Hi" in JADE and is incorrect. Alarm tile 902-3 E-6 should be "2B Recirc PP Temp Hi."
SWR 0139111	During on-site validation when running ILT-N-2 scenario, 2A & 2B C/CB were running (2C OOS and 2D tripped) when Bus 23 tripped on overcurrent taking away all condensate flow to the Reactor Feedwater Pumps. The 2C Reactor Feedwater Pump continued to run with no suction pressure until the control switch was taken to trip.
SWR 0139112	The U2 EDG Run light should stay on for the entire 6-minute cooldown period. It was noted that the light went out within 1-minute of taking the control switch to STOP and then came back on 2-3 minutes later and then stayed on for the rest of the cooldown period.
SWR 0139113	The DW & Torus Purge Fan Control Switches are difficult to take to PULL TO LOCK and indicating lights don't turn off as they should.