

**FACILITY POST-EXAMINATION COMMENTS**

**FOR THE CLINTON INITIAL EXAMINATION - JULY 2005**

# AmerGen

An Exelon Company

Clinton Power Station  
R. R. 3, Box 228  
Clinton, IL 61727

U-603743  
July 29, 2005

Mr. J. L. Caldwell  
Regional Administrator, Region III  
U. S. Nuclear Regulatory Commission  
2443 Warrenville Road, Suite 210  
Lisle, Illinois 60532-4352

Clinton Power Station  
Facility Operating License No. NPF-62  
NRC Docket No. 50-461

Subject: Comments Regarding Reactor Operator License  
Examination Question Administered on July 25, 2005

This letter is to request that questions 81 and 96 be removed from the Senior Reactor Operator License Examination administered on July 25, 2005. Enclosed are the questions and associated documentation that justifies this request. Required references have been provided with the original exam submittal on letter U-603730 dated May 26, 2005.

If you should have any questions concerning this matter please contact Mr. G. D. Setser at (217) 937-4122.

Sincerely yours,



William S. Ilff  
Regulatory Assurance Manager  
Clinton Power Station

EET/blf

Attachments

cc: NRC Clinton Licensing Project Manager (w/o Attachment)  
NRC Resident Office, V-690 (w/o Attachment)

[Redacted]

Gary Setser provided  
to originator. I never  
received the attachment.

*C. Phillips* rec'd 8/1/2005

*Copy* AUG 04 2005

*Brenda Fore*

DATE: 7/25/05

SUBMITTED BY: CPS

RO/SRO

Sheet \_\_\_\_ of \_\_\_\_

EXAM: WRITTEN

Test Item (Question.)	Concern or Problem	Recommended Resolution	Reference	Remarks
1	Missed by RO and 1 SRO-I	No grading change required, however distractor C can be enhanced by adding "Standby Liquid Control <u>PUMP B</u> "		Keyed answer is correct. SRO-I chose answer B and RO chose C.
2	Missed by 2 SRO-I	No grading change No candidate comments.		Both chose answer B. Possible knowledge weakness related to DC distribution and DC control power schemes. Some candidates felt the simulator responded differently than the correct answer.
5	Missed by 1 SRO-I, SRO-U	No grading change No candidate comments.		Both chose B. Choice based on faulty reading of the question (asking for single rod, answered for all rods).
6	Missed by RO, 2 SRO-I and SRO-U	No grading change No candidate comments.		100% missed. Question relates to SRM shorting links. While this question addresses the chosen K/A, it is strictly related to system knowledge.
9	Missed by 2 SRO-I and RO	No grading change Correct technical errors in justification for why answer A/C incorrect.		2 SRO-I chose A, RO chose C.
11	Missed by RO, 2 SRO-I and SRO-U	No grading change No candidate comments.		100% missed. All candidates chose A. Possible training weakness. Relates to NSPS/VG inter-relationship.

15	Missed by 1 SRO-I, SRO-U	No grading change Modify "fact" in stem as follows: "...DIRECTLY proportional to the PRESENT battery capacity (in ampere-hours).		2 part question related to battery hydrogen production and loss of battery room ventilation. Required knowledge of procedural requirements for loss of battery room ventilation. TR 2005-07-0082A submitted.
25	Missed by RO and 1 SRO-I	No grading change. Modify portion of stem by deleting statement in parantheses.		Both chose A. Relates to Fire Pump trip signals.
34	Missed by RO and 1 SRO-I	No grading change No candidate comments.		Both chose D. Correct answer required knowledge of various EOP related parameter setpoints in relation to EOP entry conditions.
38	Missed by RO and 1 SRO-I	No grading change No candidate comments.		Both chose B. Required recognition between interrelationship of RR EOP-RPT circuit and downshift circuit.
39	Missed by RO and SRO-I	No grading change No candidate comments.		Both chose A. Required knowledge of loads on DC distribution busses.
46	Missed by 1 SRO-I	No grading change Candidate commented that although the procedure is clear that Containment temperatures are not available , he had been trained that if parameter showed "green" (good data) it can be used. This parameter does not show green during SBO.		Chose C Missed by one candidate, listed here to capture the candidate comment.
49	Missed by 2 SRO-I and SRO-U	No grading change No candidate comments.		2 chose B, one chose C. This question required knowledge of the low pressure operating mode of the RT letdown flowpath.

