



**UNITED STATES
NUCLEAR REGULATORY COMMISSION**
REGION II
245 PEACHTREE CENTER AVENUE NE, SUITE 1200
ATLANTA, GEORGIA 30303-1257

June 25, 2018

Tom Ray
Duke Energy Carolinas, LLC
McGuire Nuclear Station
12700 Hagers Ferry Road
Huntersville, NC 28078-8985

**SUBJECT: WILLIAM B. MCGUIRE NUCLEAR STATION – NRC EXAMINATION REPORT
05000369/2018301 AND 05000370/2018301**

Dear Mr. Ray:

During the period April 16-20, 2018, the Nuclear Regulatory Commission (NRC) administered operating tests to employees of your company who had applied for licenses to operate the William B. McGuire Nuclear Station. At the conclusion of the tests, the examiners discussed 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 April 26, 2018.

Five Reactor Operator (RO) and six Senior Reactor Operator (SRO) applicants passed both the operating test and written examination. There were two post-administration comments concerning the operating examination. The comments and the NRC resolution of those comments are summarized in Enclosure 2. A Simulator Fidelity Report is included in this report as Enclosure 3.

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 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).

T. Ray

2

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: 50-369 and 50-370
License Nos: NPF-9 and NPF-17

Enclosures:

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

cc: Distribution via Listserv

SUBJECT: WILLIAM B. MCGUIRE NUCLEAR STATION – NRC EXAMINATION REPORT
05000369/2018301 AND 05000370/2018301

Distribution:

J. Bundy, RII
M. Bates, RII
G. McCoy, RII

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

OFFICE	RII:DRS	RII:DRS	RII:DRS				
SIGNATURE	JDB10 EMAIL	MAB7 EMAIL	GLJM1				
NAME	JBUNDY	MBATES	GMCCOY				
DATE	6/22/2018	6/22/2018	6/25 /2018				
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U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 05000369, 05000370

License No.: NPF-9, NPF-17

Report No.: 05000369/2018301 and 05000370/2018301

Licensee: Duke Energy Carolinas, LLC

Facility: McGuire Nuclear Station, Units 1 & 2

Location: Huntersville, NC 28078-8985

Dates: Operating Test – April 16 – 20, 2018
Written Examination – April 26, 2018

Examiners: Mark Bates, Chief Examiner, Senior Operations Engineer
Jason Bundy, Chief Examiner (Under Instruction), Operations Engineer
Tom Stephen, Operations Engineer
James Baptist, Examiner (Under Instruction), Senior Operations Engineer

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

SUMMARY

ER 05000369/2018301 and 05000370/2018301; operating test April 16-20, 2018 & written exam April 26, 2018; William B. McGuire Nuclear Station; Units 1 and 2 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.

Members of the McGuire Nuclear Station staff developed both the operating tests and the written examination. The initial operating test, written Reactor Operator (RO) examination, and written Senior Reactor Operator (SRO) examination submittals met the quality guidelines contained in NUREG-1021.

The NRC administered the operating tests during the period April 16-20, 2018. Members of the McGuire Nuclear Station training staff administered the written examination on April 26, 2018. All five RO and six SRO applicants passed both the operating test and written examination. All eleven applicants were issued licenses commensurate with the level of examination administered.

There were two 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 (Reactor Operator and Senior Reactor Operator 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 administered the operating tests during the period April 16-20, 2018. 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 McGuire Nuclear Station training staff administered the written examination on April 26, 2018. Evaluations of applicants and reviews of associated documentation were performed to determine if the applicants, who applied for licenses to operate the McGuire Nuclear 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 the McGuire Nuclear 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.

Using NUREG-1021, the NRC determined that the licensee's initial examination submittal was within the range of acceptability expected for a proposed examination.

All five RO applicants and six SRO applicants passed both the operating test and written examination. All 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 two post-examination comments concerning the operating examination. A copy of the final written examination and answer key may be accessed not earlier than April 26, 2020, in the ADAMS system (ADAMS Accession Numbers ML18136A767 and ML18136A771). A copy of the post examination comments may be accessed immediately, in the ADAMS system (ADAMS Accession Number ML18136A776).

40A6 Meetings, Including Exit

Exit Meeting Summary

On April 20, 2018 the NRC examination team discussed generic issues associated with the operating test with Thomas Ray, Site Vice-President, and members of the McGuire Nuclear Station staff. The examiners asked the licensee if any of the examination material was proprietary, or if any of the examination material received should be withheld from public disclosure. No proprietary information was identified. No information was identified that required withholding from public disclosure.

On June 12, 2018, the Chief Examiner discussed final examination results with Training Management.

