



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

February 25, 2011

Mr. J. R. Morris, Site Vice President
Duke Energy Carolinas, LLC
Catawba Nuclear Station
4800 Concord Road
York, SC 29745-9635

**SUBJECT: CATAWBA NUCLEAR STATION - NRC OPERATOR LICENSE EXAMINATION
REPORT 05000413/2010301 AND 05000414/2010301**

Dear J. R. Morris:

During the period December 13 – 17, 2010, the Nuclear Regulatory Commission (NRC) administered operating tests to employees of your company who had applied for licenses to operate the Catawba 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 December 21, 2010.

Four Reactor Operator (RO) and seven Senior Reactor Operator (SRO) initial license applicants passed both the operating test and written examination. Two SRO retake applicants passed the written examination. There were five post-examination comments concerning the written examination. These comments, and the NRC resolution of these comments, are summarized in Enclosure 2. A Simulator Fidelity Report is included in this report as Enclosure 3.

An issue related to examination security was identified by your staff and is described in Section 40A5 of the enclosed report. The issue was reviewed by the NRC examiners and characterized as a minor violation.

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).

DPC

2

If you have any questions concerning this letter, please contact me at (404) 997-4550.

Sincerely,

/RA/

Malcolm T. Widmann, Chief
Operations Branch
Division of Reactor Safety

Docket Nos: 50-413, 50-414
License Nos: NPF-35, NPF-52

Enclosures:

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

cc w/encls.: (See page 2)

cc w/encls:

Division of Radiological Health
TN Dept. of Environment & Conservation
Electronic Mail Distribution

Randy D. Hart
Regulatory Compliance Manager
Duke Energy Carolinas, LLC
Electronic Mail Distribution

Sandra Threatt, Manager
Nuclear Response and Emergency
Environmental Surveillance
Bureau of Land and Waste Management
Department of Health and Environmental
Control
Electronic Mail Distribution

Dhiaa M. Jamil
Group Executive and Chief Nuclear Officer
Duke Energy Carolinas, LLC
Electronic Mail Distribution

C. Jeff Thomas
Fleet Regulatory Compliance & Licensing
Manager
Duke Energy Carolinas, LLC
Electronic Mail Distribution

Kathryn B. Nolan
Senior Counsel
Duke Energy Corporation
526 South Church Street-EC07H
Charlotte, NC 28202

Lara Nichols
Associate General Counsel
Duke Energy Corporation
Electronic Mail Distribution

Senior Resident Inspector
U.S. Nuclear Regulatory Commission
Catawba Nuclear Station
U.S. NRC
4830 Concord Road
York, SC 29745

David A. Repka
Winston Strawn LLP
Electronic Mail Distribution

North Carolina MPA-1
Suite 600
P.O. Box 29513
Raleigh, NC 27525-0513

Susan E. Jenkins
Director, Division of Waste Management
Bureau of Land and Waste Management
S.C. Department of Health and
Environmental Control
Electronic Mail Distribution

Mark Yeager
Division of Radioactive Waste Mgmt.
S.C. Department of Health and
Environmental Control
Electronic Mail Distribution

W. Lee Cox, III
Section Chief
Radiation Protection Section
N.C. Department of Environmental
Commerce & Natural Resources
Electronic Mail Distribution

Vanessa Quinn
Federal Emergency Management Agency
Radiological Emergency Preparedness
Program
1800 S. Bell Street
Arlington, VA 20598-3025

Steve Weatherman, Operations Analyst
North Carolina Electric Membership
Corporation
Electronic Mail Distribution

County Manager of York County
York County Courthouse
P. O. Box 66
York, SC 29745-0066

Piedmont Municipal Power Agency
Electronic Mail Distribution

(cc w/encls continued on page 3)

DPC

3

cc w/encls continued
Peggy Force
Assistant Attorney General
State of North Carolina
P.O. Box 629
Raleigh, NC 27602

David A. Baxter
Vice President, Nuclear Engineering
Duke Energy Carolinas, LLC
Electronic Mail Distribution

Duke Energy Corporation, LLC
ATTN: Mr. Kevin Phillips
Training Manager
Catawba Nuclear Station
4800 Concord Road
York, SC 29745-9635

If you have any questions concerning this letter, please contact me at (404) 997-4550.

