



**UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION IV
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October 25, 2005

Jeffrey S. Forbes
Vice President Operations
Arkansas Nuclear One
Entergy Operations, Inc.
1448 S.R. 333
Russellville, AR 72801-0967

**SUBJECT: ARKANSAS NUCLEAR ONE, UNIT 1 - NRC EXAMINATION
REPORT 05000313/2005301**

Dear Mr. Forbes:

On September 15, 2005, the U. S. Nuclear Regulatory Commission (NRC) completed an examination at Arkansas Nuclear One, Unit 1. The enclosed report documents the examination findings, which were discussed on September 15, 2005, with Messrs. Brad Berryman, Randal Martin, and other members of your staff.

The examination included the evaluation of 8 applicants for reactor operator licenses, 1 applicant for an instant senior operator license and 4 applicants for upgrade senior operator licenses. The written and operating examinations were developed using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9. The license examiners determined that 12 of the 13 applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses have been issued.

No findings of significance were identified during this examination. However, a licensee-identified violation, which was determined to be of very low safety significance is listed in Section 40A7 of this report. The NRC is treating this violation as a non-cited violation consistent with Section VI.A.1 of the NRC Enforcement Policy because of the very low safety significance of the violation and because it is entered into your corrective action program. If you contest this non-cited violation, you should provide a response within 30 days of the date of this inspection report, with the basis for your denial, to the U.S. Nuclear Regulatory Commission, ATTN: Document Control Desk, Washington, DC 20555-0001, with copies to the Regional Administrator, U.S. Nuclear Regulatory Commission, Region IV, 611 Ryan Plaza Drive, Suite 400, Arlington, Texas 76011; the Director, Office of Enforcement, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001; and the NRC Resident Inspector at the Arkansas Nuclear One facility.

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Sincerely,

/RA/

Anthony T. Gody, Chief
Operations Branch
Division of Reactor Safety

Docket: 50-313
License: DPR-51

Enclosure:
NRC Examination Report 05000313/2005301
w/Attachment: Supplemental Information

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EXAMINATION REPORT
U.S. NUCLEAR REGULATORY COMMISSION
REGION IV

Dockets: 50-313

Licenses: DPR-51

Report : 05000313/2005301

Licensee: Entergy Operations, Inc.

Facility: Arkansas Nuclear One, Unit 1

Location: 1448 S.R. 333
Russellville, Arkansas

Dates: September 12-15, 2005

Inspectors: M. S. Haire, Chief Examiner, Operations Branch
G. W. Johnston, Senior Operations Engineer
J. F. Drake, Operations Engineer
K. D. Clayton, Operations Engineer

Approved By: Anthony T. Gody, Chief
Operations Branch
Division of Reactor Safety

SUMMARY OF FINDINGS

ER 05000313/2005-301; 09/12-15/2005; Arkansas Nuclear One, Unit 1; Initial Operator Licensing Examination Report.

NRC examiners evaluated the competency of 8 applicants for reactor operator licenses, 1 applicant for an instant senior operator license and 4 applicants for upgrade senior operator licenses at Arkansas Nuclear One, Unit 1. The facility licensee developed the examinations using NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9. The written examination was administered by the facility on September 9, 2005. NRC examiners administered the operating tests on September 12-15, 2005. The license examiners determined that 12 of the 13 applicants satisfied the requirements of 10 CFR Part 55, and the appropriate licenses have been issued.

A. NRC-Identified and Self-Revealing Findings

No findings of significance were identified.

B. Licensee-Identified Violations

A violation of very low safety significance, which was identified by the licensee has been reviewed by the examiners. Corrective actions taken or planned by the licensee have been entered into the licensee's corrective action program. This violation and its corrective action tracking numbers are listed in Section 4OA7 of this report.

REPORT DETAILS

4. OTHER ACTIVITIES (OA)

4OA5 Other Activities (Initial Operator License Examination)

1. License Applications

a. Scope

The examiners reviewed the applications submitted by the licensee for each of the license applicants. The applications were submitted on NRC Form 398, "Personal Qualification Statement," and NRC Form 396, "Certification of Medical Examination by Facility Licensee." The examiners also audited a sample of the license applications to confirm that they accurately reflected the subject applicant's qualifications. This audit focused on the applicant's experience and on-the-job training, including control manipulations that provided significant reactivity changes.

b. Findings

No findings of significance were identified.

