U.S. Nuclear Regulatory Commission

Site-Specific SRO Written Examination

Applicant Information	
Name:	
Date: **10/26/2011**	Facility/Unit: **Oconee**
Region: I ☐ II ☒ III ☐ IV ☐	Reactor Type: W ☐ CE ☐ BW ☒ GE ☐
Start Time:	Finish Time:

Instructions

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. To pass the examination you must achieve a final grade of at least 80.00 percent overall, with 70.00 percent or better on the SRO-only items if given in conjunction with the RO exam; SRO-only exams given alone require a final grade of 80.00 percent to pass. You have 8 hours to complete the combined examination, and 3 hours if you are only taking the SRO portion.

Applicant Certification

All work done on this examination is my own. I have neither given nor received aid.

_____
Applicant's Signature

Results		
RO/SRO-Only/Total Examination Values	75 / 25 / 100	Points
Applicant's Scores	____ / ____ / ____	Points
Applicant's Grade	____ / ____ / ____	Percent

2011B ONS SRO NRC Examination QUESTION 76

76

A

EPE011 EA2.01 - Large Break LOCA

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

Actions to be taken, based on RCS temperature and pressure - saturated and superheated .....

Given the following Unit 1 conditions:

- Large Break LOCA has occurred
- 1A AND 1B LPI pumps failed to start
- ICC tab in progress

Which ONE of the following would result in a transfer to the LOCA CD tab assuming the TSC is available and concurs with actions taken whenever required?

A. Core SCM = 0°F stable

B. 1 RCP per loop in operation

C. 1C LPI pump aligned and operating

D. CETCs = 1205°F slowly increasing

2011B ONS SRO NRC Examination QUESTION 76

76

A

General Discussion

Answer A Discussion

Correct. Once Core SCM has returned to 0, the ICC tab directs a transfer to the LOCA CD tab for additional direction.

Answer B Discussion

Incorrect. Plausible since starting RCP's is an IAAT "milestone" event in the ICC tab which is driven by CETC's being > 700 degrees and having TSC concurrence. The TSC statement in the stem lends plausibility to this answer.

Answer C Discussion

Incorrect. Plausible since aligning the C LPI pump would be actions directed by the ICC tab under these conditions however restoring LPI flow is not a criteria for transfer out of the tab. Additionally, establishing LPI flow is a tranfer to LOCA cooldown when in the LOSCM tab.

Answer D Discussion

Incorrect. Plausible since this would result in leaving the ICC tab however with CETC's > 1200 and TSC concurrance, OSAG would be implemented.

Basis for meeting the KA

Requires the ability to determine actions to be taken following a LBLOCA based on the RCS being saturated vs. superheated. Specifically, requires knowing that during a LBLOCA when superheated that you are required to stay in the ICC tab and when saturated you would transfer to the LOCA CD tab.

Basis for Hi Cog

Requires analyzing plant conditions and then determining how those conditions apply to directions given in the ICC tab of the EOP.

Basis for SRO only

In accordance with Clarification Guidance for SRO-only Questions, this question requires knowledge of diagnostic steps and decision points in the EOP (SCM returns to zero) that involve transition to event specific sub procedures (transfer to the LOCA CD tab).

The question is not systems knowledge.
The question is not Immediate Operator Actions.
The question cannot be answered from knowledge of entry conditions.
This question requires more specific knowledge than knowledge of the major mitigation strategy of the procedure. While knowing that the ICC tab stabilizes temperature and restores a heat sink, that knowledge alone will not lead to a correct answer since all choices indicate either RCS temperature has stabilized or a heat sink is now available,

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	NEW	

Development References	Student References Provided
Obj. EAP-ICC R7, R10 ICC tab of EOP	

EPE011 EA2.01 - Large Break LOCA
Ability to determine or interpret the following as they apply to a Large Break LOCA: (CFR 43.5 / 45.13)
Actions to be taken, based on RCS temperature and pressure - saturated and superheated .....

401-9 Comments:	Remarks/Status

C

2011B ONS SRO NRC Examination QUESTION 77

77

APE022 AA2.04 - Loss of Reactor Coolant Makeup
Ability to determine and interpret the following as they apply to the Loss of Reactor Coolant Makeup: (CFR 43.5/ 45.13)
How long PZR level can be maintained within limits . . . . . .

Given the following Unit 1 conditions:

Initial conditions:
- Reactor power = 100%
- RC Makeup Flow = 45 gpm stable
- Pressurizer level = 220" stable

Current conditions:
- 1HP-120 fails CLOSED

Which ONE of the following describes:

1) how long (in minutes) before Pzr heaters are no longer available?

