

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

1. 001 G2.1.31 091

Given the following:

- Unit 1 was operating at 90% power when a power reduction was initiated.
- The power reduction was terminated when LCO 3.1.5, Rod Group Alignment Limits, REQUIRED ACTION was entered due to Control Bank D rod H8 becoming misaligned above the bank position.
- 1-AOI-2, "Malfunction of Reactor Control System," is entered.
- 40 minutes after LCO 3.1.5 REQUIRED ACTION was entered, the rod has been repaired and following conditions exist:
  - Reactor power is 72%.
  - 1-RBSS, ROD BANK SELECT is in MAN.
  - RCCA H8 lift coil has been placed in the DISCONNECT position.
  - All other Control Bank D RCCA lift coils in the CONNECT position.
  - The OAC request permission to begin rod realignment using 1-FLRM, ROD MOTION CONTROL.

Which ONE of the following completes the statement below?

The unit status and Control Room rod control switches/indications (1) reflect the desired plant lineup for realignment of the misaligned control rod in accordance with 1-AOI-2 because (2).

- |    | <u>(1)</u>    | <u>(2)</u>                                                |
|----|---------------|-----------------------------------------------------------|
| A. | do            | realignment is being conducted at <100% power             |
| B✓ | do            | local xenon redistribution will not yet be significant    |
| C. | do <b>NOT</b> | the lift coil switches are not in the proper alignment    |
| D. | do <b>NOT</b> | bank sequence and overlap will not be properly maintained |

**QUESTIONS REPORT**  
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**DISTRACTOR ANALYSIS:**

- A. *Incorrect, Plausible because the positioning of the rod disconnect switches is correct and because while the power would be required to be less than 100% to realign the rod if the elapsed time had been longer, being less than 100% power is not the reason for the alignment of the switches.*
- B. *Correct, as the rod will be recovered Bank to Rod, the disconnect switch for the affected rod will be positioned in the disconnect position (up direction). This mode of operation is directed by 1-AOI-2, Malfunction of Reactor Control System and is reflective of the Tech Specs. T/S LCO 3.1.5 demonstrates that local xenon redistribution within 1 hour of rod misalignment is not significant.*
- C. *Incorrect, Plausible because if the rod were to be recovered Rod to Bank as would be required if greater than 1 hour had elapsed, then the position of the disconnect switches would be correct.*
- D. *Incorrect, Plausible because than 1 hour had elapsed the alignment would not be correct and there are alignments of the rod control switches where bank sequencing and bank overlap will not be maintained.*

**Question Number:**   91  

**Tier:**   2   **Group:**   2  

**K/A:** 001 G2.1.31  
001 Control Rod Drive System  
Conduct of Operations  
Ability to locate control room switches, controls, and indications, and to determine that they correctly reflect the desired plant lineup.

**Importance Rating:** 4.6 / 4.3

**10 CFR Part 55:** 41.10 / 45.12

**10CFR55.43.b:** 2

**K/A Match:** K/A is matched because the question requires the ability to determine if the control room switches, controls, and indications correctly reflect the desired plant lineup for realigning a misaligned control rod.

**SRO ONLY:** Question is SRO because it requires detailed knowledge of decision points in an AOI and the Bases for actions allowed in the Tech Spec relating to the Control Rod Drive System.

**Technical Reference:** 1-AOI-2, "Malfunction of Reactor Control System, Revision 0000  
WBN Unit 1 Tech Spec LCO 3.1.5, Rod Group Alignment Limits, (through Amendment 91) and Bases (through Revision 118)

## QUESTIONS REPORT

for WBN NRC SRO 10-2013 written

**Proposed references to be provided:** None

**Learning Objective:** 3-OT-AOI0200  
 12. Given a set of plant conditions, use the AOI to correctly:  
 a. Recognize Entry Conditions.  
 b. Identify Required Actions.  
 c. Respond to Contingencies (RNO).  
 d. Observe and Interpret Cautions and Notes.

3-OT-T/S0302  
 5. Determine the bases for the limits placed on control rod positioning and position monitoring equipment (Rod Insertion Limits, Alignment Limits, and Rod Position Indicating Systems).

**Cognitive Level:**  
 Higher   X    
 Lower       

**Question Source:**  
 New       X        
 Modified Bank         
 Bank       

**Question History:** New question for the WBN 10/2013 NRC exam

**Comments:**

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
 Answer: B B D C D B C C B B Scramble Range: A - D

Created: Monday, May 28, 2012  
 Modified: Wednesday, August 07, 2013  
 Revised:

Source: NEW Source If Bank:  
 Cognitive Level: HIGHER Difficulty:  
 Job Position: SRO Plant: WATTS BAR  
 Date: 10/2013 Last 2 NRC:

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values
<Cumulative>		0.000	0.000	0	N	

--- A ---			--- B ---			--- C ---			--- D ---					
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg
<Cumulative>					Total:	0	100				Omits:	0	0	
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00			

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

2. 004 G2.2.12 286

Given the following:

- Unit 1 is in Mode 3.
- Channel calibration of RCP 1 Seal Water Flow Loop 1-LPF-62-1 is in-progress.
- The instrument mechanics are unable to set the "As-Left" data to within the "As-Left" tolerances due to the failure of 1-FI-62-1A, RCP 1 SEAL WATER FLOW on 1-M-5.
- The ICS point for RCP #1 Seal Injection Flow (F0131A) which is supplied from the same flow transmitter is providing a good indication of the seal injection flow.

Which ONE of the following completes the statements below?

With **NO** further actions taken, a requirement to place the plant in MODE 3 will first be required in (1).

NRC approval (2) be required prior to utilizing compensatory instrumentation in the place of 1-FI-62-1A.

**REFERENCE PROVIDED**

- |    | <u>(1)</u> | <u>(2)</u>       |
|----|------------|------------------|
| A. | 4 hours    | would            |
| B. | 4 hours    | would <b>NOT</b> |
| C. | 30 days    | would            |
| D✓ | 30 days    | would <b>NOT</b> |

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**DISTRACTOR ANALYSIS:**

- A. *Incorrect, Plausible because the applicant may infer that the loop calibration failure impacted T/S LCO 3.5.5, Seal Injection Flow. Component to T/S LCO 3.5.5 is required action A.1, restore within 4 hours. T/S LCO 3.5.5 is surveilled by 1-SI-68-33, Measurement of Reactor Coolant Pump Seal Injection Flow. This SI allows the use of either 1-FI-62-1A or the ICS data point F0131A. As the failure only involves the meter on 1-M-5, 1-SI-68-33 can still be executed as written and thus, no surveillance failure will occur solely based upon this situation. Table 14.10 of Part II of the Fire Protection Report contains 1-FI-62-1A. As such, an entry into required action OR 14.10.1, restore within 30 days is mandated. Part II of the FPR also contains required action OR 14.10.3 (b) which states, "provide a back-up means of instrumentation monitoring for the equipment in Table 14.10." As such, NRC approval is not required to satisfy the intent of the FPR. It would be plausible to believe that such approval would be required if the applicant believed that 1-FI-62-1A were required for the satisfaction of the T/S.*
- B. *Incorrect, Plausible because it may be inferred that the loop calibration failure impacted T/S LCO 3.5.5, Seal Injection Flow. Also, as mentioned, NRC approval is not required to utilize compensatory instrumentation to satisfy the FPR.*
- C. *Incorrect, Plausible because the correct action time in accordance with the FPR is 30 days. Action OR 14.10.3 (d) stipulates that in the event that the inoperable item in table 14.10 can not be restored within the allotted 30 days that the unit be placed in Mode 3 within the next 6 hours. Again, if the applicant believed that 1-FI-62-1A were required for the satisfaction of the T/S the belief that NRC approval would be required would be plausible.*
- D. *Correct, the action time to support required action OR 14.10.1 is 30 days. NRC approval would not be required to utilize compensatory instrumentation.*

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**Question Number:** 86

**Tier:** 2 **Group:** 1

**K/A:** 004 G2.2.12  
Chemical and Volume Control System  
Equipment Control  
Knowledge of surveillance procedures.

**Importance Rating:** 3.7 / 4.1

**10 CFR Part 55:** 41.10 / 45.13

**10CFR55.43.b:** 1

**K/A Match:** K/A is matched because the question requires the knowledge of two of the CVCS surveillance instructions.

**SRO ONLY:** Question is SRO only as it requires knowledge of the the administration of the fire protection program requirements.

**Technical Reference:** Unit 1 Technical Specification 3.5.5 (Amendment 91)  
Part II of the FPR (12/20/2012 - r45)  
1-SI-68-33, r13

**Proposed references to be provided:** Redacted extracts of:  
T/S LCO 3.5.5, Amendment 91  
Part II of the FPR, r 45  
1-SI-68-33, r13

**Learning Objective:** 3-OT-MS047A  
5. Describe the relationship of Table 14.10 of the Fire Protection report to Technical Specifications/Technical Requirements and the Safe Shutdown equipment list in Part III Table 3-2.  
9. Compare/ contrast actions required by the Fire Protection Report regarding equipment out of service with those of the Technical Specifications or Technical Requirements.

**Cognitive Level:**

**Higher** X  
**Lower** \_\_\_\_\_

**Question Source:**

**New** X  
**Modified Bank** \_\_\_\_\_  
**Bank** \_\_\_\_\_

**Question History:** New question for the 10/2013 NRC exam

**Comments:**

## QUESTIONS REPORT

for WBN NRC SRO 10-2013 written

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
 Answer: D A C B C C A A D B Scramble Range: A - D

Created: Monday, May 28, 2012  
 Modified: Wednesday, August 07, 2013  
 Revised:

Source: NEW Source If Bank:  
 Cognitive Level: HIGHER Difficulty:  
 Job Position: SRO Plant: WATTS BAR  
 Date: 10/2013 Last 2 NRC:

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values
<Cumulative>		0.000	0.000	0	N	1: 0 2: 0 3: 0 4: 0

--- A ---			--- B ---			--- C ---			--- D ---					
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg
<Cumulative>			Total:			0 100			Omits:			0 0		
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00			

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

3. 008 AA2.12 376

Given the following:

- The operating crew has entered 1-ES-1.1, "SI Termination," following an inadvertent Safety Injection.
- As the crew is placing letdown in service, the OAC reports the following:
  - 1-LI-68-335A, PZR LEVEL, indicates off scale HIGH.
  - 1-LI-68-321A, PZR- COLD CAL LEVEL, indicates off scale HIGH.
  - 1-PI-68-334, PZR PRESS indicates off scale low.
- Other Pressurizer pressure indications show pressure is dropping.
- RCS subcooling indicates 58°F and lowering.

Based on the conditions above, which ONE of the following complete the statements below?

Pressurizer level indications 1-LI-68-339 and 1-LI-68-320 will be (1).

The required response in accordance with 1-ES-1.1 is to (2).

- |    | <u>(1)</u> | <u>(2)</u>                                                                        |
|----|------------|-----------------------------------------------------------------------------------|
| A. | lowering   | initiate Safety Injection and go to 1-E-0, "Reactor Trip or Safety Injection"     |
| B. | lowering   | manually start ECCS pumps and go to 1-E-1, "Loss of Reactor or Secondary Coolant" |
| C. | rising     | initiate Safety Injection and go to 1-E-0, "Reactor Trip or Safety Injection"     |
| D✓ | rising     | manually start ECCS pumps and go to 1-E-1, "Loss of Reactor or Secondary Coolant" |

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**DISTRACTOR ANALYSIS:**

- A. *Incorrect, Plausible because the same pressurizer level indications would be affected by a break on the variable leg but the direction of failure would be reversed Also because initiating a Safety Injection and transitioning to 1-E-0 would be the correct action if the event occurred after a transition from 1-ES-1.1 to a normal procedure would be been completed. This is not the required action for the current conditions even though the SI has already been terminated*
- B. *Incorrect, Plausible because the same pressurizer level indications would be affected by a break on the variable leg but the direction of failure would be reversed Also because restarting the ECCS pumps and transitioning to 1-E-1, "Loss of Reactor of Secondary Coolant" due to the lack of RCS subcooling is correct.*
- C. *Incorrect, Plausible because the conditions indicate a Vapor space LOCA is in progress resulting in the pressurizer level rising and also because initiating a Safety Injection and transitioning to 1-E-0 would be the correct action if the event occurred after a transition from 1-ES-1.1 to a normal procedure would be been completed. This is not the required action for the current conditions even though the SI has already been terminated*
- D. *Correct, Because the indication went off scale high on the 2 failed pressurizer level transmitters, the conditions indicate a break on the common reference line. The failed pressure transmitter failed low is also connected to the broken reference line. The other 2 level indicators (1-LI-62-339 and -320) will be rising as the failures and additional stem conditions indicate the failure is a vapor space LOCA requiring the ECCS pumps to be restarted and a transition made to 1-E-1, "Loss of Reactor of Secondary Coolant" due to the lack of RCS subcooling.*

**Question Number:**   76  

**Tier:**   1   **Group:**   1  

**K/A:** 008 AA2.12  
Pressurizer Vapor Space Accident  
AA2. Ability to determine and interpret the following as they apply to the Pressurizer Vapor Space Accident:  
PZR level indicators

**Importance Rating:** 3.4 / 3.7

**10 CFR Part 55:** 43.5 / 45.13

**10CFR55.43.b:** 5

**K/A Match:** K/A is matched because the question requires the ability to determine how the pressure level instruments (for both the affected instruments and the non affected instruments) will respond during a vapor space LOCA.

**SRO ONLY:** Question is SRO because it requires the interpretation of

## QUESTIONS REPORT

for WBN NRC SRO 10-2013 written

**SRO ONLY:** Question is SRO because it requires the interpretation of conditions caused by a vapor space LOCA associated with the pressurizer level instrumentation and determining the required procedure flow path resulting from the conditions. Question requires the assessment of plant conditions and then selecting a procedure or section of a procedure to mitigate, recover, or with which to proceed as well as knowledge of diagnostic steps and decision points in the EOPs that involve transitions to event specific subprocedures or emergency contingency procedures.

