

August 26, 2005

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

SUBJECT: CLINTON POWER STATION
NRC INITIAL LICENSE EXAMINATION REPORT 05000461/2005301(DRS)

Dear Mr. Crane:

On July 25, 2005, NRC examiners completed initial operator licensing examinations at your Clinton Power Station. The enclosed report presents the results of the examination which were discussed on July 21 and August 3, 2005, with Mr. Bement and Mr. Lindsey, respectively, and with other members of your staff.

The NRC examiners administered an initial license examination operating test during the week of July 18, 2005. A written examination was administered by Clinton Station training personnel on July 25, 2005. One Reactor Operator (RO) and three Senior Reactor Operator (SRO) applicants were administered license examinations. The results of the examinations were finalized on August 25, 2005. Two applicants passed all sections of their respective examinations and one was issued an applicable SRO license. One applicant scored less than 82 percent 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, his license will be withheld until any appeal rights of the failed applicants are exhausted. One applicant failed the written examination and one applicant failed both the written and the operating portion of the examination.

In accordance with 10 CFR Part 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 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).

C. Crane

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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 No. 50-461
License No. NPF-62

Enclosures: 1. Operator Licensing Examination Report 05000461/2005301(DRS)
2. Facility Comments and NRC Resolutions
3. Simulation Facility Report
4. Written Examinations and Answer Keys (RO & SRO)

cc w/encls 1 & 2: Site Vice President - Clinton Power Station
Plant Manager - Clinton Power Station
Regulatory Assurance Manager - Clinton Power Station
Chief Operating Officer
Senior Vice President - Nuclear Services
Vice President - Operations Support
Vice President - Licensing and Regulatory Affairs
Manager Licensing - Clinton Power Station
Senior Counsel, Nuclear, Mid-West Regional Operating Group
Document Control Desk - Licensing

cc w/encls 1, 2, 3 & 4: J. Lindsey, Training Manager

C. Crane

-2-

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Docket No. 50-461
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1. Operator Licensing Examination Report 05000461/2005301(DRS)
 2. Post Examination Comments and Resolution
 3. Simulation Facility Report
 4. Written Examinations and Answer Keys (RO & SRO)

cc w/encls 1 & 2:

- Site Vice President - Clinton Power Station
- Plant Manager - Clinton Power Station
- Regulatory Assurance Manager - Clinton Power Station
- Chief Operating Officer
- Senior Vice President - Nuclear Services
- Vice President - Operations Support
- Vice President - Licensing and Regulatory Affairs
- Manager Licensing - Clinton Power Station
- Senior Counsel, Nuclear, Mid-West Regional Operating Group
- Document Control Desk - Licensing

cc w/encls 1, 2, 3 & 4: J. Lindsey, Training Manager

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U. S. NUCLEAR REGULATORY COMMISSION

REGION III

Docket Nos: 50-461
License Nos.: NPF-62

Report No: 05000461/2005301(DRS)

Licensee: Exelon Generation Company, LLC

Facility: Clinton Power Station

Location: Route 54 West
Clinton, IL 61727

Dates: July 18 through July 25, 2005

Examiners: C. Phillips, Chief Examiner
R. Walton, Examiner

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

Enclosure 1

SUMMARY OF FINDINGS

ER 05000461/2005301(DRS); 07/18/2005 - 07/25/2005(DRS); Clinton Power Station; Initial License Examination Report.

The announced operator licensing initial 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:

- Four examinations were administered (three Senior Reactor Operator (SRO) and one Reactor Operator (RO)).
- Two SRO applicants passed all sections of their respective examinations, one was issued a SRO license. One applicant scored less than 82 percent 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, his license will be withheld until any appeal rights of the failed applicants are exhausted. One RO applicant failed the written and the operating examination, and one SRO applicant failed the written examination and received proposed denial letters. (Section 40A5.1)

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 weeks of July 18 and July 25, 2005. The facility's training staff used the guidance established in NUREG-1021, "Operator Licensing Examination Standards for Power Reactors," Revision 9, 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 July 18, 2005. Clinton Power Station training staff members administered the written examination on July 25, 2005. One Reactor Operator and three Senior Reactor Operator applicants were examined.

b. Findings

Written Examination

The licensee developed the written examination. During their initial review, the examiners determined that the examination, as submitted by the licensee, was within the range of acceptability expected for a proposed examination. During examination validation the week of June 20, 2005, examination changes agreed upon between the NRC and the licensee were incorporated according to the guidance contained in NUREG-1021.