2. Operator Knowledge and Performance

a. Examination Scope

On September 9, 2005, the licensee proctored the administration of the written examinations to all 13 applicants. The licensee staff graded the written examinations, analyzed the results, and presented their analysis to the NRC on September 20, 2005.

The NRC examination team administered the various portions of the operating examination to all 13 applicants on September 12-15, 2005. The 8 applicants for reactor operator licenses participated in two dynamic simulator scenarios, in a control room and facilities walkthrough test consisting of 11 system tasks, and an administrative test consisting of 4 administrative tasks. One of the 8 applicants for a reactor operator license also participated in a third dynamic simulator scenario. The applicant seeking an instant senior operator license participated in two dynamic simulator scenarios, a control room and facilities walkthrough test consisting of 10 system tasks, and an administrative test consisting of 5 administrative tasks. The 4 applicants for upgrade senior operator licenses participated in two dynamic simulator scenarios, a control room and facilities walkthrough test consisting of 5 system tasks, and an administrative test consisting of 5 administrative tasks.

b. Findings

All 13 of the applicants passed all parts of the operating test. One reactor operator applicant failed the written examination. For the written examinations, the reactor operator applicant's average score was 89.4 percent and ranged from 71.6 to

97.3 percent, and the senior operator applicant's average score was 90.7 percent and ranged from 82.8 to 93.9 percent. The overall written examination average was 89.9 percent.

Chapter ES-403 and Form ES-403-1 of NUREG-1021 require the licensee to analyze the validity of any written examination questions that were missed by half or more of the applicants. The licensee conducted this performance analysis for the six questions that met this criteria and submitted the analysis to the chief examiner on September 20, 2005. This analysis concluded that three of the questions (2, 82, and 83) were technically accurate and required no post-examination changes. The licensee recommended accepting two answers as correct for two of the questions (16 and 94) and recommended one question (73) be deleted from the examination because of there being no correct answer among the choices. None of the recommended changes had a net impact of changing a passing grade to a failure or a failing grade to passing.

The licensee's recommendations and the NRC responses follow:

Reactor/Senior Operator Question 16

The licensee recommended that both answers "A" and "C" be accepted as correct for this question. The question asked "what action is required during the re-establishment of SW flow through the DH cooler and why?" Answer "A" says "establish SW slowly to prevent DH cooler water hammer," and "C" says "establish SW slowly to prevent DH cooler thermal shock." Procedure 1203.028, "Loss of Decay Heat Removal," directs that "SW flow to DH cooler" be restored slowly out of concern for both water hammer and thermal shock, which makes both "A" and "C" correct.

NRC Response: The NRC agrees with the licensee's recommendation to accept two answers for Question 16. The procedure is clear that both water hammer and thermal shock are concerns for restoring cooling in this condition.

Reactor/Senior Operator Question 73

The licensee recommended deletion of this question since a typo in the answer intended to be correct actually makes the answer incorrect, which leaves no correct answer. The question asked: "During performance of the ESAS procedure with BWST level at 8 ft., which of the following actions is performed specifically to reduce plant personnel exposure?" The intended correct answer was "C," which said "aligning HPI to provide PZR Aux Spray." However, in order for answer "C" to have been correct, it would have had to refer to "LPI" instead of "HPI" - "HPI" was a typographical error that makes the answer incorrect. Procedure 1202.010, "ESAS," step 13 clearly directs aligning "Pressurizer AUX Spray to LPI system." Since there is not a correct answer, the question should be deleted.

NRC Response: The NRC agrees with the licensee's recommendation to delete Question 73 since there is no correct answer. The use of HPI in this circumstance is clearly not correct.

Senior Operator Question 94

The licensee recommended that both "C" and "D" be accepted as correct on this question. The question gave conditions indicating quadrant power tilt (QPT) was 3 percent above the steady state limit and asked what action was required by Technical Specification 3.2.4. Technical Specification 3.2.4, Required Action A.1.2.2, states that appropriate trip setpoints should be reduced by " $\geq 2\%$ RTP from the ALLOWABLE THERMAL POWER for each 1% of QPT greater than the steady state limit." This means the required reduction is $\geq 6\%$, which makes both "C" ("reduce applicable RPS trip setpoints 6%") and "D" ("reduce applicable RPS trip setpoints 8%") correct.