Sincerely,

/RA/

Malcolm T. Widmann, Chief
Operations Branch
Division of Reactor Safety

Docket Nos: 50-413, 50-414
License Nos: NPF-35, NPF-52

Enclosures:

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

cc w/encls.: (See page 2)

Distribution w/encl:

C. Evans, RII EICS (Part 72 Only)
L. Douglas, RII EICS (Linda Douglas)
OE Mail (email address if applicable)
RIDSNRDIRS
PUBLIC
A. Adams, NRR
RidsNrrPMCatawba Resource

*See previous concurrence page

PUBLICLY AVAILABLE NON-PUBLICLY AVAILABLE SENSITIVE NON-SENSITIVE
ADAMS: x Yes ACCESSION NUMBER: ML110560861 x SUNSI REVIEW COMPLETE

OFFICE	RII: DRS/OL	RII: DRS/OL	RII: DRP/BR1	RII: DRS/OL			
SIGNATURE	RA/EL	RA	RA/JB	RA/MM			
NAME	E. Lea	M. Widmann	J. Barley	M. Meeks			
DATE	02/24/2011	02/ /2011	02/24/2011	02/24/2011		3/ /2011	3/ /2011
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO

OFFICIAL RECORD COPY DOCUMENT NAME: O:\CATAWBA EXAMINATIONS\2010 CATAWBA INITIAL
EXAM\CORRESPONDENCE\CATAWBA EXAM REPORT DECEMBER 2010 REV1.DOCX

U.S. NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 05000413, 05000414

License No.: NPF-35, NPF-52

Report No.: 05000413/2010301, 05000414/2010301

Licensee: Duke Energy Carolinas, LLC

Facility: Catawba Nuclear Station, Units 1 & 2

Location: York, SC

Dates: Operating Test – December 13 - 17, 2010
Written Examination - December 21, 2010

Examiners: E. Lea, Chief Examiner, Senior Operations Engineer
R. Walton, Senior Operations Engineer
M. Meeks, Operations Engineer

Approved by: Malcolm T. Widmann, Chief
Operations Branch
Division of Reactor Safety

SUMMARY OF FINDINGS

ER 05000413/2010301, 05000414/2010301; December 13 - 17, 2010, and December 21, 2010; Catawba Nuclear Station, Units 1 and 2; Operator License Examinations.

Nuclear Regulatory Commission (NRC) examiners conducted an initial examination and a retake examination in accordance with the guidelines in Revision 9, Supplement 1, of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors." The examinations implemented the operator licensing requirements identified in 10 CFR §55.41, §55.43, and §55.45, as applicable.

Members of the Catawba Nuclear Station staff developed both the operating tests and the written examination.

The NRC administered the operating tests during the period December 13 – 17, 2010. Members of the Catawba Nuclear Station training staff administered the written examination on December 21, 2010. Four Reactor Operator (RO), and seven Senior Reactor Operator (SRO) applicants passed both the operating test and written examination. Two SRO retake applicants, who were required to take only the written section of the examination, passed the written examination. All applicants were issued licenses commensurate with the level of examination administered.

There were five post-examination comments.

No findings of significance were identified.

REPORT DETAILS

4. OTHER ACTIVITIES

4OA5 Operator Licensing Examinations

a. Inspection Scope

Members of the Catawba Nuclear Station staff developed both the operating tests and the written examination. All examination material was developed in accordance with the guidelines contained in Revision 9, Supplement 1, of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors." 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 reviewed the licensee's examination security measures while preparing and administering the examinations in order to ensure compliance with 10 CFR Part 55.49, "Integrity of examinations and tests."

The NRC examiners evaluated four Reactor Operator (RO) and nine Senior Reactor Operator (SRO) applicants using the guidelines contained in NUREG-1021. The examiners administered the operating tests to eleven initial applicants during the period December 13 – 17, 2011. Members of the Catawba training staff administered the written examination to eleven initial and two retake applicants on December 21, 2010. Evaluations of applicants and reviews of associated documentation were performed to determine if the applicants, who applied for licenses to operate the Catawba Nuclear Station, met the requirements specified in 10 CFR Part 55, "Operators' Licenses."

b. Findings

No findings of significance were identified. The NRC determined, using NUREG-1021, that the licensee's initial examination submittal was within the range of acceptability expected for a proposed examination.

