



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

September 16, 2020

Mr. Daniel G. Stoddard  
Senior Vice President and  
Chief Nuclear Officer  
Innsbrook Technical Center  
5000 Dominion Boulevard  
Glen Allen, VA 23060-6711

**SUBJECT: NORTH ANNA POWER STATION – NRC OPERATOR LICENSE EXAMINATION  
REPORT 05000338/2020301, 05000339/2020301**

Dear Mr. Stoddard:

During the period August 3 – 7, 2020, the Nuclear Regulatory Commission (NRC) administered operating tests to employees of your company who had applied for licenses to operate the North Anna Power Station. At the conclusion of the tests, the examiners discussed preliminary findings related to the operating tests with those members of your staff identified in the enclosed report. The written examination was administered by your staff on June 24, 2020.

One SRO failed the SRO portion of the written examination. There was one post-administration comment concerning the written test. The comment, and the NRC resolution of the comment, is summarized in Enclosure 2. A Simulator Fidelity Report is included in this report as Enclosure 3.

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 11.

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 <http://www.nrc.gov/reading-rm.adams.html> (the Public Electronic Reading Room).

If you have any questions concerning this letter, please contact me at (404) 997-4551.

Sincerely,

/RA/

Gerald J. McCoy, Chief  
Operations Branch 1  
Division of Reactor Safety

Docket Nos: 50-338, 50-339  
License Nos: NPF-4, NPF-7

Enclosures:

1. Report Details
2. Facility Comments and NRC Resolution
3. Simulator Fidelity Report

SUBJECT: NORTH ANNA POWER STATION – NRC OPERATOR LICENSE EXAMINATION  
REPORT 05000338/2020301, 05000339/2020301 dated September 16, 2020

Distribution:

P. Capehart, RII

G. McCoy, RII

PUBLICLY AVAILABLE  NON-PUBLICLY AVAILABLE  SENSITIVE  NON-SENSITIVE  
ADAMS:  Yes ACCESSION NUMBER: **ML20260H330**  SUNSI REVIEW COMPLETE  FORM 665  
ATTACHED

OFFICE	RII:DRS	RII:DRS	RII:DRS	RII:DRS	RII:DRS		
NAME	P. Capehart	J. Viera	N. Lacy	J. Bundy	G. McCoy		
DATE	9/15/2020	9/15/2020	9/15/2020	9/15/2020	9/16/2020		
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY

**U.S. NUCLEAR REGULATORY COMMISSION**

**REGION II**

Docket No.: 50-338, 50-339

License No.: NPF-4, NPF-7

Report No.: 05000338/2020301, 05000339/2020301

Enterprise Identifier L-2020-OLL-0024

Licensee: Virginia Electric and Power Company (VEPCO)

Facility: North Anna Power Station, Units 1 & 2

Location: Mineral, VA

Dates: Operating Test – August 3 – 7, 2020  
Written Examination – July 24, 2020

Examiners: P. Capehart, Chief Examiner, Senior Operations Engineer  
J. Viera, Operations Engineer  
N. Lacy, Operations Engineer  
J. Bundy, Operations Engineer

Approved by: Gerald J. McCoy, Chief  
Operations Branch 1  
Division of Reactor Safety

## SUMMARY

ER 05000338/2020301, 05000339/2020301, 000474/05000338/L-2020-OLL-0024, 000474/05000338/L-2020-OLL-0024; operating test August 3-7, 2020 and written examination July 24, 2020; North Anna Power Station; Operator License Examinations.

Nuclear Regulatory Commission (NRC) examiners conducted an initial examination in accordance with the guidelines in Revision 11 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.

The operating tests and the written examination were developed by the NRC.

The NRC administered the operating tests during the period August 3-7, 2020. Members of the North Anna Power Station training staff administered the written examination on July 24, 2020. All Reactor Operator (RO) and five Senior Reactor Operator (SRO) applicants passed both the operating test and written examination. One SRO failed the SRO portion of the written exam. All applicants were issued licenses commensurate with the level of examination administered.

There was one post-examination comment.

No findings were identified.