**Technical Reference:** 1-47W610-68-5 R24  
1-47W610-68-5A R5  
1-ES-1.1, SI Termination, Revision 0000

**Proposed references to be provided:** None

**Learning Objective:** 3-OT-EOP0100  
8. Given a set of plant conditions, use E-1, ES-1.1, ES-1.2, ES-1.3, and ES-1.4 to correctly diagnose and implement: Action Steps, RNOs, Foldout Pages, Notes, and Cautions.  
10. Determine the correct procedure transition if during the si termination steps of ES-1.1 it is determined that pZR level cannot be maintained using the normal charging flowpath

**Cognitive Level:**

Higher   X    
Lower       

**Question Source:**

New       X        
Modified Bank         
Bank       

**Question History:** New question for the WBN 10/2103 exam.

**Comments:**

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
Answer: D C C C B D A C D B Scramble Range: A - D

Created: Monday, May 28, 2012

Modified: Wednesday, August 07, 2013

Revised:

Source: NEW

Source If Bank:

Cognitive Level: HIGHER

Difficulty:

Job Position: SRO

Plant: WATTS BAR

Date: 10/2013

Last 2 NRC:

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values
<Cumulative>		0.000	0.000	0	N	

--- A ---			--- B ---			--- C ---			--- D ---					
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg
<Cumulative>						Total:			Omits:					
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00	0	0	

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

4. 013 G2.2.40 087

Given the following:

- Unit 1 is at 100%.
- 1-PT-68-340, channel 1 PZR PRESS failed.
- The Technical Specification action to place the channel in trip has been taken.

Which ONE of the following is correct in accordance with the Technical Specifications?

1-PT-68-340 may \_\_\_\_\_.

- A. be restored to perform either troubleshooting or post maintenance testing
- B. be restored ONLY to perform troubleshooting
- C. be restored ONLY to perform post maintenance testing
- D. NOT be restored to service to perform either troubleshooting or post maintenance testing

**DISTRACTOR ANALYSIS:**

- A. *Incorrect, LCO 3.0.5 establishes the allowance for restoring equipment to service under administrative controls when it has been removed from service or declared inoperable to comply with ACTIONS. The sole purpose of this Specification is to provide an exception to LCO 3.0.2 (e.g., to not comply with the applicable Required Action(s)) to allow the performance of SRs to demonstrate:  
a. The OPERABILITY of the equipment being returned to service; or  
b. The OPERABILITY of other equipment.  
A common misconception regarding this exception is that it may be used to performing troubleshooting on an item declared inoperable such that it may be repaired.*
- B. *Incorrect, Plausible because again LCO 3.0.5 does allow for restoring inoperable equipment to service but it is restricted to the minimum time required for surveillance testing and not for any other maintenance activities.*
- C. *Correct, LCO 3.0.5 may only be used to support post maintenance testing.*
- D. *Incorrect, plausible because T/S LCO 3.3.2 condition D contains its own note which allows bypassing for up to 12 hours to support surveillance testing. Therefore, it is plausible that 3.0.5 may not at all be applicable to a T/S required action which is modified by such a note.*

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**Question Number:**   87  

**Tier:**   2   **Group:**   1  

**K/A:** 013 G 2.2.40  
Engineered Safety Features Actuation System  
Ability to apply Technical Specifications for a system.

**Importance Rating:** 3.4 / 4.7

**10 CFR Part 55:** 41.10 / 43.2 / 43.5 / 45.3

**10CFR55.43.b:** 2

**K/A Match:** K/A is matched because the question requires the determination of how Tech Spec apply to a request by maintenance to restore an inoperable SSPS function for troubleshooting activities.

**SRO ONLY:** Question requires the ability to demonstrate knowledge of Tech spec requirements for returning an SSPS function to service after it had been removed from service for maintenance to repair.

**Technical Reference:** WBN Unit 1 Tech Spec (through Amendment 91)  
LCO 3.0.5 and Bases  
LCO 3.3.2

**Proposed references to be provided:** None

**Learning Objective:** 3-OT-T/S0303  
2. Determine the bases for OPERABILITY of the Reactor Trip System or other instrumentation system  
5. Given plant parameters/conditions, correctly determine applicable Action Conditions, Required Actions, and Completion Times for the various instrumentation systems covered by T/S or T/R.

**Cognitive Level:**  
**Higher**   X    
**Lower**       

**Question Source:**  
**New**         
**Modified Bank**   X    
**Bank**       

**Question History:** WBN bank question T/S0305 002 modified.

**Comments:**

# QUESTIONS REPORT

for WBN NRC SRO 10-2013 written

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
 Answer: C C B D C D A A A D Scramble Range: A - D

Created: Monday, May 28, 2012  
 Modified: Thursday, August 08, 2013  
 Revised:

Source: BANK MOD Source If Bank: WBN  
 Cognitive Level: HIGHER Difficulty:  
 Job Position: SRO Plant: WATTS BAR  
 Date: 10/2013 Last 2 NRC:

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values
<Cumulative>		0.000	0.000	0	N	

--- A ---			--- B ---			--- C ---			--- D ---			Resp	%	Avg			
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg			
<Cumulative>												Total:	0	100	Omits:	0	0
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00						

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

5. 015 A2.04 092

Given the following:

- 30 days after restart from a refueling outage, Unit 1 was operating at 100% when a rapid load decrease was required due to an MSR relief valve inadvertently opening.
- During the downpower the MSR relief valve went closed and the unit was stabilized at 72% load.
- Following the load decrease the following annunciators are in ALARM:
  - 83-D, PLANT COMPUTER GENERATED ALARM (SEE ICS)
  - 87-A, ROD INSERTION LIMIT LO
  - 87-B, ROD INSERTION LIMIT LO-LO
- AFD is more negative than the lower limit on 3 of the 4 NIS channels

Which ONE of the following completes the statements below?

To address the current conditions, (1) is required to be implemented.

In addition to preventing xenon redistribution following the power change, the existing AFD condition needs to be corrected in accordance with the Tech Spec Bases in order to prevent (2) during normal operation?

- A✓ (1) AOI-34, "Immediate Boration"  
(2) exceeding Heat Flux Hot Channel Factor limit
- B. (1) AOI-34, "Immediate Boration"  
(2) Crud Induced Power Shifts (CIPS)
- C. (1) AOI-2, "Malfunction of Reactor Control System"  
(2) exceeding Heat Flux Hot Channel Factor limit
- D. (1) AOI-2, "Malfunction of Reactor Control System"  
(2) Crud Induced Power Shifts (CIPS)

**QUESTIONS REPORT**  
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**DISTRACTOR ANALYSIS:**

- A. *Correct, The stem describes conditions where  $\Delta I$  is outside of limits and well as excessive control rod insertion. The annunciators identify the need for boration of the RCS and the Lo-Lo insertion limit alarm directs the use of AOI-34, Immediate Boration and the AFD Tech Spec Bases describes the potential consequences of a Condition 2,3, or 4 event resulting in unacceptable consequences. It identifies 'the limits on the AFD ensure that the Heat Flux Hot Channel Factor (FQ(Z)) is not exceeded during either normal operation or in the event of xenon redistribution following power changes'.*
- B. *Incorrect, Plausible because AOI-34 is the correct procedure and while Crud Induced Power Shifts (Axial Offset Anomalies) can result from AFD issues and in turn cause larger shifts AFD, this is not prevalent during early part of the fuel cycle.*
- C. *Incorrect, Plausible because AOI-2 is the procedure used for control rod problems and the annunciators in alarm are associated with abnormal conditions with control rods and do direct the use of AOI-2. Also, the second part wording is correct as related to the AFD Tech Spec.*
- D. *Incorrect, Plausible because AOI-2 is the procedure used for control rod problems and the annunciators in alarm are associated with abnormal conditions with control rods and do direct the use of AOI-2. Also, because while Crud Induced Power Shifts (Axial Offset Anomalies) can result from AFD issues and in turn cause larger shifts AFD, this is not prevalent during early part of the fuel cycle.*

**Question Number:**   92  

**Tier:**   2   **Group**   2  

**K/A:** 015 A2.04  
Nuclear Instrumentation System (NIS)  
Ability to (a) predict the impacts of the following malfunctions or operations on the NIS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Effects on axial flux density of control rod alignment and sequencing, xenon production and decay, and boron vs. control rod reactivity changes.

**Importance Rating:** 3.3 / 3.8

**10 CFR Part 55:** 41.5 / 43.5 / 45.3 / 45.5

**10CFR55.43.b:** 2

**K/A Match:** The K/A is matched because the question requires the ability understand axial flux density changes resulting from control rod alignment and sequencing, xenon production and decay, and boron vs. control rod reactivity changes.

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**SRO ONLY:** Question is SRO because it requires knowledge of the basis for action contained in the Tech Specification and also due to selecting between 2 abnormal procedures both of which are called out in the annunciators in alarm.

**Technical Reference:** Tech Spec 3.2.3 Bases  
Tech Spec 3.2.4 Bases  
1-ARI-81-87, NIS & Rod Controls, Revision 0002  
1-TI-44, Generic Reactivity Control Guidance, Revision 0000

**Proposed references to be provided:** None

**Learning Objective:** 3-OT-T/S0302  
2. Determine the bases for LCOs in section 3.2, Power Distribution Limits

**Cognitive Level:**  
Higher   X    
Lower       

**Question Source:**  
New         
Modified Bank         
Bank   X  

**Question History:** WBN bank question 015 A2.04 392 used on the AUDIT 06/2011 exam with format changed to a F-I-T-B question.

**Comments:**

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
Answer: A D A D D B A C C D Scramble Range: A - D

Created: Thursday, July 05, 2012  
Modified: Sunday, August 04, 2013  
Revised:

Source:	BANK	Source If Bank:	WBN
Cognitive Level:	HIGHER	Difficulty:	
Job Position:	SRO	Plant:	WATTS BAR
Date:	10/2013	Last 2 NRC:	

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values
<Cumulative>		0.000	0.000	0	N	

--- A ---			--- B ---			--- C ---			--- D ---					
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg
<Cumulative>						Total:		0 100		Omits:		0 0		
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00			

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

6. 028 AG2.4.21 282

Given the following:

- Unit 1 was operating at 100% reactor power when a LOCA occurred due to a pressurizer safety valve failing partially open.
- After initiating an RCS cooldown in accordance with ES-1.2, "Post LOCA Cooldown and Depressurization," the safety valve reclosed and remained closed.
- After ECCS flow has been terminated and normal charging established a malfunction occurs on 1-FCV-62-93, CHARGING FLOW PZR LEVEL CONTROL.
- The OAC reports the following conditions exist:
  - Pressurizer level is 93% and rising.
  - RVLIS is indicating 96% and stable.

Which ONE of the following completes the statements below?

FR-0, "Status Trees," will indicate entry conditions exist for \_\_\_\_\_.

Note:

*1-FR-I.1, "High Pressurizer Level"*

*1-FR-I.3, "Voids in Reactor Vessel"*

- A✓ 1-FR-I.1 only
- B. 1-FR-I.3, only
- C. both 1-FR-I.1 and 1-FR-I.3, with 1-FR-I.1 being performed first
- D. both 1-FR-I.1 and 1-FR-I.3, with 1-FR-I.3 being performed first

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**DISTRACTOR ANALYSIS:**

- A. *Correct, as seen in the Inventory tree contained within FR-0, when pressurizer level is NOT less than 92% and RVLIS is greater than 95%, then a YELLOW path to 1-FR-I.1 is present.*
  
- B. *Incorrect, Plausible 1-FR-I.3 addresses voids in the Rx Vessel. The fact that Pressurizer level is high can be a result of a voided core (which would transfer its liquid inventory to the pressurizer as a steam bubble is drawn in the core). Had RVLIS not been greater than 95%, the appropriate procedure selection would have been 1-FR-I.3.*
  
- C. *Incorrect, Plausible because the entry conditions to 1-FR-I.1 are present. Additionally, with a reduced inventory indicated on RVLIS (which if less than 95% would have sent the operator to 1-FR-I.3), the action to repressurize the RCS in order to collapse the core voiding would be of benefit. Therefore, a success path could be derived which involved restoring normal charging and letdown IAW 1-FR-I.1 and then repressurizing the RCS using the guidance contained in 1-FR-I.3.*
  
- D. *Incorrect, Plausible because a voided core could produce a high pressurizer level. If RVLIS were less than 95%, then a valid path to 1-FR-I.3 would exist. A success path could be recognized which repressurized the RCS to collapse voids in the vessel. This would involve entering 1-FR-I.3 first, following its directives and then utilizing 1-FR-I.1 to verify that charging and letdown is aligned.*

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**Question Number:** 82

**Tier:** 1 **Group:** 2

**K/A:** 028 AG2.4.21  
Pressurizer Level Control Malfunction  
Emergency Procedures / Plan  
Knowledge of the parameters and logic used to assess the status of safety functions, such as reactivity control, core cooling and heat removal, reactor coolant system integrity, containment conditions, radioactivity release control, etc.

**Importance Rating:** 41.7 / 43.5 / 45.12

**10 CFR Part 55:** 4.0 / 4.6

**10CFR55.43.b:** 5

**K/A Match:** K/A is matched because the question requires knowledge of the parameters and logic used to assess the status of safety functions affected by a pressurizer level control malfunction.

**SRO ONLY:** Question is SRO because it requires knowledge of diagnostic steps and decision points that involve transitions to event specific subprocedures during assessment of safety functions as well as knowledge of the content of the procedure versus knowledge of the procedure's overall mitigative strategy or purpose.

**Technical Reference:** FR-0, Status Trees, Revision 0014  
1-FR-I.1, High Pressurizer Level, Revision 0000  
1-FR-I.3, Voids in Reactor Vessel, Revision 0000

**Proposed references to be provided:** None

**Learning Objective:** 3-OT-FRI0001  
2. Given a set of plant conditions, use FR-I.1, FR-I.2, FR-I.3 and the Critical Safety Function Status Trees to correctly implement: Action Steps and RNOs.

**Cognitive Level:**  
**Higher** X  
**Lower** \_\_\_\_\_

**Question Source:**  
**New** X  
**Modified Bank** \_\_\_\_\_  
**Bank** \_\_\_\_\_

**Question History:** New question for the WBN 10/2013 exam

**Comments:**

## QUESTIONS REPORT

for WBN NRC SRO 10-2013 written

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
 Answer: A A C D B A A A B C Scramble Range: A - D

Created: Monday, May 28, 2012  
 Modified: Thursday, August 15, 2013  
 Revised:

Source: NEW Source If Bank:  
 Cognitive Level: HIGHER Difficulty:  
 Job Position: SRO Plant: WATTS BAR  
 Date: 10/2013 Last 2 NRC:

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values
<Cumulative>		0.000	0.000	0	N	1: 0 2: 0 3: 0 4: 0

--- A ---			--- B ---			--- C ---			--- D ---					
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg
<Cumulative>			Total:			0 100			Omits:			0 0		
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00			

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

7. 034 A3.01 593

Given the following:

- The Aux Building Crane is carrying a load of 2040 lbs. on the Auxiliary Hoist.
- No limits are bypassed on the Aux Building Crane.