During the preparatory week the licensee found five pages of a simulator scenario, which had been validated, left unattended in the simulator booth. The remaining twenty seven pages of the scenario were properly controlled. The licensee immediately removed the scenario, which contained the unattended pages from the group of scenarios which were going to be used during the exam week. The licensee initially developed four scenarios for validation during prep week. Only two scenarios were needed for the actual exam and the third scenario was designated as a spare. The integrity of the exam was not compromised. The licensee wrote a problem identification report to address the issue of the simulator scenario being left unattended. This issue was reviewed by NRC examiners and discussed with the Branch Chief, and was characterized as a minor violation.

Four RO and seven SRO initial license applicants passed both the operating test and written examination and the two retake applicants passed the 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 five post-examination comments concerning the initial written examination. A copy of the post-examination comments and the NRC's recommendation is contained in Enclosure 2. A copy of the final written examination and answer key with all changes incorporated may be accessed no earlier than December 21, 2012, in the ADAMS system (ADAMS Accession Numbers ML110410298 and ML110410302).

4OA6 Meetings, Including Exit

Exit Meeting Summary

On December 17, 2010, the NRC examination team discussed generic issues associated with the operating test with Mr. Kevin Phillips, Training Manager, and members of the Catawba 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

T. Garrison, Operations Support SPOC
G. Hamilton, Fleet Training Manager
R. Hart, Regulatory Compliance Manager
D. Hensley, Lead Examiner
E. Madsen, Operations Training Supervisor
A. Orton, Operations Training
K. Phillips, Training Manager
T. Simril, Operations Support Manager
P. Stovall, Center of Excellence- Operations Training Manager
S. Tripi, Initial Licensing Training Supervisor

NRC personnel

R. Cureton, 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 ML10410204.

Question # 21, APE036 AK3.01

Comment: The question asked what alarm would result from a given set of conditions and how the alarm would impact evacuation of containment. The facility recommends that both answers A and C be accepted as correct.

Facility Basis:

The question involves a fuel handling accident where source range counts increased by 0.4 decades. The third bullet of the stem states that source range count rates "increased by 0.4 decades and are stabilizing."

It could be interpreted that even though the count rates are stabilizing, they still could be increasing (though at a slower rate), and may reach 0.5 decades, which is the alarm setpoint for the alarm 1AD-2, D/3 & D/4 S/R HI FLUX LEVEL AT SHUTDOWN.

NRC Resolution: Recommendation not accepted. The question asked the applicant to identify the expected alarm and how the alarm impacted evacuation of containment based on a set of given conditions (current conditions not conditions at a future point in time). Documentation reviewed indicated that for the conditions provided in the stem of the question, alarm 1RAD-3, D/2 1EMF-17 REACTOR BLDG REFUEL BRIDGE would be received, not alarm 1AD-2, D/3 & D/4 S/R HI FLUX LEVEL AT SHUTDOWN. Receiving alarm 1RAD-3, D/2 1EMF-17 REACTOR BLDG REFUEL BRIDGE would cause an automatic actuation of the Containment Evacuation. Only answer C contained information which described how the plant would respond to the current plant conditions given in the stem.

Question # 41, SYS025 2.2.22

Comment: The question asked which condition associated with the Ice Condenser system requires a Limit Condition of Operation (LCO) entry with a required action completion time of within ONE hour. The facility recommended that the question be deleted from the examination, due to no correct answer.

Facility Basis:

The question was written based on a version of LCO 3.6.13, Ice Condenser Doors, which was different from the version used by the applicants training program at the of the time of the procedure freeze date (09/20/10). Please see attach LCO 3.3.13, Amendment Nos. 173/165. This version of the LCO was used by the exam developers to develop Question # 41, and supports D as being the correct answer. This version of the LCO has been in effect since 2001.

The new version of LCO 3.6.13 was issued and effective on 08/10/10, and should have been used to develop the question. Please see attached LCO 3.6.13, Amendment Nos. 256/251. It is believed that the exam developers either did not receive, or for other undetermined reasons, did not realize the LCO had been revised. The nature of the revision changes the specification

from “one or more ice condenser doors” to “one or more ice condenser lower inlet doors,” and therefore results in no correct answer for the question.

NRC Resolution: Recommendation accepted. The question is deleted from the exam based on the fact that there is no correct answer. The intended answer specified that “An ice condenser intermediate deck door temporarily blocked from opening” would require an LCO completion within ONE hour. Following a review of information, it was determined that blocking the intermediate deck door open would initiate a 4 hour LCO action requirement/completion time instead of a ONE hour LCO action requirement.

