



UNITED STATES
NUCLEAR REGULATORY COMMISSION

REGION II
SAM NUNN ATLANTA FEDERAL CENTER
61 FORSYTH STREET, SW, SUITE 23T85
ATLANTA, GA 30303-8931

January 30, 2008

Southern Nuclear Operating Company, Inc.
ATTN: Mr. J. Randy Johnson
Vice President - Farley
Joseph M. Farley Nuclear Plant
7388 North State Highway 95
Columbia, AL 36319

SUBJECT: REACTOR AND SENIOR REACTOR OPERATOR INITIAL EXAMINATIONS -
JOSEPH M. FARLEY NUCLEAR PLANT 05000348/2007301 AND
05000364/2007301

Dear Mr. Johnson:

During the period of November 5 - 15, 2007, the Nuclear Regulatory Commission (NRC) administered operating examinations to employees of your company who had applied for licenses to operate the Farley Nuclear Plant. At the conclusion of the examination, the examiners discussed the examination questions and preliminary findings with those members of your staff identified in the enclosed report. The written examination was administered by your staff on December 21, 2007.

Four Senior Reactor Operator (SRO) applicants and five Reactor Operator applicants passed both the written and operating examinations. One SRO applicant and one RO applicant failed the written examination. There were four post examination comments. These comments and the NRC resolution of these comments are summarized in Enclosure 2. A Simulation Facility 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 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). Should 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.: 50-348, 50-364
License Nos.: NPF-2, NPF-8

cc: (See page 3)

Enclosures:

1. Report Details
2. NRC Post Examination Comment Resolution
3. Simulation Facility Report

cc w/encl:
B. D. McKinney
Licensing Services Manager
B-031
Southern Nuclear Operating Company, Inc.
Electronic Mail Distribution

L. M. Stinson
Vice President
Fleet Operations Support
Southern Nuclear Operating Company, Inc.
P.O. Box 1295
Birmingham, AL 35201-1295

J. T. Gasser
Executive Vice President
Southern Nuclear Operating Company, Inc.
Electronic Mail Distribution

Stanford M. Blanton, Esq.
Balch and Bingham Law Firm
P.O. Box 306
1710 Sixth Avenue North
Birmingham, AL 35201

Dr. D. E. Williamson
State Health Officer
Alabama Dept. of Public Health
Electronic Mail Distribution

Mr. Mark Culver
Chairman
Houston County Commission
P. O. Box 6406
Dothan, AL 36302

William D. Oldfield
Quality Assurance Supervisor
Southern Nuclear Operating Company
Electronic Mail Distribution

Moanica Caston
Southern Nuclear Operating Company, Inc.
Bin B-022
P.O. Box 1295
Birmingham, AL 35201-1295

David H. Jones
Vice President
Engineering
Southern Nuclear Operating Company, Inc.
P.O. Box 1295
Birmingham, AL 35201-1295

ADAMS is accessible from the NRC Web site at <http://www.nrc.gov/reading-rm/adams.html> (the Public Electronic Reading Room). Should 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.: 50-348, 50-364

License Nos.: NPF-2, NPF-8

cc: (See page 3)

- Enclosures: 1. Report Details
2. NRC Post Examination Comment Resolution
3. Simulation Facility Report

Distribution w/encl:

C. Evans, RII EICS (Part 72 Only)
L. Slack, RII EICS
OE Mail (email address if applicable)
RIDSNNRRDIRS
PUBLIC
A. Adams, NRR
K. Cotton, NRR

***See Previous Concurrence**

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

ADAMS: XYes ACCESSION NUMBER: _____

OFFICE	RII:DRS	RII:DRS	RII:DRP				
SIGNATURE	/RA/	/RA/	/RA/				
NAME	*M. Widmann	F. Ehrhardt	S. Shaeffer				
DATE	2/ /2008	2/ /2008	2/ /2008	2/ /2008	2/ /2008	2/ /2008	2/ /2008
E-MAIL COPY?	YES NO	YES NO	YES NO	YES NO	YES NO	YES NO	YES

NUCLEAR REGULATORY COMMISSION

REGION II

Docket No.: 50-348, 50-364

License No.: NPF-2, NPF-8

Report No.: 05000348/2007301, 05000364/2007301

Licensee: Southern Nuclear Operating Company, Inc.

