

December 20, 2007

Mr. Charles G. Pardee  
Chief Nuclear Officer and  
Senior Vice President  
Exelon Generation Company, LLC  
4300 Winfield Road  
Warrenville IL 60555

SUBJECT: BRAIDWOOD STATION, UNITS 1 AND 2,  
NRC INITIAL LICENSE EXAMINATION REPORT 05000456/2007301(DRS);  
05000457/2007301(DRS)

Dear Mr. Pardee:

On December 10, 2007, the NRC completed initial operator licensing examinations at your Braidwood Station. The enclosed report presents the results of the examination which were discussed on December 7 and December 18, 2007, with Mr. Coutu and Mr. Dudek, respectively, and with other members of your staff.

The NRC examiners administered initial license examination operating tests during the week of December 3, 2007. Members of the Braidwood Station Training Department administered an initial license written examination on December 10, 2007, to the applicants. Five senior reactor operator and one reactor operator applicants were administered license examinations. The results of the examinations were finalized on December 19, 2007. Six applicants passed all sections of their examinations resulting in the issuance of five 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. Pardee

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

Sincerely,

**/RA/**

Hironori Peterson, Chief  
Operations Branch  
Division of Reactor Safety

Docket Nos. 50-456; 50-457  
License Nos. NPF-72; NPF-77

Enclosures: 1. Operator Licensing Examination Report  
05000456/2007301(DRS); 05000457/2007301(DRS)  
2. Simulation Facility Report  
3. Written Examinations and Answer Keys (RO/SRO)

cc w/encls 1 & 2: Site Vice President - Braidwood Station  
Plant Manager - Braidwood Station  
Regulatory Assurance Manager - Braidwood Station  
Chief Operating Officer and Senior Vice President  
Senior Vice President - Midwest Operations  
Senior Vice President - Operations Support  
Vice President - Licensing and Regulatory Affairs  
Director - Licensing and Regulatory Affairs  
Manager Licensing - Braidwood, Byron and LaSalle  
Associate General Counsel  
Document Control Desk - Licensing  
Assistant Attorney General  
Illinois Emergency Management Agency  
State Liaison Officer  
Chairman, Illinois Commerce Commission

cc w/encls 1, 2, & 3: G. Dudek, Training Director

C. Pardee

-2-

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

Sincerely,

**/RA/**

Hironori Peterson, Chief  
Operations Branch  
Division of Reactor Safety

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Site Vice President - Braidwood Station  
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 Regulatory Assurance Manager - Braidwood Station  
 Chief Operating Officer and Senior Vice President  
 Senior Vice President - Midwest Operations  
 Senior Vice President - Operations Support  
 Vice President - Licensing and Regulatory Affairs  
 Director - Licensing and Regulatory Affairs  
 Manager Licensing - Braidwood, Byron and LaSalle  
 Associate General Counsel  
 Document Control Desk - Licensing  
 Assistant Attorney General  
 Illinois Emergency Management Agency  
 State Liaison Officer  
 Chairman, Illinois Commerce Commission

cc w/encls 1, 2, & 3: G. Dudek, Training Director

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NAME	NValos		HPeterson				
DATE	12/20/07		12/20/07				

**OFFICIAL RECORD COPY**

Letter to Charles G. Pardee from Hironori Peterson dated December 20, 2007.

SUBJECT: BRAIDWOOD NUCLEAR PLANT, UNITS 1 AND 2  
NRC INITIAL LICENSE EXAMINATION REPORT 05000456/2007301(DRS);  
05000457/2007301(DRS)

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos. 50-456; 50-457  
License Nos. NPF-72; NPF-77

Report No: 05000456/2007301 (DRS);  
05000457/2007301 (DRS)

Licensee: Exelon Nuclear

Facility: Braidwood Nuclear Plant, Units 1 and 2

Location: Braceville, IL

Dates: December 3 through December 10, 2007

Examiners: N. Valos, Chief Examiner  
B. Palagi, Examiner  
C. Zoia, Examiner

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



## **SUMMARY OF FINDINGS**

ER 05000456/2007301(DRS); 05000457/2007301(DRS); 12/03/07 - 12/10/07;  
Braidwood Station, Units 1 and 2; Initial License Examination Report.

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 9.

### Examination Summary:

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

Enclosure 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 December 3, 2007. The facility licensee's training staff 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 December 3 through December 6, 2007. The facility licensee administered the written examination on December 10, 2007. Five senior reactor operator and one reactor operator applicants were examined. During the on-site validation week of October 22, 2007, the examiners audited one license application for accuracy.

###### b. Findings

###### Written Examination

The NRC examiners determined that the written examination, as originally submitted by the licensee, was within the range of acceptability expected for a proposed examination. All changes made to the submitted examination were made in accordance with NUREG-1021, "Operator Licensing Examination Standards for Power Reactors. The licensee had no post examination comments on the written examination.

###### Operating Test

The NRC examiners determined that the operating test, as originally submitted by the licensee, was within the range of acceptability expected for a proposed examination. All changes made to the submitted examination were made in accordance with NUREG-1021, "Operator Licensing Examination Standards for Power Reactors."