2) the basis for maintaining Pzr heaters available in accordance with the bases of Tech Spec 3.4.9 (Pressurizer)?

ASSUME NO OPERATOR ACTIONS

A. 1. Approximately 64
   2. maintain RCS pressure such that the RCS loops remain subcooled during a loss of offsite power

B. 1. Approximately 64
   2. ensure DNBR safety limit is not exceeded

C. 1. Approximately 75
   2. maintain RCS pressure such that the RCS loops remain subcooled during a loss of offsite power

D. 1. Approximately 75
   2. ensure DNBR safety limit is not exceeded

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2011B ONS SRO NRC Examination QUESTION 77

77

C

General Discussion

Answer A Discussion

Incorrect. First part is plausible since it represents the time required to reach 100" in Pzr level (24 gal/in in the Pzr), 100" is a common level used for Pzr level during off normal events and is specifically used in Enclosure 5.5 with a note stating it will ensure Pzr heaters remain available. Second part is correct.

Answer B Discussion

Incorrect. First part is plausible since it represents the time required to reach 100" in Pzr level (24 gal/in in the Pzr), 100" is a common level used for Pzr level during off normal events and is specifically used in Enclosure 5.5 with a note stating it will ensure Pzr heaters remain available. Second part is plausible since controlling RCS pressure is one of the ways we ensure the DNBR safety limit is not exceeded however the bases of TS 3.4.9 specifically states that Pzr heater operation is not credited in the safety analysis.

Answer C Discussion

Correct. 80" is the Pressurizer level setpoint that actuates the Pzr heater shutoff interlock. The Pzr is 24 gal/inch therefore with a loss of 45 gpm input to a stable system the time to reach 80" would be 74.7 minutes. The bases of TS 3.4.9 explains that Pzr heaters (along with their emergency power supply) are used to maintain the RCS loops subcooled to provide SG heat transfer even during a loss of offsite power.

Answer D Discussion

Incorrect. First part is correct. Second part is plausible since controlling RCS pressure is one of the ways we ensure the DNBR safety limit is not exceeded however the bases of TS 3.4.9 specifically states that Pzr heater operation is not credited in the safety analysis.

Basis for meeting the KA

Requires ability to calculate the time it will take to reach the minimum Pzr level following a failure of normal RC makeup ability. SLC 16.5.8 requires maintaining Pzr level > 80". At the SRO level interpreting the consequences of not maintaining Pzr level within its limits provides an SRO level match for part 2 of the question.

Basis for Hi Cog

Requires performing calculations.

Basis for SRO only

In accordance with Clarification Guidance for SRO-only Questions:

This question requires knowledge from the basis of TS 3.4.9 that is not systems knowledge. Systems training regarding Pzr heaters defines the purpse of the heaters as follows: (reference included)
1.□(OBJ.R7) Heaters:
a)□replace heat lost during normal steady state operation
b)□raise the pressure to normal operating pressure during Reactor Coolant System heatup from the cooled down condition
c)□restore system pressure following transients.

It is only as part of Tech Spec bases training to SRO's where the credited function discussed in this question is addressed.

The SRO must interpret what it means to the operator when the time expires and Pzr level falls below the SLC 16.5.8 limit of 80".
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	Comprehension	NEW	

Development References
Obj, ADM-TSS R4, R5 PNS Pzr .R24, R25, R38 PNS-PZR TS 3.4.9 bases

Student References Provided

APE022 AA2.04 - Loss of Reactor Coolant Makeup
Ability to determine and interpret the following as they apply to the Loss of Reactor Coolant Makeup: (CFR 43.5/ 45.13)
How long PZR level can be maintained within limits . . . . . .

2011B ONS SRO NRC Examination QUESTION 77

77

C

401-9 Comments:	Remarks/Status

2011B ONS SRO NRC Examination QUESTION 78

78

A

APE025 2.4.37 - Loss of Residual Heat Removal System (RHRS)
APE025 GENERIC
Knowledge of the lines of authority during implementation of the emergency plan. (CFR: 41.10 / 45.13)

Given the following Unit 1 conditions:

Initial conditions:
- Reactor in MODE 5
- LPI Decay Heat Removal has been lost
- ALERT has been declared per RP/1000/01 (Emergency Classification)

Current conditions:
- LPI is ready to be restored

In accordance with OMP 1-18 (Implementation Standard During Abnormal And Emergency Events), which ONE of the following contains ALL position(s) that are allowed to direct the Control Room Operator to start the LPI pump?