Based on the above conditions, which ONE of the following completes the statements below?

The Auxillary Building Crane (1) physically travel over the spent fuel pit with the conditions stated above.

The basis for the TR 3.9.4 weight restriction on the movement of loads over the spent fuel pit ensures that in the event that the load is dropped, the activity release will be limited to that contained in (2).

- |    | <u>(1)</u>     | <u>(2)</u>             |
|----|----------------|------------------------|
| A. | can            | a single fuel assembly |
| B✓ | can <b>NOT</b> | a single fuel assembly |
| C. | can            | two fuel assemblies    |
| D. | can <b>NOT</b> | two fuel assemblies    |

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**DISTRACTOR ANALYSIS:**

- A. *Incorrect, Plausible because the weight of the load is less than the load limit in the T/R. However, the Aux Building Crane does not use its load sensing device to activate the travel interlocks. Print 36B595944 - 5C shows that the crane trolley is stopped by the travel interlocks regardless of the underhung load's weight. Also, 0-TRI-271-3, Auxiliary Building Crane Test is performed with no load being carried by the crane (this TRI verifies that the travel interlocks function). T/R 3.9.4 states that loads > 2059 pounds shall be prohibited from travel over fuel assemblies in the spent fuel pool. As described, the design of the Aux Bldg Crane ensures that T/R 3.9.4 is met by prohibiting any load from traversing the spent fuel pool. Also, it is correct, as seen in the basis for T/R LCO 3.9.4 that the activity release from a load dropped would be limited to that contained in a single fuel assembly.*
- B. *Correct, The travel interlocks prohibit crane travel over the spent fuel pit unless the limit override keyed switch is engaged (bypassing the crane's travel interlocks would light the "limit bypass on" light. As described, the bypass interlock light is not lit, thus travel over the Spent fuel pit is not allowed. T/R LCO 3.9.4 bases identifies the load restriction is to ensure the activity release from a load dropped would be limited to that contained in a single fuel assembly.*
- C. *Incorrect, Plausible because the weight of the load is less than the load limit in the T/R. However, the Aux Building Crane does not use its load sensing device to activate the travel interlocks. Print 36B595944 - 5C shows that the crane trolley is stopped by the travel interlocks regardless of the underhung load's weight. Also, 0-TRI-271-3, Auxiliary Building Crane Test is performed with no load being carried by the crane (this TRI verifies that the travel interlocks function). T/R 3.9.4 states that loads > 2059 pounds shall be prohibited from travel over fuel assemblies in the spent fuel pool. As described, the design of the Aux Bldg Crane ensures that T/R 3.9.4 is met by prohibiting any load from traversing the spent fuel pool. The load of 2059 lbs accounts for the maximum weight of a fuel assembly, control rod and carrying tool. Therefore, if this were dropped onto another fuel assembly, then two fuel assemblies could be damaged and that conservative design would account for such.*
- D. *Incorrect, Plausible because the travel interlocks prohibit crane travel over the spent fuel pit unless the limit override keyed switch is engaged and while plausible to conclude, it is not correct that an activity release would be limited to that contained in two fuel assemblies (see above).*

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**Question Number:** 93

**Tier:** 2 **Group:** 2

**K/A:** 034 A3.01  
Fuel Handling System  
Ability to monitor automatic operation of the Fuel Handling System,  
including:  
Fuel Handling System controls including:  
Travel limits

**Importance Rating:** 2.5\* / 3.1

**10 CFR Part 55:** 41.7 / 45.5

**10CFR55.43.b:** 2, 7

**K/A Match:** K/A is matched because the question requires the applicant to monitor the correct automatic operation of the travel limits of one of the cranes used for fuel movement.

**SRO ONLY:** Question is SRO because it requires the ability to know the limits and interlocks that will prevent movement of the Auxiliary Building Crane over the spent fuel pit and why the restriction is applied.

**Technical Reference:** FSAR section 9.1.2 (page 9.1-4)  
T/R LCO 3.9.4 Basis (page 3.9-8)  
General Electric print 36B595944  
0-TRI-271-3, R5 (pages 5-8)  
Vendor Manual for the Broadline Corporation 125/10 T  
Crane (VD-S250-0441), R1

**Proposed references to be provided:** None

**Learning Objective:** 3-OT-T/S0309  
2. Determine the Bases for each specification, as applicable, to Refueling Operations.

**Cognitive Level:**

**Higher** \_\_\_\_\_  
**Lower** X

**Question Source:**

**New** X  
**Modified Bank** \_\_\_\_\_  
**Bank** \_\_\_\_\_

**Question History:** New question for the WBN 10/2013 NRC exam.

**Comments:**

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
Answer: B D C C D C D B C B Scramble Range: A - D

Created: Monday, May 28, 2012  
Modified: Thursday, August 08, 2013  
Revised:

Source: NEW Source If Bank:  
Cognitive Level: LOWER Difficulty:  
Job Position: SRO Plant: WATTS BAR  
Date: 10/2013 Last 2 NRC:

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values
<Cumulative>		0.000	0.000	0	N	1: 0 2: 0 3: 0 4: 0

--- A ---			--- B ---			--- C ---			--- D ---			Resp	%	Avg			
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg			
<Cumulative>												Total:	0	100	Omits:	0	0
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00						

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

8. 054 AA2.04 477

Given the following:

- Unit 1 is operating at 100% power.

Time

1400 - MFPT 1B is manually tripped due to leak on the pump discharge.

1410 - A Feed Water Isolation occurs due to erratic steam generator level control during the runback.

1420 - A loss of offsite power occurs.

1430 - Aux Air compressor A seizes.

Which ONE of the following completes the statements below?

The first time the AFW pumps will have automatically started is (1) the loss of offsite power.

In accordance with T/S LCO 3.7.5, Auxiliary Feedwater (AFW) System, (2) of the three AFW Trains remain OPERABLE at 1430.

- |    | <u>(1)</u> | <u>(2)</u> |
|----|------------|------------|
| A. | after      | two        |
| B. | after      | one        |
| C✓ | prior to   | two        |
| D. | prior to   | one        |

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**DISTRACTOR ANALYSIS:**

- A. *Incorrect, Plausible because the loss of offsite power is a condition that results in the automatic start of the AFW pumps and because 2 of the 3 Trains of the AFW system remaining operable is correct.*
- B. *Incorrect, Plausible because the loss of offsite power is a condition that results in the automatic start of the AFW pumps and because there are valves affected in 2 of the 3 Trains of the AFW system.*
- C. *Correct, The AFW pumps will be first started following the Feed Water Isolation (FWI) which is before the loss of offsite power. The FWI trips both MFPs which is an AFW pump start condition. The stem condition resulting in the loss of the Aux Air Compressor A affects the operation of the AFW LCVs. Train A AFW LCVs will not have the required air supply. In addition to this some of the LCVs on the C-S Train (TD AFWP) are without their required air supply. However, the loss of "A" train air will NOT in itself result in a total loss of AFW to any one S/G. Tech Spec LCO 3.7.5 Basis provides the following:*  
*The turbine driven auxiliary feedwater pump supplies flow paths to all four steam generators. Each of these flow paths contains an automatic air-operated LCV, two of which are designated as Train A, receive A-train air and provide flow to the same steam generators that are supplied by the B-train motor-driven auxiliary feedwater pump. The remaining two LCVs are designated as Train B, receive B-train air, and provide flow to the same steam generators that are supplied by the A-train motor-driven pump. This design provides the required redundancy to ensure that at least two steam generators receive the necessary flow assuming any single failure. It can be seen from the description provided above that the loss of a single train of air (A or B) will not prevent the auxiliary feedwater system from performing its intended safety function and is no more severe than the loss of a single auxiliary feedwater pump. Therefore, the loss of a single train of auxiliary air only affects the capability of a single motor-driven auxiliary feedwater pump because the turbine-driven pump is still capable of providing flow to the two steam generators that are separated from the other motor-driven pump.*
- D. *Incorrect, Plausible because the AFW pumps starting prior to the loss of offsite power is correct and because there are valves affected in 2 of the 3 Trains of the AFW system.*

**Question Number:**   77  

**Tier:**   1   **Group:**   1  

**K/A:** 054 AA2.04  
Loss of Main Feedwater (MFW)  
Ability to determine and interpret the following as they apply to the Loss of Main Feedwater (MFW):  
Proper operation of AFW pumps and regulating valves

**Importance Rating:** 4.2 / 4.3

**10 CFR Part 55:** 43.5 / 45.13

**10CFR55.43.b:** 2

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**K/A Match:** K/A is matched because the question requires the ability to determine how a the AFW system pumps and valves are affected following a loss of MFW

**SRO ONLY:** Question is SRO because it requires interpretation of the affect the stem conditions have on the operability of the AFW system due to the effect on the LCVs using data in the LCO bases.

**Technical Reference:** WBN Unit 1 Tech Spec 3.7.5 Auxiliary Feedwater (AFW) System Bases, (through Amendment 91 and Revision 118)  
1-47W611-3-3 R15  
1-47W611-3-4 R20  
1-SOI-3.02, Auxiliary Feedwater System, Revision 0002

**Proposed references to be provided:** None

**Learning Objective:** 3-OT-T/S0307  
2. Determine the Bases for each specification, as applicable, to Plant Systems.  
3. Given plant conditions and parameters, correctly determine the OPERABILITY of components associated with different Plant Systems in Section 7 of Technical Specifications.  
4. Given plant conditions and parameters, correctly determine the Conditions for Operation or Technical Requirements for various components listed in Section 7 of Tech. Specs.

**Cognitive Level:**

Higher   X    
Lower       

**Question Source:**

New   X    
Modified Bank         
Bank       

**Question History:** New question for the WBN 10/2013 NRC exam

**Comments:**

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
Answer: C B D D D B C D D D Scramble Range: A - D

Created: Monday, May 28, 2012  
Modified: Wednesday, August 07, 2013  
Revised:

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

Source:	NEW	Source If Bank:	
Cognitive Level:	HIGHER	Difficulty:	
Job Position:	SRO	Plant:	WATTS BAR
Date:	10/2013	Last 2 NRC:	

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values	
<Cumulative>		0.000	0.000	0	N	1: 0	2: 0
						3: 0	4: 0

--- A ---			--- B ---			--- C ---			--- D ---					
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg
<Cumulative>			Total:			0	100		Omits:			0	0	
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00			

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

9. 055 EG2.4.41 178

Given the following:

TIME

- 0000 - Unit 1 reactor trip breakers are opened during a shutdown for a refueling outage.
  
- 1440 - A Transmission System disturbance results in the WB Hydro Station Switchyard being de-energized.
  - DGs 1A-A and 1B-B fail to start.
  
  - DGs 2A-A and 2B-B start and restore power to their respective shutdown boards.
  
- 1450 - RCS Temperature is currently 180°F and slowly rising.
  
- 1453 - The Shift Manager/SED determines the required REP declaration level and declares the event.

Based on the conditions above, which ONE of the following completes the statement below?

The correct REP declaration is (1) and the declaration (2) require implementation of EPIP-8, "Personnel Accountability and Evacuation."

**REFERENCE PROVIDED**

- |    | <u>(1)</u>            | <u>(2)</u>      |
|----|-----------------------|-----------------|
| A. | an ALERT              | does            |
| B✓ | an ALERT              | does <b>NOT</b> |
| C. | a SITE AREA EMERGENCY | does            |
| D. | a SITE AREA EMERGENCY | does <b>NOT</b> |

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**DISTRACTOR ANALYSIS:**

- A. *Incorrect, Plausible because the declaration of an ALERT is correct and the implementation of EPIP-8, "Personal Accountability and Evacuation" is required for declaration of an SAE or GE and also because there are actions such as the staffing of the emergency centers, that is first required at the ALERT level.*
  
- B. *Correct, in accordance with EPIP-1, Section 3, LOSS OF POWER, EAL 3.2 which is applicable with the plant in MODE 5, the correct declaration is an ALERT and the EPIP-8, "Personal Accountability and Evacuation" is not required but can be implemented if warranted.*
  
- C. *Incorrect, Plausible because the declaration of an SAE would be correct in accordance with EAL 3.1 if the plant had been in Modes 1-4 and the implementation of EPIP-8, "Personal Accountability and Evacuation" is required for declaration of an SAE or GE and also because there are actions such as the staffing of the emergency centers, that is first required at the ALERT level.*
  
- D. *Incorrect, Plausible because the declaration of an SAE would be correct in accordance with EAL 3.1 if the plant had been in Modes 1-4 and the implementation of EPIP-8, "Personal Accountability and Evacuation" not being required is correct and there are requirements for a GE declaration that are not required at the SAE level.*

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**Question Number:** 78

**Tier:** 1 **Group:** 1

**K/A:** 055 EG2.4.41  
Station Blackout  
Emergency Procedures / Plan  
Knowledge of the emergency action level thresholds and classifications.

**Importance Rating:** 2.9 / 4.6

**10 CFR Part 55:** 41.10 / 43.5 / 45.11

**10CFR55.43.b:** 1

**K/A Match:** K/A is matched because the question requires knowledge of the emergency action level thresholds and classifications during a Station blackout event.

**SRO ONLY:** Question is SRO because it requires knowledge of actions in the Radiological Emergency Plan and the ability to make a correct REP declaration.

**Technical Reference:** EPIP-1, Emergency Plan Classification Logic, Revision 0037  
EPIP-3, Alert, Revision 0037  
EPIP-4, Site Area Emergency, Revision 0035  
NP-REP Appendix C, Revision 101

**Proposed references to be provided:** EPIP-1 Attachment 3, Revision 0037 (pages 3 and 4)

**Learning Objective:** 3-OT-PCD048C  
4. Given plant conditions, classify emergency events IAW EPIP-1.  
12. Given an emergency declaration, implement the appropriate Emergency Plan IAW EPIP actions IAW EPIP, 2, 3, 4, or 5.