Facility: Joseph M. Farley Nuclear Plant

Location: Columbia, AL 36319

Dates: Operating Test – November 5 - 15, 2007
Written Examination – December 21, 2007

Examiners: F. Ehrhardt, Chief Examiner, Senior Operations Engineer
M. Bielby, Senior Operations Engineer, RIII
J. Hopkins, Reactor Technology Instructor, (In-Training)
C. Kontz, Operations Engineer

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

SUMMARY OF FINDINGS

ER 05000348/2007301, 05000364/2007301, 11/5-15/2007 and 12/21/2007; Farley Nuclear Plant; Licensed Operator Examinations.

The NRC examiners conducted operator licensing initial examinations in accordance with the guidance in NUREG-1021, Revision 9, "Operator Licensing Examination Standards for Power Reactors." This examination implemented the operator licensing requirements of 10 CFR §55.41, §55.43, and §55.45.

The NRC administered the operating tests during the period of November 5-15, 2007. Members of the Farley Nuclear Plant training staff administered the written examination on December 21, 2007. The written examinations and the operating tests were developed by the Farley Nuclear Plant training staff.

Four Senior Reactor Operator (SRO) applicants and five Reactor Operator (RO) applicants passed both the written and operating examinations. One SRO applicant and one RO applicant failed the written examination. Four SRO and five RO applicants were issued operating licenses.

There were four post examination comments.

The initial written examination submittal was determined to be outside of the acceptable quality range as outlined in NUREG-1021. Twenty-three of 30 questions sampled for initial review contained unacceptable flaws. Individual questions were evaluated as unsatisfactory because they did not test the knowledge required by the selected topic, contained implausible distractors, and/or did not test at the appropriate license level. The NRC regional office returned the examination to the licensee for rework and correction in accordance with NUREG-1021. Future examinations need to incorporate lessons learned.

REPORT DETAILS

2. OTHER ACTIVITIES

4OA5 Operator Licensing Initial Examinations

a. Inspection Scope

The Farley Nuclear Plant training staff developed the operating test and written examinations. 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. 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 examiners 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."

The examiners evaluated five SRO applicants and six RO applicants who were being assessed under the guidelines specified in NUREG-1021. The examiners administered the operating tests during the period of November 5 - 15, 2007. Members of the Farley Nuclear Plant training staff administered the written examination on December 21, 2007. The evaluations of the applicants and review of documentation were performed to determine if the applicants, who applied for licenses to operate the Farley Nuclear Plant, met requirements specified in 10 CFR Part 55, "Operators' Licenses."

b. Findings

The initial written examination submittal was determined to be outside of the acceptable quality range as outlined in NUREG-1021. Twenty-three of 30 questions sampled for initial review contained unacceptable flaws. Individual questions were evaluated as unsatisfactory because they did not test the knowledge required by the selected topic, contained implausible distractors, and/or did not test at the appropriate license level. The NRC regional office returned the entire examination, containing 100 questions, to the licensee for rework and correction in accordance with NUREG-1021. Administration of the written examination was delayed, in part, because the quality of the written examination submittal was unacceptable. Future examination submittals need to incorporate lessons learned.

The NRC determined that the details provided by the licensee for the walkthrough and simulator tests were within the range of acceptability expected for a proposed examination.

Four SRO applicants and five RO applicants passed both the operating test and written examination. One SRO applicant and one RO applicant failed the written examination.

The final RO and SRO written examinations with knowledge and abilities (K/As) question references/answers, examination references, and licensee's post examination comments may be accessed in the ADAMS system (ADAMS Accession Numbers, ML080280348, and ML080280360).

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

4OA6 Meetings

Exit Meeting Summary

On November 16, 2007, the examination team discussed generic issues associated with the operating test with Ms. Cheri Collins, Plant Manager, and members of the Farley Nuclear Plant staff. The examiners asked the licensee whether any materials examined during the inspection should be considered proprietary. No proprietary information was identified.

On January 22, 2008, Mr. Malcolm Widmann, Chief, Operations Branch, discussed written examination development issues, examination results, and lessons learned with Mr. John Horn, Training Manager.

PARTIAL LIST OF PERSONS CONTACTED

Licensee personnel

C. Collins, Plant Manager
J. Horn, Training Manager
B. Moore, SNC Site Support Manager
J. Hutto, Operations Superintendent
B. Oldfield, Quality Assurance Supervisor
D. Christiansen, Nuclear Operations Training Supervisor
C. Richter, Plant Instructor - Nuclear

NRC personnel

Eddy Crowe, Senior Resident Inspector
Shane Sandal, Resident Inspector
M. Bielby, Senior Operations Examiner, RIII
J. Hopkins, Reactor Technology Instructor, (In-Training)
C. Kontz, Operations Engineer

NRC RESOLUTION TO THE FARLEY POST EXAMINATION COMMENT(S)

A complete text of the licensee's post-exam comments can be found in ADAMS under Accession Number ML 080280348.

