

July 26, 2007

Mr. Christopher M. Crane  
President and Chief Nuclear Officer  
Exelon Nuclear  
Exelon Generation Company, LLC  
Quad Cities Nuclear Power Station  
4300 Winfield Road  
Warrenville, IL 60555

SUBJECT: QUAD CITIES NUCLEAR POWER STATION  
NRC INITIAL LICENSE EXAMINATION REPORT 05000254/2007301(DRS);  
05000265/2007301(DRS)

Dear Mr. Crane:

On June 18, 2007, the U.S. Nuclear Regulatory Commission (NRC) completed administration of initial operator licensing examinations at your Quad Cities Nuclear Power Station. The enclosed report presents the results of the examination which were discussed on June 18 and June 28, 2007, with Mr. Moser, and with other members of your staff.

The NRC examiners administered initial license examination operating tests during the week of June 11, 2007. The NRC administered an initial license written examination on June 18, 2007, to the applicants. Six senior reactor operator and one reactor operator applicants were administered license examinations. The results of the examinations were finalized on July 17, 2007. All seven applicants passed all sections of their examinations resulting in the issuance of six senior reactor operator and one reactor operator licenses.

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 System (PARS) component of NRC's Agencywide 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).

C. Crane

-2-

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

Sincerely,

/RA/

Hironori Peterson, Chief  
Operations Branch  
Division of Reactor Safety

Docket Nos. 50-254; 50-265  
License Nos. DPR-29; DPR-30

Enclosures: 1. Operator Licensing Examination Report  
05000254/2007301(DRS); 05000265/2007301(DRS)  
2. Simulation Facility Report  
3. Post Examination Comments and Resolutions  
4. Written Examinations and Answer Keys (RO/SRO)

cc w/encls 1 and 2: Site Vice President - Quad Cities Nuclear Power Station  
Plant Manager - Quad Cities Nuclear Power Station  
Regulatory Assurance Manager - Quad Cities Nuclear Power Station  
Chief Operating Officer  
Senior Vice President - Nuclear Services  
Senior Vice President - Mid-West Regional  
Operating Group  
Vice President - Mid-West Operations Support  
Vice President - Licensing and Regulatory Affairs  
Director Licensing - Mid-West Regional  
Operating Group  
Manager Licensing - Dresden and Quad Cities  
Senior Counsel, Nuclear, Mid-West Regional  
Operating Group  
Document Control Desk - Licensing  
Vice President - Law and Regulatory Affairs  
Mid American Energy Company  
Assistant Attorney General  
Illinois Emergency Management Agency  
State Liaison Officer, State of Illinois  
State Liaison Officer, State of Iowa  
Chairman, Illinois Commerce Commission  
Chief Radiological Emergency Preparedness Section,  
Dept. Of Homeland Security  
D. Tubbs, Manager of Nuclear  
MidAmerican Energy Company

cc w/encls 1, 2, 3, and 4: K. Moser, Training Manager

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 Senior Counsel, Nuclear, Mid-West Regional  
 Operating Group  
 Document Control Desk - Licensing  
 Vice President - Law and Regulatory Affairs  
 Mid American Energy Company  
 Assistant Attorney General  
 Illinois Emergency Management Agency  
 State Liaison Officer, State of Illinois  
 State Liaison Officer, State of Iowa  
 Chairman, Illinois Commerce Commission  
 Chief Radiological Emergency Preparedness Section,  
 Dept. Of Homeland Security  
 D. Tubbs, Manager of Nuclear  
 MidAmerican Energy Company

cc w/encls 1, 2, 3, and 4: K. Moser, Training Manager

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Letter to Mr. Christopher M. Crane from Mr. Hironori Peterson dated July 26, 2007.

SUBJECT: QUAD CITIES NUCLEAR POWER STATION  
NRC INITIAL LICENSE EXAMINATION REPORT 05000254/2007301(DRS);  
05000265/2007301(DRS)

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U.S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-254: 50-265  
License Nos: DPR-29; DPR-30

Report No: 05000254/2007301(DRS); 05000265/2007301(DRS)

Licensee: Exelon Company

Facility: Quad Cities Nuclear Power Station, Units 1 and 2

Location: Cordova, Illinois

Dates: April 16 through June 28, 2007

Examiners: R. K. Walton, Chief Examiner  
C. Moore, Examiner  
D. Reeser, Examiner  
R. Daley, (Examiner In Training)

Approved by: Hironori Peterson, Chief  
Operations Branch  
Division of Reactor Safety

## SUMMARY OF FINDINGS

ER 05000254/2007301(DRS); 05000265/2007301(DRS); 04/16/2007 - 06/28/2007;  
Exelon Company; Quad Cities Nuclear Power Station; 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.