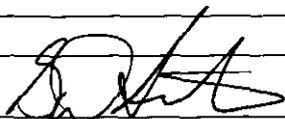
51	Missed by RO and 2 SRO-I	No grading change		2 chose D, one chose A. Candidates initially commented that C & D were correct, but after review of the procedure (which was provided for the test) agreed that only one answer correct.
69	Missed by RO, 1 SRO-I, and SRO-U	No grading change Enhancement only: Remove the word ZONE from distractor A and C		All chose A. General knowledge weakness of the refueling bridge interlocks.
77	Missed by 2 SRO-I	No grading change. Enhancement. Add to stem "...and squib valves will not fire".		Both chose C. Apparent lack of recognition that the RSD procedure does contain procedure steps that allow termination and prevention of HPCS, Feedwater, and RCIC remotely. Specific comment was that the RSD procedure does not contain a section called "Terminate and Prevent". TR 2005-07-0083A written
81	Missed by 1 SRO-I, SRO-U	DELETE QUESTION See attached table with justification for this action.		No correct answer.
87	Missed by 2 SRO-I	No grading change		Both chose B. Answering this question required detailed knowledge of the power to flow map, specifically location on map where upshift occurs relative to procedural requirements and boundaries of Controlled Entry Regions.
96	Missed by 1 SRO-I	DELETE QUESTION See attached table with justification for this action.		No correct answer

Additional comments: All questions missed by 2 or more candidates analyzed.

Exam Analyzer comments: Separate table attached with justifications for 2 proposed deletions.

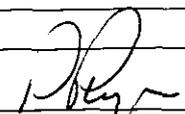
Final Resolution:

Reviewed by:

 17/29/05

Facility Author / Date

Approved by:

 17/29/05

Facility Representative / Date

Question Number	Keyed Answer	Pertinent Reference	Proposed Action	Justification
81 (Attached)	B	CPS ITS 3.6.5.4 and Bases	Delete Question	<p>Choice B is not completely correct. Part (2) "<i>DIRECT communication of the blowdown energy contained in the drywell airspace, to the suppression pool inventory, should a LOCA occur</i>", 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.</p> <p>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:</p> <p>"The limitation on positive drywell-to-primary containment differential pressure helps ensure that the horizontal vents are not cleared with <b>normal</b> weir annulus water level and limits drywell pressure during an accident to less than the drywell design pressure".</p> <p>A limitation on the drywell-to-primary containment differential pressure of <math>\geq -0.2</math> and <math>\leq +1.0</math> psid is required to ensure that suppression pool water is not forced over the weir wall, <u>vent clearing does not occur during normal operation</u>, containment conditions are consistent with the safety analyses, and LOCA drywell pressures and pool swell loads are within design values.</p> <p>Nothing in the stem conditions indicate that a LOCA condition exists nor that weir level is other than normal.</p>

				<p>An example of a correct answer for this portion of the question would then be:</p> <p>2) Clearing of the vents during normal operation.</p> <p>Choices A, C, and D are incorrect for the conditions stated in the key.</p> <p>It is therefore felt that there is no completely correct answer for the question and that it should be deleted.</p>
96 (attached)	C	EP-AA-1003 EP-AA-111 EP-AA-112-100	Delete Question	<p>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".</p> <p>Facts:</p> <ol style="list-style-type: none"> <li>1) 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 <u>unsuccessful</u> 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.</li> <li>2) 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).</li> </ol> <p>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).</p> <p>This therefore changes the correct answer for part 2 of the question:</p>

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

### Question #81

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

- A PARTIAL loss of Drywell Cooling (VP) occurs
- As a result:
  - Drywell Average Air Temperature rises and STABILIZES at 145.6°F
  - 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

**Explanation:**

B is correct – Per Tech Spec 3.6.5.4, 1.1 psid is beyond the upper limit of 1.0 psid. Condition A requires that *d/p* be restored to within the limits within 1 hour. Refer to Basis for this LCO, B 3.6.5.4, page B 3.6 – 122, the 'Background' discussion portion that reads...*"The limitation on positive..."*. This discussion means that too high a drywell-to-CNMT can cause the vents to be *already uncovered* ('cleared') at the onset of a DBA LOCA (as a result of the downward force on the annulus water level). If a LOCA, then, were to occur, the RPV blowdown energy would communicate directly into the suppression pool inventory. See LP85223, Figure 2 for an illustration of this physical arrangement.

A is incorrect – Part (1) is correct, but Part (2) describes the consequence of too low a *d/p* (i.e., below the lower LCO limit of -0.2 psid). Refer to the same page B 3.6 – 122 discussion.

C and D are incorrect – The 'stabilized' drywell average air temperature of 145.6°F is lower than the entry point for Tech Spec 3.6.5.5 (i.e., 146.53°F).

Objective:	Question Source:	Level of Difficulty:
LP85223.1.16	New	3.3

References provided to examinee:	None
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<b>References:</b>	CPS Tech Spec 3.6.5.4, Drywell Pressure (and its Bases)  CPS Tech Spec 3.6.5.5, Drywell Average Air Temperature (and its Bases)  LP85223, Primary Containment
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<b>Date Written:</b>	03/31/05	<b>Author:</b>	Ryder
<b>Comments:</b>			
<p>Although Part (1) is arguably a requirement for both RO/SRO Candidates, Part (2) is not. Part (2) asks for the potential 'consequence' of not restoring the LCO limits, which is only found in the Tech Spec Bases (as well as in the USAR). What's more, it is the Part (2) requirement that applies the KA statement's 'ability to interpret' portion. This question is in fact presented at an SRO-only level.</p>			

**MODIFIED/NRC Enhancement.** Deleted all reference to times in all distractors (ie...within X hours). Changed stem from "Drywell-to-Primary Containment d/p rises and STABILIZES at +1.2 psid" to "Drywell-to-Primary Containment d/p rises and STABILIZES at +1.1 psid".