## REPORT DETAILS

### 4. OTHER ACTIVITIES

#### 4OA5 Operator Licensing Examinations

##### a. Inspection Scope

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 administered the operating tests during the period August 3-7, 2020. The NRC examiners evaluated five Reactor Operator (RO) and six Senior Reactor Operator (SRO) applicants using the guidelines contained in NUREG-1021. Members of the North Anna Power Station training staff administered the written examination on July 24, 2020. Evaluations of applicants and reviews of associated documentation were performed to determine if the applicants, who applied for licenses to operate the North Anna Power Station, 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 North Anna Power Station training staff developed both the operating tests and the written examination. All examination material was developed in accordance with the guidelines contained in Revision 11, 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 that the licensee's examination submittal was outside the range of acceptable quality specified by NUREG-1021. The initial written examination submittal was within the range of acceptability for the RO exam; however, it was outside the range of acceptable quality for the SRO exam because more than 20% of questions in the SRO Only portion of the exam contained unacceptable flaws. Individual questions were evaluated as unsatisfactory for the following reasons:

- Four questions failed to meet the K/A statement contained in the examination outline.
- Two questions contained two or more implausible distractors.
- One question on the SRO examination was not written at the SRO license level.
- Two questions contained other unacceptable psychometric flaws (subset issues).

The NRC regional office worked with the licensee to correct these issues and there was no delay in administration of the exam. Future examination submittals need to incorporate lessons learned.

Administration of the written examination and the operating test diverged by more than 30 days because of issues associated with COVID-19. The NRR operator licensing program office concurred with the NRC regional office decision to administer the operating test and written examination more than 30 days apart.

All applicants passed the operating test. One SRO failed the SRO portion of the written examination. Five RO applicants and five SRO applicants were issued licenses.

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 submitted one post-examination comment concerning the written test. A copy of the final written examination and answer key, with all changes incorporated, and the licensee's post-examination comment may be accessed not earlier than August 8, 2023, in the ADAMS system (ADAMS Accession Number(s) ML20254A293, ML20254A324, and ML20254A347).

#### 40A6 Meetings, Including Exit

##### Exit Meeting Summary

On August 7, 2020, the NRC examination team discussed generic issues associated with the operating test with Mr. James Jenkins, Director of Nuclear Station Safety & Licensing, and members of the North Anna Power Station 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

S. Allen, Senior Instructor (Exam Author)  
B. Chang, Supervisor Nuclear Training (Training Support)  
T. Fulton, Supervisor Nuclear Training (Operations)  
C. Hickory, Senior Instructor (Exam Author)  
J. Jenkins, Director Nuclear Station Safety & Licensing  
J. Russell, Manager Nuclear Training  
B. Scott, Manager Nuclear Operations  
A. Stephens, Senior Instructor (Lead Instructor)  
E. Vestre, Nuclear Plant Manager (acting)  
C. Werneke, Station Licensing Manager (acting)

### NRC personnel

M. Tobin, Senior Resident Inspector



## FACILITY POST-EXAMINATION COMMENTS AND NRC RESOLUTIONS

A complete text of the licensee's post-examination comments can be found in ADAMS under Accession Number ML20254A347.

### Item

SRO QUESTION #95, K/A 2.1.4 - GENERIC - Conduct of Operations

Knowledge of individual licensed operator responsibilities related to shift staffing, such as medical requirements, "no-solo" operation, maintenance of active license status, 10CFR55, etc. (CFR: 41.10 / 43.2)

Question: 95

A Senior Reactor Operator, with a NO-SOLO License due to a medical condition, is currently providing oversight for a Reactor Operator, also with a NO-SOLO license, who is performing a control manipulation.

Based on the above conditions (No Solo) another SRO is required to be \_\_\_(1)\_\_\_ and another RO is required to be \_\_\_(2)\_\_\_.

- A. (1) in view of the no solo SRO  
(2) in view of the no solo RO
- B. (1) on site  
(2) on site
- C. (1) on site  
(2) in view of the no solo RO
- D. (1) in view of the no solo SRO  
(2) on site

Answer: C

### Comment:

The candidates contest the lack of clarity in the stem of the question and recommend deleting the question from the exam due to multiple correct answers.

