ILT 47 ONS SRO NRC Examination QUESTION 76

76

B

EPE009 EA2.11 - Small Break LOCA

Ability to determine or interpret the following as they apply to a small break LOCA: (CFR 43.5 / 45.13)

Containment temperature, pressure, and humidity .....

Given the following Unit 1 conditions:
Time = 0400

- Reactor power = 70% decreasing
- Unit shut down in progress due to a 140 gpm RCS leak

Time = 0420

- Core SCM = 0 ºF
- RCS temperature = 550 ºF decreasing
- Reactor building pressure = 6 psig increasing
- 1RIA-58 = 15 R/hr increasing

Time = 0445

- Reactor building pressure = 18 psig increasing
- Tremor felt in the control room
- Seismic trigger actuates

Time = 0455

- Reactor building pressure = 4 psig decreasing
- 1RIA-58 = 55 R/hr decreasing
- Little River Dam has failed

1) The Emergency Classification at 0420 is __ (1) __.

2) The Emergency Classification at 0450 is __ (2) __.

Which ONE of the following completes the statements above?

REFERENCE PROVIDED

A. 1. Alert
2. Site Area Emergency

B. 1. Alert
2. General Emergency

C. 1. Site Area Emergency
2. Site Area Emergency

D. 1. Site Area Emergency
2. General Emergency

ILT 47 ONS SRO NRC Examination QUESTION 76

76

B

General Discussion

Answer A Discussion

First part is correct. Loss of SCM gives 5 points on the matrix. This is an Alert.

Second part is incorrect because a General Emergency is the correct classification. It is plausible because it would be correct if the unexplained decrease in RB pressure were not accounted for in the Fission Product Barrier Matrix.

Answer B Discussion

Correct. Loss of SCM gives 5 points on the matrix. This is an Alert.

At 0450 LOSCM 5 points, RIA-58 reading at 50 minutes is 5 points, and unexplained RB pressure decrease 3 points. 13 total points which is a General Emergency.

Answer C Discussion

First part is incorrect because an Alert is the correct classification. It is plausible because if the candidate had the misconception that they should add the 4 points for the RCS leak rate . 160 gpm (4 points) and LOSCM (5 points) this would be 9 points and a SAE.

Second part is incorrect because a General Emergency is the correct classification. It is plausible because it would be correct if the unexplained decrease in RB pressure were not accounted for in the Fission Product Barrier Matrix.

Answer D Discussion

First part is incorrect because an Alert is the correct classification. It is plausible because if the candidate had the misconception that they should add the 4 points for the RCS leak rate . 160 gpm (4 points) and LOSCM (5 points) this would be 9 points and a SAE.

At 0450 LOSCM 5 points, RIA-58 reading at 50 minutes is 5 points, and unexplained RB pressure decrease 3 points. 13 total points which is a General Emergency.

Basis for meeting the KA

Question requires knowledge of how to base an emergency classification based on plant conditions including containment pressure. This question requires interpreting Containment Pressure indications as they relate to determining the correct EAL.

Basis for Hi Cog

Basis for SRO only

This question is SRO only based on being an emergency classification.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	BANK	ILT42 Q83

Development References
ILT42 Q83 RP 1000 001 EAP SEP

Student References Provided
RP 1000 001

EPE009 EA2.11 - Small Break LOCA

Ability to determine or interpret the following as they apply to a small break LOCA: (CFR 43.5 / 45.13)

Containment temperature, pressure, and humidity .....

401-9 Comments:	Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 76 76 **B**

ILT 47 ONS SRO NRC Examination QUESTION 77

77

A

APE025 2.2.44 - Loss of Residual Heat Removal System (RHRS)

APE025 GENERIC

Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions. (CFR: 41.5 / 43.5 / 45.12)

Unit 1 initial conditions:

- Reactor in MODE 6
- Fuel Transfer Canal full
- SF-1 and SF-2 are open

Current conditions:

- Operator reports Fuel Transfer Canal level slowly decreasing
- RBNS level increasing
- Control Room indicates Spent Fuel Pool level decreasing

Based on the above conditions, which ONE of the following:

1) actions would be performed first in accordance with AP/26 (Loss of Decay Heat Removal)?

2) states the reason for the action?

A. 1. Secure ALL LPI Pumps
   2. Determine if leak is on discharge of LPI Pumps

B. 1. Secure ALL LPI Pumps
   2. Preparation for closing 1SF-1 and 1SF-2

C. 1. Secure SF Cooling pump used for Refueling Cooling Mode
   2. Determine if leak is on discharge of SF Cooling Pump

D. 1. Secure SF Cooling pump used for Refueling Cooling Mode
   2. Preparation for closing 1SF-1 and 1SF-2

ILT 47 ONS SRO NRC Examination QUESTION 77

77

A

General Discussion

Answer A Discussion

1st part is correct. Once you make your way to the correct section of AP/26 , it will direct securing all LPI pumps in an effort to determine the location and isolability of the leak.

2nd part is correct. If securing the pumps do not change the leak rate then they will be restarted.

Answer B Discussion

First part is correct because the first action performed is to secure ALL LPI pumps.

Second part is incorrect because the reason is for leak determination. It is plausible plausible since the current SFC alignment in the refueling mode provides for taking a suction off the fuel transfer canal via the decay heat drop line and discharging to the SFP. That alignment must be secured prior to closing SF-1 and 2 to prevent pumping FTC to SFP however it is the B SF pump being used in this alignment and not the LPI pumps.

Answer C Discussion

Incorrect because this is not the first action directed. It is plausible since the B SFC Pump is being used in the Refueling Mode alignment and securing the pump and monitoring leak rate could help determine if the source of the leak is on the discharge of SFC pump. Since the Fuel Transfer Canal is full, securing the pump is plausible. Additionally, this action is actually directed by AP/26 although it is a later action after transferring to the condition specific section of the AP. It is the LPI pumps that are initially secured.

Answer D Discussion

Incorrect because it is not the first action directed. It is plausible since the SFC pumps are secured later in AP/26 prior to closing SF-1 and 2 to prevent pumping FTC to SFP.

Basis for meeting the KA

Requires ability to interpret CR indications to determine status of the system and use that knowledge to take appropriate actions per AP/26. It also requires the reasons/affects that those actions have on the system

Basis for Hi Cog

Basis for SRO only

This first part of this question requires detailed knowledge of specific procedure steps in AP/26. Knowledge of these steps are used to select which section of the procedure is to be performed. There are several sections of Subsequent Actions that could be performed based on the conditions requiring entry into the AP and using knowledge of the entry conditions and assessing the different sections of Subsequent actions is required to determine the appropriate steps to perform. Additionally, this question requires detailed knowledge of specific steps that need to be taken prior to transfer to section 4D. In this specific case, the LPI pumps are secured to assess the impact on the decreasing fuel transfer canal level. In this situation it is after these steps are performed that you make the transfer to section 4D which will direct stopping the SF Pump. This path through the AP means that to get to the appropriate actions you must assess plant conditions and determine a section of the procedure with which to proceed.

This question cannot be answered bases solely on systems knowledge since when in MODE 6 with fuel transfer canal full it would be normal to have LPI pumps running AND the B Spent Fuel Cooling pump aligned in the Refueling Cooling mode. Also, neither reason given for securing pumps would eliminate either answer based on system knowledge.
This question cannot be answered bases solely on knowledge of entry conditions.
None of the operator actions are Immediate Operator Actions of the AP.
The knowledge needed is more detail than just the major mitigation strategy of the AP.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	BANK	2009B NRC Exam Q78

Development References	Student References Provided
2009B Q78 EAP-APG R8 AP/26	

APE025 2.2.44 - Loss of Residual Heat Removal System (RHRS)

ILT 47 ONS SRO NRC Examination QUESTION 77

77

A

APE025 GENERIC

Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions. (CFR: 41.5 / 43.5 / 45.12)

401-9 Comments:	Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 78 78 **B**

APE027 2.2.25 - Pressurizer Pressure Control System (PZR PCS) Malfunction
APE027 GENERIC
Knowledge of the bases in Technical Specifications for limiting conditions for operations and safety limits. (CFR: 41.5 / 41.7 / 43.2)

Given the following Unit 1 conditions:

- Reactor in MODE 5
- ALL LTOP requirements established in accordance with Tech Spec 3.4.12 (LTOP)
- 1HP-120 demand signal fails to 100%

Which ONE of the following describes the reason the failure will NOT result in exceeding RCS brittle fracture pressure limits?

A. LTOP requires the HPI system to be deactivated therefore no HPI pumps will be injecting

B. Mechanical Travel Stop on 1HP-120 limits flow such that the operator has 10 minutes to identify and mitigate the event

C. The PORV will act as a backup to the failed Administrative Control and prevent exceeding the brittle fracture limits

D. The dedicated LTOP operator is credited with identifying the failure and responding within 10 minute of the event initiation

---

ILT 47 ONS SRO NRC Examination QUESTION 78

78

B

General Discussion

Answer A Discussion

Incorrect: Plausible since TS 3.4.12 does specify in the LCO statement that both trains of HPI must be deactivated however the bases goes on to explain that it is referring to HPI ES actuation. HPI pump operation is allowed as long as associated train valves are deactivated.

Answer B Discussion

Correct: There are two trains of LTOP protection. The primary train is the Admin Controls train. This train requires that makeup flow be controlled. The basis of TS 3.4.12 goes on to specify that for the Admin Controls to be established, there must be a travel stop on HP-120 which will limit flow to a max of 98 gpm. The PORV is a backup to the Admin controls.

Answer C Discussion

Incorrect: Plausible since the PORV does act as a backup however there is no failed administrative control since the travel stop is in place and therefore the PORV would not be required to mitigate the event.

Answer D Discussion

Incorrect: Plausible since the dedicated LTOP operator can be credited with mitigating an LTOP event however the LTOP operator is only established if one or more of the required Admin controls are not in place.

Basis for meeting the KA

Requires knowledge of the LTOP LCO as it relates to HP-120 and the PORV, both of which are part of the Pressurizer pressure control system. The malfunction portion of the KA is satisfied by the failure of the 1HP-120 demand signal.