A. Procedure Director ONLY

B. Procedure Director AND STA ONLY

C. Procedure Director AND OSM ONLY

D. Procedure Director, OSM, AND STA

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2011B ONS SRO NRC Examination QUESTION 78

78

A

General Discussion

Answer A Discussion

Correct. OMP 1-18 Attachment E (Crew Command and Control) block diagram clearly defines the Procedure Director as the only person able to provide direction to perform control room activities.

Answer B Discussion

Incorrect. STA is plausible since OMP 1-18 Att. E does give the STA the ability to communicate directly with the control room operator and the STA maintains an active SRO liscense and is an integral part of the shift team however the OMP specifies it is only allowed to provide assistance or clarification and not to provide independent direction.

Answer C Discussion

Incorrect. The OSM is plausible since the Procedure Director is normally someone who reports to the OSM therefore it would be plausible that if the Procedure Director can provide the direction, the OSM should be able to as well. However to ensure the OSM stays in the oversight role, OMP 1-18 specifically directs that the OSM communicates with the Procedure Director but not the Control Room Operator.

Answer D Discussion

Incorrect. Both the OSM and STA are plausible as described in B and C answer explanations.

Basis for meeting the KA

Requires knowledge of the lines of authority required during Emergency Plan implementation. Since this guidance is contained in OMP 1-18 only, it specifically applies during abnormal and emergency events and therefore due to the ALERT classification, it would apply to this question.

Basis for Hi Cog

Basis for SRO only

Requires knowledge of responsibilities specific to SRO's during Emergency Plan implementation. Since a single SRO license applies to all three positions (Procedure Director, STA, and OSM), knowledge of the allowable lines of command and control specific to each position during abnormal and emergency events would be required SRO knowledge.

Additionally, per Clarification Guidance for SRO-only Questions this question requires knowledge of administrative procedure that specify hierarchy of implementation and coordination of plant procedures in that it requires knowledge of the hierarchy of how to implement required procedure steps.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Memory	NEW	

Development References	Student References Provided
Obj ADM-OMP R10 ADM-OMP OMP 1-18 Att E	

APE025 2.4.37 - Loss of Residual Heat Removal System (RHRS)
APE025 GENERIC
Knowledge of the lines of authority during implementation of the emergency plan. (CFR: 41.10 / 45.13)

401-9 Comments:	Remarks/Status

2011B ONS SRO NRC Examination QUESTION 79

79

A

APE027 2.2.22 - Pressurizer Pressure Control System (PZR PCS) Malfunction
APE027 GENERIC
Knowledge of limiting conditions for operations and safety limits. (CFR: 41.5 / 43.2 / 45.2)

Given the following Unit 1 conditions:

- Reactor in MODE 2

Which ONE of the following:

1) states if BOTH of the Pressurizer Safety Valves required by Tech Spec 3.4.10 (Pressurizer Safety Valves) are required to perform their safety function?

2) describes the safety function credited to the Pressurizer Code Safety Valve(s)?

A. 1. BOTH are required
2. assists RPS with ensuring the RCS Pressure Safety Limit is NOT exceeded

B. 1. BOTH are required
2. Ensures single failure of the PORV does not prohibit establishing HPI Forced Cooling when required

C. 1. ONLY one is required
2. assists RPS with ensuring the RCS Pressure Safety Limit is NOT exceeded

D. 1. ONLY one is required
2. Ensures single failure of the PORV does not prohibit establishing HPI Forced Cooling when required

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2011B ONS SRO NRC Examination QUESTION 79

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A

General Discussion

Answer A Discussion

Correct. IAW TS 3.4.10 bases, both of the Pzr Code relief valves are required to perform their Safety Function and their Safety Function is (in concert with RPS) prevent exceeding the 2750 psig Safety Limit on RCS pressure.

Answer B Discussion

Incorrect. First part is correct. Second part is plausible since a single failure of the PORV would prevent being able to establish HPI forced cooling flow and since this is a method used by the EOP to remove core heat it is plausible to believe that the ability to establish HPI FC with a single failure would be required. Additional plausibility is added by being in MODE 2 since the RV's are not credited in all MODES.

Answer C Discussion

Incorrect. First part is plausible since most TS required systems that are credited in the Safety Analysis are required to meet single failure criteria therefore their associated LCO's require one more component/train/flowpath than is required to perform the safety function credited to the LCO. Second part is correct.

Answer D Discussion

Incorrect. First part is plausible since most TS required systems that are credited in the Safety Analysis are required to meet single failure criteria therefore their associated LCO's require one more component/train/flowpath than is required to perform the safety function credited to the LCO. Second part is plausible since a single failure of the PORV would prevent being able to establish HPI forced cooling flow and since this is a method used by the EOP to remove core heat it is plausible to believe that the ability to establish HPI FC with a single failure would be required. Additional plausibility is added by being in MODE 2 since the RV's are not credited in all MODES.