**Cognitive Level:**

**Higher** X  
**Lower** \_\_\_\_\_

**Question Source:**

**New** X  
**Modified Bank** \_\_\_\_\_  
**Bank** \_\_\_\_\_

**Question History:** New question for the WBN 10/2013 NRC exam

**Comments:**

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
Answer: B B B D D B D B C A Scramble Range: A - D

Created: Monday, May 28, 2012  
Modified: Thursday, August 15, 2013  
Revised:

Source: NEW Source If Bank:  
Cognitive Level: HIGHER Difficulty:  
Job Position: SRO Plant: WATTS BAR  
Date: 10/2013 Last 2 NRC:

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values
<Cumulative>		0.000	0.000	0	N	

--- A ---			--- B ---			--- C ---			--- D ---			Resp	%	Avg			
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg			
<Cumulative>												Total:	0	100	Omits:	0	0
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00						

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

10. 058 AA2.01 279

Given the following:

- The plant is operating at 100% power.
- Annunciator window 19-A, 125 DC VITAL CHGR/BATT III ABNORMAL, alarms due to the 125 V DC VITAL CHGR III output breaker tripping open.
- Local inspection determines that vital charger III has failed.
- Battery board voltage is slightly over 132 volts.

Which ONE of the following completes the statements below?

The indicating pointer for 1-EI-57-94, Vital Batt BD III AMPS will be (1) the zero.

REQUIRED ACTION of Tech Spec LCO 3.8.4, DC Sources - Operating is currently (2) to be entered.

- |                                              | <u>(1)</u> | <u>(2)</u>          |
|----------------------------------------------|------------|---------------------|
| A. <input checked="" type="checkbox"/> above |            | required            |
| B. <input type="checkbox"/> above            |            | <b>NOT</b> required |
| C. <input type="checkbox"/> below            |            | <b>NOT</b> required |
| D. <input type="checkbox"/> below            |            | required            |

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**DISTRACTOR ANALYSIS:**

- A. *Correct, The vital battery board ammeters on 1-M-1 are asymmetric in that the portion of the meter above the 0 registers a discharge current of 0-800 A. Below the zero registers a charging current of 0-275 (by divisions). During a normal condition the ammeters will register just at the zero or slightly below. Upon a loss of the battery charger (which normally floats the vital battery boards loads), the battery will assume the loads and a discharge will be indicated on the ammeter. Investigation of the basis for T/S LCO 3.8.4 reveals that "respective chargers...be operating and connected to the associated DC buses." Because the vital charger has tripped the 2 hour T/S LCO required action 3.8.4 A.1 must be invoked.*
- B. *Incorrect, Plausible because the ammeter indicating above zero is correct with battery in a discharging condition. Also plausible because the battery is currently maintaining the board voltage above the minimum allowed voltage.*
- C. *Incorrect, Plausible because the ammeter indication does change to the opposite side of zero as related to normal with battery in a discharging condition and it is a common misconception as to what is normal and abnormal on the ammeter. Also plausible because the battery is currently maintaining the board voltage above the minimum allowed voltage.*
- D. *Incorrect, Plausible because the ammeter indication does change to the opposite side of zero as related to normal with battery in a discharging condition and it is a common misconception as to what is normal and abnormal on the ammeter. Also plausible because the REQUIRED ACTION of LCO 3.8.4 is required.*

**Question Number:**      79  

**Tier:**      1      **Group:**      1  

**K/A:**    058 AA2.01  
Loss of DC Power  
Ability to determine and interpret the following as they apply to the Loss of DC Power:  
That a loss of dc power has occurred; verification that substitute power sources have come on line

**Importance Rating:**    3.7 / 4.1

**10 CFR Part 55:**    43.5 / 45.13

**10CFR55.43.b:**    2

**K/A Match:**    K/A is matched because the question requires the ability to determine that the charging system for a 125v DC battery has failed and the battery is currently discharging.



**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values	
<Cumulative>		0.000	0.000	0	N	1: 0	2: 0
						3: 0	4: 0

--- A ---			--- B ---			--- C ---			--- D ---			Resp	%	Avg					
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg					
<Cumulative>												Total:		0	100	Omits:		0	0
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00								

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

11. 059 A2.05 288

Given the following:

- Unit 1 is operating at 28% power.
- SG #4 main feedwater line ruptures between Turbine Building wall and the South Valve Vault Room.
- AOI-38, "Main Steam or Feedwater Line Leak," is entered and the SRO directs a reactor trip.

Which ONE of the following completes the statements below?

Procedural direction to ensure the leak is isolated will be directed (1) the transition from 1-E-0, "Reactor Trip or Safety Injection," to the applicable procedure.

NPG-SPP-03.5, "Regulatory Reporting Requirements," will require (2) hour report to the NRC.

**REFERENCE PROVIDED**

- |    | <u>(1)</u> | <u>(2)</u>             |
|----|------------|------------------------|
| A. | prior to   | only a 4               |
| B✓ | only after | both a 4 hour and an 8 |
| C. | only after | only a 4               |
| D. | prior to   | both a 4 hour and an 8 |

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**DISTRACTOR ANALYSIS:**

- A. *Incorrect, Plausible because the leak being isolated prior to the transition from 1-E-0 is correct due to the automatic FWI with Lo/Tavg because a four hour notification to the NRC is required due to the reactor trip and the actuation of AFW is not stated in the stem but must be deduced from the conditions given.*
- B. *Correct, The transition from 1-E-0 will be to ES-0.1 and while this transition will be made prior to the step that initiates the Attachment to ensure the isolation of main feedwater, a MFW isolation will have automatically occurred due to the Reactor trip with Low Tavg. The conditions in the stem requires both a 4 hour report due to the actuation of the reactor trip system when the reactor was critical (50.72(b)(3)(iv)(B)) and an 8 hour report due to the actuation of the AFW system (50.72(b)(3)(iv)(A)) as identified in 3.a.(6)*
- C. *Incorrect, Plausible because if a safety Injection had of occurred then the a check of the isolation of the feedwater would have occurred prior to the transition from 1-E-0 and because a four hour notification to the NRC is required due to the reactor trip and the actuation of AFW is not stated in the stem but must be deduced from the conditions given.*
- D. *Incorrect, Plausible because if a safety Injection had of occurred then 1-E-0 would have directed action to ensure MFW isolation have occurred prior to the transition from 1-E-0 and because both a four hour and an eight hour notification is required as stated in the correct answer analysis.*

**Question Number:** 88

**Tier:** 2 **Group:** 1

**K/A:** 059 A2.05

Main Feedwater (MFW) System

Ability to (a) predict the impacts of the following malfunctions or operations on the MFW; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:

Rupture in MFW suction or discharge line

**Importance Rating:** 3.1\* / 3.4\*

**10 CFR Part 55:** 41.5 / 43.5 / 45.3 / 45.13

**10CFR55.43.b:** 5

**K/A Match:** K/A is matched because the question requires the ability to predict when procedural action will be taken to isolate a feedwater line rupture following entry into the emergency procedure network and the administrative procedure requirement that exist for making the notification of the condition to the NRC.

## QUESTIONS REPORT

for WBN NRC SRO 10-2013 written

**SRO ONLY:** Question is SRO because it requires ability to determine when a FW line rupture will be isolated during performance of emergency procedure relative to transition between EOPs and the additional administrative requirements to must be completed when mitigating the event.

**Technical Reference:** NPG-SPP-03.5, " Regulatory Reporting Requirements,"  
Revision 0008  
1-E-0, "Reactor Trip or Safety Injection", Revision 0000

**Proposed references to be provided:** NPG-SPP-03.5, " Regulatory Reporting Requirements,"  
Appendix A (pages 1-7)

**Learning Objective:** 3-OT-EOP0000  
8. Analyze a given set of plant conditions and determine required procedural transitions per E-0.  
3-OT-SSP0305  
2. Identify the Plant events requiring immediate notification of the NRC per 10CFR50.72 (4 HOUR), as specified in NPG-SPP-03.5 Appendix A.  
3. Identify the Plant events requiring immediate notification of the NRC per 10CFR50.72 (8 HOUR), as specified in NPG-SPP-03.5 Appendix A.

**Cognitive Level:**

Higher   X    
Lower \_\_\_\_\_

**Question Source:**

New   X    
Modified Bank \_\_\_\_\_  
Bank \_\_\_\_\_

**Question History:** New question for the WBN 10/2013 NRC exam

**Comments:**

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
Answer: B D C B D D B B C D Scramble Range: A - D

Created: Monday, May 28, 2012

Modified: Wednesday, August 07, 2013

Revised:

Source: NEW

Source If Bank:

Cognitive Level: HIGHER

Difficulty:

Job Position: SRO

Plant: WATTS BAR

Date: 10/2013

Last 2 NRC:

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values
<Cumulative>		0.000	0.000	0	N	

--- A ---			--- B ---			--- C ---			--- D ---					
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg
<Cumulative>						Total:		0 100		Omits:		0 0		
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00			

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

12. 061 A2.06 289

Given the following:

- Unit 1 is operating at 100% power.
- The AB AUO reports:
  - The pump casing is hot to the touch.
  - 1-TI-3-146, MDAFWP 1B-B DISCH LINE TEMP reads 180°F.
  - The handheld rounds log requires a notification to be made if the temperature is greater than 110°F.
- Last shift 1-TI-3-146 read 89°F.
- Troubleshooting reveals that back leakage is occurring from SG #3.

Which ONE of the following completes the statements below?

The 1B-B MDAFWP is to first be (1) of SOI-3.02, Auxiliary Feedwater System.

OPDP-8, "Operability Determination Process and Limiting Conditions for Operation Tracking," requires the performance of the Immediate Determination of OPERABILITY (IDO) to be completed by (2).

*Note: SOI-3.02*

*Section 8.7, "Venting of AFW Pumps"*

*Section 8.1.2, "Manual Startup of AFW Pump B-B"*

- |    | <u>(1)</u>             | <u>(2)</u>             |
|----|------------------------|------------------------|
| A. | vented per section 8.7 | either on RO or an SRO |
| B. | run per section 8.1.2  | either on RO or an SRO |
| C✓ | vented per section 8.7 | an SRO only            |
| D. | run per section 8.1.2  | an SRO only            |

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**DISTRACTOR ANALYSIS:**

- A. *Correct, WBN Aux Bldg AUO rounds contain checks on strap-on thermometers which are attached to the discharge piping of the MDAFWPs. The readings for these thermometers are modified by the following note: "If above 110 report condition to unit supervisor. This condition could indicate steam binding (check valve leakage)." SOI-3.02 contains precaution and limitation P: "backleakage to the AFW system can lead to pump steam binding. AUO rounds require periodic checking of the pumps for this condition. Venting is required until the cause is found and corrected whenever this condition occurs." Because of this P&L it is not appropriate to run a pump which is potentially steam bound. The application of P&L J which allows emergency starts of AFWPs given any temperatures is not applicable as this scenario represents normal operation. OPDP-8 states that "a licensed, on-shift SRO is responsible for the performance of an IDO for conditions that appear to affect SSC compliance with a TS LCO." Previous to revision 7 of OPDP-8, ROs could make an IDO (in accordance with the procedure).*
- B. *Incorrect, Plausible because it is not appropriate to run an AFW pump which has a discharge temperature reading of over 110 degrees. It is plausible to believe that this could be done as it would be feasible to run the AFW pump on recirc (which recycles the discharge water to the Condensate Storage Tank (CST). This would provide a gradual recirculation and thus a system cooldown. It is correct that only an SRO may make an IDO.*
- C. *Incorrect, Plausible because it is correct that the AFW pump be vented. Additionally, it is no longer acceptable for an RO to make an IDO. It is plausible to believe that they could as previous to revision 7 of OPDP-8, ROs could make an IDO (in accordance with the procedure).*
- D. *Incorrect, Plausible because it is not appropriate to run an AFW pump which has a discharge temperature reading of over 110 degrees. It is plausible to believe that this could be done as it would be feasible to run the AFW pump on recirc (which recycles the discharge water to the Condensate Storage Tank (CST). This would provide a gradual recirculation and thus a system cooldown. Additionally, it is no longer acceptable for an RO to make an IDO. It is plausible to believe that they could as previous to revision 7 of OPDP-8, ROs could make an IDO (in accordance with the procedure).*

**Question Number:**   89  

**Tier:**   2   **Group:**   1  

**K/A:** 061 A2.06  
Auxiliary / Emergency Feedwater (AFW) System  
Ability to (a) predict the impacts of the following malfunctions or operations on the AFW; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**K/A:** 061 A2.06  
Auxiliary / Emergency Feedwater (AFW) System  
Ability to (a) predict the impacts of the following malfunctions or operations on the AFW; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:  
Back leakage of MFW

**Importance Rating:** 2.7 / 3.0

**10 CFR Part 55:** 41.5 / 43.5 / 45.3 / 45.13

**10CFR55.43.b:** 2, 5

**K/A Match:** K/A is matched because the question requires the applicant determine the impact on the AFW system caused by MFW backleakage and then utilize plant procedures to correct the situation.

**SRO ONLY:** Question is SRO because it requires the applicant to assess conditions and then select the appropriate procedure section during an abnormal situation. (10CFR55.43(b)(5))

**Technical Reference:** AUO rounds for the Auxiliary Building  
OPDP-8, Operability Determination Process and Limiting  
Conditions for Operation Tracking, Revision 0015  
1-47W803-2, R59

**Proposed references to be provided:** None

**Learning Objective:** 3-OT-OPDP-8, Operability Determination Process and Limiting Conditions for Operation Tracking, Rev. 5

03. Identify the responsibilities of the Unit Supervisor described in OPDP-8, Operability Determination Process and Limiting Conditions for Operation Tracking  
04. Identify the responsibilities of the Unit Operator described in OPDP-8, Operability Determination Process and Limiting Conditions for Operation Tracking

**Cognitive Level:**

**Higher**   X    
**Lower**       

**Question Source:**

**New**   X    
**Modified Bank**         
**Bank**       

**Question History:** New question for the WBN 10/2013 NRC exam

# QUESTIONS REPORT

for WBN NRC SRO 10-2013 written

**Comments:**

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
 Answer: C B A B D C B D C B Scramble Range: A - D

Created: Monday, May 28, 2012  
 Modified: Wednesday, August 07, 2013  
 Revised:

Source: NEW Source If Bank:  
 Cognitive Level: HIGHER Difficulty:  
 Job Position: SRO Plant: WATTS BAR  
 Date: 10/2013 Last 2 NRC:

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values
<Cumulative>		0.000	0.000	0	N	1: 0 2: 0 3: 0 4: 0

--- A ---			--- B ---			--- C ---			--- D ---		
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg
<Cumulative>			Total:			0 100			Omits: 0 0		
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

13. 064 A2.09 190

Given the following:

- Unit 1 is operating at 100% power.
- 0-SI-82-13, "24 Hour Load Run - DG1A-A," is in progress and the diesel generator has been paralleled to Shutdown Board 1A-A for the past 18 hours.
- Outside air temperature measured at the Meteorological Tower 10 meter data point is 61°F.
- The Operating Duty Specialist notifies the Shift Manager that a Tornado Watch has been declared by the National Weather Service for Rhea and Meigs counties. The Outside AUO reports incoming inclement weather.
- 0-AOI-8, "Tornado Watch or Warning," is implemented.