Basis for Hi Cog

Basis for SRO only

This question requires knowledge from the basis of TS 3.4.12 and the Safety Limits that is not systems knowledge. While the LTOP lesson plan does require an RO to know that there are administrative limits on makeup flow during LTOP, it is only specifically out of the TS bases that we describe how that requirement is satisfied. Additionally requires SRO only knowledge of HPI deactivation requirements.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Memory	BANK	ILT40 (Q79) NRC Exam

Development References	Student References Provided
CP-017 Pg 14, 15 TS 3.4.12 bases ILT40 Q79	

APE027 2.2.25 - Pressurizer Pressure Control System (PZR PCS) Malfunction

APE027 GENERIC

Knowledge of the bases in Technical Specifications for limiting conditions for operations and safety limits. (CFR: 41.5 / 41.7 / 43.2)

401-9 Comments:	Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 79

79

A

EPE055 2.2.44 - Loss of Offsite and Onsite Power (Station Blackout)

EPE055 GENERIC

Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions. (CFR: 41.5 / 43.5 / 45.12)

Given the following Unit 1 conditions:
Initial conditions:

- Reactor power = 100%
- ACB-4 closed
- Switchyard Isolation occurs

Current conditions:

- Keowee Unit 2 emergency lockout
- 230 KV Yellow Bus Differential lockout
- Blackout Tab is in progress

1) The Blackout tab will direct the performance of ___(1)___ to energize 1TC, 1TD and 1TE.

2) The MFB will be re-energized from ___(2)___ in accordance with the procedure directed in part 1.

Which ONE of the following completes the statements above?

A. 1. Enclosure 5.38 (Restoration of Power)
   2. CT-4

B. 1. Enclosure 5.38 (Restoration of Power)
   2. CT-5

C. 1. AP/11 (Recovery from Loss of Power)
   2. CT-4

D. 1. AP/11 (Recovery from Loss of Power)
   2. CT-5

ILT 47 ONS SRO NRC Examination QUESTION 79

79

A

General Discussion

Answer A Discussion

1st part is correct. Encl 5.38 will be used to restore power to TC, TD and TE.

2nd part is correct. EOP enclosure 5.38 (Restoration of Power) will align power to the MFBs from Keowee Unit 1 via CT-4 since it is operating.

Answer B Discussion

1st part is correct. Encl 5.38 will be used to restore power to TC, TD and TE.

2nd part is incorrect because power will come through CT-4. It is plausable because CT-5 would be used if Keowee Unit 1 were not available.

Answer C Discussion

1st part is incorrect because power is restored to TC, TD and TE with Encl 5.38. It is plausible because AP/11 is used to restore power to equipment after power is restored to TC, TD or TE and it is directed by the Blackout Tab.

2nd part is correct. EOP enclosure 5.38 (Restoration of Power) will align power to the MFBs from Keowee Unit 1 via CT-4 since it is operating.

Answer D Discussion

1st part is incorrect because power is restored to TC, TD and TE with Encl 5.38. It is plausible because AP/11 is used to restore power to equipment after power is restored to TC, TD or TE and it is directed by the Blackout Tab.

2nd part is incorrect because power will come through CT-4. It is plausable because CT-5 would be used if Keowee Unit 1 were not available.

Basis for meeting the KA

Question matches the KA by requiring knowledge of control room indications to determine status of electrical system and knowing how power will come back in to the busses.

Basis for Hi Cog

Basis for SRO only

This question is SRO only because it requires assessing plant conditions and then selecting a procedure to recover or proceed.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	NEW	

Development References

EAP-BO Pg 10, 12
Blackout Tab
AP 11
SRO Only Guidance
Encl 5.38
Elec Dwg

Student References Provided

EPE055 2.2.44 - Loss of Offsite and Onsite Power (Station Blackout)

EPE055 GENERIC

Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions. (CFR: 41.5 / 43.5 / 45.12)

401-9 Comments:

Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 79 79 **A**

ILT 47 ONS SRO NRC Examination QUESTION 80

80

B

APE058 AA2.01 - Loss of DC Power

Ability to determine and interpret the following as they apply to the Loss of DC Power: (CFR: 43.5 / 45.13)

That a loss of dc power has occurred; verification that substitute power sources have come on line .....

Given the following Unit 1 conditions:
Time = 1200:

- Reactor power = 100%
- 1SA6/B2 INVERTER 1DID SYSTEM TROUBLE actuated

Time = 1205

- AO reports:
  o 1SA13/A8 INVERTER 1DID INPUT VOLTAGE LOW actuated
  o Inverter 1DID output voltage low

1) The status of 1KVID at Time = 1205 is __(1)__.

2) The MINIMUM action(s) required to restore the 1DID inverter to OPERABLE in accordance with Tech Spec 3.8.6 (Vital Inverters-Operating) is/are to restore DC input voltage __(2)__.

Which ONE of the following completes the statements above?

A. 1. NOT energized
   2. ONLY

B. 1. NOT energized
   2. AND re-connect to 1KVID

C. 1. Energized
   2. ONLY

D. 1. Energized
   2. AND re-connect to 1KVID

ILT 47 ONS SRO NRC Examination QUESTION 80

80

B

General Discussion

Answer A Discussion

First part is correct. The Vital inverter panelboards (KVIA, KVIB, KVIC, and KVID) do have an alternate source of power that can be aligned from Regulated power (KRA) however the swap requires manual alignment since there is no Auto swap to Regulated power for the vital power panelboards.

Second part is incorrect because to be operable, DID is required to connected KVID. It is plausible since restoring the DC input voltage would return the inverter to a functional status however it would not meet TS bases requirement for operability since it is not aligned to its panelboard.

Answer B Discussion

First part is correct. The Vital inverter panelboards (KVIA, KVIB, KVIC, and KVID) do have an alternate source of power that can be aligned from Regulated power (KRA) however the swap requires manual alignment since there is no Auto swap to Regulated power for the vital power panelboards.

Second part is correct. The bases of TS 3.8.6 requires the inverter to be powering its associated panelboard to be Operable.

Answer C Discussion

First part is incorrect. First part is plausible since the essential inverter [panelboards (KI, KU, and KX) do have an auto swap function to provide them power from regulated power automatically on loss of the inverter therefore this would be a correct choice if asking about one of the essential power panelboards.

Second part is incorrect because to be operable, DID is required to connected KVID. It is plausible since restoring the DC input voltage would return the inverter to a functional status however it would not meet TS bases requirement for operability since it is not aligned to its panelboard.

Answer D Discussion

Incorrect, First part is plausible since the essential inverter [panelboards (KI, KU, and KX) do have an auto swap function to provide them power from regulated power automatically on loss of the inverter therefore this would be a correct choice if asking about one of the essential power panelboards.

Second part is correct. The bases of TS 3.8.6 requires the inverter to be powering its associated panelboard to be Operable..

Basis for meeting the KA

This question requires the ability to interpret given plant indications and determine if they indicate a loss of one of the vital instrument power panelboards. Then determination of the status of the panelboard following the loss of DC demonstrates the ability to verify that substitute power sources have responded correctly.. At the SRO level the question requires interpreting the loss of DC input to the inverter and its impact on the actions required to restore the inverter to Operable.

Basis for Hi Cog

Basis for SRO only

In accordance with "Clarification Guidance for SRO-only Questions":
This question requires making operability determinations on TS related equipment. The first part of the question requires knowledge of operability requirements for the DID inverter found only in the Bases of TS 3.8.6 (that it be connected to its associated panelboard to be considered Operable) and can not be answered by system knowledge only. The second part is RO knowledge since it can be answered based on system knowledge.
It cannot be answered solely by1hr or less memory items.
It cannot be answered solely by above the line knowledge
It cannot be answered solely by knowing TS Safety Limits
It does require knowledge of TS basis that is not systems knowledge

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	BANK	ILT44 Q80

ILT 47 ONS SRO NRC Examination QUESTION 80

80

B

Development References
ILT44 Q80 ADM TSS TS 3.8.6 B

Student References Provided

APE058 AA2.01 - Loss of DC Power

Ability to determine and interpret the following as they apply to the Loss of DC Power: (CFR: 43.5 / 45.13)

That a loss of dc power has occurred; verification that substitute power sources have come on line .....

401-9 Comments:	Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 81

81

B

APE062 AA2.02 - Loss of Nuclear Service Water

Ability to determine and interpret the following as they apply to the Loss of Nuclear Service Water: (CFR: 43.5 / 45.13)

The cause of possible SWS loss .....

Given the following plant conditions:
Initial plant conditions:

- Unit 1 AND Unit 2 Reactor power = 100%
- A and C LPSW pumps are operating
- 1LPSW-2 (A LPSW Pump Suction) is inadvertently closed

Current plant conditions:

- 1SA-09 / A-9, LPSW HEADER A PRESS LOW alarms and clears
- LPSW header pressure is fluctuating between 75 psig and 85 psig
- A LPSW pump amps are erratic
- AP/24, LOSS OF LPSW is initiated

In accordance with AP/24:

1) the Standby LPSW Pump auto start circuitry ____(1)____ disabled prior to securing the A LPSW pump.

2) the A LPSW pump can be restarted____(2)____.

Which ONE of the following completes the statements above?

A. 1. is
   2. as soon as 1LPSW-2 has been re-opened

B. 1. is
   2. ONLY after the A LPSW pump has been filled and vented

C. 1. is NOT
   2. as soon as 1LPSW-2 has been re-opened

D. 1. is NOT
   2. ONLY after the A LPSW pump has been filled and vented

ILT 47 ONS SRO NRC Examination QUESTION 81

81

B

General Discussion

Answer A Discussion

1st part is correct. AP/24, step 4.3 directs disabling the Unit 1/2 STBY LPSW PUMP AUTO START CIRCUIT. Step 4.4 stops the affected pump.

2nd part is incorrect because with indications of cavitation, a note prior to step 4.7 states the pump must be filled and vented prior to start. It is plausible because the source of the problem has been both identified and corrected.

Answer B Discussion

1st part is correct. AP/24, step 4.3 directs disabling the Unit 1/2 STBY LPSW PUMP AUTO START CIRCUIT. Step 4.4 stops the affected pump.

2nd part is correct because there is a note in AP/24 prior to step 4.7 (to start LPSW pumps) that states if the pump was stopped due to cavitation, it is NOT available until filled and vented.

Answer C Discussion

1st part is incorrect because the the Unit 1/2 STANDBY LPSW PUMP AUTO START CIRCUIT is placed in DISABLE prior to stopping the affected pumps. It is plausible because cavitation was not taking place, it would be correct.

2nd part is incorrect because with indications of cavitation, a note prior to step 4.7 states the pump must be filled and vented prior to start. It is plausible because the source of the problem has been both identified and corrected.

Answer D Discussion

1st part is incorrect because the the Unit 1/2 STANDBY LPSW PUMP AUTO START CIRCUIT is placed in DISABLE prior to stopping the affected pumps. It is plausible because cavitation was not taking place, it would be correct.

2nd part is correct because there is a note in AP/24 prior to step 4.7 (to start LPSW pumps) that states if the pump was stopped due to cavitation, it is NOT available until filled and vented.