Basis for meeting the KA

Requires knowledge of the LCO requiring operability of the Pressurizer Code RV's and how they impact the ability to ensure the RCS pressure Safety Limit is not exceeded.

Basis for Hi Cog

Basis for SRO only

In accordance with Clarification Guidance for SRO-only Questions:

This question requires knowledge from the basis of TS 3.4.10 that is not systems knowledge. Knowing that both of the RV's are required to perform the safety function credited in the safety analysis and exactly what the safety analysis takes credit for the RV's to do goes beyond systems knowledge required of an RO candidate.
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	NEW	

Development References	Student References Provided
Obj ADM-TSS R5 TS 3.4.10 bases	

APE027 2.2.22 - Pressurizer Pressure Control System (PZR PCS) Malfunction
APE027 GENERIC
Knowledge of limiting conditions for operations and safety limits. (CFR: 41.5 / 43.2 / 45.2)

401-9 Comments:	Remarks/Status

2011B ONS SRO NRC Examination QUESTION 80

80

B

EPE038 2.1.20 - Steam Generator Tube Rupture (SGTR)
EPE038 GENERIC
Ability to interpret and execute procedure steps. (CFR: 41.10 / 43.5 / 45.12)

Given the following Unit 3 conditions:

- SGTR tab in progress
- Core SCM = 59°F increasing
- RCS cooldown in progress
- Group 2 Rod 4 100% withdrawn (did not insert when tripped)
- RCS temperature = 550°F decreasing

Which ONE of the following describes the actions directed by the Procedure Director in accordance with the SGTR tab in preparation for isolating the faulted Steam Generator?

A. cooldown to 525°F – 532°F limited only by Tech Spec cooldown limits

B. cooldown to 525°F – 532°F limited only by ability to maintain Pzr level > 100"

C. cooldown to 450°F – 525°F limited only by Tech Spec cooldown limits

D. cooldown to 450°F – 525°F limited only by ability to maintain Pzr level > 100"

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2011B ONS SRO NRC Examination QUESTION 80

80

B

General Discussion

Answer A Discussion

Incorrect. The target temperature is correct. The rate is plausible since it would be correct in most other cooldown situations.

Answer B Discussion

Correct. SGTR directs cooling down to 525 - 532 limited only by Pzr level to facilitate isolating the leaking SG.

Answer C Discussion

Incorrect. Plausible since this is the range of RCS temperature specified in the EOP as the cooldown plateau if ONLY 1 control rod is not fully inserted. The second part of the statement is correct for most other cooldown situations.

Answer D Discussion

Incorrect. Plausible since this is the range of RCS temperature specified in the EOP as the cooldown plateau if ONLY 1 control rod is not fully inserted.

Basis for meeting the KA

Requires the ability to both interpret and give direction to execute procedure steps of the SGTR tab.

Basis for Hi Cog

Requires analyzing plant data and determining a course of action based on guidance in a procedure. Determining that being in the SGTR tab will allow violating TS cooldown rates requires analysis.

Basis for SRO only

In accordance with Clarification Guidance for SRO-only Questions, this question requires assessing plant conditions (RCS temp and SGTR) and selecting a section of a procedure with which to proceed (performing section for SG isolation prior to continuing RCS cooldown). Also requires detailed knowledge of the content of the procedure specific to the section being performed (limits on cooldown rate while cooling down to isolate SG)

The question is not systems knowledge.
The question is not Immediate Operator Actions.
The question cannot be answered from knowledge of entry conditions.
This question requires more specific knowledge than knowledge of the major mitigation strategy of the procedure. While knowing that Core SCM must be decreased, knowledge of specific actions on how to decrease core SCM are beyond systems knowledge since both options would decrees Core SCM. Knowledge the RCS temp must be reduced to isolate the SG would be mitigation strategy but the specifics of the temp range and limiting factors of the cooldown are detailed knowledge of implementation.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	NEW	

Development References	Student References Provided
Obj EAP-SGTR R5, R6 SGTR tab	

EPE038 2.1.20 - Steam Generator Tube Rupture (SGTR)
EPE038 GENERIC
Ability to interpret and execute procedure steps. (CFR: 41.10 / 43.5 / 45.12)

401-9 Comments:	Remarks/Status

2011B ONS SRO NRC Examination QUESTION 81

81

B

APE057 AA2.19 - Loss of Vital AC Electrical Instrument Bus
Ability to determine and interpret the following as they apply to the Loss of Vital AC Instrument Bus: (CFR: 43.5 / 45.13)
The plant automatic actions that will occur on the loss of a vital ac electrical instrument bus .....

