



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

January 23, 2013

Mr. Mano Nazar  
Executive Vice President and  
Chief Nuclear Officer  
Florida Power and Light Company  
P.O. Box 14000  
Juno Beach, FL 33408-0420

**SUBJECT: ST. LUCIE NUCLEAR PLANT – NRC OPERATOR LICENSE EXAMINATION  
REPORT 05000335/2012301 AND 05000389/2012301**

Dear Mr. Nazar:

During the period of December 3 – 11, 2012, the Nuclear Regulatory Commission (NRC) administered operating tests to employees of your company who had applied for licenses to operate the St. Lucie Nuclear Plant. 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 17, 2012.

Five Senior Reactor Operator (SRO) applicants and four Reactor Operator (RO) applicants passed both the operating examinations and the written examination. Four SRO applicants failed the written examination. One SRO applicant failed the administrative topics portion and the overall walk-through portion of the operating test. There were four 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.

The initial examination submittal was within the range of acceptability expected for a proposed examination. All examination changes agreed upon between the NRC and the staff were made according to NUREG-1021, Operator Licensing Examination Standards for Power Reactors, Revision 9, Supplement 1.

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) 997-4550.

Sincerely,

*/RA/*

Malcolm T. Widmann, Chief  
Operations Branch 1  
Division of Reactor Safety

Docket Nos: 50-335, 50-389  
License Nos: DPR-67, NPF-16

Enclosures:

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

cc: (See page 3)

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DATE	1/23/2013	1/23/2013		1/ /2013	1/ /2013	1/ /2013	1/ /2013
E-MAIL COPY?	YES NO	YES NO		YES NO	YES NO	YES NO	YES NO

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Letter to Mano Nazar from Malcolm T. Widmann dated January 23, 2013

SUBJECT: ST. LUCIE NUCLEAR PLANT – NRC OPERATOR LICENSE EXAMINATION  
REPORT 05000335/2012301 AND 05000389/2012301

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**NUCLEAR REGULATORY COMMISSION**

**REGION II**

Docket No.: 05000335, 05000389

License No.: DPR-67, NPF-16

Report No.: 05000335/2012301, 05000389/2012301

Licensee: Florida Power and Light Company (FP&L)

Facility: St. Lucie Nuclear Plant, Units 1 & 2

Location: 6351 S. Ocean Drive  
Jensen Beach, FL 34957

Dates: Operating Test – December 3 – 11, 2012  
Written Examination – December 17, 2012

Examiners: P. Capehart, Chief Examiner, Senior Operations Engineer  
M. Bates, Senior Operations Engineer  
G. Callaway, Senior Reactor Technology Instructor

Approved by: Malcolm T. Widmann, Chief  
Operations Branch 1  
Division of Reactor Safety

## SUMMARY OF FINDINGS

ER 05000335/2012301, 05000389/2012301; operating test December 3 - 7, 2012 & December 10 -12, 2012; written exam December 17, 2012; St. Lucie Nuclear 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 administered the operating tests during the period of December 3 – December 11, 2012. Members of the St. Lucie Power Plant training staff administered the written examination on December 17, 2012. The written examination, scenario, and JPM outlines were provided by the NRC. The written examination and operating test details were developed by the St. Lucie Nuclear Plant training staff.

Five Senior Reactor Operator (SRO) and four Reactor Operator (RO) applicants passed both the written and operating examinations. Four SRO applicants failed the written examination. One SRO applicant failed the administrative topic portion and the walk-through overall. Six applicants were issued operating licenses commensurate with the level of examination administered.

Two SRO applicants passed the operating test, but passed the written examination with an overall score between 80% and 82% and the SRO-only portion with a score between 70% and 74%. One RO applicant passed the operating test, but passed the written examination with a score between 80% and 82%. These applicants were issued a letter stating that they passed the examination and issuance of their license has been delayed pending any written examination appeals that may impact the licensing decision for their application.

There were four post examination comments.

No findings were identified.