Question # 76, EPEP011 2.2.37

Comment: The question asked the applicant to describe, based on a given set of plant conditions, which procedure should be implemented and to identify the actions contained within the procedure which would mitigate the conditions. The facility recommended that both answers B and D be accepted as correct.

Facility Basis:

The stem conditions involved sump blockage, resulting in cavitation of the RHR (low head injection) pumps. The answer key indicates B as the correct answer. However, D is also correct, as Follows:

Distractor D involves securing the ND (low head injection) pumps, the NV (high head), and the NI (intermediate head) pumps, and initiating makeup to the FWST. The question was intended to test which action(s) would be taken FIRST to mitigate the cavitating ND pumps. This is answer B. However, the question as written did not specify the “FIRST” action to take. The action in distractor D are also in ECA-1.3, and if taken, would indeed mitigate the conditions presented in the stem. Please see attached and highlighted ECA-1.3. Specifically, Step 4.k directs that if the ND pumps (s)’ cavitation continues, then stop the affected pump. Continuing in the procedure to Step 15 will direct makeup to the FWST.

Therefore, the action of either B or D, if taken, would mitigate the conditions presented in the stem.

NRC Resolution: Recommendation accepted. Both answers are accepted because actions identified in both B and D are contained in ECA-1.3, and would mitigate the conditions identified in the stem of the question. The stem did not specifically ask the applicant to identify the “FIRST” action the applicant would take.

Question # 83, APE60 AA2.04

Comment: The question asked the applicant to describe how manually isolating a radiation leak would affect members of the public at two locations along the sight boundary. The facility recommends that answers B and D be accepted as correct.

Facility Basis:

The answer key indicates B is the correct answer. However, D is also correct as follows: The stem, as worded, asks for the effect of manually isolating an accidental gaseous release, in the context of minimizing exposure to a member of the public at Location 1 versus Location 2. Both

locations are at the Site Boundary. The question was intended to require the applicant to apply knowledge of the basis for Selected Licensee Commitment (SLC) 16.11-19, Gas Storage Tanks, and evaluate the effect of a release at two locations along the Site Boundary. However, the wording of the question leaves room for selecting either answer B (Location 1 – nearest to the release) or answer D (location 2 – furthest from the release), because the stem did not specifically refer to the SLC basis. This results in either Location selection as being correct. If a member of the public receives less than 0.5 rem at the location nearest to the release (Location 1), they will also receive less than 0.5 rem at the location furthest from the release (Location 2). Therefore, there are two correct answers: B and D.

NRC Resolution: Recommendation accepted. The effect of manually isolating the valve would result in a radiation level at Location 1 and Location 2 that would be within the limit identified in the SLC – less than 0.5 rem.

Question # 86, SYS004 A2.21

Comment: The question asked the applicant to identify the procedure which contains the actions required to mitigate a set of given conditions due to controller malfunction. The facility recommends that this question be deleted from the exam.

Facility Basis:

“The stem conditions involve a malfunction controller for the Letdown Heat Exchanger Outlet Temperature Controller. The intent of the question is to test the SRO applicant on procedure selection and knowledge of detailed cont for the required mitigation action.

However, the stem is incomplete and confusing. The stem asks the applicant to identify only the procedure containing the required action for mitigation, but not to determine the required action. This could make the question confusing for the applicant since the distracters present the applicant with options outside the stated scope of the stem.

The facility used the guidance of ES-403, D.1.b, as shown below:

The following type of errors, if identified and adequately justified by the facility licensee, are most likely to result in post-examination changes agreeable to the NRC:

- A question with an unclear stem that confused the applicants or did not provide all the necessary information

The question is essentially incompletely developed since it contains only two distracters linked to the stem, and is therefore an invalid question.”

NRC Resolution: Recommendation accepted. The stem specifically asked the applicant to identify the procedure which contained the correct actions to mitigate a set of given conditions. Two of the distracters identified the correct procedure. Each of the distracters also identified actions that should be taken. The stem did not ask the applicant to identify the actions identified in the procedure, and is considered to be unclear. Therefore, based on the information identified in NERUG 1021, Revision 9, ES-403, D.1.b, the question is deleted.

SIMULATOR FIDELITY REPORT

Facility Licensee: Catawba Nuclear Station

Facility Docket No: 50-413, 50-414

Operating Test Administered: December 13 – 17, 2011

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.