Which ONE of the following completes the statements below?

The performance of 0-SI-82-13 is (1).

In accordance with 0-AOI-8, the conditions above (2) require the use of the emergency start handswitch on 1-M-1 or 2-M-1 to start all Emergency Diesel Generators.

- | <u>(1)</u>                                                      | <u>(2)</u>    |
|-----------------------------------------------------------------|---------------|
| A. required to be suspended                                     | do            |
| B. <input checked="" type="checkbox"/> required to be suspended | do <b>NOT</b> |
| C. allowed to be continued                                      | do            |
| D. allowed to be continued                                      | do <b>NOT</b> |

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**DISTRACTOR ANALYSIS:**

- A. *Incorrect, Plausible because the surveillance test to be suspended is correct. The second part is plausible because starting the diesel generators would position the plant to be ready for a loss of off-site power and is the action that would be taken if the stem conditions were changed to have a tornado warning issued with met tower temperature less than 52°F.*
- B. *Correct, The Inclement Weather conditions do require the surveillance test to be suspended but do not currently require the diesel generators to be emergency started.*
- C. *Incorrect, Plausible that the surveillance test would be continued because the conditions have the emergency power supply already connected to its bus and because a tornado warning has not been issued. The second part is plausible because starting the diesel generators would position the plant to be ready for a loss of off-site power and is the action that would be taken if the stem conditions were changed to have a tornado warning issued with met tower temperature less than 52°F.*
- D. *Incorrect, Plausible that the surveillance test would be continued because the conditions have the emergency power supply already connected to its bus and because a tornado warning has not been issued. Second part plausible because the diesel generators not currently being required to be emergency started is correct.*

**Question Number:**      90  

**Tier:**      2      **Group:**      1  

**K/A:**    064 A2.09  
Emergency Diesel Generator (ED/G) System  
Ability to (a) predict the impacts of the following malfunctions or operations on the ED/G system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:  
Synchronization of the ED/G with other electric power supplies

**Importance Rating:**    3.1 / 3.3

**10 CFR Part 55:**    41.5 / 43.5 / 45.3 / 45.13

**10CFR55.43.b:**    2

**K/A Match:**    K/A is matched because the question requires the applicant to predict the impact of operating a diesel generator synchronized with the off-site power supplies as required by a surveillance instruction when

## QUESTIONS REPORT

for WBN NRC SRO 10-2013 written

**K/A Match:** K/A is matched because the question requires the applicant to predict the impact of operating a diesel generator synchronized with the off-site power supplies as required by a surveillance instruction when inclement weather develops at the plant and how the weather effects the operation of the other diesel generators.

**SRO ONLY:** Question is SRO because it requires knowledge of the limitations on the performance of a surveillance instruction that are contained in the Tech Spec Bases.

**Technical Reference:** WBN Unit 1 Tech Spec Bases  
0-SI-82-13, 24 Hour Load Run - DG1A-A, Revision 0014  
0-AOI-8, Tornado Watch or Warning, Revision 0000

**Proposed references to be provided:** None

**Learning Objective:** 3-OT-T/S0308  
2. Determine the basis for each specification, as applicable, to the Electrical Power Systems.  
3. Given plant conditions and parameters correctly determine the applicable Action Conditions, Required Actions and completion times associated with the Electric Power Systems.  
3-OT-AOI8000  
7. Demonstrate ability/knowledge of AOI-8, by:  
a. Recognizing Entry conditions.  
b. Responding to Actions.  
c. Responding to Contingencies (RNO).  
d. Responding to Notes/Cautions.

**Cognitive Level:**

Higher	<u>  X  </u>
Lower	<u>      </u>

**Question Source:**

New	<u>      </u>
Modified Bank	<u>  X  </u>
Bank	<u>      </u>

**Question History:** WBN bank question 064 G2.2.25 290 use of the 03/2013 exam modified for use on the WBN 10/2013 NRC exam.

**Comments:**

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
Answer: B B A D C B B B A B Scramble Range: A - D

Created: Monday, May 28, 2012

Modified: Wednesday, August 07, 2013

Revised:

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

Source:	BANK MOD	Source If Bank:	WBN
Cognitive Level:	HIGHER	Difficulty:	
Job Position:	SRO	Plant:	WATTS BAR
Date:	10/2013	Last 2 NRC:	

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values
<Cumulative>		0.000	0.000	0	N	

--- A ---			--- B ---			--- C ---			--- D ---					
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg
<Cumulative>						Total:			Omits:			0 0		
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00			

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

14. 068 AG2.1.7 183

Given the following:

- 0918 - With Unit 1 operating at 100% power, 1-AOI-27, "Main Control Room Inaccessibility," is entered due to the operating crew becoming irritated by the presence of unidentified fumes in the MCR.
- 0930 - All MCR actions required by 1-AOI-27 are complete and the crew establishes control in the Auxiliary Control Room.
- 0930 - Tech Spec 3.0.3 is entered.
- 1530 - The crew initiates a cooldown.

The following trends are observed:

<u>Time</u>	<u>S/G Pressures</u>	<u>RCS Hot leg Temp</u>
1630	1035 psig	550°F
1730	630 psig	500°F
1830	385 psig	447°F
1930	300 psig	422°F
2030	250 psig	406°F
2130	200 psig	387°F
2230	110 psig	344°F
2330	85 psig	320°F
0030	50 psig	297°F

Which ONE of the following completes the statements below?

The Tech Spec required time for placing the unit in Mode 4 (1) met.

In accordance with Tech Specs, the crew (1) violate the limit for RCS cooldown rate.

- |                   |                |
|-------------------|----------------|
| <u>(1)</u>        | <u>(2)</u>     |
| A. was            | did            |
| B. was            | did <b>NOT</b> |
| C. was <b>NOT</b> | did            |
| D. was <b>NOT</b> | did <b>NOT</b> |

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**DISTRACTOR ANALYSIS:**

- A. *Incorrect, Plausible because the plant being in Mode 4 within the Tech Spec allowed time is correct and the 1-AOI-27 administrative limit of 50°F/hr was exceeded.*
- B. *Correct, with LCO 3.0.3 being entered at 0930 the plant is required to be in Mode 4 no later than 2330. The cooldown time line indicates the temperature was 344°F at 2230. Therefore, the plant was in Mode 4 within the LCO 3.0.3 allowed time. The data shows the RCS cooldown rate did exceed the AOI administrative target of 50°F/hr however it was maintained within the maximum cooldown rate of 100°F/hr allowed by Tech Spec.*
- C. *Incorrect, Plausible because with the plant was already in Mode 3 prior to initiating the cooldown at 1530 the time to be in Mode 4 could in correctly determined to be 2130 by omitting the 1 hour allowance when initially entering LCO 3.0.3. Also, because the 1-AOI-27 administrative limit of 50°F/hr was exceeded.*
- D. *Incorrect, Plausible because with the plant was already in Mode 3 prior to initiating the cooldown at 1530 the time to be in Mode 4 could in correctly determined to be 2130 by omitting the 1 hour allowance when initially entering LCO 3.0.3. Also, because the 100°F/hr allowed by Tech Spec not being violated is correct.*

**Question Number:**   83  

**Tier:**   1   **Group:**   2  

**K/A:** 068 AG2.1.7  
Control Room Evacuation  
Conduct of Operations  
Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.

**Importance Rating:** 4.4 / 4.7

**10 CFR Part 55:** 41.5 / 43.5 / 45.12 / 45.13

**10CFR55.43.b:** 2

**K/A Match:** K/A is matched because the question requires the ability to evaluate instrument interpretation and operating characteristics during an RCS cooldown following a Control Room Evacuation to determine if Tech Spec required actions are met and if the change in plant status requires additional LCO required actions to be implemented.

**SRO ONLY:** Question is SRO because it requires knowledge of the application of generic Limiting Condition for Operation (LCO) requirements

## QUESTIONS REPORT

for WBN NRC SRO 10-2013 written

**SRO ONLY:** Question is SRO because it requires knowledge of the application of generic Limiting Condition for Operation (LCO) requirements (LCO 3.0.1 thru 3.0.7; SR 4.0.1 thru 4.0.4)

**Technical Reference:** 1-AOI-27, Main Control Room Inaccessibility, Revision 0001  
WBN Unit 1 Tech Spec 3.0.3, (through amendment 91)

**Proposed references to be provided:** None

**Learning Objective:** 3-OT-AOI2700  
12. Demonstrate ability/knowledge of AOI, to correctly:  
a. Recognize Entry conditions.  
b. Respond to Action steps.  
c. Respond to Contingencies (RNO column).  
d. Respond to Notes & Cautions.

**Cognitive Level:**  
Higher   X    
Lower       

**Question Source:**  
New         
Modified Bank   X    
Bank       

**Question History:** WBN question 068 AG2.1.7 used on the WBN 12/2011 NRC exam (one of the last 2) modified.

**Comments:**

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
Answer: B B A A C A A C D B Scramble Range: A - D

Created: Monday, May 28, 2012  
Modified: Wednesday, August 07, 2013  
Revised:

Source: BANK MOD Source If Bank: WBN  
Cognitive Level: HIGHER Difficulty:  
Job Position: SRO Plant: WATTS BAR  
Date: 10/2013 Last 2 NRC:

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values
<Cumulative>		0.000	0.000	0	N	

--- A ---			--- B ---			--- C ---			--- D ---			Resp	%	Avg
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg
<Cumulative>			Total:			0 100			Omits:			0 0		
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00			

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

15. 076 AA2.06 084

Given the following:

- Unit 1 is operating at 22% power in a normal system alignment following restart from a refueling outage in accordance with 1-GO-4, "Normal Power Operation."
- AOI-28, "High Activity In Reactor Coolant," is entered due to a step increase in DOSE EQUIVALENT I-131 which has risen to and stabilized at 15  $\mu\text{ci/gm}$ .
- LCO 3.4.16, RCS Specific Activity, REQUIRED ACTION is implemented.

Which ONE of the following completes the statements below?

In order to maintain pressurizer level stable during performance of AOI-28, the charging flow is placed to MANUAL and **INCREASED** while establishing the required flow through the   (1)  .

Unit 1 is   (2)  .

- A. (1) Cation Bed in accordance with SOI-62.04, "CVCS Purification System"  
(2) required to be placed in MODE 3 with RCS Tavg less than 500°F within the next 6 hours
- B. (1) Cation Bed in accordance with SOI-62.04, "CVCS Purification System."  
(2) allowed to continue power operations provided the DOSE EQUIVALENT I-131 is reduced to less than the limit within 48 hours
- C.  (1) Mix Bed Demin in accordance with SOI-62.01, "CVCS-Charging and Letdown"  
(2) required to be placed in MODE 3 with RCS Tavg less than 500°F within the next 6 hours
- D. (1) Mix Bed Demin in accordance with SOI-62.01, "CVCS-Charging and Letdown"  
(2) allowed to continue power operations provided the DOSE EQUIVALENT I-131 is reduced to less than the limit within 48 hours

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**DISTRACTOR ANALYSIS:**

- A. *Incorrect, Plausible because placing the Cation Bed in service will result in establishing a flow rate through the bed at the requested flow rate up to the maximum allowed of 75 gpm. With letdown in the normal system alignment of 75 gpm, placing the Cation bed in service the letdown flow would not result in a change in pressurizer level. Also because the action to Be in MODE 3 with  $T_{avg} < 500^{\circ}\text{F}$  within 6 hours is correct.*
- B. *Incorrect, Plausible because placing the Cation Bed in service will result in establishing a flow rate through the bed at the requested flow rate up to the maximum allowed of 75 gpm. With letdown in the normal system alignment of 75 gpm, placing the Cation bed in service the letdown flow would not result in a change in pressurizer level. Also because prior to Ammendment 91 of T/S (the current ammdement) the allowing continued power operations provided that the DOSE EQUIVALENT I-131 be reduced to less than the limit (which had been 21  $\mu\text{Ci/gm}$  --- Ammendment 90 and previous) within 48 hours would have been correct in accordance with LCO 3.4.16 RCS Specific Activity.*
- C. *Correct, a pressurizer level change would occur when establishing the operation of the mix beds at 120 gpm due to the mismatch of charging and letdown flows unless the procedural directed action to raise charging flow is completed. The AOI also identifies the required action to action to COMPLY with action C of LCO 3.4.16 WHEN Dose Equivalent Iodine (I-131) is greater than 14  $\mu\text{Ci/gm}$ . LCO 3.4.16 Action C is to Be in MODE 3 with  $T_{avg} < 500^{\circ}\text{F}$  within 6 hours.*
- D. *Incorrect, Plausible because establishing the required operation of the mix bed at 120 gpm does require placing Charging to MANUAL and raising the flow rate to prevent changes in pressurizer level. Also because prior to Ammendment 91 of T/S (the current ammdement) the allowing continued power operations provided that the DOSE EQUIVALENT I-131 be reduced to less than the limit (which had been 21  $\mu\text{Ci/gm}$  --- Ammendment 90 and previous) within 48 hours would have been correct in accordance with LCO 3.4.16 RCS Specific Activity.*

**Question Number:**   84  

**Tier:**   1   **Group:**   2  

**K/A:** 076 AA2.06  
High Reactor Coolant Activity  
Ability to determine and interpret the following as they apply to the High Reactor Coolant Activity:  
Response of PZR LCS to changes in the letdown flow rate

**Importance Rating:** 2.2 / 2.5

**10 CFR Part 55:** 43.5 / 45.13



**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

Created: Monday, May 28, 2012

Modified: Thursday, August 15, 2013

Revised:

Source: NEW

Source If Bank:

Cognitive Level: HIGHER

Difficulty:

Job Position: SRO

Plant: WATTS BAR

Date: 10/2013

Last 2 NRC:

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values
<Cumulative>		0.000	0.000	0	N	

--- A ---			--- B ---			--- C ---			--- D ---			Resp	%	Avg
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg
<Cumulative>			Total:			0	100		Omits:			0	0	
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00			

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

16. 077 AG2.2.37 480

Given the following:

- Unit 1 is operating at 100% power.
- At 0930, the Safety Injection Pump 1A-A is declared INOPERABLE and tagged for maintenance.
- At 1310, a 161kv system disturbance results in the degraded voltage (DS) relays operating on 6.9kV Shutdown Board 1B-B and 30 seconds later 161kv Line A (Line 1) trips due to line relay operation.
- No further manipulation of the electrical system is performed.