## REPORT DETAILS

### 4. OTHER ACTIVITIES

#### 4OA5 Operator Licensing Initial Examinations

##### a. Inspection Scope

Members of the St. Lucie Nuclear Plant training staff developed the written examination and operating test details. The written examination, scenario, and JPM outlines were provided by the NRC. NRC regional examiners reviewed the proposed examination material to determine whether it was developed in accordance with NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1. Examination changes agreed upon between the NRC and the licensee were made according to 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 to ensure examination security and integrity complied with 10 CFR §55.49, "Integrity of Examinations and Tests." One "near miss" examination security event occurred during exam administration. On October 17, 2012, a station SRO who was signed onto the HLC-21 examination security agreement participated in an oral board for a reactor operator candidate in the current HLC-21 license class. Examiners determined that an exam compromise did not take place because the SRO was removed from the oral board prior to providing any feedback to the candidate. The licensee documented this event in AR number 01814000.

The NRC examiners evaluated nine SRO and four RO applicants using the guidelines contained in NUREG-1021. The examiners administered the operating tests during the period of December 3 – December 11, 2012. Members of the St. Lucie Power Plant training staff administered the written examination on December 17, 2012. Evaluations of applicants and reviews of associated documentation were performed to determine if the applicants, who applied for licenses to operate the St. Lucie Nuclear Plant, met requirements specified in 10 CFR Part 55, "Operators' Licenses."

##### b. Findings

No findings 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.



Two SRO applicants passed the operating test, but passed the written examination with an overall score between 80% and 82% and the SRO-only portion with a score between 70% and 74%. One RO applicant passed the operating test, but passed the written examination with a score between 80% and 82%. These applicants were issued a letter stating that they passed the examination and issuance of their license has been delayed pending any written examination appeals that may impact the licensing decision for their application

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 four post-examination comments concerning the written examination. A copy of the final written examinations and answer keys, with all changes incorporated, and the licensee's post-exam comments may be accessed not earlier than December 14, 2014, in the ADAMS system (ADAMS Accession Number(s) ML13017A371, ML13017A366, and ML13018A013).

#### 40A6 Meetings

##### Exit Meeting Summary

On December 11, 2012, the NRC examination team discussed generic issues associated with the operating test with Mr. Dan DeBoer, Director Operations, and members of the St. Lucie Nuclear Plant staff. The examiners asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

#### PARTIAL LIST OF PERSONS CONTACTED

##### Licensee personnel

M. Baughman – Site Training Manager  
 D. Cecchett - Licensing Engineer  
 F. Dennis - ILT Training Supervisor  
 P. Farnsworth – Exam Project Manager  
 R. Kilian – Facility Representative

##### NRC personnel

None

## Facility Comments and NRC Resolution

A complete text of the licensee's post-examination comments can be found in ADAMS under Accession Number ML13018A013.

### Question # 7, APE025AK2.02

#### Comment:

Part 2 of the question asks, given RCS temperature and level, and based on the plant being in MODE 6 with both trains of SDC in service, if the LPSI pumps did not start following a LOOP, how much time is there until "time to boil"? The facility recommends answer selection "C" be used as the correct answer instead of choice "A".

#### Facility Basis:

Part 2 of Question 7 requires the use of Attachment 1 of I –AOP-03.02, "Shutdown Cooling Abnormal Operations". The reference provided to the applicants as part of the exam package was Rev. 5 of I -AOP-03.02 (Refer to the "As-Given Exams for this submittal). However, the official answer key reflected an answer (30 minutes) calculated from Rev.6 of 1-AOP-03.02 (Refer to St. Lucie's written exam sent to the NRC as part of the 45 day submittal). All thirteen applicants performed the time to boil calculation using the provided reference (Rev.5) and derived a time to boil of approximately 40 minutes. Based on that, all thirteen applicants chose answer selection "C".

