



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

November 3, 2009

Mr. Jon A. Franke  
Vice President, Crystal River Nuclear Plant  
Crystal River Nuclear Plant (NA2C)  
15760 W. Power Line Street  
Crystal River, FL 34428-6708

SUBJECT: CRYSTAL RIVER NUCLEAR PLANT - NRC EXAMINATION REPORT –  
05000302/2009301

Dear Mr. Franke:

During the periods of August 31 – September 3 and September 14 – 16, 2009, the Nuclear Regulatory Commission (NRC) administered operating tests to employees of your company who had applied for licenses to operate the Crystal River 3 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 September 22, 2009.

Four Reactor Operator (RO) and seven Senior Reactor Operator (SRO) applicants passed both the operating test and written examination. There were two post-administration comments concerning the operating test and 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.

In accordance with 10 CFR 2.390 of the NRC's "Rules of Practice," a copy of this letter and its enclosure will be available electronically for public inspection in the NRC Public Document Room or from the Publicly Available Records (PARS) component of NRC's document system (ADAMS). ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room).

FPC

2

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

Sincerely,

*/RA/*

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

Docket Nos.: 50-302  
License Nos.: DPR-72

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

cc: (See Page 3)

FPC

2

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

Sincerely,

*/RA/*

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

Docket Nos.: 50-302  
License Nos.: DPR-72

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

cc: (See Page 3)

PUBLICLY AVAILABLE       NON-PUBLICLY AVAILABLE       SENSITIVE       NON-SENSITIVE

ADAMS:  Yes    ACCESSION NUMBER: \_\_\_\_\_

OFFICE	RII:DRS	RII:DRS	RII:DRS	RII:DRS	RII:DRP		
SIGNATURE	Via email	FJE /RA/	Via email	MTW /RA/	JDH /RA for/		
NAME	LVick	FEhrhardt	Glaska	MWidmann	MSykes		
DATE	11/03/2009	11/02/2009	11/02/2009	11/03/2009	11/03/2009		
E-MAIL COPY?	YES    NO	YES    NO	YES    NO				

DOCUMENT NAME: O:\CRYSTAL RIVER EXAMINATIONS\INITIAL EXAM 2009-301\CORRESPONDENCE\CR3 EXAM REPORT 2009-301 (REVISION 0).DOC

cc w/encl:

R. J. Duncan, II  
Vice President  
Nuclear Operations  
Carolina Power & Light Company  
Electronic Mail Distribution

Brian C. McCabe  
Manager, Nuclear Regulatory Affairs  
Progress Energy Carolinas, Inc.  
Electronic Mail Distribution

James W. Holt  
Plant General Manager  
Crystal River Nuclear Plant (NA2C)  
Electronic Mail Distribution

Stephen J. Cahill  
Engineering Manager  
Crystal River Nuclear Plant (NA2C)  
Electronic Mail Distribution

R. Alexander Glenn  
Associate General Counsel  
(MAC - BT15A)  
Florida Power Corporation  
Electronic Mail Distribution

Steven R. Carr  
Associate General Counsel  
Legal Department  
Progress Energy Service Company, LLC  
P.O. Box 1551  
Raleigh, NC 27602-1551

Christos Kamilaris  
Director  
Fleet Support Services  
Carolina Power & Light Company  
Electronic Mail Distribution

William A. Passetti  
Chief  
Florida Bureau of Radiation Control  
Department of Health  
Electronic Mail Distribution

Daniel R. Westcott  
Supervisor  
Licensing & Regulatory Programs  
Crystal River Nuclear Plant (NA1B)  
Electronic Mail Distribution

Thomas D. Walt  
Vice President  
Nuclear Oversight  
Carolina Power and Light Company  
Electronic Mail Distribution

Jack E. Huegel  
Manager, Nuclear Oversight  
Crystal River Nuclear Plant  
Electronic Mail Distribution

Mark Rigsby  
Manager, Support Services - Nuclear  
Crystal River Nuclear Plant (NA2C)  
Electronic Mail Distribution

Phyllis Dixon  
Training Manager  
Crystal River Nuclear Plant  
Electronic Mail Distribution

Attorney General  
Department of Legal Affairs  
The Capitol PL-01  
Tallahassee, FL 32399-1050

Ruben D. Almaguer  
Director  
Division of Emergency Preparedness  
Department of Community Affairs  
Electronic Mail Distribution

Chairman  
Board of County Commissioners  
Citrus County  
110 N. Apopka Avenue  
Inverness, FL 32650

FPC

4

Letter to Jon A. Franke from Malcolm T. Widmann dated November 3, 2009

SUBJECT: CRYSTAL RIVER NUCLEAR PLANT - NRC EXAMINATION REPORT –  
05000302/2009301

Distribution w/encl:

C. Evans, RII

L. Slack, RII

OE Mail

RIDSNRRDIRS

PUBLIC

RidsNrrPMCrystal River Resource

**U. S. NUCLEAR REGULATORY COMMISSION**

**REGION II**

Docket Nos.: 50-302

License Nos.: DPR-72

Report No.: 05000302/2009301

Licensee: Progress Energy Florida (Florida Power Corporation)