Basis:

1. This question asks the examinee to identify what requirement must be met for a NO-SOLO licensed RO to perform control manipulations in the control room when the SRO is also a NO-SOLO licensed and also ask for the requirements for the NO-SOLO SRO in the control room observing the NO-SOLO RO.
2. The correct answer is taken directly from NUREG-1021 ES-605C.3.c, bullet 3:

*An RO who is at risk of sudden incapacitation may have a **no-solo** restriction that requires another licensed operator to be **in view** when the restricted operator is performing control manipulations and someone capable of summoning assistance to be present at all other times while the restricted operator is performing licensed duties.*

*The analogous SRO restriction would require another licensed operator to be in view when the restricted operator is performing control manipulations and another senior operator to be present on site at all other times while the restricted operator is performing SRO licensed duties or someone capable of summoning assistance to be present at all other times while the restricted operator is performing RO licensed duties.*

Facility Licensee Position:

1. The licensee and applicants argue that the other answer choices could be considered correct. The other answer choices are a combination of both the RO and SRO having another RO and SRO “in view” of them (Choice A), having another RO and SRO “on site” (Choice B), or to have another SRO “in view” of the no-solo SRO and another RO on site (Choice D). Listed below is a compilation of remarks stated by the applicants with agreement by the licensee as to why there are multiple correct answers:
  - i) Per NRC Guidelines, an SRO is also qualified to perform RO Duties.
  - ii) OP-AA-300, Reactivity Management, requires an “extra” SRO for planned control manipulations.
  - iii) The Stem of the Question does not specify whether the control manipulation is a simple Boration or Dilution for Temperature control, a Plant Ramp, taking the reactor critical, or a performance test. Since all of these are activities associated with normal plant operations the answer must be universally acceptable.
  - iv) If the NO-SOLO SRO overseeing control manipulations becomes incapacitated, the RO cannot assume the License Duties of the NO-SOLO SRO while the NO-SOLO RO completes the control manipulation and the On-Site SRO is called to the Main Control Room. If the plant were in a condition where additional control manipulations were required due to Xenon, Equipment Failures, or Operator Error, the lack of an SRO for the period of time it would take to arrive in the Main Control Room (assume < 15 minutes) could place the unit in a more unstable condition.
  - v) The Stem of the Question does not specify whether the question is testing the minimum federal requirements or the station requirements. Normally it would be assumed to test plant standards.
  - vi) Answer A could be correct since the stem specified that both the RO and SRO have a NO-SOLO designation. NUREG-1021, Rev. 11 requires another licensed operator to be in view when the restricted operator is performing control manipulations. This could be understood to mean that another SRO must be in view of the individuals performing and observing the control manipulation.
  - vii) Answer B could be correct if the NO-SOLO SRO is considered the licensed operator in view of the NO-SOLO RO performing the control manipulation. Additionally, NUREG-1021, Rev.

11 allows another SRO to be present on site at all other times while the restricted operator is performing SRO licensed duties, providing oversight for a RO would be considered a licensed duty for an SRO.

viii) Answer D could be correct considering 10 CFR 55.59 precludes control manipulations from being made without an SRO present. If a NO-SOLO RO becomes incapacitated with an extra NO-SOLO SRO in sight and an extra RO on site, then one of the SROs could fill the licensed RO duties while still maintaining an SRO available for oversight.

### **NRC Resolution:**

The licensee's recommendation was rejected. The NRC disagrees with the licensee that the question should be deleted.

In the cases denoted in the above contentions, the applicant would need to make assumptions outside of the question to make the other choices plausible. NUREG Appendix E states that when answering a question, do NOT make assumptions regarding conditions that are not specified in the question unless they occur as a consequence of other conditions that are stated in the question. The applicants should NOT assume that the control manipulation was of a specific size or duration that mandated another SRO be present; the stem of the question specified that the context of the question was only related to no-solo requirements, not the magnitude of the control manipulation.

The licensee stated that they have no lesson objective that covers this specific KA. ES-401, Section D.2.g states *"A technical reference, .... And a cross-reference to the facility licensee's exam question bank, if applicable, shall be noted for every question. If the facility licensee has a learning objective applicable to the question, it should also be referenced. However, the **absence of a learning objective does not invalidate the question**, provided that it has an appropriate K/A and technical reference.* The site does not have a plant standard that covers the no-solo topic and wrote the question using NUREG-1021 as the technical reference for this question.

Answer "A" cannot be considered correct because the no-solo SRO is required only to have another SRO "on site" assigned to fulfill his duties if he becomes incapacitated. He does not have to be in view of the no-solo SRO.

Answer "B" cannot be considered correct because the no-solo RO is required to have another RO "in view" as a minimum criterion.

Answer "D" cannot be considered correct for the same reason as given in choice "A". The no-solo SRO is only required to have another SRO on site, not another SRO in view of him.

## **SIMULATOR FIDELITY REPORT**

Facility Licensee: North Anna Power Station

Facility Docket No.: 50-338, 50-339

Operating Test Administered: August 3-7, 2020

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.

No simulator fidelity or configuration issues were identified.