**UNITED STATES**
**NUCLEAR REGULATORY COMMISSION**
REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW, SUITE 23T85
ATLANTA, GEORGIA 30303-8931

May 1, 2009

Mr. Christopher L. Burton
Vice President
Carolina Power & Light Company
Shearon Harris Nuclear Plant
P.O. Box 165, Mail Zone 1
New Hill, NC 27562-0165

SUBJECT: SHEARON HARRIS NUCLEAR POWER PLANT – NRC OPERATOR LICENSE EXAMINATION REPORT 05000400/2009301

Dear Mr. Burton:

During the period March 9-13 and March 17-18, 2009, the Nuclear Regulatory Commission (NRC) administered operating tests to employees of your company who had applied for licenses to operate the Shearon Harris Nuclear Power Plant. 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 March 20, 2009.

Seven Reactor Operator (RO) and three Senior Reactor Operator (SRO) applicants passed both the operating test and written examination. One RO applicant failed the written examination. There were four post-administration comments concerning the operating and written examinations. 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.

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) 562-4550.

Sincerely,

**/RA/**

Malcolm Widmann, Chief
Operations Branch
Division of Reactor Safety

Docket No: 50-400
License No. NPF-63

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

(cc: w/encl – See Page 3)

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**U.S. NUCLEAR REGULATORY COMMISSION**

REGION II

| | |
|---|---|
| Docket No.: | 05000400 |
| License No.: | NPF-63 |
| Report No.: | 05000400/2009301 |
| Licensee: | Carolina Power & Light Company (CP&L) |
| Facility: | Shearon Harris Nuclear Power Plant |
| Location: | 5413 Shearon Harris Road<br>New Hill, NC 27562 |
| Dates: | Operating Test – March 9-18, 2009<br>Written Examination – March 20, 2009 |
| Examiners: | F. Ehrhardt, Chief Examiner, Sr. Operations Engineer<br>R. Monk, Senior Resident Inspector (Examiner Certified)<br>M. Riches, Operations Engineer |
| Approved by: | M. Widmann, Chief<br>Operations Branch<br>Division of Reactor Safety |

Enclosure 1

## SUMMARY OF FINDINGS

ER 05000400/2009301; March 9-18, 2009 & March 20; Shearon Harris Nuclear Power Plant; Operator License Examinations.

Nuclear Regulatory Commission (NRC) examiners conducted an initial examination in accordance with the guidelines in Revision 9, Supplement 1, 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 NRC developed the written examination outline. Members of the Shearon Harris Nuclear Power Plant staff developed both the operating tests and the written examination.

The NRC administered the operating tests during the period March 9-13 and March 17-18, 2009. Members of the Shearon Harris Nuclear Power Plant training staff administered the written examination on March 20, 2009. Seven Reactor Operator (RO) and three Senior Reactor Operator (SRO) applicants passed both the operating test and written examination. One Reactor Operator failed the written examination. Eight applicants were issued licenses commensurate with the level of examination administered. One SRO applicant and one RO applicant were issued letters stating that they passed both the written and operating examinations and that their licenses will be issued pending receipt of additional information.

There were four post-examination comments.

No findings of significance were identified.

## REPORT DETAILS

4. OTHER ACTIVITIES

4OA5 Operator Licensing Examinations

a. Inspection Scope

The NRC developed the written examination outline. Members of the Shearon Harris Nuclear Power Plant 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 §55.49, "Integrity of examinations and tests."

The NRC examiners evaluated eight Reactor Operator (RO) and three Senior Reactor Operator (SRO) applicants using the guidelines contained in NUREG-1021. The examiners administered the operating tests during the period March 9-13 and March 17-18. Members of the Shearon Harris Nuclear Power Plant training staff administered the written examination on March 20, 2009. Evaluations of applicants and reviews of associated documentation were performed to determine if the applicants, who applied for licenses to operate the Shearon Harris Nuclear Power Plant, 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 operating test and written examination submittals were both within the range of acceptability expected for a proposed examination.