#### NRC Resolution:

Recommendation accepted. The licensee handed out the incorrect revision of the procedure as a reference for the exam question. Based on the use of the incorrect revision, the answer changed from 30 minutes (choice A) to ~40 minutes (choice C) and therefore choice C is accepted as the correct and only answer.

### Question # 59, 035A3.01

Comment: The question asked, if during an increase in power from 90 to 100%, the 1A Main Feedwater Regulating Valve (HPFRV) stops responding and fails as is, how does 1A SG level respond assuming no operator action? The facility recommends answer selection "B" be used as the correct answer instead of choice "A".

#### Facility Basis:

The applicant should correctly assume, from the given conditions, that BOTH the High Power Feed Regulating Valve (HPFRV) and the Low Power Feed Regulating Valve (LPFRV) would be in automatic (normal operating mode) for the power increase. With BOTH the HPFRV and the LPFRV in AUTO, then the LPFRV will NOT open to restore SG level for the stated conditions in the stem of the question.

Above 40% [30% on Unit 2] steam flow, the LPFRV gets a “hard” close signal if both the HPFRV and LPFRV controllers are in AUTO. This is supported in the St. Lucie student lesson text 0711408 and the Foxboro prints marked up by the DCS contractor.

Looking at sheet 4 of the Foxboro prints, the hard close signal is sent to the LPFRV (15% bypass valve) when the steam flow bistable is satisfied at some value between 25-40% steam flow (circle 12) and both controllers are in AUTO (circle 27). Circle 27 is developed on sheet 2 and is ONLY met if BOTH controllers are NOT in manual (i.e.in AUTO).

Therefore since the question does not state that the HPFRV controller is in manual, the LPFRV should not respond to lowering SG level and answer selection “B” would be the actual plant response.

**NRC Resolution:**

Recommendation accepted. Answer selection “B” is to be used as the correct answer instead of choice “A”.

**Question # 70, G2.2.43**

**Comment:**

The question asks for the procedure which controls an annunciator which has been “out of service” for 10 days. The facility recommends that two answer choices (A & C) be considered as correct.

**Facility Basis:**

The stem of the question does not state that the annunciator in question has been defeated. It states that the annunciator is “out of service”. “Out of Service” is not a defined term in ADM-09.03 and as used at St. Lucie simply means that the device/component is not “In Service”.

With no information in the stem as to whether or not the annunciator had been defeated, the student could logically conclude that the annunciator had not yet been defeated and he is being asked what procedure is utilized to defeat the annunciator because the stem does not state that it has been defeated simply that it is “out of service”. This would be time zero, the appropriate procedure to control the annunciator would be ADM-09.03, Administrative Control of Defeated Annunciators for the first seven days.

**NRC Resolution:**

Delete the question. NUREG-1021, ES-403 D.1.c states: If it is determined that there are two correct answers, both answers will be accepted as correct. If, however, both answers contain conflicting information, the question will likely be deleted. The licensee’s basis contains conflicting information that would make choice A correct for one condition and choice C correct for the other condition. Since the stem is ambiguous to this condition, the question will be deleted.

**Question # 83, APE059AA2.04****Comment:**

Part 2 of question asks for the reportability requirements for a liquid release that is 20 times the applicable concentrations specified in 10CFR20 part B. The facility recommends that two answer choices (B & C) be considered as correct.

**Facility Basis:**

In accordance AP0010721, a 60 day LER is required for "...Liquid effluent released to an unrestricted area exceeds 20 times the concentration specified in 10 CFR 20, Appendix B, Table 2, for all radionuclides except tritium and dissolved noble gases, averaged over 1 hour. {50.73(a)(2)(viii)(B)}.

This supports the selected answer "B".

In addition to the selected answer you should also accept choice "C". In accordance with EPIP-0I, St. Lucie Plant Classification Tool - Hot Conditions:

## RU1

Any Release of Gaseous or Liquid Radioactivity to the Environment Greater Than 2 times the ODCM for 60 Minutes or Longer.