NRC Response: The NRC agrees with the licensee's recommendation to accept two answers for Question 94. Clearly, if $\geq 6\%$ adjustment is directed by the technical specification, then both "C" and "D" are correct.

3. Initial Licensing Examination Development

a. Examination Scope

The licensee developed the examinations in accordance with NUREG-1021, Revision 9. All licensee facility training and operations staff involved in examination preparation and validation were on a security agreement. The facility licensee submitted the integrated examination outlines on May 16, 2005. The chief examiner reviewed the outlines against the requirements of NUREG-1021, Revision 9, and provided comments to the licensee. The facility licensee submitted the draft examination package on July 14, 2005. The chief examiner reviewed the draft examination package against the requirements of NUREG-1021, Revision 9, and provided comments to the licensee on the examination on July 29, 2005. The NRC conducted an onsite validation of the operating examinations and provided further comments during the week of August 22, 2005. The licensee satisfactorily completed comment resolution on August 26, 2005.

b. Findings

The NRC approved the initial examination outline and advised the licensee to proceed with the operating examination development.

The examiners determined that the written and operating examinations initially submitted by the licensee were within the range of acceptability expected for a proposed examination.

No findings of significance were identified.

4. Simulation Facility Performance

a. Examination Scope

The examiners observed simulator performance with regard to plant fidelity during the examination validation and administration.

b. Findings

No findings of significance were identified.

5. Examination Security

a. Examination Scope

The examiners reviewed examination security for examination development and during both the onsite preparation week and examination administration week for compliance with NUREG-1021 requirements. Plans for simulator security and applicant control were reviewed and discussed with licensee personnel.

b. Findings

A compromise of the reactor operator written examination occurred during examination development that resulted in the licensee-identified non-cited violation documented in section 4OA7 of this report. The compromise occurred when the licensee accidentally distributed an early draft version of the reactor operator written license examination during administration of the audit examination. The examination proctor realized the mistake within minutes of distributing the wrong examination, and quickly collected all copies of the license examination. Copies of the reactor operator audit examination were then prepared and distributed. During subsequent investigation, it was determined that no applicant had worked beyond or gained knowledge of any question beyond question #3. To ensure a valid examination, the following changes were made to the reactor operator license examination:

- Replacement KA's were selected and replacement questions were developed for questions #1-10.
- An additional 27 questions were selected among the remainder of the examination to be replaced or significantly modified.

4OA6 Meetings, Including Exit

The chief examiner presented the examination results to Messrs. Brad Berryman, Unit One Operations Manager, Tom Mayfield, Acting Training Manager, Randal Martin, Unit One Operations Training Manager, and other members of the licensee's management staff on September 15, 2005. The licensee acknowledged the findings presented.

The licensee did not identify any information or materials used during the examination as proprietary.

4OA7 Licensee-Identified Violations

The following violation of very low safety significance (Green) was identified by the licensee and is a violation of NRC requirements, which meet the criteria of Section VI of the NRC Enforcement Policy, for being dispositioned as a non-cited violation.

- 10 CFR 55.49 prohibits licensees from compromising any portion of a license examination by engaging in activities that, but for detection, would have affected the equitable and consistent administration of the examination. Contrary to this, on August 5, 2005, the licensee mistakenly distributed the actual NRC reactor operator license examination to the license candidates during the audit examination administration; the first three questions on the NRC license examination were compromised before the error was detected and the examinations collected by the proctor. The licensee documented this compromise in Condition Report CR-ANO-1-2005-01144. This finding is of very low safety significance because it was detected and the compromised aspects of the examination were replaced before the actual NRC license examination was administered.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee Personnel

Randal Martin, Unit One Operations Training Manager
Robert Byford, Simulator Training Supervisor
Steve Pullin, Examination Author
John Cork, Examination Author

NRC Personnel

R. Deese, Senior Resident Inspector