Basis for meeting the KA

The question matches the KA by requiring knowledge of the indications of pump cavitation (cause of possible SWS loss). This will determine the actions taken in the AP for this loss (switch taken to disable) andrequirements for restart.

Basis for Hi Cog

Basis for SRO only

This question is SRO only because it requires in-depth knowledge of abnormal procedures and operability requirements of LPSW system components.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	NEW	

Development References

AP/24
TS 3.3.28
TS 3.7.7 B
EAP APG
SSS-LPW Pg 10, 19

Student References Provided

APE062 AA2.02 - Loss of Nuclear Service Water
Ability to determine and interpret the following as they apply to the Loss of Nuclear Service Water: (CFR: 43.5 / 45.13)
The cause of possible SWS loss .....

401-9 Comments:

Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 81 81 **B**

ILT 47 ONS SRO NRC Examination QUESTION 82

82

C

APE037 AA2.03 - Steam Generator (S/G) Tube Leak

Ability to determine and interpret the following as they apply to the Steam Generator Tube Leak: (CFR: 43.5 / 45.13)

That the expected indication on main steam lines from the S/Gs should show increasing radiation levels .....

Given the following Unit 1 conditions:
Time = 0800:

- Reactor power = 80% stable
- 1RIA-40 Alert and High Alarm actuated
- AP/31, PRIMARY TO SECONDARY LEAKAGE is initiated
- 1RIA-59 = 20 gpm increasing
- 1RIA-60 = 0.4 gpm increasing

Time = 0805:

- 1RIA-59 = 30 gpm increasing
- 1RIA-60 = 0.6 gpm increasing
- SGTR tab is entered
- Maximum Runback is initiated

Time = 0809

- Reactor power = 15%
- Auxiliaries have been transferred

1) If there is no primary to secondary leak on the 1B SG, the increased indication on 1RIA-60 is most likely due to radiation____(1)____.

2) At 0809, the SRO should____(2)____, then continue in the SGTR tab.

Which ONE of the following completes the statements above?

A. 1. from the B steam header due to cross contamination
   2. trip the Main Turbine ONLY

B. 1. from the B steam header due to cross contamination
   2. trip the Main Turbine AND the Reactor

C. 1. from the A SG header reaching 1RIA-60 due to the close proximity of the steam lines
   2. trip the Main Turbine ONLY

D. 1. from the A SG header reaching 1RIA-60 due to the close proximity of the steam lines
   2. trip the Main Turbine AND the Reactor

ILT 47 ONS SRO NRC Examination QUESTION 82

82

C

General Discussion

Answer A Discussion

1st part is incorrect because N-16 will have decayed away by the time it has passed through the system and back down the B steam line. It is plausible because some cross contamination will occur.

2nd part is correct. Criteria to trip the turbine is power ~ 15% and auxiliaries transferred. The reactor will not be tripped until power is < 5%.

Answer B Discussion

1st part is incorrect because N-16 will have decayed away by the time it has passed through the system and back down the B steam line. It is plausible because some cross contamination will occur.

2nd part incorrect because the reactor is not tripped at this time. It is plasusible because if less than or equal to 5%, it would be correct.

Answer C Discussion

1st part is correct. Per the caution statement prior to step 12 in the SGTR tab, shine can account for up to 2% of the value of the opposite header.

2nd part is correct. Criteria to trip the turbine is power ~ 15% and auxiliaries transferred. The reactor will not be tripped until power is < 5%.

Answer D Discussion

1st part is correct. Per the caution statement prior to step 12 in the SGTR tab, shine can account for up to 2% of the value of the opposite header.

2nd part incorrect because the reactor is not tripped at this time. It is plasusible because if less than or equal to 5%, it would be correct.

Basis for meeting the KA

This question matches the KA by requiring knowledge of the effects radiation shine on steam line detectors during a SGTR and how they could increase without a SGTR on that particular SG.

Basis for Hi Cog

Basis for SRO only

This question is SRO only because it requires "Assessing plant conditions and then selecting a procedure or section of a procedure with which to proceed".

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	NEW	

Development References

EAP-APG
SGTR Tab
AP 31
AP 2
RAD-RIA Pg 30-32

Student References Provided

APE037 AA2.03 - Steam Generator (S/G) Tube Leak
Ability to determine and interpret the following as they apply to the Steam Generator Tube Leak: (CFR: 43.5 / 45.13)
That the expected indication on main steam lines from the S/Gs should show increasing radiation levels .....

401-9 Comments:

Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 82 82 **C**

ILT 47 ONS SRO NRC Examination QUESTION 83

83

A

APE051 2.4.20 - Loss of Condenser Vacuum
APE051 GENERIC
Knowledge of the operational implications of EOP warnings, cautions, and notes. (CFR: 41.10 / 43.5 / 45.13)

Given the following Unit 3 conditions:

- Reactor power = 100%
- Condenser vacuum = 26”Hg decreasing
- Steam pressure to the CSAEs = 240 psig stable

1) Per 3AP/27, steam pressure to the CSAEs ____(1)____ required to be increased.

2) Guidance to address aligning the Main Vacuum Pumps to Unit 3 is contained in ____(2)____.

Based on the given plant conditions, complete the above statements.

A. 1. is
   2. 1AP/27

B. 1. is
   2. 3AP/27

C. 1. Is NOT
   2. 1AP/27

D. 1. Is NOT
   2. 3AP/27

ILT 47 ONS SRO NRC Examination QUESTION 83

83

A

General Discussion

Answer A Discussion

1st part is correct. Per step 4.6, Ensure Stm to Stm Air Eject A, B, C > 255 psig.

2nd part is correct. A procedure note in 1/AP/27 Encl 5.1 states that this enclusire will be used to align vacuum pumps on ANY Oconee Unit.

Answer B Discussion

1st part is correct. Per step 4.6, Ensure Stm to Stm Air Eject A, B, C > 255 psig.

2nd part is incorrect because guidance to align the Main Vacuum Pumps is contained in Unit 1's AP/27. A procedure note in 1/AP/27 Encl 5.1 states that this enclusire will be used to align vacuum pumps on ANY Oconee Unit. It is plausible because the Vacuum loss is on Unit 3.

Answer C Discussion

1st part is incorrect because step 4.6 states to Ensure SJAE pressure is > 255 psig. It is plausible because 250 psig is a number used to ensure the TD EFDW pump remains operable.

2nd part is correct. A procedure note in 1/AP/27 Encl 5.1 states that this enclusire will be used to align vacuum pumps on ANY Oconee Unit.

Answer D Discussion

1st part is incorrect because step 4.6 states to Ensure SJAE pressure is > 255 psig. It is plausible because 250 psig is a number used to ensure the TD EFDW pump remains operable.

2nd part is incorrect because guidance to align the Main Vacuum Pumps is contained in Unit 1's AP/27. A procedure note in 1/AP/27 Encl 5.1 states that this enclusire will be used to align vacuum pumps on ANY Oconee Unit. It is plausible because the Vacuum loss is on Unit 3.

Basis for meeting the KA

This question matches the KA by requiring knowledge of cautions contained in the EOP pertaining to a loss of vacuum.

Basis for Hi Cog

Basis for SRO only

This question is at the SRO level based on additional knowledge of a procedures content beyond the overall mitigation strategy (SJAE requiring to be > 255 psig). Also, the question requires enough knowledge to select the correct procedure to mitigate consequences to this event.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	NEW	

Development References
1/AP/27 3/AP/27 EAP-APG

Student References Provided

APE051 2.4.20 - Loss of Condenser Vacuum

APE051 GENERIC

Knowledge of the operational implications of EOP warnings, cautions, and notes. (CFR: 41.10 / 43.5 / 45.13)

401-9 Comments:	Remarks/Status

D

ILT 47 ONS SRO NRC Examination QUESTION 84

84

APE059 AA2.03 - Accidental Liquid Radioactive-Waste Release

Ability to determine and interpret the following as they apply to the Accidental Liquid Radwaste Release: (CFR: 43.5 / 45.13)

Failure modes, their symptoms, and the causes of misleading indications on a radioactive-liquid monitor .....

Unit 1 plant conditions:

- Reactor power = 100%
- 50 gpd tube leak 1A Steam Generator for approximately 1 week
- An increase in activity is reported in Chemical Treatment Pond (CTP) #3

Which ONE of the following:

1) describes an event which would cause this increase?

2) states the LOWEST Steam Generator tube leak rate that would require initiating a power decrease in accordance with AP/31 Primary to Secondary Leakage?

A. 1. 1RIA-31 (LPI Cooler) activity is increasing and this will increase activity levels in CTP #3.
   2. 65 gpd

B. 1. 1RIA-33 (LW Release) interlock has failed and a Waste Monitor Tank release continues from the Radwaste Building.
   2. 125 gpd

C. 1. 1RIA-42 (RCW) activity is increasing and this will increase activity levels in CTP #3.
   2. 65 gpd

D. 1. 1RIA-54 (TBS) interlock has failed and the Turbine Building Sump is being continually pumped.
   2. 125 gpd

ILT 47 ONS SRO NRC Examination QUESTION 84

84

D

General Discussion

Answer A Discussion

1st part is incorrect. LPSW goes to the discharge not to #3 CTP. Isolating the cooler would not stop the release.

2nd part is incorrect. AP/31 directs that if leak rate reaches 100 gpd, then initiate a power reduction. It is plausible because if > 60 gpd AND both continious primary to secondary leakage monitoring methods are inoperable, it would be correct. This however, it not the situation.

Answer B Discussion

1st part is incorrect. Waste monitor tanks discharge to the Keowee tailrace, not CTP # 3.

2nd part is correct. AP/31 directs that if leak rate reaches 100 gpd, then initiate a power reduction.

Answer C Discussion

1st part is incorrect. RCW is a closed system. The RCW cooler is cooled by CCW which goes to the discharge, not CTP #3.

2nd part is incorrect. AP/31 directs that if leak rate reaches 100 gpd, then initiate a power reduction. It is plausible because if > 60 gpd AND both continious primary to secondary leakage monitoring methods are inoperable, it would be correct. This however, it not the situation.

Answer D Discussion

1st part is correct. TBS pumps to CTP #3. Due to the S/G tube leak, activity could be high in the sump. If the interlock failed it could pump high activity to CTP #3.

2nd part is correct. AP/31 directs that if leak rate reaches 100 gpd, then initiate a power reduction.

Basis for meeting the KA

Requires knowledge that failure of the 1RIA-54 (Turbine Building Sump monitor) automatic isolation function will require manual action to terminate a liquid radwaste release.