Two of four applicants passed the written examination. The licensee submitted two post-examination comments to the written examination. The examiners accepted one of the two requested changes. The change resulting from the examiner's post-examination review are documented in Enclosure 2, Post Examination Comments and Resolution.

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. Examination changes, agreed upon between the NRC and the licensee, during the examination validation the week of June 20, 2005, were made according to NUREG-1021.

Examination Results

Two SRO applicants passed all sections of their respective examinations, one was issued a SRO license. One applicant scored less than 82 percent 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, his license will be withheld until any appeal rights of the failed applicants are exhausted. One RO applicant failed the written and the operating examination, and one SRO applicant failed the written examination and received proposed denial letters.

.2 Examination Security

a. Examination Security 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). The examiners reviewed and observed the licensee's implementation 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 was acceptable. However, during the development of the initial license examination, the licensee notified the NRC of one issue which had the potential to affect the integrity of the examination.

The issue associated with examination security was identified by the licensee on May 4, 2005, that a licensed SRO signed an on-the-job training (OJT) book for a license candidate after the SRO had signed the examination security agreement. The NRC's requirements in this area were found in NUREG - 1021, "Operator Licensing Examination Standards For Power Reactors," Revision 9, Form 201-3 states, in part, that the individual signing the security agreement understands that they are not to instruct, evaluate, or provide performance feedback to those applicants scheduled to be administered a licensing examination. Both the SRO and the license candidate stated that the conversation was limited to watch relief and turnover. An evaluation was conducted, wherein it was determined that no actual examination compromise occurred because of the nature of the OJT topic and the extent to which the SRO was involved in the preparation of the examination material. The licensee's corrective actions included providing a "read and sign" briefing to all initial license training candidates emphasizing that individuals wearing white initial license training Licensing Examination Security badges should not be sought out for any training or signatures. In addition, the licensee contacted all personnel on the NRC examination security agreement, and reemphasized the examination security requirements including the prohibition on conducting line training observations.

The licensee documented this issue in their corrective action program as Action Request (AR) Number 331956. The NRC chief examiner was appropriately notified of the issue. The examiners reviewed the licensee's investigation and assessed the issue for a possible violation of 10 CFR 55.49, "Integrity of Examinations and Tests." The examiners determined that no actual examination compromise had occurred. The violation was considered minor in nature and was not subject to enforcement action in accordance with NRC enforcement policy.

After the licensee conducted their audit examination the licensee decided not to put six operators up for the examination. However, after it was decided that these six operators would not take the examination and before the NRC approved examination was administered to the actual candidates, the licensee administered the approved NRC examination to three of the six candidates not approved to take the examination. Those that took the NRC examination early were placed on the security agreement prior to the administration of the examination. There was no regulatory requirement to prevent the licensee from administering the examination to the three applicants. However, this was considered a very unorthodox method of utilizing the approved NRC examination material. The licensee was cautioned about the potential impact on examination security by administering the examination to unauthorized plant personnel not authorized to take the NRC examination prior to the administration of the examination to the approved candidates.

4OA6 Meetings

.1 Exit Meetings

The chief examiner presented the examination team's preliminary observations and findings on July 21, 2005, to Mr. Bement and other members of the Clinton Power Station Operations and Training Department staff. A subsequent exit with the training manager Mr. J. Lindsey, was held on August 3, 2005. The purpose of the re-exit was to acknowledge the receipt and review of the licensee's post-examination comments on the written examination. No proprietary information was identified by the station's staff during the exit meeting. The licensee acknowledged the observations and findings presented.