Facility: Crystal River Unit 3

Location: 15760 W. Power Line Street  
Crystal River, FL 34428

Dates: Operating Tests – August 31 – September 3 and  
September 14 – 16, 2009  
Written Examination - September 22, 2009

Examiners: G. Laska, Chief, Senior Operations Examiner  
F. Ehrhardt, Senior Operations Engineer  
L. Vick, Reactor Engineer (Examiner Qualified) NRR/ IOLB

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

## **SUMMARY OF FINDINGS**

ER 05000302/2009301; August 31 – September 3, September 14 – 16 and September 22, 2009; Crystal River Unit 3, Operator License Examinations.

The Nuclear Regulatory Commission (NRC) examiners conducted an initial operator licensing 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.

Members of the Crystal River Unit 3 staff developed both the operating tests and the written examination.

The NRC administered the operating tests during the period of August 31 – September 3 and September 14 – 16, 2009. Members of the Crystal River Unit 3 training staff administered the written examination on September 22, 2009. Four Reactor Operator (RO) and seven Senior Reactor Operator (SRO) applicants, passed both the written examination and operating test. All applicants were issued licenses commensurate with the level of examination administered.

There were two post examination comments. The NRC resolutions to these comments are summarized in Enclosure 2.

No findings of significance were identified.

## Report Details

### 4. OTHER ACTIVITIES

#### 4OA5 Operator Licensing Initial Examinations

##### a. Inspection Scope

Members of the Crystal River Unit 3 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 four Reactor Operator (RO) and seven Senior Reactor Operator (SRO) applicants using the guidelines contained in NUREG-1021. The examiners administered the operating tests during the period August 31 – September 3, and September 14 – 16, 2009. Members of the Crystal River Unit 3 plant training staff administered the written examination on September 22, 2009. Evaluations of applicants and reviews of associated documentation were performed to determine if the applicants, who applied for licenses to operate the Crystal River Unit 3 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 initial written examination and operating test were within the range of acceptability expected for the proposed examination and test, respectively. Four Reactor Operator (RO) and seven Senior Reactor Operator (SRO) applicants passed both the operating test and written examination.

The licensee submitted one post-examination comment concerning the operating test and one comment concerning the written examination. A copy of the final written RO and SRO examinations and answer keys, with all changes incorporated, and the licensee's post-examination comments may be accessed in the ADAMS system (ADAMS Accession Number(s) ML092890637, ML092890642 and ML092890647).

Copies of all individual examination reports were sent to the facility training manager for evaluation of weaknesses and determination of appropriate remedial training.

4OA6 MeetingsExit Meeting Summary

On September 16, 2009, the examination team discussed generic issues with Mr. J. Franke, Director Site Operations, and members of his staff. The examiners asked the licensee whether any materials examined during the examination should be considered proprietary. No proprietary information was identified.

## PARTIAL LIST OF PERSONS CONTACTED

Licensee personnel

M. Broussard, Operations Requalification Instructor  
 P. Dixon, Training Manager  
 J. Franke, Director Site Operations  
 D. Herrin, Licensing (Lead Engineer)  
 M. Kelly, Operations  
 A. Kennedy, Initial Operations Instructor  
 F. Lawrence, Supervisor Operations Initial Training, Acting  
 R. Llewellyn, Training Instructor  
 C. Morris, Operations  
 M. Van Sicklen, Superintendent Operations Training

NRC personnel

T. Morrissey, Senior Resident inspector

**NRC Resolution to the Facility Comment**

A complete text of the licensee's post examination comments can be found in ADAMS under Accession Number ML092890647.

**CR3 2009 NRC Post Exam Comments:****Post Exam Comment #****Written Exam question # 93 (SRO # 18)**

K/A number BW/E09EA2.2

The following plant conditions exist:

- The plant is in Mode 3
- A complete loss of offsite power (LOOP) has occurred.
- "B" ES Diesel engine has catastrophically failed.
- Offsite power is not expected back for at least 48 hours.

Which ONE of the following describes the allowable cooldown rate and the maximum time allowed by TS to achieve cold shutdown based on plant conditions? (**reference provided**)

Start an RCS cooldown at a maximum rate of     (1)     and be     (2)     .

- A.     (1)  $\leq 50^\circ \text{ F} / 1/2 \text{ hr}$   
       (2)  $< 200^\circ \text{ F}$  in 37 hours
- B.     (1)  $\leq 25^\circ \text{ F} / 1/2 \text{ hr}$   
       (2)  $< 200^\circ \text{ F}$  in 37 hours
- C.     (1)  $\leq 50^\circ \text{ F} / 1/2 \text{ hr}$   
       (2)  $< 200^\circ \text{ F}$  in 44 hours
- D.     (1)  $\leq 25^\circ \text{ F} / 1/2 \text{ hr}$   
       (2)  $< 200^\circ \text{ F}$  in 44 hours

Answers A and B should **BOTH** be accepted for the following reasons:

Because the question asks;

“Which one of the following describes the allowable cooldown rate and the maximum time allowed by TS to achieve cold shutdown...” one could reasonably assume that the phrase **allowed by TS** applies to both conditions: the allowable cooldown rate AND to achieve cold shutdown.