### Examination Summary:

- Seven examinations were administered (six senior reactor operator and one reactor operator).
- All applicants passed all sections of their examinations resulting in the issuance of six senior reactor operator and one reactor operator licenses.

## REPORT DETAILS

### 4. OTHER ACTIVITIES (OA)

#### 4OA5 Other

##### .1 Initial Licensing Examinations

###### a. Inspection Scope

The NRC Region III, Operator Licensing Branch prepared the examination outline and developed the written examination and operating test. The NRC examiners visited the Quad Cities Training Building to develop the proposed examination during the week of April 16, 2007, with the assistance of members of the facility licensee training staff. The NRC examiners validated the written examination and operating test the week of May 21, 2007. Also, during the on-site development week, the examiners audited three of the license applications for accuracy. The NRC examiners conducted an announced initial operator licensing examination during the week of June 11, 2007. The NRC Region III, Operator Licensing Branch used the guidance prescribed in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, to prepare the outline and develop the written examination and operating test. The examiners administered the operating test, consisting of job performance measures and dynamic simulator scenarios, during the period of June 11 through June 15, 2007. The chief examiner administered the written examination on June 18, 2007. Six senior reactor operators and one reactor operator applicants were examined.

###### b. Findings

###### Written Examination

During a series of validations of the written examination, a number of questions were modified or replaced. Changes made to the written examination were documented on Form ES-401-9, "Written Examination Review Worksheet" which is available electronically in the NRC Public Document Room or from the Publicly Available Records component of NRC's document system (ADAMS). On June 25, 2007, the licensee submitted one post-examination comment for consideration by the NRC examiners when grading the written examination. The post-examination comments and the NRC resolution for the post-examination comments are contained in Enclosure 3 of this document, "Post Examination Comments and Resolutions." The NRC examiners graded the written examination on June 27, 2007, and conducted a review of each missed question to determine the accuracy and validity of the examination questions.

###### Operating Test

During the validation of the operating test, several Job Performance Measures (JPMs) were replaced and some modifications made to the dynamic simulator scenarios. Several JPMs were replaced for several reasons including: 1) the JPM was performed as part of the licensee's audit exam; 2) a JPM was determined to have the same safety function as a previously selected JPM; and 3) a JPM was determined to be too simplistic

in nature (inadequate difficulty level). Changes made to the operating test were documented in a document titled, "Operating Test Comments," which is available electronically in the NRC Public Document Room or from the Publicly Available Records component of NRC's document system (ADAMS). The NRC examiners completed operating test grading on July 17, 2007.

### Examination Results

Six applicants were administered written and operating tests at the Senior Reactor Operator level. One of the applicants was previously licensed Nuclear Station Operator at Quad Cities Nuclear Power Station. One applicant was administered a written and operating test at the Reactor Operator level. All applicants passed all portions of their examinations and were issued operating licenses.

## .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 in accordance with 10 CFR 55.49, "Integrity of Examinations and Tests," and NUREG-1021, "Operator Licensing Examination Standard for Power Reactors." The examiners reviewed and observed the licensee's implementation and controls of examination security and integrity measures (e.g., security agreements) throughout the examination process.

### b. Findings

The licensee's implementation of examination security requirements during examination preparation and administration were acceptable and met the guidelines provided in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors." No violations of 10 CFR 55.49 occurred during the examination preparation or administration.

## 4OA6 Meetings

### Debrief Meeting

The chief examiner presented the examination team's preliminary observations with Mr. R. Gideon, Plant Manager, and other members of the licensee management on June 18, 2007. The licensee acknowledged the observations and findings presented.



Exit Meeting

A subsequent exit via teleconference was held on June 28, 2007, with Mr. K. Moser, Training Manager, and other members of the licensee, following review of the site post-examination comments. No proprietary items were identified during the administration of the examination nor during the exit meeting with the licensee staff.

ATTACHMENT: SUPPLEMENTAL INFORMATION

## SUPPLEMENTAL INFORMATION

### KEY POINTS OF CONTACT

#### Licensee

R. Gideon, Plant Manager  
\*R. Svaleson, Operations Director  
G. Moore, Nuclear Oversight Manager  
\*K. Moser, Training Manager  
C. Kronich, Shift Operations Supervisor  
\*D. Snook, Operations Training Specialist  
\*M. Jensen, Facility Author  
\*S. Russell, Nuclear Training - Corporate  
\*R. Coon, Nuclear Training - Corporate

#### NRC

\*R. K. Walton, Chief Examiner  
M. Kurth, Site Resident Inspector  
A. Koonce, Resident Inspector (In-Training)

#### IEMA/DNS

B. Ganser, IDNS Inspector

\* Present for the June 28 teleconference exit.