Which ONE of the following completes the statements below?

The 6.9kV Shutdown Board 1B-B will be energized from its (1).

A shutdown to MODE 3 the next day (2) required to be completed by Tech Spec.

**REFERENCE PROVIDED**

- |                           | <u>(1)</u> | <u>(2)</u>    |
|---------------------------|------------|---------------|
| A✓ Diesel Generator       |            | is            |
| B. Alternate power supply |            | is            |
| C. Diesel Generator       |            | is <b>NOT</b> |
| D. Alternate power supply |            | is <b>NOT</b> |

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**DISTRACTOR ANALYSIS:**

- A. *Correct, The conditions indicate the 6.9kv Shutdown Board is being supplied from its diesel generator. The operation of the degraded voltage relays results in the board being stripped and then when voltage restored by the diesel generator, the blackout loads will be sequenced back on the board. The condition result in the implementation of LCO 3.8.1 CONDITION A .2 which requires declaring SI pump 1B-B inoperable (required feature(s) with no offsite power available inoperable when its redundant required feature(s) is inoperable) no later than 24 hours from the discovery of no offsite power to one train concurrent with inoperability of redundant required feature(s). If the conditions do not change then conditions of LCO 3.5.2 ECCS - Operating become applicable and since the LCO has no action to address the condition, LCO -3.0.3 is required to be entered requiring the plant to be in Mode 3 within 7 hours.*
- B. *Incorrect, Plausible because the shutdown board would have transferred to if alternate power supply (the other offsite 161kV line) if Line 1 had of trips prior to the actuation of the degraded voltage relays or if the effect of the degraded voltage relays is not understood. Second part of question is plausible because the shutdown being required the next day is correct.*
- C. *Incorrect, Plausible because the board being supplied from the diesel generator is correct and the second part of the shutdown not being required the next day is plausible if the Required action of LCO 3.8.1 CONDITION A is misapplied due to having only one offsite source inoperable which allows 72 hours to restore.*
- D. *Incorrect, Plausible because the shutdown board would have transferred to if alternate power supply (the other offsite 161kV line) if Line 1 had of trips prior to the actuation of the degraded voltage relays or if the effect of the degraded voltage relays is not understood. The second part of the shutdown not being required the next day is plausible if the Required action of LCO 3.8.1 CONDITION A is misapplied due to having only one offsite source inoperable which allows 72 hours to restore.*

**Question Number:**   80  

**Tier:**   1   **Group:**   1  

**K/A:** 077 AG2.2.37  
Generator Voltage and Electric Grid Disturbances  
Equipment Control  
Ability to determine operability and/or availability of safety related equipment.  
41.7 / 43.5 / 45.12

**Importance Rating:** 3.6 / 4.6

**10 CFR Part 55:** 41.7 / 43.5 / 45.12

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**10CFR55.43.b:** 2

**K/A Match:** K/A is matched because the question requires the question requires the applicant to determine the operability of safety related equipment (offsite power status and an ECCS pump) following a grid disturbance.

**SRO ONLY:** The question is SRO because it requires the application of Tech Spec LCO REQUIRED ACTIONS and information contained in the Tech Spec Bases.

**Technical Reference:** WBN Unit 1 Tech Spec (through Amendment 91)  
LCO 3.8.1 AC Sources - Operating and Bases  
LCO 3.5.2 ECCS - Operating

**Proposed references to be provided:** LCO 3.8.1 AC Sources - Operating, LCO and Actions (6 pages)  
LCO 3.5.2 ECCS - Operating, LCO and Actions (1 page)

**Learning Objective:** 3-OT-T/S0308  
3. Given plant conditions and parameters correctly determine the Action Conditions, Required Actions, and Completion times associated with the Electrical Power Systems.

**Cognitive Level:**  
Higher   X    
Lower       

**Question Source:**  
New   X    
Modified Bank         
Bank       

**Question History:** New question for the WBN 10/2013 NRC exam

**Comments:**

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
Answer: A C C D A B D C C B Scramble Range: A - D

Created: Monday, May 28, 2012  
Modified: Thursday, August 15, 2013  
Revised:

Source: NEW Source If Bank:  
Cognitive Level: HIGHER Difficulty:  
Job Position: SRO Plant: WATTS BAR  
Date: 10/2013 Last 2 NRC:

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values	
<Cumulative>		0.000	0.000	0	N	1: 0	2: 0
						3: 0	4: 0

--- A ---			--- B ---			--- C ---			--- D ---			Resp	%	Avg					
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg					
<Cumulative>												Total:		0	100	Omits:		0	0
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00								

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

17. G 2.1.38 094

Given the following:

- Unit is operating at 100% power.
- A tornado was sighted over the Watts Bar Training Center, but dissipated without touching down onsite.
- Confirmation was subsequently received that no visible damage had been received to any structures or equipment on site.
- An evaluation of the Radiological Emergency Plan (REP) determines the conditions for an NOUE were initially met, but are now fully resolved.

Which ONE of the following completes the statements below?

In accordance with EPIP-1, "Emergency Plan Classification Logic," the condition shall be (1).

The NRC is required to be notified within a maximum of (2) of the action taken.

- | <u>(1)</u>                                                      | <u>(2)</u> |
|-----------------------------------------------------------------|------------|
| A✓ reported to the ODS but the NOUE will <b>NOT</b> be declared | 1 hour     |
| B. reported to the ODS but the NOUE will <b>NOT</b> be declared | 15 minutes |
| C. declared and terminated the NOUE at the same clock time      | 15 minutes |
| D. declared and terminated the NOUE at the same clock time      | 1 hour     |

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**DISTRACTOR ANALYSIS:**

- A. *Correct, As identified in the EPIP-1 Precautions and Limitations, "IF an EAL was exceeded, but the emergency has been totally resolved (prior to declaration), the emergency condition that was appropriate shall not be declared but reported to the NRC and Operations Duty Specialist (ODS) within one hour using NPG-SPP-03.5, Regulatory Reporting Requirements."*
- B. *Incorrect, Plausible because the emergency condition that was appropriate shall not be declared but shall be reported to the NRC and Operations Duty Specialist (ODS) and because there are 15 minutes time requirements associated with EPIP-1.*
- C. *Incorrect, Plausible because declaring and terminating the emergency condition at the same clock time would identify the condition had existed but prevent any unneeded action associated with the event form being initiated and because there are 15 minutes time requirements associated with EPIP-1.*
- D. *Incorrect, Plausible because declaring and terminating the emergency condition at the same clock time would identify the condition had existed but prevent any unneeded action associated with the event form being initiated and because there are 15 minutes time requirements associated with EPIP-1.*

**Question Number:**   94  

**Tier:**   3   **Group:**   n/a  

**K/A:** G 2.1.38  
Conduct of Operations  
Knowledge of the station's requirements for verbal communications when implementing procedures.

**Importance Rating:** 3.7\* / 3.8

**10 CFR Part 55:** 41.10 / 45.13

**10CFR55.43.b:** 1

**K/A Match:** K/A is matched because the question requires knowledge of verbal communication requirements associated with implementing required action during performance of the Radiological Emergency Plan implementing procedures.

**SRO ONLY:** Question is SRO because it requires completion of SRO actions required following recognition of a condition where an emergency plan declaration that was not recognized until after the condition was no longer present.

**Technical Reference:** EPIP-1, Emergency Plan Classification Logic, Revision 0037

## QUESTIONS REPORT

for WBN NRC SRO 10-2013 written

**Technical Reference:** EPIP-1, Emergency Plan Classification Logic, Revision 0037  
 NPG-SPP-03.5, Regulatory Reporting Requirements, Revision 0008

**Proposed references to be provided:** None

**Learning Objective:** 3-OT-PCD048A  
 1. Identify the Plant events requiring immediate notification of the NRC per 10CFR50.72 (1 HOUR), as specified in NPG-SPP-03.5 Appendix A.  
 3-OT-PCD048A  
 7. Given an emergency plan declaration, describe the time requirements for off-site notifications IAW EPIP 2, 3, 4, or 5. (RO State notifications only)

**Cognitive Level:**

<b>Higher</b>	
<b>Lower</b>	X

**Question Source:**

<b>New</b>	
<b>Modified Bank</b>	
<b>Bank</b>	X

**Question History:** WBN bank question G 2.4.29 100 used on the WBN 5/2008 NRC exam.

**Comments:**

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
 Answer: A B D B D D D A B B Scramble Range: A - D

Created: Monday, May 28, 2012  
 Modified: Monday, August 05, 2013  
 Revised:

Source:	BANK	Source If Bank:	WBN
Cognitive Level:	LOWER	Difficulty:	
Job Position:	SRO	Plant:	WATTS BAR
Date:	10/2013	Last 2 NRC:	

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values
<Cumulative>		0.000	0.000	0	N	

--- A ---			--- B ---			--- C ---			--- D ---					
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg
<Cumulative>			Total:			0 100			Omits:			0 0		
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00			

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

18. G 2.2.21 295

Given the following:

- The indicating lights for 1-FCV-30-40, LWR CNTMT PURGE EXH PRESS RLF extinguish on both the 1-M-9 HS and 1-XX-55-6E, CNTMT ISOL STATUS PNL.
- One blown fuse was found in the control circuit for 1-FCV-30-40.
- The valve travelled to its failed position.
- The blown fuse is replaced like-for-like.
- The lost indicating lights are restored.

Which ONE of the following completes the statements below?

A full stroke of 1-FCV-30-40 (1) required to prove operability of the valve.

If 1-FCV-30-40 had not been able to be opened, (2) would be used to maintain containment pressure within the T/S LCO limits.

- |    | <u>(1)</u>    | <u>(2)</u>        |
|----|---------------|-------------------|
| A. | is            | EGTS              |
| B. | is            | containment purge |
| C. | is <b>NOT</b> | EGTS              |
| D. | is <b>NOT</b> | containment purge |

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**DISTRACTOR ANALYSIS:**

- A. *Incorrect, Plausible because as listed in TI-126 (under the valve operator, air (AO) section), a repair to the solenoid operator would require a full stroke of the valve. However, in accordance with TI-126, a fuse replacement only requires an energization check. This is also reflected in OPDP-7, Fuse control which demonstrates that the first time that a fuse clears is not a condition adverse to quality. OPDP-7 also allows the operations staff a single fuse replacement without mandating that pre-replacement troubleshooting be executed. EGTS would assist in maintaining containment pressure; but, would do so only if the Containment Vent Air Cleanup Units (which are isolated by 1-FCV-30-40) were in service. The only viable option to restore containment pressure given the condition in the question would be to initiate a containment purge.*
  
- B. *Incorrect, Plausible because containment purge would be used to maintain containment pressure within limits. As previously discussed, a full stroke of the valve is not required to demonstrate operability.*
  
- C. *Incorrect, Plausible because a full stroke of the valve is not required. It is plausible to believe that EGTS would assist in maintaining containment pressure if it were not understood that the closure of 1-FCV-30-40 provided a separation of the annulus and the containment.*
  
- D. *Correct, a full stroke of the valve is not required. The only viable option to restore containment pressure given the condition in the question would be to initiate a containment purge.*

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**Question Number:** 95

**Tier:** 3 **Group:** n/a

**K/A:** G 2.2.21  
Equipment Control  
Knowledge of pre- and post-maintenance operability requirements.

**Importance Rating:** 2.9 / 4.1

**10 CFR Part 55:** 41.10 / 43.2

**10CFR55.43.b:** 2

**K/A Match:** K/A is matched because the question requires the knowledge of post-maintenance operability requirements.

**SRO ONLY:** The SRO is the only member of the operations staff who is able to approve PMTs. This is seen in NPG-SPP-06.3, Pre/Post Maintenance testing. Therefore, the determination of the return to operation testing requirements is an SRO-only function.

**Technical Reference:** OPDP-7, Fuse Control, R0005  
TI-126, Post Maintenance Testing Matrices,  
Revision0013  
1-45W600-30-10, R17  
Technical Specifications, through Amendment 91

**Proposed references to be provided:** None

**Learning Objective:** No objective identified

**Cognitive Level:**

<b>Higher</b>	<u>      </u>
<b>Lower</b>	<u>  X  </u>

**Question Source:**

<b>New</b>	<u>  X  </u>
<b>Modified Bank</b>	<u>      </u>
<b>Bank</b>	<u>      </u>

**Question History:** New question for the 10/2013 WBN NRC exam

**Comments:**

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
Answer: D A B D D D B D B A Scramble Range: A - D  
Created: Monday, May 28, 2012  
Modified: Wednesday, August 07, 2013  
Revised:

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

Source:	NEW	Source If Bank:	
Cognitive Level:	LOWER	Difficulty:	
Job Position:	SRO	Plant:	WATTS BAR
Date:	10/2013	Last 2 NRC:	

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values	
<Cumulative>		0.000	0.000	0	N	1: 0	2: 0
						3: 0	4: 0

--- A ---			--- B ---			--- C ---			--- D ---					
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg
<Cumulative>			Total:			0 100			Omits:			0 0		
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00			

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

19. G 2.2.23 096

Given the following:

- Unit 1 operating in MODE 1.

Which ONE of the following identifies a condition where an entry into the Unit 1 narrative log is required for equipment made inoperable but the completion of an entry into the LCO Tracking Log would **NOT** be required in accordance with OPDP-8, "Limiting Conditions for Operations Tracking."

- A✓ The equipment made inoperable will be restored to operable status before the end of the current shift.
- B. A Safety Function Determination identifies that no loss of Safety Function exists.
- C. The equipment made inoperable is not required unless the unit enters MODE 3.
- D. The equipment made inoperable is being tracked in accordance with the clearance procedure.

**DISTRACTOR ANALYSIS:**

- A. *Correct, equipment made inoperable that will be restored to operable status before the end of the current shift requires an entry in the Unit's Narrative Log but not an entry in the LCO Tracking Log in accordance with OPDP-8, Operability Determination Process and Limiting Conditions for Operation Tracking, 3.5.1.C .*
- B. *Incorrect, entries in both the Unit's Narrative Log and in the LCO Tracking Log are required. The completion of a Safety Function Determination does not change the requirements for logging.*
- C. *Incorrect, entries in both the Unit's Narrative Log and in the LCO Tracking Log are required. See OPDP-8, Section 3.3.11 L.*
- D. *Incorrect, entries in both the Unit's Narrative Log and in the LCO Tracking Log are required. See OPDP-8, Section 3.5.1 H.*

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**Question Number:**   96  

**Tier:**   3   **Group**   n/a  

**K/A:** G 2.2.23  
Equipment Control  
Ability to track Technical Specification limiting conditions for operations.

**Importance Rating:** 3.1 / 3.8

**10 CFR Part 55:** 41.10 / 43.2 / 45.13

**10CFR55.43.b:** 2, 5

**K/A Match:** K/A is matched because the question requires the ability to track Technical Specification limiting conditions for operations in accordance with OPDP-8.