ADMINISTRATIVE TOPIC – Conduct of Operations “Determine if current conditions allow Mode 4 entry”

Licensee Comment:

The plant conditions given to the applicants were, in part, that the unit was in Mode 5. Element 3 of the JPM stated that the 1B Diesel Generator (DG) was required to be immediately declared inoperable due to low fuel oil supply and that the inoperable 1B DG would preclude Mode 4 entry. This performance standard is incorrect.

The conditions presented in the JPM included a table that showed that the Diesel Fuel Oil storage tank for the 1B DG contained 20,350 gallons. This amount of fuel oil is less than that required in Condition “A” of Tech Spec 3.8.3, i.e. 21,000 gallons. However, the Applicability for LCO 3.8.3 is “When associated DG is required to be OPERABLE.” Technical Specification LCO 3.8.2 b. (Applicability: Mode 5, 6, and during movement of irradiated fuel assemblies) only requires that one DG be operable.

Technical Specification LCO 3.8.1 b. (Applicability: Modes 1, 2, 3, and 4) states that two diesel generator (DG) sets are required to be operable. The Required Action for Condition B, “One DG set inoperable” contains a Note stating “LCO 3.0.4c is applicable when only one of the three DGs is inoperable.” For the conditions presented in the JPM, the other two DGs (1-2A and 1C) were operable. LCO 3.0.4c states that when an LCO is not met, entry into a Mode or other specified condition in the Applicability shall only be made when an allowance is stated in the Specification. This is the case for LCO 3.8.1 Condition B in accordance with 3.8.1 Bases.

Thus, the 1B DG is not required to be operable (with the 1-2A and 1C DGs operable) to go to Mode 4, and the 1B DG is not required to be immediately declared inoperable in Mode 5.

Plant policy and management expectation is that the 1B DG is considered to be one entire train (1-2A and 1C DG are considered to be the “A” Train set of DGs.) and that a change in Mode would be allowed only if the inoperable DG was one of the two DGs that are considered “A” Train (1-2A or 1C). This policy and expectation is not documented in approved plant procedures.

The non-critical performance standard for Element 3 of the JPM should have read “an Admin LCO must be written for the 1B DG.”

We request, when grading the JPM, that Element 3 be considered a non-critical step based on a literal interpretation of our licensing documents Technical Specifications and Bases. This would leave two other critical tasks which must be properly evaluated by applicants in order to determine that Mode 4 entry is prohibited, for reasons other than the DG inoperability.

NRC Resolution:

The licensee recommendation was accepted.

WRITTEN EXAMINATION – QUESTION 029EK1.01 (RO EXAM 32)

Licensee Comment:

Distractor B should also be accepted as a correct answer. The first part of distractor B is the same as the first part of answer A and the second part of distractor B is a subset of the second half of answer A.

NRC Resolution:

The licensee recommendation was not accepted.

The stem of the question stated, in part, that 1) Attempts to establish emergency boration (step 4 of FRP-S.1) have been unsuccessful, 2) Reactor power indicates 6% (reactor critical per FRP-S.1 steps 8 and 16), and 3) The RCS temperature is slowly rising.

Distractor “B” states “Allow the RCS to heat up, and open one PORV as necessary to maintain pressurizer pressure less than 2135 psig to increase charging flow. The first portion of distractor B, “Allow the RCS to heat up,” is a correct statement, consistent with answer “A.” The remaining portions of distractor “B” are incorrect.

After performing Step 17 RNO (Answer A), the operator is directed, in Step 18, to return to step 4, “Initiate Emergency Boration of the RCS.” Step 4.5 directs the operator to “Check pressurizer pressure LESS THAN 2335 psig.” The stem of the question did not provide a value or trend for pressurizer or RCS pressure and did not describe the status of the RCS pressure boundary (intact or lost.) The stem did state that RCS temperature is slowly rising, and it is reasonable for an examinee to assume that RCS pressure would increase correspondingly and eventually increase to the Pressurizer PORV setpoint (2335 psig.)

