

March 12, 2004

Mr. Thomas Coutu
Site Vice President
Kewaunee Nuclear Plant
Nuclear Management Company, LLC
N490 Hwy 42
Kewaunee, WI 54216-9511

SUBJECT: KEWAUNEE NUCLEAR POWER PLANT
NRC INITIAL LICENSE EXAMINATION REPORT 05000305/2004301(DRS)

Dear Mr. Coutu:

On February 5, 2004, the NRC completed administration of initial operator licensing examinations at your Kewaunee Nuclear Power Plant. The NRC finalized the results of the examination on March 4, 2004. The enclosed report presents the results of the examinations.

NRC examiners administered the operating test during the week of February 2, 2004, and the written examination on February 5, 2004. Three reactor operator (RO) and one senior reactor operator (SRO) applicants were administered written examinations and operating tests for initial operator licensing. Three applicants passed all sections of their respective examinations. One RO applicant failed the written examination and will not be issued a license. One applicant scored 81 percent or less on the written examination; and, in accordance with the guidelines of NUREG 1021, "Operator Licensing Examination Standards for Power Reactors," ES-501.D.3.c, the applicant's license will be withheld until any appeal rights of the other proposed license applicant failure, which may impact the outcome of the examination, are exhausted.

In accordance with 10 CFR Part 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).

T. Coutu

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We will gladly discuss any questions you have concerning this examination.

Sincerely,

/RA/

Roger D. Lanksbury, Chief
Operations Branch
Division of Reactor Safety

Docket No. 50-305
License No. DPR-43

Enclosures: 1. Operator Licensing Examination
Report 05000305/2004301(DRS)
2. Post Examination Comments and Resolution
3. Simulation Facility Report
4. Written Examinations and Answer
Keys (RO & SRO)

cc w/encls 1, 2 & 3: D. Graham, Director, Bureau of Field Operations
Chairman, Wisconsin Public Service Commission
State Liaison Officer

cc w/encls 1, 2, 3 & 4: W. Hunt, Training Manager

T. Coutu

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket No: 50-305

License No: DPR-43

Report No: 05000305/2004301(DRS)

Licensee: Nuclear Management Company, LLC

Facility: Kewaunee Nuclear Power Plant

Location: N 490 Highway 42
Kewaunee, WI 54216

Dates: February 2 through 5, 2004

Examiners: C. Phillips, RIII NRC Chief Examiner
M. Bielby, RIII NRC Examiner
C. Zoia, RIII NRC Examiner in Training
R. Lanksbury, RIII NRC Observer

Approved by: Roger Lanksbury, Chief
Operations Branch
Division of Reactor Safety

SUMMARY OF FINDINGS

ER 05000305/2004301(DRS); 02/02/2004-02/05/2004; Kewaunee Nuclear Power Plant.

The announced operator licensing initial examination was conducted by regional examiners in accordance with the guidance of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 8.

Examination Summary:

- Four examinations (three Reactor Operator (RO) and one Senior Reactor Operator (SRO)) were administered.
- One RO applicant failed the written examination and will not be issued an operator license. All four applicants passed the operating test. (Section 4OA5.1)
- Two RO and one SRO applicants passed all sections of their respective examinations. One applicant scored an 81 percent or less on the written examination and will not receive a license until appeal rights of the other proposed license applicant failure, which may impact the outcome of the examination, are exhausted. (Section 4OA5.1)

REPORT DETAILS

4. OTHER ACTIVITIES (OA)

4OA5 Other

.1 Initial Licensing Examinations

a. Examination Scope

The NRC examiners conducted an announced operator licensing initial examination during the week of February 2, 2004. The NRC used the guidance established in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 8, to prepare the examination outline and to develop the written examination and operating test. The NRC examiners administered the operating test during the week of February 2, 2004. The NRC administered the written examination on February 5, 2004. Three Reactor Operator (RO) and one Senior Reactor Operator (SRO) applicants were examined.

b. Findings

Written Examination

The NRC developed the written examination. The licensee reviewed the written examination for technical accuracy on December 15 and 16, 2003, and again on January 7 and 8, 2004, prior to the operating test validation week. Examination changes, agreed upon between the NRC and the licensee, were incorporated into the written examination in accordance with the guidelines provided in NUREG-1021.

The NRC examiners administered the written examination in accordance with NUREG-1021. The NRC examiners graded the written examination and concluded that two of the four applicants passed. The NRC identified a problem with one question during a post examination review and removed the question from the examination. The licensee submitted one post written examination comment. The NRC agreed with the comment and that question was also removed from the examination.