Seven Senior Reactor Operator (SRO) applicants and three Reactor Operator (RO) applicants passed both the written and operating examinations. One RO applicant failed the written examination. Issuance of two licenses, one for an RO applicant and one for an SRO applicant, have been delayed pending receipt of additional information. Details concerning the need for additional information have been sent to the individual applicants and the facility licensee.

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 test and two comments concerning the written examination. A copy of the final written examination and answer key, with all changes incorporated, and the licensee's post-examination comments may be accessed in the ADAMS system (ADAMS Accession Number(s) ML091170441, ML091170423, and ML091170432).

4OA6 Meetings, Including Exit

Exit Meeting Summary

On March 18, 2009 the NRC examination team discussed generic issues associated with the operating test with Mr. Chris Burton, Shearon Harris Vice President, and members of the Shearon Harris Nuclear Power 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

C. Burton, Vice President Harris Plant
K. Henderson, General Manager Harris Plant
W. Gurganious, Director – Fleet Nuclear Training
G. Kilpatrick, Manager – Training
T. Toler, Superintendent – Operations Training
K. Bailey, Supervisor – Operations Continuing Training
A. Lucky, Senior Nuclear Operations Training Instructor
T. Craig, Senior Operations Instructor
R. Bright, Simulator Support
W. Saunders, Manager – Operations
W. Gunter, Manager – Shift Operations
M. Weber, Superintendent – Operations Support
M. Christopherson, Control Room Supervisor
M. Fulks, Senior Reactor Operator
D. Cortlett, Supervisor – Licensing/Regulatory Programs
M. Wallace, Senior Specialist - Licensing

NRC personnel

J. Austin, 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 ML091170441.

Item

Administrative Topic "a." – Determine Rod Misalignment Using Thermocouples (RO A1-1 and SRO A1-1)

Comment

The licensee recommended that a corrected copy of the JPM guide be used when grading the applicants' performance.

The corrected copy supplied by the licensee modified the task standards for performance step 5 (a critical step in RO A1-1 and SRO A1-1) and performance step 6 (a critical step in SRO A1-1) to be correct with respect to the thermocouple data that was provided to the applicants as part of the initiating cue during administration of the JPM.

NRC Resolution

The licensee's recommendation was accepted.

The task standards for performance steps 5 and 6 in the "as administered" JPMs are not correct for the thermocouple data provided to applicants. The task standards contained in the corrected copy of the JPM guide provided by the licensee are correct with respect to thermocouple data provided to the applicants.

Item

Administrative Topic "b." – Perform a Manual Shutdown Margin Calculation (RO A1-2)

Comment

The licensee recommended that a corrected copy of the JPM guide be used when grading the applicants' performance.

The task standards associated with performance steps within the JPM guide were written for use of OST-1036, Shutdown Margin Calculation Modes 1-5 (**Cycle 15**). During administration of this JPM, all applicants were provided with OST-1036, Shutdown Margin Calculation Modes 1-5 (**Cycle 13**). The corrected copy of the exam guide modifies all task standards to be correct assuming use of OST-1036, Shutdown Margin Calculation Modes 1-5 (Cycle 13).

NRC Resolution

The licensee's recommendation was accepted.

The task standards for the performance steps within the "as administered" JPM are not correct for the reference material (Cycle 15) supplied to the applicants. The task standards contained in the corrected copy of the JPM guide provided by the licensee are correct with respect to the reference material used by all applicants (Cycle 13).

Item

SRO Question 83, K/A 061AG2.4.41

Comment

The licensee recommends that choices 'C' and 'D' both be accepted as correct answers.

Insufficient information is provided in the stem to differentiate whether or not a pathway for fission products to escape containment exists. For the containment radiation levels given in the question a Containment Ventilation Isolation Signal would have occurred. With no indication of equipment or component malfunctions related to the Containment Ventilation Isolation provided in the stem, a pathway would not exist for fission products to escape containment (containment would be intact). However, the stem also states that Plant Vent Stack #1 WRGM Effluent radiation levels are rising, indicating that a pathway exists for fission products to escape to the environment via containment and the plant vent stack (containment breached). Additionally, only one (Charging Pump 1B Room Area Radiation Monitor) of seven Fuel Breach Area Radiation Monitors was listed in the stem as alarming, vice multiple monitors that would be expected to be in alarm for a fuel breach, indicating that a leak existed in the associated charging pump room (containment breached).