Given the following Unit 1 conditions:

Initial conditions:
- Startup in progress
- Control Rod Group 2 being withdrawn for startup
- 1B RPS channel in Manual Bypass

Current conditions:
- 1KVIA panelboard input breaker trips OPEN
- 1C RB pressure transmitter feeding RPS fails LOW

Which ONE of the following describes:

1) the status of the 1A RPS channel?

2) the MAXIMUM time (hours) allowed by Tech Spec 3.3.1 (RPS Instrumentation) to open ALL CRD breakers?

REFERENCE PROVIDED

A. 1. Tripped
   2. 6

B. 1. Tripped
   2. 12

C. 1. NOT Tripped
   2. 6

D. 1. NOT Tripped
   2. 12

2011B ONS SRO NRC Examination QUESTION 81

81

B

General Discussion

Answer A Discussion

Inorrect. First part is correct. Second part is plausible if information in Table 3.3.1-1 is mis-applied. The shutdown bypass function listed in the table (1b and 11) are stated as being required in Modes 2, 3, 4, and 5. There is a superscript b that must be referenced which says (in part) that they are only required during shutdown bypass operations. With Group 2 being withdrawn for startup, that means that RCS pressure would be at normal operating pressure. Since the high RCS pressure setpoint during shutdown bypass operations is < 1720 psig, if shutdown bypass were enabled, all RPS channels would be tripped and the CRD breakers would therefore be all open.

Answer B Discussion

Correct. If the RPS channel loses power, it will trip and since KVIA feeds the A RPS channel, that channel would be tripped. Based on information in Table 3.3.1-1, RB pressure is required when in MODE 3. With 1B RPS channel in manual bypass, KVIA de-enrgized, and C RB pressure failed low, 2 required RPS channels for the RB pressure function are inoperable and the 1A RPS channel is already tripped. TS Condition B is for 2 or more required channels of a function inoperable and it requires referencing Table 3.3.1-1. That table would specify entering Condition C (looking at the RB pressure function) and Condition C specifys 12 hours allowed prior to opening all CRD trip breakers.

Answer C Discussion

Incorrect. First part is incorrect however it is plausible since this would be correct if asking about the A ES instrument channel losing power and the A ES instrument channel is also fed from KVIA. Second part is plausible if information in Table 3.3.1-1 is mis-applied. The shutdown bypass function listed in the table (1b and 11) are stated as being required in Modes 2, 3, 4, and 5. There is a superscript b that must be referenced which says (in part) that they are only required during shutdown bypass operations. With Group 2 being withdrawn for startup, that means that RCS pressure would be at normal operating pressure. Since the high RCS pressure setpoint during shutdown bypass operations is < 1720 psig, if shutdown bypass were enabled, all RPS channels would be tripped and the CRD breakers would therefore be all open.

Answer D Discussion

Incorrect. First part is incorrect however it is plausible since this would be correct if asking about the A ES instrument channel losing power and the A ES instrument channel is also fed from KVIA. Second part is correct.

Basis for meeting the KA

The KA requires the ability to determine if plant automatic actions have occurred as a result of a loss of one of the Vital AC instrument buses (KVIA).

Basis for Hi Cog

Requires analyzing plant conditions and applying them to a Tech Spec.

Basis for SRO only

In accordance with Clarification Guidance for SRO-only Questions, this question requires applying a Tech Spec in accordance with the rules of Section 1. The question is not direct lookup as it requires application of a Table in the spec as well as requires being able to assess plant conditions and determine the status of RPS Shutdown Bypass operations.
The question is not systems knowledge.
The question is not Immediate Operator Actions.
The question cannot be answered from knowledge of entry conditions.
This question requires more specific knowledge than knowledge of the major mitigation strategy of the procedure. While knowing that the ICC tab stabilizes temperature and restores a heat sink, that knowledge alone will not lead to a correct answer since all choices indicate either RCS temperature has stabilized or a heat sink is now available,

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	NEW	

Development References
Obj IC-ES R33 ADM-ITS R 1105/014 TS 3.3.1

Student References Provided
TS 3.3.1

APE057 AA2.19 - Loss of Vital AC Electrical Instrument Bus
Ability to determine and interpret the following as they apply to the Loss of Vital AC Instrument Bus: (CFR: 43.5 / 45.13)
The plant automatic actions that will occur on the loss of a vital ac electrical instrument bus .....