Operating Test

The NRC developed the operating test. The licensee reviewed the operating test for technical accuracy from January 12 through 16, 2004, during the operating test validation week. Examination changes, agreed upon between the NRC and the licensee, were incorporated into the operating test according to NUREG-1021. The licensee submitted no post examination comments on the operating test.

Examination Results

Three RO applicants and one SRO applicant were administered written examinations and operating tests for initial operator licensing. Three applicants passed all sections of their respective examinations. One RO applicant failed the written examination and will not be issued a license. One applicant scored an 81 percent or less on the written

examination and will not receive a license until all appeal rights of the other proposed license applicant failure, which may impact the outcome of the examination, are exhausted. Should the reactor operator candidate who failed the written examination appeal, a subsequent review of the written exam may result in question deletions or changes which may affect the licensing decision of the applicant with a score of 81 percent or less.

.2 Examination Security

a. Inspection Scope

The NRC examiners briefed the facility contact on the NRC's requirements and guidelines related to examination physical security (e.g., access restrictions and simulator considerations) and integrity (e.g., predictability and bias). The examiners observed the implementation of examination security and integrity measures (e.g., security agreements, examination material control, and physical access control to the simulator) throughout the examination process.

b. Findings

The following findings document two violations of NRC examination security requirements:

- On January 19, 2004, a member of the licensee's training management left two proposed examination questions and the associated knowledge and abilities designators (K/As) on his desk overnight unattended and unsecured. After licensee personnel reviewed the written examination prepared by the NRC, licensee management personnel planned to submit two questions from the exam bank as a proposed improvement to the questions prepared by the NRC. The question topics and K/As were subject to exposure. The exam questions and the K/As were replaced and the written exam outline was changed.
- On February 4, 2004, the NRC identified that the Control Room Supervisor's voice could be heard immediately outside the simulator control booth door. The Control Room Supervisor position, in the simulator, has a microphone directly in front of that position which is amplified into the simulator control booth. The candidates were determined to be sequestered far enough away from the simulator during the conduct of the exam such that exam compromise was not a problem. However, the candidates were not controlled during the onsite validation period from January 12-16, 2004. The candidates were interviewed, by the licensee, and stated that they neither overheard any of the validation of the exam material, nor were they informed of any of the exam material by any other individual that may have overheard what was going on in the simulator during the onsite validation. In addition, the Operations Training General Supervisor entered the simulator several times each day during the onsite validation and did not see anyone near the simulator entrance. The examiners did not have any indications during the course of the exam that the candidates may have been aware of any of the portions of the exam. The licensee was evaluating corrective actions to prevent recurrence.

These violations were considered minor in nature because no examination material was actually compromised; therefore, they would not be subject to enforcement action. These findings have been entered into the licensee's corrective action program as CAP 019650 and CAP 019959 respectively.

4OA6 Meetings

.1 Exit Meeting

The chief examiner presented the examination team's preliminary observations and findings on February 5, 2004, to Mr. Hoops and other members of the Operations and Training Department staff. The licensee acknowledged the observations and findings presented.

ATTACHMENT: SUPPLEMENTAL INFORMATION

PARTIAL LIST OF PERSONS CONTACTED

Licensee

K. Hoops, Site Director
K. Davison, Plant Manager
W. Godes, Ops Training General Supervisor
T. Hunt, Operations Training Supervisor
W. Hunt, Training Manager
S. Johnson, Training Instructor
D. Lohman, Operations Manager

NRC

C. Phillips, Chief Examiner
C. Zoia, Examiner in Training
J. Adams, Senior Resident Inspector Prairie Island

LIST OF ACRONYMS USED

ADAMS	Agency-Wide Document Access and Management System
CRD	Control Rod Drive System
DRS	Division of Reactor Safety
IRPI	Individual Rod Position Indication
JPM	Job Performance Measure
K/A	Knowledge and Abilities designator
LOCA	Loss of Coolant Accident
NRC	Nuclear Regulatory Commission
RO	Reactor Operator
SRO	Senior Reactor Operator

Post Examination Comments and Resolution

Written Examination Question #54 on the Reactor Operator (RO) Examination and Question #29 on the Senior Reactor Operator (SRO) Examination:

The applicant is asked, what would cause annunciator 47041-P, ROD BOTTOM ROD DROP, to alarm. The answer choices are:

- a. Control Bank B demand is 38 and a Control Bank B IRPI [individual rod position indication] reads 18.
- b. Control Bank A demand is 18 and a Control Bank A IRPI reads 32.
- c. Shutdown Bank B demand is 32 and a Shutdown Bank B IRPI reads 18.
- d. Shutdown Bank A demand is 18 and a Shutdown Bank A IRPI reads 32.

Facility Comment:

None. The examiners identified that this question had four correct answers during a post-examination review of questions that were missed by two or more applicants.

