UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION III
2443 WARRENVILLE ROAD, SUITE 210
LISLE, IL 60532-4352

September 7, 2012

Mr. Larry Weber
Senior Vice President and
Chief Nuclear Officer
Indiana Michigan Power Company
Nuclear Generation Group
One Cook Place
Bridgman, MI 49106

SUBJECT: D.C. COOK NUCLEAR POWER PLANT, UNITS 1 AND 2;
NRC INITIAL LICENSE EXAMINATION REPORT 05000315/2012301
AND 05000316/2012301(DRS)

Dear Mr. Weber:

On August 9, 2012, the U.S. Nuclear Regulatory Commission (NRC) completed the initial operator licensing examination process for license applicants employed at your D.C. Cook Nuclear Power Plant. The enclosed report documents the results of those examinations. Preliminary observations noted during the examination process were discussed on August 2, 2012, with Mr. Sergio Vasquez, Operations Director, along with other members of your staff. An exit meeting was conducted by telephone on August 15, 2012, between Mr. Ron Sieber, Training Manager, of your staff and, Mr. Carl Moore, Operator Licensing Examiner, to review the proposed final grading of the written examination for the license applicants. During the telephone conversation, the NRC confirmed the plant had submitted documentation noting there was one post-examination comment for consideration during NRC grading of the written examination. The post-examination documentation was received by the NRC on August 9, 2012.

The NRC examiners administered an initial license examination operating test during the weeks of July 23, 2012, and July 30, 2012. The written examination was administered by D.C. Cook Nuclear Power Plant Training Department personnel on August 3, 2012. Three Senior Reactor Operator Instant, three Senior Reactor Operator Upgrade, and eight Reactor Operator applicants were administered license examinations. The results of the examinations were finalized on August 24, 2012. All 14 applicants passed all sections of their respective examinations and were issued Senior Reactor Operator or Reactor Operator licenses.

The written examination and other related written examination documentation will be withheld from public disclosure for 24 months per your request.

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 System (PARS) component of NRC's Agency wide Documents Access and Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Hironori Peterson, Chief
Operations Branch
Division of Reactor Safety

Docket Nos. 50-315; 50-316
License Nos. DPR-58; DPR-74

Enclosures:
1. Operator Licensing Examination Report 05000315/2012301(DRS); 05000316/2012301(DRS)
   w/Attachment: Supplemental Information
2. Simulation Facility Report
3. Written Examination Post-Examination Comment Resolution

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos.	50-315; 50-316
License Nos.	DPR-58; DPR-74
Report No:	05000315/2012301(DRS); 05000316/2012301(DRS)
Licensee:	Indiana Michigan Power Company
Facility:	D.C. Cook Nuclear Power Plant, Units 1 and 2
Location:	Bridgman, MI
Dates:	July 23 – August 3, 2012
Inspectors:	C. Moore, Operations Inspector B. Palagi, Senior Operations Inspector M. Morris, Senior Resident Inspector C. Cowdrey, Operations Inspector
Approved by:	H. Peterson, Chief Operations Branch Division of Reactor Safety

SUMMARY OF FINDINGS

ER 05000315/2012301(DRS); 05000316/2012301(DRS); 07/23/2012 - 08/03/2012; Indiana Michigan Power Company, D.C. Cook Nuclear Power Plant, Units 1 and 2, Initial License Examination Report.

The announced initial operator licensing examination was conducted by regional NRC examiners in accordance with the guidance of NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, Supplement 1.

Examination Summary

Fourteen of fourteen applicants passed all sections of their respective examinations.
Six applicants were issued Senior Reactor Operator licenses and eight applicants were issued Reactor Operator licenses. (Section 4OA5.1).

REPORT DETAILS

4OA5 Other Activities

.1 Initial Licensing Examinations

a. Examination Scope

The U.S. Nuclear Regulatory Commission (NRC) examiners and members of the facility licensee's staff used the guidance prescribed in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9-Supplement 1, to develop, validate, administer, and grade the written examination and operating test. Members of the facility licensee's staff prepared the outline and developed the written examination and operating test. The NRC examiners validated the proposed examination during the week of June 25, 2012, with the assistance of members of the facility licensee's staff. During the on-site validation week, the examiners audited two license applications for accuracy. The NRC examiners, with the assistance of members of the facility licensee's staff, administered the operating test, consisting of job performance measures (JPMs) and dynamic simulator scenarios, during the period of July 23 through August 2, 2012. The facility licensee administered the written examination on August 3, 2012.

b. Findings

(1) Written Examination

The NRC examiners determined that the written examination, as proposed by the licensee, was within the range of acceptability expected for a proposed examination. Less than 20 percent of the proposed examination questions were determined to be unsatisfactory and required modification or replacement. All changes made to the proposed examination, were made in accordance with NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," and documented on Form ES-401-9, "Written Examination Review Worksheet," which will be available in 24 months electronically in the NRC Public Document Room or from the Agencywide Documents Access and Management System (ADAMS).