401-9 Comments:	Remarks/Status

2011B ONS SRO NRC Examination QUESTION 81

81

B

2011B ONS SRO NRC Examination QUESTION 82

82

C

APE003 2.4.20 - Dropped Control Rod
APE003 GENERIC
Knowledge of the operational implications of EOP warnings, cautions, and notes. (CFR: 41.10 / 43.5 / 45.13)

Given the following Unit 1 conditions:

Initial conditions:
- Reactor in MODE 2 and returning to power following a maintenance shutdown
- Reactor power = 4% slowly increasing
- Control Rod Group 1 Rod 4 drops into core

Current conditions:
- Reactor power = 3% stable

Which ONE of the following describes the actions <u>required</u> in accordance with AP/1/A/1700/001 (Unit Runback)?

A. Maintain current power level until Control Rod repair and recovery are complete then proceed with OP/1/A/1102/001 (Controlling Procedure for Unit Startup)

B. Maintain current power level until Control Rod repair and recovery are complete then proceed with OP/1/A/1102/004 (Operation at Power)

C. Go to OP/1/A/1102/010 (Controlling Procedure for Unit Shutdown) and shutdown the reactor prior to Control Rod repair and recovery

D. Manually trip the reactor and once EOP Subsequent Actions are completed, perform control rod repair and recovery

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2011B ONS SRO NRC Examination QUESTION 82

82

C

General Discussion

Background information for plausibility statements.

OP/1102/01 is used to perform a startup up to a power level of 20%. To go beyond 20% power requires transition to OP/1102/04 (Ops at Power). The automatic runback for a dropped rod will take the unit to 55% if power level is > 55% when the rod is dropped.

Answer A Discussion

Incorrect. Plausible since this would be correct for any power level between 5% and 20%.

Answer B Discussion

Incorrect. Plausible since this would be correct for power levels between 20% and 55%.

Answer C Discussion

Correct. Per the NOTE in AP/1 section 4H there is a concern regarding inadvertent MODE changes during rod recovery if power level is < 5% therefore the AP directs shutdown of the Rx per Operating procedures prior to Rod recovery.

Answer D Discussion

Incorrect. Plausible since there is guidance in OMP 1-18 Att. J (Plant Transient Response) to shutdown the plant to a known safe condition following any transient which results in a low Rx power level of < 5%. If the candidate were unaware of the specific guidance in AP/1 it would be a plausible choice to manually trip the Rx. Additionally plausible if the candidate recalls that the AP does give direction to shutdown the Rx prior to rod repair and recovery but does not specifically recall that the guidance directs using the shutdown procedure.

Basis for meeting the KA

Requires knowledge of the operational implications (being required to shutdown the Rx prior to recovering the dropped rod) of the NOTE in AP/1 regarding the concern over an inadvertent MODE change during rod recovery at low power.

Basis for Hi Cog

Requires analyzing plant data and applying the analysis to various procedures to determine the correct procedure to use.

Basis for SRO only

AP In accordance with Clarification Guidance for SRO only Questions, this question requires assessing plant conditions and selecting a procedure with which to proceed. It requires detailed knowledge of the content of AP/1 to determine the correct procedure to transition to. This AP would be directed by an SRO and requires more than knowledge of the information contained in the relevant NOTE to determine the correct procedural path.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Memory	NEW	

Development References	Student References Provided
Obj EAP-APG R9 AP/1	

APE003 2.4.20 - Dropped Control Rod

APE003 GENERIC

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

401-9 Comments:	Remarks/Status

2011B ONS SRO NRC Examination QUESTION 83

83

B

APE005 AA2.01 - Inoperable/Stuck Control Rod

Ability to determine and interpret the following as they apply to the Inoperable / Stuck Control Rod: (CFR: 43.5 / 45.13)

Stuck or inoperable rod from in-core and ex-core NIS, in-core or loop temperature measurements .....

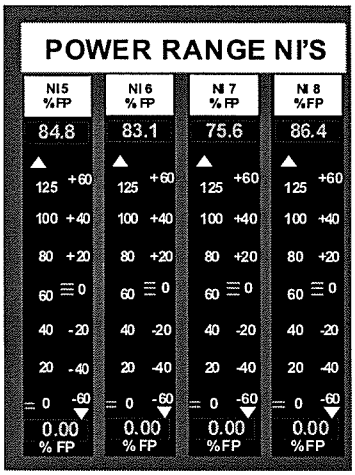
Given the following Unit 1 conditions:

Initial Conditions:

- Reactor power = 85% slowly increasing
- Delta Tc in HAND

Current conditions:

- ICS runback in progress
- Reactor power as indicated below



Which ONE of the following describes:

1) the reason for the ICS runback?

2) a concern that would result from extended operation with skewed Power Range NI indications as described above?