ATTACHMENT: SUPPLEMENTAL INFORMATION

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Licensee

R. Bement, Vice President, Clinton Station
W. Iliff, Reg. Assurance Manager
T. Marini, Nuclear Oversight Manager
A. Bailey, Operations Training Manager
M. McDowell, Plant Manager
W Carsky, Shift Operations Superintendent
R. Swenson, Training Director (Acting)

Nuclear Regulatory Commission

C. Phillips, Chief Examiner
H. Peterson, Chief Operations Branch, Region III
B. Dickson, Senior Resident Inspector
D. Tharp, Resident Inspector

ITEMS OPENED, CLOSED AND DISCUSSED

Opened, Closed, and Discussed

None

LIST OF ACRONYMS

ADAMS	Agency-Wide Document Access and Management System
AR	Action Request
DRS	Division of Reactor Safety
NRC	Nuclear Regulatory Commission
OJT	On-The-Job Training
RO	Reactor Operator
SRO	Senior Reactor Operator

POST EXAMINATION COMMENTS AND RESOLUTION

Written Examination Question #81 on the Senior Reactor Operator (SRO) Examination:

The plant is operating at rated power, when the following occurs:

- q A PARTIAL loss of Drywell Cooling (VP) occurs
- q As a result:
 - o Drywell Average Air Temperature rises and STABILIZES at 145.6°F
 - o Drywell-to-Primary Containment d/p rises and STABILIZES at +1.1 psid

Which ONE of the following describes:

- (1) the required action, and
- (2) the POTENTIAL consequence of NOT taking that action?
 - A. (1) Restore the Drywell-to-Primary Containment d/p to within its Tech Spec limits
(2) Weir wall overflow, should an inadvertent upper pool dump occur.
 - B. (1) Restore the Drywell-to-Primary Containment d/p to within its Tech Spec limits.
(2) DIRECT communication of the blowdown energy contained in the drywell airspace, to the suppression pool inventory, should a LOCA occur.
 - C. (1) Restore the Drywell Average Air Temperature to within its Tech Spec limits.
(2) Drywell temperatures in excess of the drywell STRUCTURAL design temperature, should a LOCA occur.
 - D. (1) Restore the Drywell Average Air Temperature to within its Tech Spec limits.
(2) Drywell temperatures in excess of the drywell EQUIPMENT QUALIFICATION temperatures, should a COMPLETE loss of VP occur.

Answer: B

Facility Comment:

Choice B is not completely correct. Part (2) *“DIRECT communication of the blowdown energy contained in the drywell airspace, to the suppression pool inventory, should a LOCA occur,”* describes the circumstance that is EXPECTED to occur during a LOCA and not the POTENTIAL consequences of NOT restoring an “out-of-limit” Drywell to Containment dP during non-LOCA conditions. This statement would apply regardless of initial conditions and therefore is NOT a consequence of a high out of spec Drywell to Containment dP. Therefore the keyed answer did not address the question.

Conditions of the stem indicate that drywell pressure is higher than Containment press, therefore the following wording from CPS ITS 3.6.5.4 Bases apply:

*"The limitation on positive drywell-to-primary containment differential pressure helps ensure that the horizontal vents are not cleared with **normal** weir annulus water level and limits drywell pressure during an accident to less than the drywell design pressure."*

A limitation on the drywell-to-primary containment differential pressure of -0.2 and $+1.0$ psid is required to ensure that suppression pool water is not forced over the weir wall, vent clearing does not occur during normal operation, containment conditions are consistent with the safety analyses, and LOCA drywell pressures and pool swell loads are within design values.

Nothing in the stem conditions indicate that a LOCA condition exists nor that weir level is other than normal.

An example of a correct answer for this portion of the question would then be:

2) Clearing of the vents during normal operation.

Choices A, C, and D are incorrect for the conditions stated in the key.

It is therefore felt that there is no completely correct answer for the question and that it should be deleted.

Resolution:

The licensee's comment is that the answer is not completely correct and that there is a better answer available for the question. However, the answer is correct as originally stated, whereas the other three answers are clearly incorrect. The question asks what is the POTENTIAL consequence of NOT returning the differential pressure between the drywell and the containment to within the Technical Specification value. DIRECT communication of the blowdown energy contained in the drywell airspace, to the suppression pool inventory, should a LOCA occur is a potential consequence of having a starting point for drywell to containment differential pressure that is too high. Answer A would only be correct for a situation where drywell pressure was less than containment pressure which is clearly not the case. Answers C and D are incorrect because the drywell temperature listed does not exceed the drywell temperature Technical Specification Limiting Conditions for Operation. Therefore, answer B is correct and the question will not be deleted.

POST EXAMINATION COMMENTS AND RESOLUTION

Written Examination Question #96 on the Senior Reactor Operator (SRO) Examination:

Using the provided references, answer the following.