Basis for Hi Cog

Basis for SRO only

.The second part of the question requires detailed knowledge of the content of AP/31 that is not just major mitigation strategy. The major strategy would require knowledge that there are thresholds of leakage rates that you can reach before reaching the leak rate that would require enter into the EOP that would require power reduction. It is detailed knowledge of the content to know what those specific leak rate threshold values are.
Additionally, knowledge of the threshold values for shutdown demonstrate the ability to determine that Enclosure 5.1 (Unit Shutdown Requirements) becomes applicable and therefore demonstrates assessing plant conditions and determining a section of a procedure with which to proceed.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Memory	MODIFIED	ILT43 Q64 / 2009B Q92

Development References

RAD-RIA Pg 26
ILT43 Q64
2009B Q92
AP 31

Student References Provided

APE059 AA2.03 - Accidental Liquid Radioactive-Waste Release

Ability to determine and interpret the following as they apply to the Accidental Liquid Radwaste Release: (CFR: 43.5 / 45.13)

Failure modes, their symptoms, and the causes of misleading indications on a radioactive-liquid monitor .....

401-9 Comments:

Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 84 84 **D**

ILT 47 ONS SRO NRC Examination QUESTION 85

85

A

BWE09 2.2.4 - Natural Circulation Operations

BWE09 GENERIC

(multi-unit license) Ability to explain the variations in control board/control room layouts, systems, instrumentation, and procedural actions between units at a facility. (CFR: 41.6 / 41.7 / 41.10 / 45.1 / 45.13)

Unit 3 plant conditions:
Time = 0800

- A main steam line break occurred inside containment
- The EHT tab was performed
- The crew transferred to the Forced Cooldown (FCD) Tab

Time = 0830

- The decision has been made to perform a natural circulation cooldown

Time = 1500

- RCS temperature = 240 ^{O}F
- RCS pressure = 250 psig

1) At this point in the cooldown, the FCD tab directs using the ____(1)____ to complete the RCS cooldown.

2) Transition to OP/3/A/1102/010 (Controlling Procedure for Unit Shutdown) is done ____(2)____.

A. 1. Normal Decay Heat Removal Mode
   2. ONLY after the LPI alignment in (1) above is made

B. 1. Normal Decay Heat Removal Mode
   2. to perform the alignment directed in (1) above

C. 1. LPI Series Mode
   2. ONLY after the LPI alignment in (1) above is made

D. 1. LPI Series Mode
   2. to perform the alignment directed in (1) above

ILT 47 ONS SRO NRC Examination QUESTION 85

85

A

General Discussion

Answer A Discussion

1st part is correct. This is true for Unit 3.

2nd part is correct. As directed in the FCD tab, the transition is made to 1102/010 after LPI DHR is established and temperature is 150 to 180 degrees.

Answer B Discussion

1st part is correct. This is true for Unit 3.

2nd part is incorrect but plausible since this procedure does contain directions required to align LPI cooling and under other conditions the OP is what is used to perform aligment to LPI cooling.

Answer C Discussion

1st part is incorrect because you are directed by the Unit 3 FCD tab to line up for normal decay heat removal mode. It is plausible because if it were Unit 1, it would be correct.

2nd part is correct. As directed in the FCD tab, the transition is made to 1102/010 after LPI DHR is established and temperature is 150 to 180 degrees.

Answer D Discussion

1st part is incorrect because you are directed by the Unit 3 FCD tab to line up for normal decay heat removal mode. It is plausible because if it were Unit 1, it would be correct.

2nd part is incorrect but plausible since this procedure does contain directions required to align LPI cooling and under other conditions the OP is what is used to perform aligment to LPI cooling.

Basis for meeting the KA

Chief agreed that using the transition to LPI at end of cooldown would meet intent of KA as long as it is done from a NC cooldown.

This question matches the KA by requiring knowledge of the differences in Units procedural actions when perform a natural circulation cooldown.

Basis for Hi Cog

Basis for SRO only

This question is SRO only because it requires assessing plant conditions and determining a procedural path to address those conditions.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	BANK	

Development References
FCD tab U1 FCD tab U3 EAP FCD PNS LPI Pg 21, 28 SRO Only Guidance

Student References Provided

BWE09 2.2.4 - Natural Circulation Operations

BWE09 GENERIC

(multi-unit license) Ability to explain the variations in control board/control room layouts, systems, instrumentation, and procedural actions between units at a facility. (CFR: 41.6 / 41.7 / 41.10 / 45.1 / 45.13)

ILT 47 ONS SRO NRC Examination QUESTION 85

85

A

401-9 Comments:	Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 86

86

B

SYS005 2.1.30 - Residual Heat Removal System (RHRS)
SYS005 GENERIC
Ability to locate and operate components, including local controls. (CFR: 41.7 / 45.7)

Given the following Unit 2 conditions:

- Reactor in MODE 6
- LPI aligned to Normal DHR mode

1) The MINIMUM LT-5 level which allows LPI to be aligned to the purification IX is __(1)__ inches.

2) The valve used to make this alignment (2LP-96) is a(n) __(2)__ operated valve.

Which ONE of the following completes the statements above.

A. 1. 50
   2. electrically

B. 1. 50
   2. manually

C. 1. 80
   2. electrically

D. 1. 80
   2.. manually

ILT 47 ONS SRO NRC Examination QUESTION 86

86

B

General Discussion

Answer A Discussion

Incorrect.

First part is correct since the LPI procedure initial conditions for the enclosure used to align LPI to purification requires that LT-5 level be 50" or greater.

Second part is incorrect but plausible since there are a large nunber of LPI valves that are electric valves operated from the control and there are valves in the purification alignment that are electric valves,

Answer B Discussion

Correct

First part is correct since the LPI procedure initial conditions for the enclosure used to align LPI to purification requires that LT-5 level be 50" or greater.

Second part is correct since 1LP-96 is a manual valve.

Answer C Discussion

Incorrect

First part is plausible since 80" is a threshold level for Rx vessel level for many things It is also the approximate level of where the Rx Vessel level is maintained to prevent flooding the transfer canal which occurs at 84".

Second part is incorrect but plausible since there are a large nunber of LPI valves that are electric valves operated from the control and there are valves in the purification alignment that are electric valves,

Answer D Discussion

Incorrect

First part is plausible since 80" is a threshold level for Rx vessel level for many things It is also the approximate level of where the Rx Vessel level is maintained to prevent flooding the transfer canal which occurs at 84".

Second part is correct since 1LP-96 is a manual valve.

Basis for meeting the KA

This question requires knowledge of local components related to the operation of the RHR system. 1LP-96 is a manual valve and therefore a local control. KA is met at the SRO level since the question also requires knowledge of when the local control can be operated.

Basis for Hi Cog

Basis for SRO only

This question is SRO only because it requires assessing plant conditions and determining a section of a procedure which will be utilized and is not entry conditions to an AP or EOP.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Memory	NEW	

Development References	Student References Provided
TS 3.4.7 basis PNS-LPI	

SYS005 2.1.30 - Residual Heat Removal System (RHRS)

SYS005 GENERIC

Ability to locate and operate components, including local controls. (CFR: 41.7 / 45.7)

ILT 47 ONS SRO NRC Examination QUESTION 86

86

B

401-9 Comments:	Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 87

87

B

SYS012 A2.05 - Reactor Protection System (RPS)

Ability to (a) predict the impacts of the following malfunctions or operations on the RPS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: (CFR: 41.5 / 43.5 / 45.3 / 45.5)

Faulty or erratic operation of detectors and function generators .....

Given the following Unit 1 conditions:
Time = 1200:00

- Reactor startup in progress
- Reactor power = 3% stable
- The operating Main Feedwater Pump trips

Time = 1200:15

- The SRO directs the OATC to perform IMAs

Time = 1202

- Reactor power = 3% stable

1) The reactor ____(1)____ have automatically tripped at Time = 1200 when the operating FDW pump tripped.

2) The SRO should ____2____.

Which ONE of the following completes the statements above?

A. 1. should
   2. perform actions in the Subsequent Actions tab to shut down the reactor

B. 1. should
   2. **GO TO** the UNPP tab to perform actions to shut down the reactor

C. 1. should NOT
   2. perform actions in the Subsequent Actions tab to shut down the reactor

D. 1. should NOT
   2. **GO TO** the UNPP tab to perform actions to shut down the reactor

---

ILT 47 ONS SRO NRC Examination QUESTION 87

87

B

General Discussion

Answer A Discussion

1st part is correct. The automatic reactor trip due to no running MFWPs automatically "enables" when > 1.75% power. Therefore, the reactor should have tripped.

2nd part is incorrect because the SRO should transfer to the UNPP tab from the Subsequent Action Tab Parallel Action Page before performing any actions in the Subsequent Action Tab. It is plausible because
1) the criteia to stay in the SA tab is power < 5% (true) and decreasing (false) with the RNO directing you to GO TO the UNPP tab. You are < 5%.
2) there are actions in the SA tab to shut down the reactor if not ALL control rods inserted. The RNO for step one includes opening HP-24 & 25, inserting control rods manually and tripping CRD breakers.

Answer B Discussion

1st part is correct. The automatic reactor trip due to no running MFWPs automatically "enables" when > 1.75% power. Therefore, the reactor should have tripped.

2nd part is correct.UNPP is plausible even if Rs should hot have Automatically tripped since the RP attempted to perform IMA's and the Rx is still at power. This would mean the Rx Trip pushbutton has been depressed and the Rx still did not trip.

Answer C Discussion

1st part is incorrect because the reactor should have automatically tripped. It is plausible because if power were < 1.75%, it would be correct.

2nd part is incorrect because the SRO should transfer to the UNPP tab from the Subsequent Action Tab Parallel Action Page before perform any actions in the Subsequent Action Tab. It is plausible because
1) the criteia to stay in the SA tab is power < 5% (true) and decreasing (false) with the RNO directing you to GO TO the UNPP tab. You are < 5%.
2) there are actions in the SA tab to shut down the reactor if not ALL control rods inserted. The RNO for step one includes opening HP-24 & 25, inserting control rods manually and tripping CRD breakers.

Answer D Discussion

1st part is incorrect because the reactor should have automatically tripped. It is plausible because if power were < 1.75%, it would be correct.

2nd part is correct.UNPP is plausible even if Rs should hot have Automatically tripped since the RP attempted to perform IMA's and the Rx is still at power. This would mean the Rx Trip pushbutton has been depressed and the Rx still did not trip.

Basis for meeting the KA

The question matches the KA by requiring the ability to predict the impact of reaching reactor trip setpoints (or in this case that it failed), and using the correct procedure to mitigate the event.