A. 1. Dropped Control Rod
   2. Brittle fracture of the reactor vessel wall could occur

B. 1. Dropped Control Rod
   2. Peak fuel cladding temperatures could be exceeded

C. 1. RCP trip
   2. Brittle fracture of the reactor vessel wall could occur

D. 1. RCP trip
   2. Peak fuel cladding temperatures could be exceeded

2011B ONS SRO NRC Examination QUESTION 83

83

B

General Discussion

Answer A Discussion

Incorrect. First part is correct. Second part is plausible since the reactor vessel wall is affected by exposure to neutron flux. Since neutron embrittlement of the vessel wall is a concern and increased QPT results in increased exposure of the RV wall to neutron flux it is plausible to associate elevated QPT levels with concerns over neutron embrittlement of the RV wall and therefore concerns over Brittle Fracture of the RV.

Answer B Discussion

Correct. A dropped control rod will result in depressed power production in the quadrant in which the rod has dropped and depending on the proximity of the rod to other quadrant, it can cause slightly misaligned power production in other quadrants as well. QPT is a common issue that will arise in a dropped rod situation. The COLR provides 3 levels of QPT limits. Although the lowest limit is named "steady state" limit, it applies at all times the spec is applicable (even if the unit is not at "steady state").

Answer C Discussion

Incorrect. First part is plausible for two reasons: 1. There is an RC Flow Runback in ICS that would attempt to perform an ICS runback on loss of a RCP at power. Reactor power is low enough in this question so that there would not be a Rx trip on flux/flow when the RCP was lost. With Delta TC in hand there would be no automatic re-ration of feedwater which adds to plausiblility of unbalanced Excore NI indications 2. Since there are 4 pumps (one in each cold leg) it is plausible to associate a RCP with a quadrant of the core and therefore believe that a RCP trip could result in skewed power production in each core due to the flow and temperatures being believed to be different in each quadrant. With Delta TC in hand there would be no automatic re-ration of feedwater which adds to plausiblility of unbalanced Excore NI indications. Second part is plausible since the reactor vessel wall is affected by exposure to neutron flux. Since neutron embrittlement of the vessel wall is a concern and increased QPT results in increased exposure of the RV wall to neutron flux it is plausible to associate elevated QPT levels with concerns over neutron embrittlement of the RV wall and therefore concerns over Brittle Fracture of the RV.

Answer D Discussion

Incorrect. First part is plausible for two reasons: 1. There is an RC Flow Runback in ICS that would attempt to perform an ICS runback on loss of a RCP at power. Reactor power is low enough in this question so that there would not be a Rx trip on flux/flow when the RCP was lost. With Delta TC in hand there would be no automatic re-ration of feedwater which adds to plausiblility of unbalanced Excore NI indications 2. Since there are 4 pumps (one in each cold leg) it is plausible to associate a RCP with a quadrant of the core and therefore believe that a RCP trip could result in skewed power production in each core due to the flow and temperatures being believed to be different in each quadrant. With Delta TC in hand there would be no automatic re-ration of feedwater which adds to plausiblility of unbalanced Excore NI indications. Second part is correct..

Basis for meeting the KA

Requires the ability to determine that a Control Rod is inoperable (i.e. has been dropped into the core and therefore cannot respond to positioning signals as described in TS bases discussion of inoperable rods) based on excore power range NI's and requires an understanding of the implications of operting with a dropped rod that skews neutron flux and results in Quadrant Power Tilt issues.

Basis for Hi Cog

Requires analyzing plant data and drawing conclusions based on the analysis.

Basis for SRO only

In accordance with Clarification Guidance for SRO-only Questions:

This question requires knowledge from the basis of TS 3.2.3 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	Comprehension	NEW	

Development References	Student References Provided
Obj ADM-TSS R5 ADM-TSS section for TS 3.2.3	

APE005 AA2.01 - Inoperable/Stuck Control Rod

Ability to determine and interpret the following as they apply to the Inoperable / Stuck Control Rod: (CFR: 43.5 / 45.13)

Stuck or inoperable rod from in-core and ex-core NIS, in-core or loop temperature measurements .....

2011B ONS SRO NRC Examination QUESTION 83

83

B

401-9 Comments:	Remarks/Status

2011B ONS SRO NRC Examination QUESTION 84

84

A

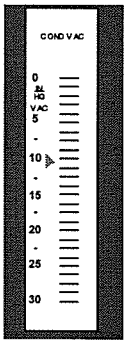
APE051 2.2.44 - Loss of Condenser Vacuum

APE051 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:

- RCS temperature = 545°F increasing
- Turbine Bypass Valves are in HAND and CLOSED
- AP/27 (Loss of Condenser Vacuum) in progress
- Condenser vacuum is as indicated below



Which ONE of the following describes:

1) the RCS response to attempts to open the TBV's from the ICS Bailey stations in the Control Room?