The plant is operating at rated power, when the following occurs:

- (3) At Time = 0 minutes, ALL annunciators on P877 are lost due to a blown power supply
- (4) At Time = +20 minutes, an UNISOLABLE primary system discharge causes operators to enter EOP-8 because an Area Temperature has JUST REACHED its EOP-8 entry value
- (5) At Time = +55 minutes, as directed by EOP-8, operators perform an RPV Blowdown

Which ONE of the following identifies the LATEST time:

- q by when the FIRST required State/Local agency NOTIFICATION must be completed, and
- q by when the event MUST be ESCALATED to the HIGHEST Classification Level necessary for these plant conditions?
 - A. (1) Time = +30 minutes
(2) Time = +35 minutes
 - B. (1) Time = +45 minutes
(2) Time = +40 minutes
 - C. (1) Time = +50 minutes
(2) Time = +70 minutes
 - D. (1) Time = +85 minutes
(2) Time = +70 minutes

Answer: C

Facility Comment:

There is no correct answer to this question. Stem conditions state (in part), *“At Time = +20 minutes, an UNISOLABLE primary system discharge causes operators to enter EOP-8 because an Area Temperature has JUST REACHED its EOP-8 entry value”*.

Facts:

- q The word UNISOLABLE is defined in EP-AA-1003 as “A breach or leak that cannot be isolated from the Control Room or within 15 minutes by operators in the field.” Therefore if a leak has been classified as UNISOLABLE, an unsuccessful attempt has been made either in the MCR or the field (or both) to isolate it. The question does not elaborate as to the reason for this condition.

- q The phrase “an area temperature has just reached its EOP entry value” defines the particular temperature as the Max Normal, vice the Max Safe temperatures. (Refer to CPS EOP-8 and to Table F1 in EP-AA-1003 page CL 3-8).

The keyed answer justifying C as correct makes the assumption that the only EAL threshold of concern at time +20 minutes is that related to the Max Normal area temperature (FA1). However with both a Max Normal temperature AND an UNISOLABLE discharge, the appropriate EAL would be FS1 based on Potential Loss of RCS (related to area temperature Table F1) AND Loss of Containment (related to either c.1 or c.2).

This therefore changes the correct answer for part 2 of the question:

- 2) *by when the event MUST be ESCALATED to the HIGHEST Classification Level necessary for these plant conditions?*

Given that:

- 1) The highest classification is FS1,
- 2) The event requiring classification of FS1 actually occurs at +20 minutes, and
- 3) The SM takes the full allowed time of 15 minutes to classify the event,

The correct answer to part 2 is 35 minutes. Part 1 remains correct since the escalation from a UE to a SAE occurs before the notification for the UE must be made. (Refer to EP-AA-111)

In summary, the correct answer should be:

- 1) 50 minutes
- 2) 35 minutes

Resolution:

The examiner agreed with the licensee’s comment that there is no correct answer to this question. The examiner agreed with the licensee’s comment that the question does not state where the leakage is coming from or why it is unisolable. Therefore, it is possible to reach the conclusion that the leakage is coming from a system inside the containment and through a hole in the containment wall. If this is the case postulated then it is logical to assume there is a simultaneous reactor coolant system leak and containment breach. If this were the case then the applicant could assume a site area emergency (FS1) at time +20. In that case there is no correct answer to the question.

SIMULATION FACILITY REPORT

Facility Licensee: Clinton Station

Facility Docket No.: 50-461

Operating Tests Administered: July 18-21, 2005

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 JPM H - Perform a SF Valve Stroke Timing Test the candidate was required to time a valve stroke in the closed direction. Due to a short in valve position indication the valve did not appear to change position which impacted the outcome of the JPM. However, the JPM provided enough information that it did not have to be replaced.
2.	During the Scenario 3, a bearing temperature indication for a SW pump indicated that the bearing temperature was high prior to starting the pump. The staff recovered by telling the applicant that the computer point had a work ticket written and that the indication was erroneous.
3.	There was one example where the simulator was indicating unexpectedly. During Reactor Operator Administrative JPM 1, "Control Rod Withdrawal Checklist – Mode 3," the IRM recorders had not had the power turned on by the simulator operator. This resulted in a failed channel check. The examiner had to tell the applicant that the simulator was in error because the examiner did not know what the impact of the failed channel check might have on the outcome of the JPM if allowed to continue.