TS 3.4.3 “RCS Pressure and Temperature (PT) Limits” requires that RCS cooldown rates be maintained with the limits of the PTLR (Pressure/Temperature Limits Report). Per the PTLR, the cooldown rate limit for the given plant conditions is  $\leq 50^\circ \text{ F} / 1/2 \text{ hr}$ .

By using this logic answer A would be correct even though the original expectation was for B to be the correct answer based on the following justification.

Based on conditions in the question stem the plant is in Natural Circulation. EOP-09 Natural Circulation Cooldown, places a procedural limit of  $\leq 25^{\circ} \text{ F} / 1/2 \text{ hr}$  on the RCS cooldown rate to minimize the formation of head voids.

The expected correct answer was B based on this limit. More than half of the applicants answered the question based on this interpretation of the question and selected choice B which was the expected answer.

### **NRC RESPONSE:**

The NRC agrees with the licensee's contention. It appears that the "according to Technical Specification" statement" could be applied to both parts of the question, the allowable cooldown rate, and time to achieve cold shutdown. If this were the case, answer A would be the correct answer. If the question was read linking the technical specification statement to only the time to achieve cold shutdown, answer B would be the correct answer. Therefore, the NRC will accept both answers A and B as correct answers.

### **CR3 2009 NRC Post Exam Comments:**

#### **Post Exam Comment # 2**

SRO Admin JPM CO1

Correction for the STANDARD in Step 4.

Problem: Standard incorrectly required performance of CP-152 Step 4.8.1.5, instead of Step 4.8.1.6, which is the correct step for the revised plant conditions.

ALL candidates correctly determined that the actions of CP-152, Action Level 3, were required. Additionally ALL candidates correctly determined that TS 3.4.12, RCS Operational Leakage, Condition B, was also applicable.

Furthermore the "Examiner Note" in Step 4 stated the following: *Candidate may summarize the actions by stating that the actions of CP-152, Action Level 3, are required.*

The values for RM-A12 readings were modified during Prep Week. The Standard required Step 4.8.1.5 of CP-152 be performed, which was correct for the original values. During Prep Week the new values given for RM-A12 were modified such that this step was no longer applicable (did not meet the  $\geq 30 \text{ gpd/hr}$  increase). The correct procedure step to perform, with the new values, was Step 4.8.1.6. This modification to the Standard was missed and the old Step 4.8.1.5 was erroneously left in the Standard.

Further justification for the change is that the ONLY reading that can be confirmed with two indications IAW CR3 procedures and the EPRI Primary-to-Secondary Guideline is the time NOW data at 1300 which is a leak rate of greater than or equal to 150 gallons per day.

The purpose of confirming the correct leak rate required by CR3 procedures and the EPRI Guideline is to avoid unnecessary plant shutdowns. From the EPRI Guideline:

Leakage is *qualitatively confirmed* when two independent radiation monitors (typical monitor pairs like off-gas/SGBD monitors, off-gas/N-16 monitors, or N-16/SGBD monitors) trend in the same direction with the same order of magnitude.

The JPM queue sheet does not provide the ability to qualitatively confirm the leakage until the 1300 data point. The JPM in its original form was written to provide confirmation of the readings using the data provided in the queue sheet. However, through the revision process the confirming information was omitted and the key was not changed to reflect the time NOW confirmed leak rate of greater than or equal to 150 gallons per day.

CR3 requests that STEP 4 of JPM CO1 reflect Step 4.8.1.6 with a standard of:

**IF leak rate is  $\geq$  150 gpd is confirmed,  
OR Action Level 3 was entered from Step 4.3.1,  
THEN be in mode 3 within 6 hours.**

AND that STEP 4 of JPM CO1 reflects an "N/A" for step 4.8.1.5.

**NRC RESPONSE:**

The NRC agrees that changes were made to the JPM during the examination preparation week, and that changes were made to the cue sheet that changed the intent of the original JPM. The changes to the cue sheet did change the leak rate to  $\geq$  150 gpd. This change does make step 4.8.1.6 correct. The NRC will grade the JPM with step 4.8.1.6 as being correct, and will N/A step 4.8.1.5 as requested.

## SIMULATOR FIDELITY REPORT

Facility Licensee: Crystal River 3 Nuclear Plant

Facility Docket No.: 05000302/2009-301

Operating Test Administered: August 31-September 4 and September 14-16, 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:

<u>Item</u>	<u>Description</u>
Simulator Power Supply	One simulator power supply issue caused some down time (short duration) during prep week. Power Supply was replaced.
MUP-1B (A train) Indication on the Remote Shutdown Panel	With the knife switch open indication on the switchgear, MUP 1-B (A Train) still had "ON" indication. Simulator Trouble Report 03724 was written to investigate.