KEY POINTS OF CONTACT

Licensee personnel

T. Ray	Site Vice-President
S. Snider	Plant Manager
S. Fortin	Operations
M. Kelly	Training Manager
V. Ford	Operations Training Manager
S. Helms	ILT Supervisor
J. Thomas	Regulatory Affairs Manager
B. Richards	Regulatory Affairs

NRC personnel

A. Hutto	Senior Resident Inspector
R. Cureton	Resident Inspector

FACILITY POST-EXAMINATION COMMENTS AND NRC RESOLUTIONS

A complete text of the licensee's post-examination comment can be found in ADAMS under Accession Number ML 18136A776.

Item 1

OPERATING EXAM, Scenario #1, Event 3 1A S/G Tube Leak

Comment

During administration of Scenario #1 of the operating exam, an approximate 30 GPM S/G Tube Leak on 1A S/G was given to the applicants. The licensee's original submittal identified Tech Spec 3.4.13 (RCS Operational Leakage) condition 'B' and Site Licensing Commitment (SLC) 16-9.7 (Standby Shutdown System (SSS)) conditions 'A and C' as being the applicable Tech Specs and SLCs for this failure. The licensee has since determined that Tech Spec 3.4.18 (SG Tube Integrity) Condition 'B' is also applicable for this particular scenario.

The following information is from the Tech Spec 3.4.18 Bases:

"A SG tube has tube integrity when it satisfies the SG performance criteria. The SG performance criteria are defined in Specification 5.5.9, "Steam Generator (SG) Program," and describe acceptable SG tube performance. The Steam Generator Program also provides the evaluation process for determining conformance with the SG performance criteria.

There are three SG performance criteria: structural integrity, accident induced leakage, and operational LEAKAGE. Failure to meet any one of these criteria is considered failure to meet the LCO."

Based on the fact that the operational LEAKAGE for this scenario exceeded the limit of 135 Gallons Per Day identified in Tech Spec 3.4.13, the licensee has determined that Tech Spec 3.4.18 LCO is also not met, and that Condition 'B' is applicable.

NRC Resolution

The licensee's recommendation was accepted.

During development and validation of simulator scenario 1, the exam developers, the NRC, and the operators involved in the validation of the scenarios agreed that only LCO 3.4.13 condition 'B' and SLC 16-9.7 conditions 'A' and 'C' were applicable.

However, as stated above by the facility licensee, following a post-examination assessment, entry into LCO 3.4.13 condition 'B', SLC 16-9.7 conditions 'A' and 'C' and LCO 3.4.18 condition 'B' were determined to be the technically correct application of the appropriate specifications, given the conditions present in the scenario event. Therefore, the NRC agreed with the facility licensee's recommendation and modified the ES-D-2 form for this scenario event to add the additional entry into LCO 3.4.18 as technically accurate, in accordance with TS, for the given conditions.

All applicants who were given Scenarios 1 during exam administration of the operating test were evaluated as required to enter LCO 3.4.13, LCO 3.4.18 and SLC 16-9.7 for this event

Item 2

OPERATING EXAM, Systems (Control Room) JPM B (Align the Containment Spray System to Cold Leg Recirculation)

Comment

The Task Standard for Systems-Control Room JPM B is as follows:

The operator will attempt to align the 1A NS Pump for operation until it is observed that 1NS-18A (1A NS Pump Suction From Cont Sump Isol) has failed to open. The operator will then align the 1B NS Train for operation, and secure the 1A NS Train operation.

One applicant mis-operated valve 1NS-20A (1A NS Pump Suction From FWST Isol) in Step 8.e.6 "check 1NS-20A - CLOSED" of ES-1.3 (Transfer To Cold Leg Recirc). If the valve were to be open when "checked", the correct action would be to go to the RNO and GO TO step 8.f to align B train NS to the sump. The applicant did incorrectly open 1NS-20A when it should have only been verified CLOSED and then went to the RNO as previously described. 1NS-18A is interlocked with 1NS-20A. 1NS-20A must be closed to allow 1NS-18A to open.

1NS-18A would not have opened, if attempted, in step 8.e.7 of ES-1.3. No alignment could be made that would connect the containment sump to the FWST. Step 8g and 8g RNO of ES-1.3 addresses NS Train A not being available and places an info sticker on the containment sump valve and closes the NS Train A discharge valves to isolate the A train flow path.

The licensee contends that there were no system/plant consequences as a result of the mis-operation of 1NS-20A and the task standard to align B Train of NS for recirculation was achieved.

NRC Resolution

The licensee's recommendation was accepted.

The applicant's error did not prevent successful completion of a critical step and did not place the plant in a less safe condition; therefore, their score was graded as satisfactory. In accordance with NUREG-1021, the operating exam answer key was not changed based on this contention.

SIMULATOR FIDELITY REPORT

Facility Licensee: McGuire Nuclear Station

Facility Docket No.: 05000369 and 05000370

Operating Test Administered: April 16-20, 2018.

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.