NRC Resolution:

The NRC concluded that this question should be removed from the examination. Per Kewaunee System Description Number 49, the rod bottom bistable provided indication, control, and protection functions in the event of a dropped rod. The bistable got its input from each individual rod IRPI. The bistable output operated a control relay which generated the Rod Bottom Drop Alarm. The bistable was set to trip or de-energize the control relay at 20 steps from the bottom.

For Control Banks B, C, and D, a bypass bistable was provided to block the rod drop alarm during those times when it was necessary to operate the plant with some of the control rods fully inserted. The bypass bistable got its input from the Pulse to Analog converter. No bypass was provided for Control Bank A or any of the Shutdown Banks since these banks were always withdrawn prior to placing the CRD [Control Rod Drive] System in Automatic. The bypass operated when bank demand was 35 steps or less from the core bottom.

Therefore, in choice a. the Control Bank B demand was at 38 steps, which according to the System Description the rod bottom alarm bypass was not in and the Control Bank IRPI reading 18 should have given a rod bottom alarm which would make choice a. correct.

In choice b. the Control Bank A demand was at 18 steps and a Control Bank A IRPI read 32 steps. Without any other information given one could assume that the other Control Bank A IRPIs were at the Control Bank A demand location of 18 steps. Since there was no alarm bypass for Control Bank A then the alarm would be in, which would make this a correct answer choice.

In addition, in choice c., the Shutdown Bank B demand was 32 and a Shutdown Bank B IRPI read 18. Since there was no bypass for shutdown banks the IRPI at 18 would give a rod drop alarm which would make choice c. a correct answer also.

Finally, in choice d, the Shutdown Bank A demand was 18 and a Shutdown Bank A IRPI read 32. Without any other information given one could assume that the other Shutdown Bank A IRPIs were at the Shutdown Bank A demand location of 18 steps. Since there was no alarm bypass for Shutdown Bank A then the alarm would be in which would make this a correct answer choice.

The NRC concluded that this question had more than two correct answers and removed this question from the examination.

Written Examination Question #65 on the Reactor Operator (RO) Examination and Question #40 on the Senior Reactor Operator (SRO) Examination:

The applicant is asked:

A LOCA [loss of coolant accident] has occurred. Post-LOCA containment hydrogen concentration is 7%. What method is available to address hydrogen control in the containment?

- a. dilute the containment atmosphere.
- b. place the Hydrogen Recombiner in service.
- c. vent containment through the Shield Building Ventilation System.
- d. spray containment using the containment spray pumps.

Facility Comment:

The facility's comment was that the question had more than one possible outcome. Since there was no elapsed time given in the stem of the question the applicant could assume that the LOCA was in progress. In which case, the first time the operator would address containment hydrogen was step 23 of E-1, LOSS OF REACTOR OR SECONDARY COOLANT. Once the hydrogen concentration is determined to be greater than "6% IN DRY AIR" the operator was directed to "Consult with Emergency Director for additional recovery actions. GO TO Step 24." The information in the E-1, LOSS OF REACTOR OR SECONDARY COOLANT background document stated, "no other operator action is appropriate at this point." Consulting with the Emergency Director was not a choice given in the question therefore there was no correct answer.

If the applicant was expected to choose the action taken by the emergency director based on the guidance provided in N-RBV-18C, "POST-LOCA Hydrogen Control," Revision K, then choice a. or b. would be correct. Step 2.3 of N-RBV-18C, stated, "if the hydrogen concentration in Containment is \geq .5% by volume, place the Hydrogen Recombiner in service, OR dilute Containment Atmosphere."

NRC Resolution:

The NRC concluded that there was no correct answer to this question. The examiners reviewed Procedures E-0, REACTOR TRIP OR SAFETY INJECTION, Revision V and E-1, LOSS OF REACTOR OR SECONDARY COOLANT, Revision 0, and agreed with the licensee that the first opportunity for the operators to check hydrogen concentration was at E-1, Step 23. Procedure E-1 has the operator check hydrogen concentration less than 6% in dry air. If the hydrogen concentration was greater than 6% than the operator was instructed to consult the Emergency Director for further recovery actions. This action was not one of the choices given to the applicants. The applicants were not expected to know what actions the Emergency Director would take. In addition, the background document BKG E-1, LOSS OF REACTOR OR SECONDARY COOLANT stated, "No other operator action is appropriate at this point pending evaluation by the Emergency Director and plant Engineering staff." Therefore, the examiners determined that there was no correct answer to this question.

WRITTEN EXAMINATIONS AND ANSWER KEYS (RO/SRO)

RO Final Examination ADAMS Accession No. ML040690107

SRO Final Examination ADAMS Accession No. ML040690107