The final as-administered examination and answer key (ML 12244A531) will be available in 24 months electronically in the NRC Public document Room or from ADAMS. On August 9, 2012, the licensee submitted documentation noting that there was one post-examination comment for consideration by the NRC examiners when grading the written examination. The post-examination comment and the NRC resolution for the comment is found in Enclosure 3 of this report.

The NRC examiners graded the written examination on August 15, 2012, and conducted a review of each missed question to determine the accuracy and validity of the examination questions.

(2) Operating Test

The NRC examiners determined that the operating test, as originally proposed by the licensee, was within the range of acceptability expected for a proposed examination. Changes made to the operating test, documented in a document titled, "Operating Test

Comments," as well as the final as-administered dynamic simulator scenarios and JPMs, are available electronically in the NRC Public Document Room or from ADAMS.

The NRC examiners completed operating test grading on August 24, 2012.

(3) Examination Results

Six applicants at the Senior Reactor Operator level were administered written examinations and operating tests. Eight applicants at the Reactor Operator level were administered written examinations and operating tests. Fourteen applicants passed all portions of their examinations and were issued their respective operating licenses.

.2 Examination Security

a. Scope

The NRC examiners reviewed and observed the licensee's implementation of examination security requirements during the examination validation and administration to assure compliance with 10 CFR 55.49, "Integrity of Examinations and Tests." The examiners used the guidelines provided in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," to determine acceptability of the licensee's examination security activities.

b. Findings

No findings were identified.

4OA6 Management Meetings

.1 Debrief

The Chief Examiner presented the examination team's preliminary observations and findings on August 2, 2012, to Mr. Sergio Vazquez Operations Director, and other members of the D.C. Cook Nuclear Power Plant Operations and Training Department staff.

.2 Exit Meeting

The Chief Examiner conducted an exit meeting on August 15, 2012, with Mr. Ron Sieber, Training Manager, via telephone. The NRC's final disposition of the station's post-examination comments were disclosed and discussed with Mr. Sieber during the telephone discussion. The examiners asked the licensee whether any of the material used to develop or administer the examination should be considered proprietary. No proprietary or sensitive information was identified during the examination or debrief/exit meetings.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

T. Werk, Operations Training
T. Conrad, Operations Training
I.D. Fleetwood, Operations Training
B. Evans, Operations Training
R. Sieber, Training Manager
K. Beran, Operations
S. Vazquez, Operations Director

NRC

C. Moore, Operations Inspector
B. Palagi, Senior Operations Inspector
M. Morris, Fermi Senior Resident Inspector
C. Cowdrey, Operations Inspector

ITEMS OPENED, CLOSED, AND DISCUSSED

Opened, Closed, and Discussed

None

SIMULATION FACILITY REPORT

Facility Licensee: D.C. Cook Nuclear Power Plant, Unit 1 and Unit 2

Facility Docket Nos: 50-315; 50-316

Operating Tests Administered: July 23 through August 2, 2012

The following documents observations made by the NRC examination team during the initial operator license examination. These observations do not constitute audit or inspection findings and are not, without further verification and review, indicative of non-compliance with 10 CFR 55.45(b). These observations do not affect NRC certification or approval of the simulation facility other than to provide information which may be used in future evaluations. No licensee action is required in response to these observations.

During the conduct of the simulator portion of the operating tests, the following items were observed:

ITEM	DESCRIPTION
	No new undocumented items were identified.

WRITTEN EXAMINATION POST-EXAMINATION COMMENT RESOLUTION

SRO Question #85

Given the following conditions on Unit 2:

- Reactor is at 100% power.
- All control systems are in normal alignment.
- Letdown flow is 75 gpm on QFI-301, Letdown Flow Indicator.

The following parameters are now noted on the CVCS system:

- Seal Return Flows are 3 gpm per Reactor Coolant Pump.
- Charging flow is 94 gpm and rising.
- QTA-160, Regen HX Outlet Temp - Letdown, has risen 25°F from its steady state value.
- Volume Control Tank level is 33% and lowering.
- Pressurizer level is 55% and lowering slowly.
- Reactor Coolant System (RCS) average temperature is 574°F and stable.

Which ONE of the following describes the correct leak location AND associated leakage monitoring requirements?

The Leakage is from the ...

A. letdown line between the letdown isolation valves and the orifices valves. This leakage must be monitored as post accident recirculation flow path leakage, as required by TS 5.5.2, Leakage Monitoring Program.

B. charging line between the flow indicator and Containment. This leakage is required to be monitored as RCS leakage, as required by TS 3.4.13 RCS Operational LEAKAGE.

C. letdown line between the letdown isolation valves and the orifices valves. This leakage is required to be monitored as RCS leakage, as required by TS 3.4.13 RCS Operational LEAKAGE.