GDSetser 6/14/05

**Question #96**

Using the provided references, answer the following.

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

- At Time = 0 minutes, ALL annunciators on P877 are lost due to a blown power supply
- 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
- At Time = +55 minutes, as directed by EOP-8, operators perform an RPV Blowdown

Which ONE of the following identifies the LATEST time:

- (1) by when the FIRST required State/Local agency NOTIFICATION must be completed,  
and  
(2) 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

**Explanation:**

C is correct – Part (1): The earliest that an EAL threshold is reached is at Time = +15 minutes, for EAL 'MU6' (see CPS Annex page CL 3-11). Per EP-AA-112-100, Section 2.1, the Shift Manager (SM) would have until Time = +30 minutes to classify/declare the event as a UE, and until Time = +45 minutes to complete the required State/Local notifications. However, at Time = +20 minutes, the 'FA1' EAL threshold is reached due to a 'Potential Loss of RCS' (see Annex page CL 3-8). Again, the SM would have until Time = +35 minutes ( $20 + 15 = 35$ ) to classify/declare the event as an ALERT. Per EP-AA-111, Section 4.1, the 2<sup>nd</sup> NOTE, once this higher classification level is declared, if the UE notification has not yet been made, the UE event is essentially dismissed (without further consideration), in favor of the more 'severe' ALERT event declaration. In other words, given these stem conditions, the UE event (loss of annunciators) does not result in a 'First required' State/Local agency notification. Rather, the SM has until Time = +50 minutes to complete the ALERT notifications. And since the next plant transient that requires a re-classification (escalation) to an SAE (i.e., the RPV Blowdown) doesn't even occur until Time = +55 minutes, the SM does in fact get a chance to complete the ALERT notifications at Time = +50 minutes. This, therefore, amounts to the 'First required' State/Local agency notification for these given plant conditions. Part (2): An SAE is the highest classification required for these plant conditions (i.e., the 'FS1' EAL is reached due to Loss of Containment; see Annex page CL 3-8). Again, per EP-AA-112-100, Section 2.1, the SM must declare this escalation (from an ALERT) no later than Time = +70 minutes ( $+55 + 15$  minutes = +70 minutes).

A is incorrect – For the reasons already described above. Part (1) is plausible to the Candidate who disregards the EP-AA-111, Section 4.1, requirements, and mistakenly applies a +30 minute requirement ( $+15 + 15 = +30$  minute) of EP-AA-112-100, Section 2.1, to the start of the 'threshold clock' for 'MU6'. Part (2) is plausible to the Candidate who recognizes the need to escalate to an ALERT by no later than Time = +35 minutes (FA1 threshold at Time = +20, +15 minutes to classify, per EP-AA-112-100, Section 2.1). This Candidate does not recognize that the RPV Blowdown at Time = +55 minutes results in a further escalation to an SAE ('FS1' EAL).

B is incorrect – For the reasons already described above. Part (1) is plausible to the Candidate who, although correctly waits for the MU6 threshold clock to become 'active' (i.e., the threshold is met) before

applying the +30 minute allowance of EP-AA-112-100, Section 2.1, fails to apply the EP-AA-111, Section 4.1 requirement that essentially dismisses the MU6 event. Part (2) is designed to provide psychometric balance with Part (2) of choice 'D' (i.e., a time value that is earlier than its associated Part (1) value). It has sufficient face validity for the thoroughly confused Candidate, as well.

D is incorrect – For the reasons already described above. This choice (both Parts) is plausible to the Candidate who cannot effectively translate the earlier of the EOP-8 actions identified in the stem conditions, and instead simply applies the final state of the plant (RPV Blowdown is progress) and concludes that EAL 'FS1' applies. This Candidate will necessarily recognize that the SM has 15 minutes to classify the SAE (i.e., Time = +55 minutes + 15 minutes = +70 minutes), yielding Part (2) of the answer choice. Similarly, the SM has an additional 15 minutes, from Time = +70 minutes, to complete the State/Local notifications (Time = +70 + 15 minutes = +85 minutes), yielding Part (1) of the answer choice.

Objective:	Question Source:	Level of Difficulty:
LP87537.1.10	New	3.3

<b>References provided to examinee:</b>	EP-AA-1003, Clinton Radiological Annex, pages CL 3-6 thru 3-13 EOP flowcharts
<b>References:</b>	EP-AA-1003, Clinton Radiological Annex EP-AA-112-100, Control Room Operations EP-AA-111, Emergency Classification and PARs CPS EOP-8, Secondary Containment Control

<b>Date Written:</b>	05/16/05	<b>Author:</b>	Ryder
<b>Comments:</b> None			