Basis for Hi Cog

Basis for SRO only

This question is SRO only because it requires the ability to assess plant conditions and select the appropriate procedure to mitigate the event.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	NEW	

Development References
Digital RPS Pg 44 IMA SA EAP IMA Pg 8

Student References Provided

SYS012 A2.05 - Reactor Protection System (RPS)

ILT 47 ONS SRO NRC Examination QUESTION 87

87

B

Ability to (a) predict the impacts of the following malfunctions or operations on the RPS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: (CFR: 41.5 / 43.5 / 45.3 / 45.5)

Faulty or erratic operation of detectors and function generators .....

401-9 Comments:	Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 88

88

A

SYS013 A2.02 - Engineered Safety Features Actuation System (ESFAS)

Ability to (a) predict the impacts of the following malfunctions or operations on the ESFAS; and (b) based Ability on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations; (CFR: 41.5 / 43.5 / 45.3 / 45.13)

Excess steam demand .....

Given the following Unit 1 conditions:
Initial conditions:

- Reactor tripped at 0600
- AFIS header B initiated
- 1A S/G pressure = 800 psig and slowly decreasing
- ES 1 & 2 actuated
- RB pressure = 2 psig and increasing
- Core SCM = 0º F
- Rule 2 (Loss of SCM) is in progress

Current conditions:

- Time = 0608
- Core SCM = 15º F
- Rule 5 is complete
- EHT Tab has been initiated
- Tcold = 460º F
- Pressurizer level = 136” slowly increasing
- RCS makeup flow = 130 gpm

1) Rule 8 (PTS) ____(1)____ required to be initiated.

2) In accordance with the EHT Tab, the ____ (2) ____ Tab will be initiated.

At 0608, which ONE of the following completes the statements above?

A. 1. is
   2. FCD

B. 1. is
   2. LOCA CD

C. 1. is NOT
   2. FCD

D. 1. is NOT
   2. LOCA CD

ILT 47 ONS SRO NRC Examination QUESTION 88

88

A

General Discussion

Answer A Discussion

First part is correct because HPI operated in the injection mode with no RCPs operating.

Second part is correct since required makeup flow is < RCS normal makeup capability

Answer B Discussion

1st part is correct. Rule 8 (PTS) is required if HPI operated in the injection mode while no RCPs were operating or a cooldown <400 degrees F at >100 degrees
F/hr occurred.

2nd part is incorrect but plausible since it can be made correct by changing the value of makeup flow to > 160 gpm which is normal makeup capability.

Answer C Discussion

First part is incorrect because HPI operated in the injection mode with no RCPs operating. Second part is incorrect, but is plausible

Second part is correct since required makeup flow is < RCS normal makeup capability

Answer D Discussion

First part is incorrect because HPI operated in the injection mode with no RCPs operating. Second part is incorrect, but is plausible

2nd part is incorrect but plausible since it can be made correct by changing the value of makeup flow to > 160 gpm which is normal makeup capability.

Basis for meeting the KA

The question matches the KA by requiring knowledge of the impact of an excessive steam demand event and the procedures used to adress the event.

Basis for Hi Cog

Basis for SRO only

The question is SRO only because it requires the ability to evaluate plant conditions and make a procedure selection in the EOP accordingly.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	BANK	ILT43 (Q 79) NRC Exam

Development References
EHT Tab ILT43 Q79 EAP-EHT Pg 7

Student References Provided

SYS013 A2.02 - Engineered Safety Features Actuation System (ESFAS)

Ability to (a) predict the impacts of the following malfunctions or operations on the ESFAS; and (b) based Ability on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations; (CFR: 41.5 / 43.5 / 45.3 / 45.13)

Excess steam demand .....

401-9 Comments:

Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 89

89

B

SYS026 A2.08 - Containment Spray System (CSS)

Ability to (a) predict the impacts of the following malfunctions or operations on the CSS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: (CFR: 41.5 / 43.5 / 45.3 / 45.13)

Safe securing of containment spray when it can be done) .....

Given the following Unit 1 conditions:
Time = 0800

- Reactor power = 100%
- LOCA occurs

Time = 0815

- RB pressure peaks at 12 psig
- Building Spray pump 1B fails to start

Time = 0830

- LOCA CD tab is in progress
- RB pressure = 8 psig decreasing

1) The operating BS train ____(1)____ meet the minimum requirement for Iodine removal assumed in the safety analysis for this accident.

2) At 0830, RB pressure ____(2)____ meet the criteria to secure Reactor Building Spray pumps.

Which ONE of the following completes the above statements?

A. 1. does
   2. does

B. 1. does
   2. does NOT

C. 1. does NOT
   2. does

D. 1. does NOT
   2. does NOT

ILT 47 ONS SRO NRC Examination QUESTION 89

89

B

General Discussion

Answer A Discussion

1st part is correct. Per TS3.6.5 bases, one train of BS is credited for Iodine removal following a LOCA.

2nd part is incorrect because during a LOCA (in the LOCA CD tab) RB pressure is required to be < 3 psig to secure RB spray pumps. It is plausible because if RB spray were initiated by a steam line break, it would be correct (criteria in the EHT tab is RB pressure < 10 psig).

Answer B Discussion

1st part is correct. Per TS3.6.5 bases, one train of BS is credited for Iodine removal following a LOCA.

2nd part is correct. RB pressure is required to be < 3 psig to secure RB spray.

Answer C Discussion

1st part is incorrect because one train does meet the safety analysis criteria for Iodine removal during a LOCA. It is plausible because in mode 1, 2 BS trains are required to be "operable" and for this event, 2 RBC trains are required to mitigate the containment pressure increase. Building Spray and Reactor Building Cooling are combined in TS 3.6.5.

2nd part is incorrect because during a LOCA (in the LOCA CD tab) RB pressure is required to be < 3 psig to secure RB spray pumps. It is plausible because if RB spray were initiated by a steam line break, it would be correct (criteria in the EHT tab is RB pressure < 10 psig).

Answer D Discussion

1st part is incorrect because one train does meet the safety analysis criteria for Iodine removal during a LOCA. It is plausible because in mode 1, 2 BS trains are required to be "operable" and for this event, 2 RBC trains are required to mitigate the containment pressure increase. Building Spray and Reactor Building Cooling are combined in TS 3.6.5.

2nd part is correct. RB pressure is required to be < 3 psig to secure RB spray.

Basis for meeting the KA

This question matches the KA by requiring knowledge of the criteria for securing RBS pumps, how the criteria is different depending on the reason for the RB pressure and the procedures that contain the criteria.

Basis for Hi Cog

Basis for SRO only

This question is SRO only because it requires:
1) procedure knowledge beyond that of major mitigation strategies (when to secure BS pumps).
2) bases for accident analysis

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	NEW	

Development References

LOCA CD Tab Step 29
EHT Tab Step 48
TS 3.6.5 B
PNS-BS Obj: R1, R11

EAP EHT Pg 23

Student References Provided

SYS026 A2.08 - Containment Spray System (CSS)
Ability to (a) predict the impacts of the following malfunctions or operations on the CSS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: (CFR: 41.5 / 43.5 / 45.3 / 45.13)

ILT 47 ONS SRO NRC Examination QUESTION 89

89

B

Safe securing of containment spray when it can be done) .....

401-9 Comments:	Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 90

90

B

SYS103 2.2.38 - Containment System
SYS103 GENERIC
Knowledge of conditions and limitations in the facility license. (CFR: 41.7 / 41.10 / 43.1 / 45.13)

Unit 1 plant conditions:

- Reactor startup is in progress
- Reactor in MODE 3
- 1LPSW-1061 (RB AUX COOLERS RETURN BLOCK) is declared INOPERABLE and is deactivated to satisfy TS 3.6.3 (Containment Isolation Valves) Condition A

1) The Unit 1 startup ____(1)____ continue into MODE 2.

2) If administrative controls are established to open 1LPSW-1061, the time that it is allowed to be open ____(2)____ limited to 4 hours.

Which ONE of the following completes the statements above?

REFERENCE PROVIDED

A. 1. may
   2. is

B. 1. may
   2. is NOT

C. 1. may NOT
   2. is

D. 1. may NOT
   2. is NOT

ILT 47 ONS SRO NRC Examination QUESTION 90

90

B

General Discussion

Answer A Discussion

1st part is correct. Since TS 3.6.3 allows for unlimited operation once the Required Action is satisfied entry into MODE 2 is allowed. LCO 3.0.4 states that:

When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall not be made except when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time.

Since continued operation is allowed, Mode change is allowed

2nd part is incorrect. When under administrative controls, the time that 1LPSW-1061 is open is not limited to 4 hours. It is plausible because if administrative controls were not in place , the required action for condition A would have to be completed within 4 hours.

Answer B Discussion

1st part is correct. Since TS 3.6.3 allows for unlimited operation once the Required Action is satisfied entry into MODE 2 is allowed. LCO 3.0.4 states that:

When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall not be made except when the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time.

Since continued operation is allowed, Mode change is allowed

2nd part is correct. The amplifying note allows "intermittent" operation which is not limited to 4 hours..

Answer C Discussion

1st part is incorrect because the startup may continue to Mode 2. It is plausible because there is not a note saying LCO 3.0.4 does not apply.

2nd part is incorrect. When under adminestrative controls, the time that 1LPSW-1061 is open is not limited to 4 hours. It is plausible because if adminestrative controls were not in place , the required action for condition A would have to be completed within 4 hours.

Answer D Discussion

1st part is incorrect because the startup may continue to Mode 2. It is plausible because there is not a note saying LCO 3.0.4 does not apply.

2nd part is correct. The amplifying note allows "intermittent" operation which is not limited to 4 hours.

Basis for meeting the KA

This question matches the KA by requiring knowledge of how an inoperable containment isolation valve (containment) affects the condition and limitation of the plant license (TS).

Basis for Hi Cog

Basis for SRO only

This question is SRO only because it requires knowledge of the TS Bases to analyze plant conditions in order to deterime required actions and requires application of the generic rules of TS per section 3.0.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	NEW	

Development References
TS 3.6.3 TS 3.6.3 B LCO 3.0.4

Student References Provided
TS 3.6.3

ILT 47 ONS SRO NRC Examination QUESTION 90

90

B

SYS103 2.2.38 - Containment System

SYS103 GENERIC

Knowledge of conditions and limitations in the facility license. (CFR: 41.7 / 41.10 / 43.1 / 45.13)

401-9 Comments:	Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 91

91

D

SYS011 A2.11 - Pressurizer Level Control System (PZR LCS)

Ability to (a) predict the impacts of the following malfunctions or operations on the PZR LCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: (CFR: 41.5 / 43.5 / 45.3 / 45.13)

Failure of PZR level instrument - low .....