### ITEMS OPENED, CLOSED, AND DISCUSSED

#### Opened, Closed, and Discussed

None

### LIST OF ACRONYMS

ADAMS	Agency-Wide Document Access and Management System
APRM	Average Power Range Monitor
AR	Action Request
CFR	Code of Federal Regulations
DRS	Division of Reactor Safety
LPRM	Local Power Range Monitor
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records System
RO	Reactor Operator
SRO	Senior Reactor Operator
SWR	Simulator Work Request

## SIMULATION FACILITY REPORT

Facility Licensee: Quad Cities Nuclear Power Plant

Facility Licensee Docket No.: 50-254, 50-265

Operating Tests Administered: June 11 through June 15, 2007

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.

Use of the simulator during the development week, validation week and test administration week, the following discrepancies were observed:

ITEM	DESCRIPTION
1	There was one simulator exam scenario delay of approximately 1.5 hours on the morning of May 21, 2007, due to failed hardware. AR 00632021 was written to document the problem.
2	When performing an annunciator test at the simulator 901-5 panel, the red first-hit annunciators did not extinguish until the reset pushbutton was depressed. This differs from the control room. AR00634525 and SWR 10038 were written to document the problem.
3	During validation of a Main Steam Line Break in the MSIV room with failure to isolate, the room temperature indicator indicated approximately 508°F 30 seconds after the break. This was a much higher temperature than the inspectors expected. SWR 10105 was written to document this issue.
4	During administration of the MSIV closure time test per JPM a, AO 1-203-1A, MSIV Inboard Isolation Valve, timed too slowly compared to the validated stroke time. SWR 10110 was written to document this issue.
5	The 3B ERV valve failed to indicate open when given a manual open signal. The licensee attributed this to the open indicating light bulb being about 1/8 turn loose. This condition was documented on Simulator Minor Maintenance item #5578.
6	A candidate placed HPCI in the Trip-Latched condition during a scenario. Later, HPCI was observed as running. The evaluator believed that the simulator was behaving improperly instead of the individual improperly trip-latching HPCI. This condition was previously documented as Simulator Minor Maintenance Item #5555.

## Post Examination Comments and Resolutions

QUESTION: 040 (1.00)

With Unit 2 in Mode 1 on the 60% rod line, Operators raise recirculation flow with both pumps to 80% of rated drive flow.

Assume that the APRM Flow Biased scram signal is set to the analytical value.

The APRM Flow Biased scram set point is now . . .

- A. 108.0%.
- B. 112.2%.
- C. 115.9%.
- D. 125.0%.

Answer: B

### Facility Comment:

Quad Cities Lesson Plan LIC-0703 LPRM/APRM, provided to your office with the original reference material submittal, lists the APRM Flow Biased scram set point Analytical Limit:

APRM HIGH-HIGH Trip Unit set point:  
Analytical Limit 20%  
(Not in Run)

Analytical Limit  
.56 Wd = 71.1% and 125%

Wd is the percentage of recirculation loop flow, which provides a rated core flow of 98 million lbs/hr.

$0.56(80) + 71.1\% = 115.9\%$ . Therefore, the answer to the question should be "C," 115.9%.

A facility requested revision to question might have prompted the error on the key. As originally provided for validation, the question was based on the Tech Spec allowable value for the APRM Flow Biased scram set point (.56Wd+67.4% and 122%) and the correct answer was "B." Following validation, the facility requested revision of the question to base it on the Analytical Limit instead of the Tech Spec allowable value. The Lead Examiner and Facility Representative agreed on the revision prior to approval, but it appears that the key was not revised accordingly.

### Facility Proposed Resolution:

The key provided with the examination lists the answer as "B," but the correct answer should be "C." The facility proposes changing the correct answer for Question 40 from "B" to "C."

## **Post Examination Comments and Resolutions**

### **NRC Resolution:**

Question 40 was revised, following the onsite validation visit, to change the question so that the answer would be based on the Analytical Limit rather than the Technical Specification Allowable Value. The answer key was not updated to reflect the change to the question. The basis for changing the question was, as stated in the Facility Comment, that the set-point value identified in the Facility's training materials is based on the Analytical Limit. With the set-point based on the Analytical Limit the correct answer choice is "C," not "B." The correct answer for Question 40 was changed from "B" to "C" on the answer key.

**WRITTEN EXAMINATIONS AND ANSWER KEYS (RO/SRO)**

RO/SRO Initial Examination ADAMS Accession #ML 072010171.