The pressurizer PORVs would, if functioning properly, open to control pressurizer pressure between 2335 psig and 2315 psig. At the point in time that the pressurizer PORVs cycle, RCS pressure will be equal to or possibly slightly above 2335 psig, i.e. not less than 2335 psig, and the operator would refer to the RNO for Step 4.5. Step 4.5 RNO states “Verify PRZR PORVs and PRZR PORV ISOs - OPEN. IF NOT, THEN open PRZR PORVs and PORV ISOs as necessary until pressurizer pressure is less than 2135 psig.” Per this step, the operator would only manually operate the PORVs if they failed to operate automatically. The stem of the question did not provide any information concerning the status of the pressurizer PORVs or PORV block valves. NUREG 1021, Appendix E, Paragraph B.7, states “When answering a question, do *not* make assumptions regarding conditions that are not specified in the question unless they occur as a consequence of other conditions that are stated in the question.”

Additionally, the method of pressure control described in the second half of distractor “B,” “maintain pressurizer pressure less than 2135 psig” is incorrect. While Step 4.5 RNO does not explicitly direct the operator to close the pressurizer PORVs once pressurizer pressure is less than 2135, FNP-0-FRB-S.1, “Farley Nuclear Plant Specific Background Document for FNP-1/2 - FRP-S.1, Response to Nuclear Power Generation/ATWT,” states “When primary pressure drops 200 psi below the PORV pressure setpoint, the PORVs should be closed.”

In summary, distractor “B” is incorrect because the examinee would have to assume an equipment malfunction not provided in the question stem in order to arrive at the conclusion that

a PORV must be manually operated and because the distractor incorrectly describes how pressurizer pressure must be maintained if the PORV(s) are manually operated.

WRITTEN EXAMINATION – QUESTION 076G2.1.2 (SRO EXAM 90)

Licensee Comment:

Distractor B should also be accepted as a correct answer. The first part of distractor B is the same as the first part of answer A. The second part of distractor B is also correct.

NRC Resolution:

The licensee recommendation was accepted.

In order for Unit 2 “B” train Service Water (SW) to be operable for the plant conditions stated in the stem of the question, the 2C SW pump must be mechanically and electrically aligned to train “B” SW and the 2C SW pump must be aligned to auto start for the 2E SW pump.

The second part of distractor “B” states “Align 2C SW pump to auto start for 2E SW pump IAW AOP-10.0, Loss of Service Water.” AOP-10 entry conditions include the “Trip of any operating SW Pump.” AOP-10, Step 19 states that if the affected train is not leaking, then the crew should evaluate aligning the 2C pump to affected train using FNP-2-SOP-24.0, Service Water System. Step 19 would only be performed if the pressure in both Service Water (SW) trains is less than or equal to 60 psig. No information is provided in the stem regarding SW train pressures either before or after the trip of the 2E SW pump. The licensee states that, based on plant operating data, SW pressure may be less than 60 psig in a train that has both SW pumps running due to environmental conditions (e.g. hot weather with all SW heat exchanger cooling valves full open.) Thus, an applicant could reasonably conclude that AOP-10 Step 19 could be required to be performed, and Step 19, by referring to SOP-24.0, indirectly provides guidance for aligning the 2C pump to the “B” train. SOP-24.0D, “Aligning SW Pump 2C to B Train,” Section 3.0, also provides steps for selecting the 2C SW pump for B train auto-start. The first step of Section 3.0 directs the operator to verify that the 2C SW pump is aligned mechanically and electrically to B train per SOP-24.0D, sections 1.0 and 2.0 respectively.

While the intent of the question was to test whether or not the applicant recognized the actions that must be performed on the 2C SW pump in order to make B train SW operable, the question was deficient. In order to adequately test this, the question should have asked for the “minimum action(s) required” and the second half of distractor “B” should have indicated that only aligning the 2C pump to auto start for the 2E pump (without re-aligning the 2C pump mechanically or electrically) was sufficient.

WRITTEN EXAMINATION – QUESTION G2.4.44 (SRO EXAM 100)

Licensee Comment:

Change the correct answer to C. Answer option B is incorrect and was inadvertently identified in the test file as the correct answer.

NRC Resolution:

The licensee recommendation was accepted for the reason stated.

SIMULATION FACILITY REPORT

Facility Licensee: Farley Nuclear Plant

Facility Docket Nos.: 05000348/05000364

Operating Tests Administered on: November 5 – 15, 2007

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 IP 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 items were identified.