3. **Confirmed sample analyses** for gaseous or **liquid releases** indicate concentrations OR release rates greater than **2 times** ODCM Limits for **60 minutes or longer**.

The stem of the question DOES NOT specify the length of time the release occurred. In addition, the stem provided:

"Chemistry has reported that samples taken just offshore of the discharge canal were over 20 times the applicable concentrations specified in 10CFR20 part B".

In consideration of the time it takes to go off shore and take samples, analyze the samples, AND the stem not defining the length of time to isolate the discharge flow path, it can be implied that the release continued to occur for greater than 60 minutes. This would meet the threshold for RU1 unusual event classification category.

In accordance, AP0010721 {50.72(a)(1), (a)(2), (a)(3), and (a)(4),

Immediately after notification of State and local agencies, but not later than 1 hour after declaration of emergency class defined in EPIP-0I.

This supports the stem question:

..what are the reportability requirements per 10CFR50.72 and 10CFR50.73?

Additionally in EPIP-02 and EPIP-08 is requires notification as follows:

2. NRC Notification

- a. The NRC is notified using the Emergency Notification System

**NRC Resolution:**

Recommendation accepted. The stem of the question does not define a finite period of time in which the release occurs therefore both choices are correct.

## SIMULATOR FIDELITY REPORT

Facility Licensee: St. Lucie Nuclear Plant

Facility Docket Nos.: 05000335/2012301, 05000389/2012301

Operating Test Administered: December 3 – December 11, 2012

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 validating and conducting the simulator portion of the operating test, examiners observed the following:

### Software items:

CEDM Cooler temperature is 2 degrees from alarm set point. This was discovered during validation. Problem; the alarms comes in very quickly on loss of ICW or CCW. It is also one of first alarms during LOCA.

IC-29 Cold Gas temperature approximately 30 degrees in the IC set. It should be 40 degrees C. This was discovered during validation. Problem is TCV 13-15 is in manual and should be in auto set at 106.

CVCS DCS graphic does not show boric acid flow. This was discovered during validation.  
Page #

During the conduct of simulator scenario 5 the Turbine Control System appeared to place itself in "GO". During the conduct of simulator Scenario 4 the Turbine Control System appeared to place itself on "HOLD". On Tuesday during simulator maintenance to repair the boric acid controller it was discovered that the Unit Supervisor's TCS station monitor was in the touch screen mode and was out of extremely calibration. At that time the touch screen feature was disabled. During the next 4 days no further problems were encountered. The touch screen out of calibration is a possible cause not the probable cause. Further investigation is needed.

During simulator scenario 3 the intercept and reheat valves closed. All turbine valves should close together not in pairs. This problem has been identified previously during TCS testing. This was not identified during validation because persons started the standby DEH pump. IC-14 was the start point.

During simulator scenario 3 following the reactor trip with two stuck open safeties the A QSPDS indicated 32 degrees F and showed blue on white and subcooling zero.

X-17 setpoint and reset setpoint needs to be verified. In alarm at 997 scfm and did not clear until flow exceeded 1200 scfm. Alarmed during S-6 Containment Mini Purge

K-19 alarmed during S-5 Reactor Startup JPM. The group out of sequence alarms 1 out of 4 persons. The DCS indicates the overlap actual exceeds the setpoint.

Hardware items:

FCV 2210Y Boric Acid Flow Controller failed internally. This was identified during scenario 5 first crew first event. It was repaired following the completion of activities on day two.

LIS 07-2A RWT Level indicated red with a level of 27.52 with actual 32 feet. Hardware problem occurred during scenario 3 third crew. It was repaired over the weekend

Only "A" Channel ATWAS bistable key is labeled. Key 157 Discovered during the NRC Exam validation.

Primary Water Storage Tank level failed during the NRC exam validation and was repaired the next weekend. This had no impact on the NRC exam.

The right hand Bell phone (simulated land line) has failed in the instructor facility. A repair ticket was prepared. This had no impact on the exam. This was discovered on day 2