NRC Resolution

The licensee's recommendation was accepted. The stem did not provide all necessary information to unambiguously distinguish between choices 'C' and 'D.' In order to answer the question based on the information provided in the stem, an applicant must either:

1. Assume that Containment Ventilation Isolation operated correctly (containment intact) and ignore contradictory rising Plant Vent Stack #1 WRGM Effluent and Charging Pump 1B Room Area radiation levels, or
2. Assume that Containment Ventilation Isolation did not operate correctly (no information provided in stem to support the assumption) and consider rising Plant Vent Stack #1 WRGM Effluent and Charging Pump 1B Room Area radiation levels (containment breached.)

Because answers 'C' and 'D' do not contain conflicting information, both are accepted as correct.

Item

SRO Question 87, K/A 012A2.01

Comment

The licensee recommends that the question be deleted from the examination.

There is no correct answer listed for the question. With OWP-RP-02 in place for Pressurizer Pressure Channel II (PT-476), channel II OTΔT bistables are tripped. The actions of Answer D (original correct answer) would allow the plant to remain in a condition contrary to Tech Specs for 7 hours. All other answer choices are still incorrect.

NRC Resolution

The licensee's recommendation was accepted.

Initial conditions given in the stem of the question impose contradictory requirements that make all of the possible answer choices incorrect. Therefore the question was deleted from the exam per NUREG 1021 ES-403 d.1.b.

**SIMULATOR FIDELITY REPORT**

Facility Licensee: Shearon Harris Nuclear Power Plant

Facility Docket No.: 05000400

Operating Test Administered: March 9-18, 2009

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:

| Item | Description |
|---|---|
| "C" RCP | "C" Reactor Coolant Pump radial bearing and seal water injection temperatures did not respond as expected during a simulated #1 seal failure. Malfunction RCS14C was inserted at a value of 35%, resulting in a #1 seal high leak off flow alarm and seal leak off flow indication pegged high (> 10 gpm) as expected. However, radial bearing and seal water injection temperatures lowered a few degrees and then remained stable for greater than 15 minutes, which was not expected. Expected response was that radial bearing and seal injection temperatures would rise due to hotter RCS water flowing up through the thermal barrier heat exchanger.<br><br>The licensee generated Simulator Service Request number 09-101 to track this item. |

If you have any questions concerning this letter, please contact me at (404) 562-4550.

Sincerely,

**/RA/**

Malcolm Widmann, Chief
Operations Branch
Division of Reactor Safety

Docket No: 50-400
License No. NPF-63

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3 Simulator Fidelity Report

(cc: w/encl – See Page 3

X PUBLICLY AVAILABLE ☐ NON-PUBLICLY AVAILABLE ☐ SENSITIVE X NON-SENSITIVE

ADAMS: X Yes ACCESSION NUMBER **ML091210151_** X SUNSI REVIEW COMPLETE

| OFFICE | RII:DRS | RII:DRS | RII:DRS | RII:DRS | | | |
|---|---|---|---|---|---|---|---|
| SIGNATURE | /RA via email/ | /RA/ | /RA via email/ | /RA/ | / | | |
| NAME | Craig Kontz | Mark Riches | Frank Erdhardt | Malcolm Widmann | | | |
| DATE | 4/30/2009 | 4/30/2009 | 4/30/2009 | 5/ /2009 | 5/ /2009 | 5/ /2009 | 5/ /2009 |
| E-MAIL COPY? | YES NO | YES NO | YES NO | YES NO | YES N | YES NO | YES NO |

OFFICIAL RECORD COPY DOCUMENT NAME: O:\HARRIS EXAMINATIONS\INITIAL EXAM 2009-301\CORRESPONDENCE\FINAL HARRIS 2009-301 EXAM REPORT (REV1).DOC