###### Examination Results

Six applicants passed all sections of their examinations resulting in the issuance of five senior reactor operator and one reactor operator 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

There was one issue associated with exam security identified by the facility during the week of the onsite validation of the examination. During the Initial License Test (ILT) training on the simulator on 10/22/07, which occurred immediately following an 8 hour period of NRC ILT validation, an ILT student identified place-keeping marks present in a procedure. This situation was considered potentially significant, since the place-keeping marks in a procedure can identify an event in a simulator exam scenario, and thus invalidate the simulator event. The issue was documented in the corrective action program as IR 00687959 and the station performed a Quick Human Performance Investigation (QHPI) associated with the issue.

The NRC was appropriately notified of this issue. As a result of the event, one simulator event was changed in a scenario. We reviewed and assessed the issue for a possible violation of 10 CFR 55.49, "Integrity of Examinations and Tests." With the actions taken, it was determined that no actual examination compromise had occurred. The event was considered minor in nature and was not subject to enforcement action in accordance with NRC enforcement policy.

Other than the issue identified above, 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 and administration.

## .3 Failure to Control Regulatory Guide 1.97 Instrumentation Marking

### Introduction:

The inspectors identified an Unresolved Item (URI) concerning the lack of procedural controls for labeling Regulatory Guide (RG) 1.97 post-accident indications on the main control room control panels.

Description:

The NRC examiners initially questioned the process for marking the post-accident monitoring indicators in the simulator and both the Unit 1 and Unit 2 control rooms during the week of the onsite validation for the examination (i.e., the week of October 22, 2007). An NRC information request was documented as Issue Report (IR) 00688723, but was only partially completed by the time the examination was given during the week of December 3, 2007. Remaining IR actions included:

- Determine the extent of the station's commitment to RG 1.97, and then per Technical Specifications Table 3.3.3-1, "Post Accident Monitoring Instrumentation," identify those instruments required to be properly marked;
- Evaluate the Operations Department and labeling procedures for changes required to maintain the RG 1.97 requirements; and
- Evaluate operator training for the need to familiarize licensed operators with RG 1.97 equipment marking.

Based on information received to date, the RG 1.97 instrumentation marked with a "black dot" is tracked within the Passport computer database but is not procedurally controlled. The inspectors identified several instruments on the Unit 1 control panels and in the simulator that were not properly marked, and informed the licensee.

The lack of procedural controls for labeling RG 1.97 post-accident indications on the control panels appeared to be a violation of NRC requirements, but is considered an Unresolved Item (URI) to allow the licensee to gather and submit the remaining information request items for NRC review. (URI 05000456/2007301-01)

4OA6 Meetings

Exit Meeting

The chief examiner presented the examination team's preliminary observations and findings with Mr. Dudek and other members of the licensee management on December 7, 2007. A subsequent exit via teleconference was held on December 18, 2007, with Mr. Dudek following the determination that there were no site post-examination comments. No proprietary items were identified during the exit meeting with the licensee. The licensee acknowledged the observations and findings presented.

ATTACHMENT: SUPPLEMENTAL INFORMATION

Enclosure 1

**SUPPLEMENTAL INFORMATION**

**KEY POINTS OF CONTACT**

Licensee

T. Coutu, Site Vice president  
G. Dudek, Training Director  
L. Brooks, Operations Services/Operations Director  
R. Gayheart, Operations  
S. Butler, Operations Training Manager  
R. Cameron, ILT Lead  
D. Stiles, Training/Examination Author  
S. Deprest, Corporate Operations Training  
J. Bulek, Nuclear Oversight Lead Assessor  
D. Gullott, Regulatory Assurance

NRC

N. Valos, Chief Examiner  
B. Palagi, Examiner  
C. Zoia, Examiner  
G. Roach, Resident Inspector

**ITEMS OPENED, CLOSED, AND DISCUSSED**

Opened

05000456/2007301-01	URI	Failure to Control Regulatory Guide 1.97 Instrumentation Marking
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Closed

None

Discussed

None

Attachment

## LIST OF ACRONYMS

ADAMS	Agency-Wide Document Access and Management System
CFR	Code of Federal Regulations
DRS	Division of Reactor Safety
ILT	Initial License Test
NRC	Nuclear Regulatory Commission
PARS	Publicly Available Records System
QHPI	Quick Human Performance Investigation
RG	Regulatory Guide
RO	Reactor Operator
SDP	Significance Determination Process
SRO	Senior Reactor Operator
SWR	Simulator Work Request
URI	Unresolved Item

## SIMULATION FACILITY REPORT

Facility Licensee: Braidwood Nuclear Plant, Units 1 and 2

Facility Licensee Docket Nos. 50-456; 50-457

Operating Tests Administered: December 3 through December 6, 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.

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

ITEM	DESCRIPTION
1	During a normal operations evolution in a simulator scenario, the candidates noted that two incorrect Sequence of Events (SER) points actuated when the expected annunciator occurred. When each Main Feedwater Pump (MFP) Lube Oil Level Test control switch was placed in the Low Level position, SER points printed indicating High Level. Similarly, when each MFP was placed in the High Level position, SER points printed indicating Low Level. The SER points need to be reversed. SWR #10529 was written associated with the issue.
2	During the start of a Non-Essential Service Water (WS) Pump, WS header pressure dropped from 95 psig to 75 psig before returning to 120 psig. In addition, the control room "WS HDR Press Low" alarm was received. SWR #10530 was written associated with the issue.

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

RO/SRO Initial Examination ADAMS Accession No. ML073541076.