Given the following Unit 1 conditions:
Initial conditions:

- Time 0600
- Reactor power = 100%
- Pressurizer (PZR) Level 3 selected
- SASS in MANUAL
- ICCM Train "1B" experiences a total loss of power

1) Due to the loss of power, 1HP-120 will __ (1) __.

2) If power cannot be restored, TS 3.3.8 (Post Accident Monitoring Instrumentation) __ (2) __require a shutdown within 12 hours.

Which ONE of the following completes the statements above?

REFERENCE PROVIDED

A. 1. close
2. does

B. 1. close
2. does NOT

C. 1. open
2. does

D. 1. open
2. does NOT

General Discussion

Answer A Discussion

1st part is incorrect. ICCM Train "A" feeds Pzr level 1 and 2. Train B feeds Pzr level 3. A loss of power to 1B ICCM Train will cause Pzr Level 3 to fail low and cause 1HP-120 to fully open. It is plausible because if power were lost to 1HP-120, it could be correct. Air operated valves failure position on a loss of power typically occur because air is vented off. Numerous valves in the HPI system (5, 6 & 21) fail closed if air pressure to the valve goes away.

2nd part is incorrect because TS 3.3.8 will not require a shutdown. It is plausible because if the applicant goes directly to the Table in TS 3.3.8 for Pzr level, it states that 2 channels are required. If 2 channels are not available, it directs you to condition H. Condition H requires a shutdown to M-3 within 12 hours if the condition cannot be corrected (2 trains are required and Level 3 (ICCM Tr B) is one of those trains).

Answer B Discussion

1st part is incorrect. ICCM Train "A" feeds Pzr level 1 and 2. Train B feeds Pzr level 3. A loss of power to 1B ICCM Train will cause Pzr Level 3 to fail low and cause 1HP-120 to fully open. It is plausible because if power were lost to 1HP-120, it could be correct. Air operated valves failure position on a loss of power typically occur because air is vented off. Numerous valves in the HPI system (5, 6 & 21) fail closed if air pressure to the valve goes away.

2nd part is correct. TS 3.3.8 Condition A applies which allows 30 days to restore to operable status. Unless both channels are inoperable, you do not reference the table 3.3.8-1.

Answer C Discussion

1st part is correct because Pzr level 3 fails low, causing 1HP-120 to open in response.

2nd part is incorrect because TS 3.3.8 will not require a shutdown. It is plausible because if the applicant goes directly to the Table in TS 3.3.8 for Pzr level, it states that 2 channels are required. If 2 channels are not available, it directs you to condition H. Condition H requires a shutdown to M-3 within 12 hours if the condition cannot be corrected (2 trains are required and Level 3 (ICCM Tr B) is one of those trains).

Answer D Discussion

1st part is correct because Pzr level 3 fails low, causing 1HP-120 to open in response

2nd part is correct. TS 3.3.8 Condition A applies which allows 30 days to restore to operable status. Unless both channels are inoperable, you do not reference the table 3.3.8-1.

Basis for meeting the KA

This question matches the KA by requiring knowledge of the impact of Pzr level indication failing low on system operation.

Basis for Hi Cog

Basis for SRO only

The question is SRO only because it requires knowledge of TS bases and information "below the line".

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	NEW	

Development References
PNS-PZR Pg 30 TS 3.3.8 TS 3.3.8 B Pzr Instrument Dwg

Student References Provided
TS 3.3.8

SYS011 A2.11 - Pressurizer Level Control System (PZR LCS)

Ability to (a) predict the impacts of the following malfunctions or operations on the PZR LCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: (CFR: 41.5 / 43.5 / 45.3 / 45.13)

Failure of PZR level instrument - low .....

ILT 47 ONS SRO NRC Examination QUESTION 91

91

D

401-9 Comments:	Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 92

92

A

SYS014 A2.06 - Rod Position Indication System (RPIS)

Ability to (a) predict the impacts of the following malfunctions or operations on the RPIS; and (b) based on those on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations : (CFR: 41.5 / 43.5 / 45.3 / 45.13)

Loss of LVDT .....

Given the following Unit 1 conditions:
Time = 1200

- Reactor power = 100%
- Relative Position Indication (RPI) inoperable for ALL Control Rods

Time = 1230

- Absolute Position Indication (API) inoperable for Group 1 Rod 7 Control Rod

Current Conditions:

- Tech Spec 3.1.4 Required Action A.2.1.1 (SDM Verification) has just been completed and shutdown margin requirements of the COLR have been determined to be NOT met

Which ONE of the following:

1) is the LATEST time that Group 1 Rod 7 Control Rod must be declared inoperable in accordance with Tech Specs?

2) should be used to restore shutdown margin requirements in accordance with Tech Spec bases?

A. 1. 1230
   2. CBAST and BWST ONLY

B. 1. 1230
   2. CBAST, BWST and A BHUT

C. 1. 1330
   2. CBAST and BWST ONLY

D. 1. 1330
   2. CBAST, BWST and A BHUT

ILT 47 ONS SRO NRC Examination QUESTION 92

92

A

General Discussion

Answer A Discussion

1st part is correct. TS 3.1.7 required declaring a rod with no operable position indication inoperable immediately (1230).

2nd part is correct. The basis of TS 3.1.7 says that if borating to restore SDM, the boration should occur IAW guidance in basis of TS 3.1.1 (SDM). The basis of TS 3.1.1 says the boration should occur from a highly borated source of water such as CBAST or BWST.

Answer B Discussion

1st part is correct. TS 3.1.7 required declaring a rod with no operable position indication inoperable immediately (1230).

Second part is incorrect because the TS bases requires a highly borated source to restore SDM. While the A BHUT is borated > the RCS (which is what makes it plausible), it is not considered a highly borated source.

Answer C Discussion

1st part is incorret because the Control Rod must be declared inoperable immediately. It is plausible becaue there are many Tech Specs that allow 1 hr as a competition time and the 1 hr CT would mean that this would still be a required memory item.

2nd part is correct. The basis of TS 3.1.7 says that if borating to restore SDM, the boration should occur IAW guidance in basis of TS 3.1.1 (SDM). The basis of TS 3.1.1 says the boration should occur from a highly borated source of water such as CBAST or BWST.

Answer D Discussion

1st part is incorret because the Control Rod must be declared inoperable immediately. It is plausible becaue there are many Tech Specs that allow 1 hr as a competition time and the 1 hr CT would mean that this would still be a required memory item.

Second part is incorrect because the TS bases requires a highly borated source to restore SDM. While the A BHUT is borated > the RCS (which is what makes it plausible), it is not considered a highly borated source.

Basis for meeting the KA

Chief agreed that since we do not have LVDT's that question that asked about a loss of one of the CR position indication systems impact on the other one would meet KA.

Requires predicting the impact of inoperable RPIS (declaring the control rod inoperable) and using procedures to mitigate the consequences (restoring SDM).

Basis for Hi Cog

Basis for SRO only

This question requires assessing plant conditions and selecting a boration source to restore shutdown margin that discussed in the TS bases and is beyond system knowledge. Knowing which boration choices are available to use will aid in making the correct procedure selection.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Memory	BANK	ILT44 Q92

Development References

Admin-ITS
TS 3.1.4
TS 3.1.7
TS 3.1.1 B
ILT44 Q92

Student References Provided

SYS014 A2.06 - Rod Position Indication System (RPIS)
Ability to (a) predict the impacts of the following malfunctions or operations on the RPIS; and (b) based on those on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations : (CFR: 41.5 / 43.5 / 45.3 / 45.13)
Loss of LVDT .....

ILT 47 ONS SRO NRC Examination QUESTION 92

92

A

401-9 Comments:	Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 93

93

B

SYS035 2.2.22 - Steam Generator System (S/GS)
SYS035 GENERIC
Knowledge of limiting conditions for operations and safety limits. (CFR: 41.5 / 43.2 / 45.2)

Unit 1 plant conditions:

- Reactor power = 100%
- A SGTL occurs on the 1A SG
- AP/31 (Primary to Secondary Leakage) is initiated

1) While in AP/31, EOP Enclosure 5.5 __(1)__ allowed to be utilized to maintain Pressurizer at desired level.

2) The Tech Spec limit on primary to secondary leakage is that amount assumed in the safety analysis for a ____(2)____ which will ensure that dose consequences are less than the limits defined in 10 CFR 100.

Which ONE of the following completes the statements above?

A. 1. is
2. Reactor Trip from 100 percent power

B. 1. is
2. Steam Line Break

C. 1. is NOT
2. Reactor Trip from 100 percent power

D. 1. is NOT
2. Steam Line Break

ILT 47 ONS SRO NRC Examination QUESTION 93

93

B

General Discussion

Answer A Discussion

1st part is correct since OMP 1-18 says it can be used during abnormal events.

2nd part is incorrect because the leak rate limit (150 gpd/SG) is part of the analysis for a steam line break accident. It is plausible because on a trip from 100% power, the steam generator saftey valve will lift, releasing steam to the atmosphere.

Answer B Discussion

1st part is correct since OMP 1-18 says it can be used during abnormal events.

2nd part is correct. Per TS 3.4.13 Bases, 150 gpd/SG leak rate is assumed as an initial conditions for a steam line break accident.

Answer C Discussion

1st part is incorrect. Plausible since this is an enclosure from the EOP and the EOP entry conditions are not met.

2nd part is incorrect because the leak rate limit (150 gpd/SG) is part of the analysis for a steam line break accident. It is plausible because on a trip from 100% power, the steam generator saftey valve will lift, releasing steam to the atmosphere.

Answer D Discussion

1st part is incorrect. Plausible since this is an enclosure from the EOP and the EOP entry conditions are not met.

2nd part is correct. Per TS 3.4.13 Bases, 150 gpd/SG leak rate is assumed as an initial conditions for a steam line break accident.

Basis for meeting the KA

This question matches the KA by requiring knowledge of bases for the limit associated with leakage through the SG tubes.

Basis for Hi Cog

Basis for SRO only

This question is SRO only because:
1) It requires knowledge of the bases for TS limitations (RCS leakage)
2) It requires the ability to assess plant conditions and select a procedure to mitigate the event.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Memory	NEW	

Development References
AP/31 TS 3.4.13 B OMP 1-18 SRO Only Guidance

Student References Provided

SYS035 2.2.22 - Steam Generator System (S/GS)
SYS035 GENERIC
Knowledge of limiting conditions for operations and safety limits. (CFR: 41.5 / 43.2 / 45.2)

401-9 Comments:	Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 94 94 **B**

GEN2.1 2.1.40 - GENERIC - Conduct of Operations
Conduct of Operations
Knowledge of refueling administrative requirements. (CFR: 41.10 / 43.5 / 45.13)

Given the following Unit 3 conditions:

- Shutdown for refueling in progress
- Reactor in MODE 4
- Component Handling in progress in the Spent Fuel Pool
- A fuel assembly is currently in the mast and being moved
- 3RIA-6 (SFP Area Monitor) shows an observable increase, approximately one half (½) decade above background
- 3SA-8/B-9 (RM Process Monitor Radiation High) in alarm due to 3RIA-32 Auxiliary Building Gas Monitor
- Spent Fuel Pool level = minus (-) 2.7 feet decreasing

Enter __(1)__ to mitigate the event and the required Technical Specification entry and basis is __(2)__.