D. charging line between the flow indicator and Containment. This leakage must be monitored as post accident recirculation flow path leakage, as required by TS 5.5.2, Leakage Monitoring Program.

ANSWER:
D

Applicant Contention:

Question #85 on the SRO examination requires the candidate to differentiate between CVCS leakage in the letdown line and charging line. It also requires the determination of the appropriate TS to monitor the leakage.

Upon further review of the question, it appears there is no completely correct answer.

The leakage could be contained on the letdown line if it was between the Regenerative Heat Exchanger (Regen Hx) and the Letdown Orifi. This would cause a rise in the Regen Hx Letdown temperature and the other indications listed within the stem.

Distractors B & C both list TS 3.4.13, RCS Operational Leakage. The leakage from the charging and/or letdown line is considered RCS Operational Leakage whether it is inside or outside of Containment.

Based on the leakage location and the applicable TSs, answers B, C, and D are all partially correct.

Recommendation:

Delete the Question

Facility Contention:

The facility is in agreement with the applicant contentions. The facility helped the applicants developed the contention. The facility recommends deleting the question because it contains three partially correct answers and no completely correct answer.

References:

Technical Specification Definitions – LEAKAGE
Technical Specification 3.4.13, RCS Operational LEAKAGE and Bases
Technical Specification 5.5.2, Leakage Monitoring Program
Plant Procedure OHI-4032, Leakage Monitoring Program
Flow Diagram CVCS – Reactor Letdown and Charging OP-2-5129-53

NRC Resolution:

Question #85 will be deleted from the 2012 D.C. Cook written examination because it has been determined that no completely correct answer exists for this question.

Based on the information contained in the stem, the initial correct answer was assumed to be Distractor D. Based on the difference between charge line flow and letdown line flow plus RCP seal return flow, an RCS leak of 7 gpm is occurring. The stem also states that the letdown line temperature has risen 25°F and that letdown line flow is 75 gpm. Based on these conditions, the applicant was expected to determine that the CVCS system leak was on the “charging line between the flow indicator and Containment.” That is, on the charging header upstream of the Regenenerative Heat Exchanger. The 7 gpm reduction in charging flow to the regenerative heat exchanger results in the 25°F increase in letdown temperature. If the applicants were able to make this connection, they should have eliminated Distractors A and C, and the question then would have come down to which TS is applicable to this leakage?

The part of the question associated with which TS is applicable to charging line leakage is problematic for two reasons. The first reason is that based on the conditions described in the stem this charging line leakage is not yet isolated. Therefore, TS 3.4.13, RCS Operational

Leakage, would apply because initially it would be classified as Unidentified Leakage based on the TS surveillance requirement 3.4.13.1, RCS Leak Test. Once the leak was isolated, it would no longer be considered RCS Operational Leakage, but based on the conditions stated in the stem it is still an active leak. The second problem with the TS portion of this question is that TS 5.5.2, Leakage Monitoring Program, would also apply to leakage on the charging line up to QMO-200, Charging Line Isolation Valve. Technical Specification 5.5.2 would not apply to leakage downstream of QMO-200 because that part of the charging header is not part of the ECCS recirculation flow path that would be exposed to highly radioactive fluids. However, the portion of the charging line between flow indicator QFI-200 and QMO-200 is part of the ECCS recirculation flow path. Therefore, Distractors B and D are both incorrect answers because neither contains both TSs 3.4.13 and 5.5.2.

D.C. Cook has also proposed that Distractor C is also a partially correct answer. They propose that a leak on the letdown line between the Regenerative Heat Exchanger and the Letdown Orifi would result in a “rise in Regenerative Heat Exchanger outlet temperature and the other indications listed in the stem.” The NRC has determined that a leak in this portion of the letdown line would increase letdown temperature due to the increase in letdown line flow through the Regenerative Heat Exchanger. The decrease in system pressure that would result from the leak would also cause letdown line pressure to decrease which would cause pressure control valve QRV-301 to close down to maintain pressure at its setpoint, which would cause a corresponding decrease in letdown line flow. Additionally, the decrease in differential pressure across the Letdown Orifi due to the leakage at this location should also decrease Letdown line flow. But, since Letdown line flow remains at 75 gpm, the NRC has determined that Distractor C is not a correct answer.

Based on the guidance provided in NUREG-10121, Operator Licensing Examination Standards for Power Reactors, Section ES-403.D.1.c., a question with no correct answer shall be deleted from the examination. The NRC has determined that Question #85 has no completely correct answer and will be deleted from the examination. The answer key for this examination was modified to delete Question #85 from the examination.

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 System (PARS) component of NRC's Agency wide Documents Access and Management System (ADAMS), accessible from the NRC Web site at http://www.nrc.gov/reading-rm/adams.html (the Public Electronic Reading Room).

Sincerely,

/RA/

Hironori Peterson, Chief
Operations Branch
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