**SRO ONLY:** Question is SRO because the tracking of Track Spec LCO is a function that is the assigned to the SRO position.

**Technical Reference:** OPDP-8, Operability Determination Process and Limiting Conditions for Operation Tracking, Revision 0014

**Proposed references to be provided:** None

**Learning Objective:** 3-OT-OPDP-8  
03. Identify the responsibilities of the Unit Supervisor described in OPDP-8, Limiting Condition for Operation Tracking.

**Cognitive Level:**

**Higher** \_\_\_\_\_  
**Lower**   X  

**Question Source:**

**New** \_\_\_\_\_  
**Modified Bank** \_\_\_\_\_  
**Bank**   X  

**Question History:** WBN bank question G 2.2.23 096

**Comments:**

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
Answer: A C A C A A C B B B

Scramble Range: A - D

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

Created: Thursday, July 05, 2012

Modified: Wednesday, August 07, 2013

Revised:

Source: BANK

Source If Bank: WBN

Cognitive Level: LOWER

Difficulty:

Job Position: SRO

Plant: WATTS BAR

Date: 10/2013

Last 2 NRC:

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values
<Cumulative>		0.000	0.000	0	N	1: 0      2: 0 3: 0      4: 0

--- A ---			--- B ---			--- C ---			--- D ---			Resp	%	Avg					
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg					
<Cumulative>												Total:		0	100	Omits:		0	0
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00								

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

20. G 2.3.14 997

Given the following conditions:

- Unit 1 was operating at 100% power.
- A large break LOCA occurred which precipitated entry into the Severe Accident Management Guidelines (SAMGs).
- The TSC and OSC are fully staffed and operational.

Subsequently:

- The TSC RP Manager believes that members of the emergency response organization may be exposed to a Thyroid dose of 11 REM.

Which one of the following completes the statements below?

The use of Potassium Iodide (KI) (1) be commenced.

The Site Emergency Director (SED) (2) approve the distribution of KI.

- |    | <u>(1)</u>        | <u>(2)</u>                |
|----|-------------------|---------------------------|
| A. | should <b>NOT</b> | must                      |
| B. | should            | must                      |
| C. | should <b>NOT</b> | is <b>NOT</b> required to |
| D. | should            | is <b>NOT</b> required to |

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**DISTRACTOR ANALYSIS:**

- A. *Incorrect, plausible because the dose explicated in the stem of the question is less than the limits presented in section 3.1.1 of EPIP-15 which are used for protection of the public. Also plausible, as EPIP-15 contains the wording, "the SED shall be informed prior to issuance." This wording is often misconstrued as a requirement dictating that the SED's approval be granted prior to the distribution of KI.*
- B. *Incorrect, plausible because the use of KI should be commenced. Also plausible, as EPIP-15 contains the wording, "the SED shall be informed prior to issuance." This wording is often misconstrued as a requirement dictating that the SED's approval be granted prior to the distribution of KI.*
- C. *Incorrect, plausible because the dose explicated in the stem of the question is less than the limits presented in section 3.1.1 of EPIP-15 which are used for protection of the public. Additionally, it is true that the SED is not required to approve the issuance of KI.*
- D. *Correct, in accordance with both Appendix B step L of EPIP-15 and section 3.6 step A of EPIP-14, if a projected dose to the thyroid is expected to exceed 10 REM, KI should be issued. As seen in Appendix B step L of EPIP-15, the SED "shall be informed prior to issuance." EPIP-15 does not require that the SED approve the issuance. Additionally, EPIP-14 reflects that "if the TSC RP Manager or designee has reason to believe a person's projected cumulative dose to the thyroid...might exceed 10 Rem, the exposed person should be started immediately on a dose regimen of Potassium iodide (KI)."*

**Question Number:**   97  

**Tier:**   3   **Group**   n/a  

**K/A:** G 2.3.14  
Radiation Control  
Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities.

**Importance Rating:** 3.4 / 3.8

**10 CFR Part 55:** 41.12 / 43.4 / 45.10

**10CFR55.43.b:** 4, 5

**K/A Match:** K/A is met because the question requires that a potential radiation/contamination hazard be identified and compensated for using the appropriate plant procedure.

**SRO ONLY:** Question is SRO only because it assesses the knowledge of

## QUESTIONS REPORT

for WBN NRC SRO 10-2013 written

**SRO ONLY:** Question is SRO only because it assesses the knowledge of Radiation hazards that may arise during normal and abnormal situations, including maintenance activities and various contamination conditions. [10 CFR 55.43(b)(4)]. Specifically, analysis and interpretation of radiation and activity readings as they pertain to selection of administrative, normal, abnormal, and emergency procedures is required. The applicant must consider the dose to the thyroid and appropriately progress through EPIP-15 and EPIP-14 to select the correct action.

**Technical Reference:** EPIP-14, Radiological Control Response, Revision 0022  
EPIP-15, Emergency Exposure Guidelines, Revision 0015

**Proposed references to be provided:** None

**Learning Objective:** 3-OT-PCD-048C, Radiological Emergency Plan, r 16  
10. Given implementation of the site emergency plan, describe the requirements for approving emergency exposure IAW EPIP-15.

**Cognitive Level:**

Higher \_\_\_\_\_  
Lower  X

**Question Source:**

New  X   
Modified Bank \_\_\_\_\_  
Bank \_\_\_\_\_

**Question History:** New question for the WBN 10/2013 NRC exam

**Comments:**

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
Answer: D C A D C B D B B A Scramble Range: A - D

Created: Thursday, July 05, 2012  
Modified: Wednesday, August 07, 2013  
Revised:

Source: NEW Source If Bank:  
Cognitive Level: LOWER Difficulty:  
Job Position: SRO Plant: WATTS BAR  
Date: 10/2013 Last 2 NRC:

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values	
<Cumulative>		0.000	0.000	0	N	1: 0	2: 0
						3: 0	4: 0

--- A ---			--- B ---			--- C ---			--- D ---			Resp	%	Avg					
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg					
<Cumulative>												Total:		0	100	Omits:		0	0
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00								

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

21. G 2.3.6 098

Given the following:

- Unit 1 is at 100% power.
- Waste Gas Decay Tank 'E' needs to be released.
- The minimum time from fill date to release has **NOT** been met.

In accordance with SOI-77.02, "Waste Gas Disposal System," which ONE of the following correctly identifies whose approval is required to waive the minimum decay time requirement and the minimum required Operations Department approval(s) for a gaseous release permit?

	<u>Waive the Decay time</u>	<u>Approve the release</u>
A✓	Chemistry Manager	Shift Manager <u>or</u> Unit Supervisor
B.	Chemistry Manager	Both Shift Manager <u>and</u> Unit Supervisor
C.	Radiation Protection Manager	Both Shift Manager <u>and</u> Unit Supervisor
D.	Radiation Protection Manager	Shift Manager <u>or</u> Unit Supervisor

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**DISTRACTOR ANALYSIS:**

- A. *Correct, In accordance with SOI-77.02, the Chemistry Manager signature is required to waive the decay time and the minimum required Operations Department approval for the release is either the Shift Manager or the Unit supervisor. (See below)*
- B. *Incorrect, Plausible because the Chemistry Manager being required to waive the decay time is correct and the Operation Department approval is by the two positions listed but it is either of them, not both.*
- C. *Incorrect, Plausible because the Radiation Protection Manager is required for other activities involving the release of radioactive materials and the Operation Department approval is by the two positions listed but it is either of them, not both.*
- D. *Incorrect, Plausible because the Radiation Protection Manager is required for other activities involving the release of radioactive materials and the Operation Department approval is by either of the two positions listed is correct.*

SOI-77.02 Section 8.3

[5] **IF** GDT is **NOT** 60 days into decay, **THEN**  
CHEMISTRY DUTY MANAGER may waive the 60 day  
requirement.

\_\_\_\_\_  
Chemistry Duty Manager Signature

[16] **OBTAIN** SRO approval and verification that release is  
authorized, and instructions are correct for release of the  
applicable Gas Decay Tank.

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**Question Number:** 98

**Tier:** 3 **Group** n/a

**K/A:** G 2.3.6  
Radiation Control  
Ability to approve release permits.

**Importance Rating:** 2.0 / 3.8

**10 CFR Part 55:** 41.13 / 43.4 / 45.10

**10CFR55.42.b:** 4

**K/A Match:** K/A is matched because the question requires knowledge of the process for approving Radiation release permits.

**SRO only** Question is SRO because it requires the ability to determine the proper approval levels for waiving a requirement and the actual approval of the release which is an SRO function.

**Technical Reference:** SOI-77.02, Waste Gas Disposal, Revision 0037

**Proposed references to be provided:** None

**Learning Objective:** 3-OT-SYS077B  
10. Describe the general procedure to make a gaseous release.

**Cognitive Level:**

**Higher** \_\_\_\_\_  
**Lower**   X  

**Question Source:**

**New** \_\_\_\_\_  
**Modified Bank** \_\_\_\_\_  
**Bank**   X  

**Question History:** WBN bank question G 2.3.6 098

**Comments:**

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
Answer: A C C C A D A B A B Scramble Range: A - D

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

Created: Thursday, July 05, 2012

Modified: Wednesday, August 07, 2013

Revised:

Source: BANK

Source If Bank: WBN

Cognitive Level: LOWER

Difficulty:

Job Position: SRO

Plant: WATTS BAR

Date: 10/2013

Last 2 NRC:

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values
<Cumulative>		0.000	0.000	0	N	

--- A ---			--- B ---			--- C ---			--- D ---			Resp	%	Avg
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg
<Cumulative>			Total:			0	100		Omits:			0	0	
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00			

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

22. G 2.4.18 199

Given the following:

- Unit 1 experienced a Reactor Trip and Safety Injection.
- The crew transitioned to 1-FR-Z.1, "High Containment Pressure," from 1-E-1, "Loss of Reactor or Secondary Coolant."
- While 1-FR-Z.1 was being performed, the crew transitioned to 1-FR-P.1, "Pressurized Thermal Shock" and is performing the first step to check RCS pressure greater than 150 psig
- The STA reports the containment pressure has dropped and the containment status tree is GREEN and that no other RED or ORANGE paths exist.

Which ONE of the following completes the statements below in accordance with 1-FR-P.1?

The basis of the FR-P.1 step for checking RCS pressure greater than 150 psig is to (1).

(2) will be the procedure implemented if a transition is made from FR-P.1 during performance of the step.

- A. (1) preclude performing 1-FR-P.1 actions, since pressurized thermal shock is not a serious concern for a large-break LOCA  
(2) 1-E-1
- B✓ (1) preclude performing 1-FR-P.1 actions, since pressurized thermal shock is not a serious concern for a large-break LOCA  
(2) 1-FR-Z.1
- C. (1) determine if the 1-FR-P.1 steps requiring soak periods are required as the procedure is performed  
(2) 1-E-1
- D. (1) determine if the 1-FR-P.1 steps requiring soak periods are required as the procedure is performed  
(2) 1-FR-Z.1

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**DISTRACTOR ANALYSIS:**

- A. *Incorrect, While a pressurized thermal shock is not a serious concern for a large-break LOCA, the transition will be back to 1-FR-Z.1, not to 1-E-1. Plausible, since basis is correct, and with the 1-FR-Z.1 status green the applicant could conclude the return to 1-E-1 will be required as it was the procedure in effect prior the the 1-FR-Z.1 entry.*
- B. *Correct, A pressurized thermal shock is not a serious concern for a large-break LOCA because the system cannot re-pressurize with a large break LOCA. The step RNO will transition back to instruction in effect, which is 1-FR-Z.1 even though the status tree for it is now green.*
- C. *Incorrect, The bases for checking RCS pressure greater than 150 psig is not to determine if soak period are required, and the transition to 1-E-1 is not correct. Plausible because the procedure does contain criteria that does require soak periods to be completed and a transition to 1-E-1 will eventually be made but the rules of usage require the transition to be made back to the procedure is effect prior to the 1-FR-P.1 entry which was 1-FR-Z.1.*
- D. *Incorrect, The bases for checking RCS pressure greater than 150 psig is not to determine if soak period are required, but the transition to 1-FR-Z.1 is correct. Plausible because the procedure does contain criteria that does require soak periods to be completed and transitioning back to 1-FR-Z.1 is correct even though the status tree is currently status green.*

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**Question Number:**   99  

**Tier:**   3   **Group:**   n/a  

**K/A:** G 2.4.18  
Emergency Procedures / Plan  
Knowledge of the specific bases for EOPs.

**Importance Rating:** 3.3 / 4.0

**10 CFR Part 55:** 41.10 / 43.1 / 45.13

**10CFR55.43.b:** 5

**K/A Match:** K/A is matched because the question requires knowledge of the specific bases for the performance of 1-FR-P.1

**SRO ONLY:** Question is SRO because it requires knowledge of diagnostic steps and decision points in the emergency operating procedures (EOP) that involve transitions to event specific subprocedures or emergency contingency procedures.

**Technical Reference:** 1-FR-P.1, Pressurized Thermal Shock, Revision 0000  
WOG background FR-P.1, Response To Imminent  
Pressurized Thermal Shock Condition, HP-Rev. 2  
April 30, 2005

**Proposed references to be provided:** None

**Learning Objective:** 3-OT-FRP0001  
9. Explain the basis for returning to the instruction in effect after identifying that RCS pressure  $\leq$  150 psig and RHR is delivering flow when performing step 1 of FR-P.1.

**Cognitive Level:**

**Higher**   X    
**Lower**       

**Question Source:**

**New**         
**Modified Bank**         
**Bank**   X  

**Question History:** WBN bank question W/E08 EG2.4.18 085 used on the 05/2008 NRC exam (7 exams back) with format changed for use on the WBN 10/2013 exam.

**Comments:**

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
Answer: B C B C D A A B A A Scramble Range: A - D

Created: Monday, May 28, 2012  
Modified: Wednesday, August 07, 2013  
Revised:

Source: BANK Source If Bank: WBN  
Cognitive Level: HIGHER Difficulty:  
Job Position: SRO Plant: WATTS BAR  
Date: 10/2013 Last 2 NRC:

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values	
<Cumulative>		0.000	0.000	0	N	1: 0	2: 0
						3: 0	4: 0

--- A ---			--- B ---			--- C ---			--- D ---			Resp	%	Avg			
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg			
<Cumulative>												Total:	0	100	Omits:	0	0
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00						

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

23. G 2.4.43 500

Given the following:

- At 0400, the SRO answers the NRC ENS phone and receives the plant status communications check.