Which ONE of the following completes the statement above?

A. 1. AP/35 (Loss of SFP Cooling and/or Level)
2. TS 3.10.1 (SSF) - Ensures the RC Makeup pump can maintain all three Oconee Units in MODE 3 for a minimum of 72 hours

B. 1. AP/35 (Loss of SFP Cooling and/or Level)
2. TS 3.7.11 (Spent Fuel Pool Water Level) - Ensures adequate iodine removal during a fuel handling accident

C. 1. AP/18 (Abnormal Release of Radioactivity)
2. TS 3.10.1 (SSF) - Ensures the RC Makeup pump can maintain all three Oconee Units in MODE 3 for a minimum of 72 hours

D. 1. AP/18 (Abnormal Release of Radioactivity)
2. TS 3.7.11 (Spent Fuel Pool Water Level) - Ensures adequate iodine removal during a fuel handling accident

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ILT 47 ONS SRO NRC Examination QUESTION 94

94

B

General Discussion

Answer A Discussion

1st part is correct. Entry conditions for AP/35 are met and this will address the lowering fuel pool level.

2nd part is incorect because the bases is to ensure adequate iodine removal. It is plausible because it applies to makeup inventory.

Answer B Discussion

1st part is correct. Entry conditions for AP/35 are met and this will address the lowering fuel pool level.

2nd part is correct. This is the bases for SFP water level during a fuel handling accident.

Answer C Discussion

1st part is incorrect because AP-35 is a higher priority. Plausible because a valid alarm on RIA-32 is an entry condition for AP/18, but AP/35 is a higher priority and the procedure used to mitigate this event.

2nd part is correct for AP/18. It is true for 72 hours.

Answer D Discussion

1st part is incorrect because AP-35 is a higher priority. Plausible because a valid alarm on RIA-32 is an entry condition for AP/18, but AP/35 is a higher priority and the procedure used to mitigate this event.

2nd part is incorrect because it does not apply to AP/18. Plausible because the water does provide shielding and reduces dose rate

Basis for meeting the KA

The question requires knowledge of administrative (Tech Spec) requirements for fuel handling.

Basis for Hi Cog

Basis for SRO only

Meets 10CFR55.43(b)(2) Facility operating limitations in the technical specifications and their bases.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Memory	BANK	ILT39 Q94

Development References

ILT43 Q92
AP 18
AP 35
TS 3.7.11 B
TS 3.10.1 B
EAP-APG AP35

Student References Provided

GEN2.1 2.1.40 - GENERIC - Conduct of Operations
Conduct of Operations
Knowledge of refueling administrative requirements. (CFR: 41.10 / 43.5 / 45.13)

401-9 Comments:

Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 95

95

B

GEN2.1 2.1.4 - GENERIC - Conduct of Operations

Conduct of Operations

Knowledge of individual licensed operator responsibilities related to shift staffing, such as medical requirements, “no-solo” operation, maintenance of active license status, 10CFR55, etc. (CFR: 41.10 / 43.2)

Given the following Unit 1 conditions:
Initial conditions:

- All 3 Units reactor power = 100%
- 1SA-3/B6 (FIRE ALARM) actuated
- AO's dispatched to the Turbine Building 3rd Floor (1TA and 1TB area)

Current conditions:

- AO reports the fire on 1TB with heavy smoke and rolling flames
- Fire Brigade is dispatched

1) In accordance with the “Fire Plan” a water fog __ (1) __ be used on the switchgear to fight the fire.

2) In accordance with SLC 16.13.1 (Minimum Station Staffing Requirements), an SRO __ (2) __ required to serve as the fire brigade leader.

Which ONE of the following completes the statements above?

A. 1. can
2. is

B. 1. can
2. is NOT

C. 1. can NOT
2. is

D. 1. can NOT
2. is NOT

ILT 47 ONS SRO NRC Examination QUESTION 95

95

B

General Discussion

Answer A Discussion

1st part is correct. In accordance with the "Fire Plan" a water fog can be used to fight this fire.

2nd part is incorrect because an SRO is NOT required to serve as Fire Brigade Leader. It is plausible since under normal conditions an SRO is the Fire Brigade leader.

Answer B Discussion

1st part is corect. In accordance with the "Fire Plan" a water fog can be used to fight this fire.

2nd part is correct. In accordance with SLC 16.13.1 an SRO or a quilified NEO can be the Fire Brigade Leader.

Answer C Discussion

1st part is incorrect because a fog can be used. It is plausible because a water stream cannot be used on this fire.

2nd part is incorrect because an SRO is NOT required to serve as Fire Brigade Leader. It is plausible since under normal conditions an SRO is the Fire Brigade leader.

Answer D Discussion

1st part is incorrect because a fog can be used. It is plausible because a water stream cannot be used on this fire.

2nd part is correct. In accordance with SLC 16.13.1 an SRO or a quilified NEO can be the Fire Brigade Leader.

Basis for meeting the KA

Requires knowledge of fire brigade staffing and using water to fight an electrical fire.

Basis for Hi Cog

Basis for SRO only

Requires knowledge of the fire plan (when a water fog can be used).
The bases of SLC 16.13.1 regarding who can serve as fire brigade leader.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Memory	BANK	ILT42 (Q99) NRC Exam

Development References	Student References Provided
Fire plan SLC 16.13.1 ILT42 Q99	

GEN2.1 2.1.4 - GENERIC - Conduct of Operations

Conduct of Operations

Knowledge of individual licensed operator responsibilities related to shift staffing, such as medical requirements, “no-solo” operation, maintenance of active license status, 10CFR55, etc. (CFR: 41.10 / 43.2)

401-9 Comments:	Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 96

96

C

GEN2.2 2.2.11 - GENERIC - Equipment Control
Equipment Control
Knowledge of the process for controlling temporary design changes. (CFR: 41.10 / 43.3 / 45.13)

In accordance with NSD 301 (Engineering Change Program):

1) An on-line temporary design change is required to have a plan that specifies removal of the change within __ (1) __ year(s) from installation.

2) The Operational Control Group (Operations) __ (2) __ responsible for maintaining a log of installed changes.

Which ONE of the following completes the statements above?

A. 1. 3
2. is

B. 1. 3
2. is NOT

C. 1. 1
2. is

D. 1. 1
2. is NOT

ILT 47 ONS SRO NRC Examination QUESTION 96

96

C

General Discussion

Answer A Discussion

Incorrect. First part is plausible because 3 years is the time allowed for an equivalent change to expire. Second part is correct.

Answer B Discussion

Incorrect. First part is plausible because 3 years is the time allowed for an equivalent change to expireSecond part is plausible the process is "owned" by
engineering.

Answer C Discussion

Correct. Per NSD-301 a plan for removal within one year must be in place before temporary design change will be installed. The operational control group (OPS in this case) is required to maintain a log of installed changes.

Answer D Discussion

Incorrect. First part is correct. Second part is plausible the process is "owned" by engineering.

Basis for meeting the KA

The question requirs knowledge of the process for controlling Temporary Design Changes.

Basis for Hi Cog

Basis for SRO only

This question is SRO only because it requires knowledge of facility licensee procedures required to obtain authority for design and operating changes in the facility.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Memory	BANK	ILT42 (Q95) NRC Exam

Development References
ADM-SD Pg 17 NSD-301 Pg 17 & 31 ILT42 Q95

Student References Provided

GEN2.2 2.2.11 - GENERIC - Equipment Control

Equipment Control

Knowledge of the process for controlling temporary design changes. (CFR: 41.10 / 43.3 / 45.13)

401-9 Comments:	Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 97

97

C

GEN2.2 2.2.23 - GENERIC - Equipment Control
Equipment Control
Ability to track Technical Specification limiting conditions for operations. (CFR: 41.10 / 43.2 / 45.13)

Given the following Unit 3 conditions:

- Time = 1100
- 3KVIA panelboard de-energized

Current conditions:

- Time = 1200
- DC panelboard 3DIB is de-energized

1) Tech Spec 3.8.8 requires that you __(1)__.

2) KVIA AND KVIB have shorter completion times than KVIC and KVID because they __(2)__.

Which ONE of the following completes the statements above?

REFERENCE PROVIDED

A. 1. restore 3KVIA by 1500 and 3KVIB by 1600
   2. are the source of power for the ES Digital Channels

B. 1. restore 3KVIA by 1500 and 3KVIB by 1600
   2. provide power for SK and SL breakers protective relaying

C. 1. enter LCO 3.0.3 immediately
   2. are the source of power for the ES Digital Channels

D. 1. enter LCO 3.0.3 immediately
   2. provide power for SK and SL breakers protective relaying

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ILT 47 ONS SRO NRC Examination QUESTION 97

97

C

General Discussion

Answer A Discussion

Incorrect: First part is plausible since Condition F is entered if either KVIA or KVIB is inoperable and has a 4 hour completion time for either panelboard therefore it would be plausible to determine that 4 hours to restore the panelboards would be allowed.

Answer B Discussion

Incorrect: : First part is plausible as described in A. Second part is plausible since SK and SL breakers protective relaying is signaled out in the electrical specs as unique. It is unique because unit 1's DIC and DID panelboards provide power to these breakers that all 3 units rely on. The fact that the power for SK and SL breakers comes from a units power panelboards and is signaled out as unique in the electrical specs combine to make this a plausible distractor since Condition F is itself unique for other reasons. Additionally, the breakers are getting power from the "c" and "d" strings of panelboards however it is from the DC panelboards instead of the AC panelboards.

Answer C Discussion

CORRECT: When 3DIB is de-energized then 3KVIB would also de-energize. With both 3KVIA and 3KVIB de-energized there is no TS Condition in TS 3.8.8 that allows for multiple Vital Instrumentation power panelboards to be inoperable therefore immediate entry into LCO 3.0.3 would be required. TS 3.8.8 Condition F allows 4 hours to restore KVIA and KVIB and then allows 24 hours to restore KVIC and KVID. The difference is due to the fact that KVIA and KVIB provide power to the odd and even ES digital channels respectively therefore a loss of either panelboard would render all of the Odd or Even digital channels unable to trip since they fail in the untripped state when deenergized.