Which ONE of the following completes the statement below?

The "authentication code" which the SRO receives during the communication check is valid for a (1) hour period and is required during communication between the site and the NRC when communicating any (2).

- | <u>(1)</u>                             | <u>(2)</u>                       |
|----------------------------------------|----------------------------------|
| A. 12                                  | threat or physical attack event  |
| B. 12                                  | Protective Action Recommendation |
| <input checked="" type="radio"/> C. 24 | threat or physical attack event  |
| D. 24                                  | Protective Action Recommendation |

**DISTRACTOR ANALYSIS:**

- A. *Incorrect, Plausible because a 12 hour period is the frequency of many required surveillances of plant and equipment status. Also because the use of the code to confirm communications between the site and NRC during a threat or physical attack event is correct.*
- B. *Incorrect, Plausible because a 12 hour period is the frequency of many required surveillances of plant and equipment status. The second part is plausible as any Protective Action Recommendation has a serious impact to the public.*
- C. *Correct, Security Advisory for Power Reactors, SA-07-01 directs that during the DAILY plant status communications check, a new authentication code will be issued. Such code will become effective at 8:00AM that day. Therefore, the codes are valid for a period of 24 hours (8AM to 8AM). A 12 hour period is plausible because 12 hours is the frequency of many required surveillances of plant and equipment status. The use of the code is required to confirm communications between the site and NRC during a threat or physical attack event.*
- D. *Incorrect, Plausible because the authentication code being valid for 24 hours makes the first part of the answer correct and the second part is plausible as any Protective Action Recommendation has a serious impact to the public.*

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**Question Number:** 100

**Tier:** 3 **Group:** n/a

**K/A:** G 2.4.43  
Emergency Procedures / Plan  
Knowledge of emergency communications systems and techniques

**Importance Rating:** 3.2 / 3.8

**10 CFR Part 55:** 41.10 / 45.13

**10CFR55.43.b:** 2

**K/A Match:** K/A is matched because the question requires knowledge of how the functionality of a emergency communication system is tested and the technique used to authenticated during an emergency.

**SRO ONLY:** Question is SRO because it requires knowledge of actions by an SRO to confirm the operation of communication systems and to establish the process by which authenticity of communications with the NRC will be assured during an emergency.

**Technical Reference:** NRC SA-07-01, Security Advisory for Power Reactors, Revision 1  
SOI-100.01, Communications Systems, Revision 0025

**Proposed references to be provided:** None

**Learning Objective:** 3-OT-SYS100A  
1. Explain the purpose of each of the following communications systems, as per SOI-100.01.  
a. NRC Emergency Notification System (ENS)

**Cognitive Level:**  
**Higher**   X    
**Lower**       

**Question Source:**  
**New**   X    
**Modified Bank**         
**Bank**       

**Question History:** New question for the WBN 10/2013 NRC exam

**Comments:**

## QUESTIONS REPORT

for WBN NRC SRO 10-2013 written

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
 Answer: C A C B A C B D B C Scramble Range: A - D

Created: Monday, May 28, 2012  
 Modified: Wednesday, August 07, 2013  
 Revised:

Source: NEW Source If Bank:  
 Cognitive Level: HIGHER Difficulty:  
 Job Position: SRO Plant: WATTS BAR  
 Date: 10/2013 Last 2 NRC:

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values
<Cumulative>		0.000	0.000	0	N	1: 0 2: 0 3: 0 4: 0

--- A ---			--- B ---			--- C ---			--- D ---			Resp	%	Avg
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg
<Cumulative>			Total:			0 100			Omits:			0	0	
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00			

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

24. W/E05 EG2.1.20 981

Given the following:

- The operating crew entered 1-E-1, "Loss of Reactor or Secondary Coolant."

Subsequently:

- A RED path for secondary heat sink is evident and the crew enters 1-FR-H.1, "Loss of Secondary Heat Sink."

Currently:

- RCS pressure is 800 psig and stable.
- All S/G pressures are 900 psig and stable.

Which one of the following completes the statements below?

The conditions will require (1).

In accordance with TI-12.04, the STA is required to monitor status trees (2) while a red path exists.

(1)

(2)

- |                                                                |                          |
|----------------------------------------------------------------|--------------------------|
| A. a transition back to 1-E-1                                  | once every 10-20 minutes |
| B. continuing in 1-FR-H.1                                      | once every 10-20 minutes |
| <input checked="" type="radio"/> C. a transition back to 1-E-1 | continuously             |
| D. continuing in 1-FR-H.1                                      | continuously             |

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**DISTRACTOR ANALYSIS:**

- A. *Incorrect, plausible because a transition back to the instruction in effect is warranted. The procedure in effect prior to the realization of the red path to 1-FR-H.1 was 1-E-1. When the unit supervisor checks if secondary heat sink is required, he will realize that RCS pressure is NOT greater than any intact S/G pressure. Therefore, he will execute the response not obtained instruction to return to the instruction in effect. Even though the red path to 1-FR-H.1 does not fully implement 1-FR-H.1, it still exists and IAW TI-12.04 section 2.4.4, "while any red or orange path exists, the status trees will be monitored continuously." A common misconception seen during requalification scenarios is to observe a crew fail to continuously monitor status trees after an "immediate" transition out of either 1-FR-H.1 or FR-P.1. The fact that the red path procedure will not be used does not obviate the need to continuously monitor status trees. The normal monitoring frequency for status trees is once every 10-20 minutes.*
- B. *Incorrect, plausible because the RCS is still pressurized. Another common misconception is to misunderstand the coupling between the RCS and the S/Gs. A common mistake is to believe that secondary heat removal is REQUIRED until the RCS lost all subcooling (e.g. if the RCS has blown down to containment pressure). In this case, the RCS has depressurized to the point that ECCS injection has matched the break loss; decay heat removal is afforded by such a mechanism. Even though the red path to 1-FR-H.1 does not fully implement 1-FR-H.1, it still exists and IAW TI-12.04 section 2.4.4, "while any red or orange path exists, the status trees will be monitored continuously." A common misconception seen during requalification scenarios is to observe a crew fail to continuously monitor status trees after an "immediate" transition out of either 1-FR-H.1 or FR-P.1. The fact that the red path procedure will not be used does not obviate the need to continuously monitor status trees. The normal monitoring frequency for status trees is once every 10-20 minutes.*
- C. *Correct, a transition back to 1-E-1 is warranted. Additionally, because a red path exists, the STA must continuously monitor the status trees.*
- D. *Incorrect, plausible because the RCS is still pressurized. Another common misconception is to misunderstand the coupling between the RCS and the S/Gs. A common mistake is to believe that secondary heat removal is REQUIRED until the RCS lost all subcooling (e.g. if the RCS has blown down to containment pressure). In this case, the RCS has depressurized to the point that ECCS injection has matched the break loss; decay heat removal is afforded by such a mechanism. Additionally, the continuous monitoring of status trees is required.*

Question Number:   81  

Tier:   1   Group:   1  

K/A: W/E05 EG2.1.20  
Loss of Secondary Heat Sink

## QUESTIONS REPORT

for WBN NRC SRO 10-2013 written

**K/A:** W/E05 EG2.1.20  
Loss of Secondary Heat Sink  
Conduct of Operations  
Ability to interpret and execute procedure steps.

**Importance Rating:** 4.6 / 4.6

**10 CFR Part 55:** 41.10 / 43.5 / 45.12

**10CFR55.43.b:** 5

**K/A Match:** K/A is matched because the question requires the ability to interpret conditions to make correct decisions in the steps of FR-H.1 as to when a transition out of 1-FR-H.1 is required.

**SRO ONLY:** Question is SRO because it requires the assessment of plant conditions and then selecting a procedure or section of a procedure to mitigate, recover, or with which to proceed as well as knowledge of diagnostic steps and decision points in the EOPs that involve transitions to event specific subprocedures or emergency contingency procedures.

**Technical Reference:** 1-FR-H.1, Loss of Secondary Heat Sink, Revision 0000

**Proposed references to be provided:** None

**Learning Objective:** 3-OT-FRH0001  
17. Given a set of plant conditions, use FR-H.1, H.2, H.3, H.4, & H.5 and the Critical Safety Function Status Trees to correctly diagnose and implement: Action Steps, RNOs, Foldout Pages, Notes and Cautions.

### Cognitive Level:

**Higher**   X    
**Lower**       

### Question Source:

**New**   X    
**Modified Bank**         
**Bank**       

**Question History:** New question for the 10-2013 NRC exam

### Comments:

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9  
Answer: C D B C A B C B C C Scramble Range: A - D

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

Created: Monday, May 28, 2012

Modified: Thursday, August 15, 2013

Revised:

Source: NEW

Source If Bank:

Cognitive Level: HIGHER

Difficulty:

Job Position: SRO

Plant: WATTS BAR

Date: 10/2013

Last 2 NRC:

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values
<Cumulative>		0.000	0.000	0	N	1: 0      2: 0 3: 0      4: 0

--- A ---			--- B ---			--- C ---			--- D ---			Resp	%	Avg
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg
<Cumulative>			Total:			0	100		Omits:			0	0	
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00			

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

25. W/E15 EA2.2 185

Given the following:

Time

- 21:56 - Unit I is operating at 100% power with the 1B-B RHR pump out of service.
- 21:57 - The plant experiences a seismic event that resulted in a LOCA.
- 22:13 - The crew implements 1-E-1, "Loss of Reactor or Secondary Coolant."
- 22:34 - The SRO receives the following reports:
- RHR pump 1A-A just tripped.
  - Containment sump level is 85%.
  - Containment pressure is now 2.6 psig after peaking at 3.8 psig.
  - RWST level is 41% and decreasing.

Which ONE of the following identifies the action the SRO must perform?

- A. Continue in 1-E-1 until RWST level meets ES-1.3, "Transfer to Containment Sump," transition criteria.
- B. Transition to FR-Z.2, "Containment Flooding."
- C. Transition to ECA-1.1, "Loss of RHR Sump Recirculation."
- D. Transition to FR-Z.1, "High Containment Pressure."

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

**DISTRACTOR ANALYSIS:**

- A. *Incorrect, Plausible because if the sump level had been <83%, 1-E-1 would direct a transition to 1-ES-1.3 when the RWST level drops to 34% and then a transition to ECA-1.1 would be directed during performance of 1-ES-1.3.*
- B. *Correct, A containment sump level of 83% or greater makes the Containment Status Tree Orange and with no other procedure having a higher priority, an immediate transition to FR-Z.2, "Containment Flooding," is currently required. There are no procedures currently in use which override the application of the status trees.*
- C. *Incorrect, Plausible because this is the RNO for 1-E-1, Step 19, **ENSURE** RHR available for Cntmt sump recirculation. However, while there are conditions that provide for ECAs taking precedent over an FR, there is no modifying note stating that this procedure takes priority over an Orange path FR. There is a common misconception that ECA-1.1 has a priority similar to ES-1.3, "Transfer to Containment Sump," which does have priority over FR implementation.*
- D. *Incorrect, Plausible because the containment pressure has risen above Phase B pressure (2.8 psig) that can result in an ORANGE path with a higher priority than the path on FR-Z.2. However, the ORANGE path will not exist because the containment spray pumps will have started and containment spray will be in service.*

**Question Number:** 85

**Tier:** 1 **Group:** 2

**K/A:** W/E15 EA2.2  
Containment Flooding  
Ability to determine and interpret the following as they apply to the  
(Containment Flooding)  
Adherence to appropriate procedures and operation within the limitations in  
the facility\*s license and amendments.

**Importance Rating:** 2.9 / 3.3

**10 CFR Part 55:** 43.5 / 45.13

**10CFR55.43.b:** 5

**K/A Match:** K/A is matched because the question requires the ability to assess conditions and make the transition to the correct procedure during a Containment Flooding event.

**SRO ONLY:** Question is SRO because it requires the assessment of plant conditions and then selecting a procedure or section of a procedure to mitigate, recover, or with which to proceed as well as knowledge of diagnostic steps and decision points in the EOPs that involve transitions to event specific subprocedures

## QUESTIONS REPORT

for WBN NRC SRO 10-2013 written

**SRO ONLY:** Question is SRO because it requires the assessment of plant conditions and then selecting a procedure or section of a procedure to mitigate, recover, or with which to proceed as well as knowledge of diagnostic steps and decision points in the EOPs that involve transitions to event specific subprocedures or emergency contingency procedures.

**Technical Reference:** FR-0, Status Trees, Revision 0014  
1-E-1, Loss of Reactor or Secondary Coolant, Revision 0000

**Proposed references to be provided:** None

**Learning Objective:** 3-OT-EOP0100  
8. Given a set of plant conditions, use E-1, ES-1.1, ES-1.2, ES-1.3, and ES-1.4 to correctly diagnose and implement: Action Steps, RNOs, Foldout Pages, Notes, and Cautions.  
3-OT-FRZ0001  
1. Given a set of plant conditions, use the FR-Z status tree to determine which, if any, Containment Function Restoration Procedure should be implemented.

### Cognitive Level:

**Higher**   X    
**Lower**       

### Question Source:

**New**         
**Modified Bank**   X    
**Bank**       

**Question History:** WBN question W/E15 G 2.2.4 009 used on the WBN 2006 NRC exam with one distractor changed and the stem format and wording modified.

MCS Time: 1 Points: 1.00 Version: 0 1 2 3 4 5 6 7 8 9

**Comments:** Answer: B D D B A D D B C A Scramble Range: A - D

Created: Monday, May 28, 2012

Modified: Thursday, August 08, 2013

Revised:

Source: BANK MOD

Source If Bank: SQN

Cognitive Level: HIGHER

Difficulty:

Job Position: SRO

Plant: WATTS BAR

Date: 10/2013

Last 2 NRC:

**QUESTIONS REPORT**  
for WBN NRC SRO 10-2013 written

Test Name	Test Date	rpb	p(Diff)	Time	Equ	User Values	
<Cumulative>		0.000	0.000	0	N	1: 0	2: 0
						3: 0	4: 0

--- A ---			--- B ---			--- C ---			--- D ---			Resp	%	Avg					
Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg	Resp	%	Avg					
<Cumulative>												Total:		0	100	Omits:		0	0
0	0	0.00	0	0	0.00	0	0	0.00	0	0	0.00								