Answer D Discussion

Incorrect: First part is correct. Second part is plausible as described in B.

Basis for meeting the KA

Requires tracking previously entered TS LCO's and then correctly applying that to a subsequent inoperability to determine the correct actions required by Tech Specs.

Basis for Hi Cog

Basis for SRO only

Requires applying the generic LCO 3.0.3 rule to a situation where there are insufficient TS Conditions to cover all inoperability's that exist. This requirement is unique to the SRO position

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	BANK	2010A (Q 80) NRC Exam

Development References

EL VPC Pg 24
TS 3.8.8
TS 3.8.8 B
2010A Q80

Student References Provided

TS 3.8.8

GEN2.2 2.2.23 - GENERIC - Equipment Control
Equipment Control
Ability to track Technical Specification limiting conditions for operations. (CFR: 41.10 / 43.2 / 45.13)

401-9 Comments:

Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 97 97 **C**

ILT 47 ONS SRO NRC Examination QUESTION 98

98

A

GEN2.3 2.3.14 - GENERIC - Radiation Control

Radiation Control

Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities. (CFR: 41.12 / 43.4 / 45.10)

Given the following Unit 1 conditions:
Initial conditions:

- EOP Enclosure 5.12 (ECCS Suction Swap to RBES) in progress

Current conditions:

- The step to open 1HP-939 and 1HP-940 has just been completed

1) These valves direct HPI flow to the __ (1) __.

2) In accordance with the bases of SLC 16.6.12 (Additional HPI Requirements) this flow path is established to prevent __ (2) __.

Which ONE of the following completes the statements above?

A. 1. RBES
   2. elevated dose rates in the Auxiliary Building

B. 1. RBES
   2. Boron precipitation in the core

C. 1. LDST
   2. elevated dose rates in the Auxiliary Building

D. 1. LDST
   2. HPI pump damage due to flow below minimum

ILT 47 ONS SRO NRC Examination QUESTION 98

98

A

General Discussion

Answer A Discussion

Correct. 1HP-939/940 provide a flow path from the LDST outlet to the RBES. These valves are opened to prevent the HPI pump recirc flow during piggyback from causing HPI relief valves from opening. If opened this would cause high dose rates in the AB.

Answer B Discussion

Incorrect. First part is correct. Second part is plausible a flow path to the RBES is aligned to provide for post LOCA Boron Dilution. However this is not the correct flow path.

Answer C Discussion

Incorrect. Plausible if the candidate has the misconception that the valves are used to ensure an HPI pump recirc flow path back to the LDST. Second part is correct.

Answer D Discussion

Incorrect. Plausible if the candidate has the misconception that the valves are used to ensure an HPI pump recir flow path back to the LDST. Second part is plausible because the candidate could have the misconception that these valves ensured HPI pump minimum flow was established. Also they do allow the minimum flow path to stay aligned during piggy back operation.

Basis for meeting the KA

Question requires knowledge of radation hazards that can occur during a SBLOCA and how it is prevented.

Basis for Hi Cog

Basis for SRO only

This question requires knowledge from the basis of SLC 16.6.12 that is not systems knowledge.
It cannot be answered by knowing 1 hr or less TS/TRM Action
It cannot be answered solely with "above the line" information.
It cannot be answered solely by knowing Safety Limits

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Memory	BANK	ILT41 (Q97) NRC Exam

Development References
PNS-HPI Pg 37, 38 SLC 16.6.12 EOP Encl. 5.12 ILT41 Q97

Student References Provided

GEN2.3 2.3.14 - GENERIC - Radiation Control

Radiation Control

Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities. (CFR: 41.12 / 43.4 / 45.10)

401-9 Comments:

Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 99 99 **B**

GEN2.4 2.4.19 - GENERIC - Emergency Procedures / Plan
Emergency Procedures / Plan
Knowledge of EOP layout, symbols, and icons. (CFR: 41.10 / 45.13)

Given the following Unit 1 conditions:
Time = 0400

- Reactor has tripped
- Subsequent Actions tab in progress
- RCS pressure = 2150 psig stable
- RCS temperature = 547°F stable

Time = 0405

- While at step 4.13 of the SA tab (checking for indications of a SGTR) the following occurs:
  - 1SA-18/D-6 (RC System Approaching Saturation Conditions) actuates
  - 1SA-8/B-9 (Process Monitor Radiation High) actuates
  - Pzr level = 0 inches
  - RBNS level increases off scale high
  - RCS pressure 1330 psig slowly decreasing
  - "A" loop SCM = 0°F
  - "B" loop SCM = 18°F slowly decreasing
  - Core SCM = 18°F slowly decreasing

1) At 0405, the Procedure Director will **GO TO** the LOSCM tab based on a Parallel Actions page transfer ___(1)___

2) After the transfer to the LOSCM tab is made, a subsequent ___(2)___ will require a transfer to a different EOP tab.

Which ONE of the following completes the statement above?

A. 1. immediately
   2. Turbine Building Flood

B. 1. immediately
   2. Blackout

C. 1. ONLY when Core SCM reaches 0°F
   2. Turbine Building Flood

D. 1. ONLY when Core SCM reaches 0°F
   2. Blackout

ILT 47 ONS SRO NRC Examination QUESTION 99

99

B

General Discussion

Answer A Discussion

First part is correct.

Second part is plausible because the candidate could have the misconception that TBF tab is a higher priority because drastic action are taken in TBF tab due to the imminent loss of important plant equipment.

Answer B Discussion

Correct. Per EAP-EOP lesson plan:
...anytime plant conditions have changed, the Procedure Director will use the Parallel Actions page to determine where to go within the EOP to address the changes. Parallel actions transfers are made in order of priority of symptoms. TBF is a higher priority than LOSCM.

Answer C Discussion

First part is plausible because there is a EOP PA page transfer that is based on Core SCM only. That is the transfer to the ICC tab when core SCM indicates superheated.

Second part is plausible because the candidate could have the misconception that TBF tab is a higher priority because drastic action are taken in TBF tab due to the imminent loss of important plant equipment.

Answer D Discussion

First part is plausible because there is a EOP PA page transfer that is based on Core SCM only. That is the transfer to the ICC tab when core SCM indicates superheated.

Second part is correct.

Basis for meeting the KA

Requires knowledge of the layout of the EOP. Specifically how the Parllell actions pages are laid out and how they are used.

Basis for Hi Cog

Basis for SRO only

1. Per SRO guidance document, Knowledge of dignoastic steps and decision points in the EOP that involve transigtions to event specific sections of the EOP. The concept of the parallel actions transfer page is NOT used in AP's and is therefore SRO only.

2. Knowledge of the transfers using Parallel Actions is an SRO ONLY objective (R31) in the Generic EOP lesson plan.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Memory	BANK	ILT45 Q99

Development References

ILT45 Q99
EAP-EOP
EOP SA
LOSCM PA Page

Student References Provided

GEN2.4 2.4.19 - GENERIC - Emergency Procedures / Plan
Emergency Procedures / Plan
Knowledge of EOP layout, symbols, and icons. (CFR: 41.10 / 45.13)

401-9 Comments:

Remarks/Status

ILT 47 ONS SRO NRC Examination QUESTION 100

100

B

GEN2.4 2.4.43 - GENERIC - Emergency Procedures / Plan
Emergency Procedures / Plan
Knowledge of emergency communications systems and techniques. (CFR: 41.10 / 45.13)

Given the following plant conditions:
Time = 1200

- Security Supervisor reports intruders have forced their way through the Vehicle Access Point (Security Point 1) near the complex using various weapons and have been seen heading towards the 525kv Switchyard

Time = 1205

- Security Supervisor reports intruders and their weapons are in the 525kvSwitchyard AND the 230kv Switchyard

Without using the Emergency Coordinator Judgment option, which ONE of the following:

1) states the EAL classification required by the conditions at Time = 1205?

2) is the correct notification code to activate the Emergency Response Organization (ERO) per RP/0/A/1000/002 (Control Room Emergency Coordinator Procedure)?

REFERENCE PROVIDED

A. 1. Alert
2. E2a

B. 1. Alert
2. E2f

C. 1. Site Area Emergency
2. E3a

D. 1. Site Area Emergency
2. E3f

ILT 47 ONS SRO NRC Examination QUESTION 100

100

B

General Discussion

Answer A Discussion

1st part is correct. This event would be classified as an alert per RP 1000 001 Enclosure 4.6.

2nd part is incorrect because the correct notification code is E2f. It is plausible because for any other event that would require activation of the ERO, it would be correct. In RP 1000 002, step 2.2 it states that IF a security event is in progess, then GO TO step 4. This is correct. IF the applicant performs step 2.3, they will determine E2a as the notification code.

Answer B Discussion

1st part is correct. This event would be classified as an alert per RP 1000 001 Enclosure 4.6.

2nd part is correct per enclosure 4.11.

Answer C Discussion

1st part is incorrect because the event would be classified as an Alert. It is plausible because the 230 kv switchyard does contain Safety Related equipment (the Yellow Bus) it would therefore be reasonable to believe it would be considered inside the protected area (especially since the 230kv SWYD has a fence around it).

2nd part is incorrect because the correct notification code is E2f. It is plausible because for any other SAE that would require activation of the ERO, it would be correct. In RP 1000 002, step 2.2 it states that IF a security event is in progess, then GO TO step 4. This is correct. IF the applicant performs step 2.3, they will determine E3a as the notification code.

Answer D Discussion

1st part is incorrect because the event would be classified as an Alert. It is plausible because the 230 kv switchyard does contain Safety Related equipment (the Yellow Bus) it would therefore be reasonable to believe it would be considered inside the protected area (especially since the 230kv SWYD has a fence around it).

2nd part is incorrect because it should be E2f. It is plausible because if it were a SAE, it would be correct.

Basis for meeting the KA

Requires knowledge of and ability to use correct communication techniques (determine notification code).

Basis for Hi Cog

Basis for SRO only

Requires EAL determinations and ERO notification codes which are activities performed by SROs.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Memory	MODIFIED	ILT40 Q100

Development References
ILT40 Q100 RP 1000 001 RP 1000 002 EAP SEP

Student References Provided
RP 1000 001 RP 1000 002

GEN2.4 2.4.43 - GENERIC - Emergency Procedures / Plan

Emergency Procedures / Plan

Knowledge of emergency communications systems and techniques. (CFR: 41.10 / 45.13)

401-9 Comments:	Remarks/Status

ILT 47 ONS SRO NRC Examination **QUESTION 100** 100 **B**