2) the number of Atmospheric Dump Valve flow paths required to perform the safety function credited to the ADV's during a SGTR if condenser vacuum renders the TBV's unavailable?

A. 1. The RCS heatup rate will DECREASE
2. 2

B. 1. The RCS heatup rate will DECREASE
2. 1

C. 1. The RCS heatup rate will remain UNCHANGED
2. 2

D. 1. The RCS heatup rate will remain UNCHANGED
2. 1

2011B ONS SRO NRC Examination QUESTION 84

84

A

General Discussion

Answer A Discussion

Correct.

Part 1 - With condenser Vacuum at approximately 10" Hg, the TBV's are still operable from the Control Room therefore opening the TBV's will reduce SG pressure and therefore increase heat transfer rate which results in a decrease in the RCS heatup rate.

Part 2 - Although there are only two ADV flow paths, both are required to cooldown the RCS to 532 during a SGTR to allow for isolation of the faulted SG. If TBV's are available, procedure direct using the TBV's to perform the cooldown however if TBV's are unavailable the ADV's are used.

Answer B Discussion

Incorrect. First part is correct. Second part is plausible since the TBV's are the preferred method of depressurizing the SG's and are always used if available since they can be directly controlled by the Operator from the Control Room. However since the TBV's are not a QA Condition 1 system, they are not credited in the Safety Analysis. Additional Plausibility comes from the fact that the ADV's are not QA Conditions 1 equipment although the are credited in the Safety Analysis since they are not subject to active failures.

Answer C Discussion

Incorrect. First part is plausible since there is a low vacuum interlock with the TBV's that will make the Control Room Bailey Stations unavailable however the setpoint for the interlock is < 7". The interlock being in affect at 10" is plausible since it is below the Main Turbine and Feedwater pump Lo Vacuum trip setpoints. Additionally plausible since the Bailey Stations at the Aux Shutdown Panel would remain available.

Second part is correct.

Answer D Discussion

Incorrect. First part is plausible since there is a low vacuum interlock with the TBV's that will make the Control Room Bailey Stations unavailable however the setpoint for the interlock is < 7". The interlock being in affect at 10" is plausible since it is below the Main Turbine and Feedwater pump Lo Vacuum trip setpoints. Additionally plausible since the Bailey Stations at the Aux Shutdown Panel would remain available.

Second part is plausible since the TBV's are the preferred method of depressurizing the SG's and are always used if available since they can be directly controlled by the Operator from the Control Room. However since the TBV's are not a QA Condition 1 system, they are not credited in the Safety Analysis. Additional Plausibility comes from the fact that the ADV's are not QA Conditions 1 equipment although the are credited in the Safety Analysis since they are not subject to active failures.

Basis for meeting the KA

This question requires interpreting control room indications of a loss of vacuum to determine the status of a system and understanding how operater actions will impact system conditions. Additionally, at the SRO level it requires knowledge of the impact that mitigating the loss of condenser vacuum will have on the ability to perform functions credited in the safety analysis specifi to the Atmospheric Dump Valves.

Basis for Hi Cog

Requires analyzing plant conditions and determining system responses to those conditions. Additionally requires assessing the ability of the unit to perform one of its credited Safety Functions.

Basis for SRO only

In accordance with Clarification Guidance for SRO-only Questions:

This question requires knowledge from the basis of TS 3.7.4 that is not systems knowledge. Knowledge that the ADV's are credited to perform a plant cooldown would be systems knowledge. Since most TS required systems are required to have redundant trains, knowledge that both trains of the ADV's are required to perform its safety function is SRO knowledge from the TS bases. The systems lesson plans do explain that the ADV's are credited to perform a plant cooldown when TBV's are unavailable but they do NOT explain that the ADV's are somewhat unique in that both flow paths are required to perform the function.
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	Comprehension	NEW	

2011B ONS SRO NRC Examination QUESTION 84

84

A

Development References	Student References Provided
Obj ADM-TSS R5 STG-ICS Chpt 3 TS 3.7.4 bases	

APE051 2.2.44 - Loss of Condenser Vacuum

APE051 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

2011B ONS SRO NRC Examination QUESTION 85

85

C

BWA05 AA2.2 - Emergency Diesel Actuation
Ability to determine and interpret the following as they apply to the (Emergency Diesel Actuation)
(CFR: 43.5 / 45.13)
Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments.

Given the following plant conditions:

- ACB-3 closed

Which ONE of the following is/are the MINIMUM condition(s) that would render the Underground Emergency Power Path NOT Operable in accordance with the basis of Tech Spec 3.8.1 (AC Sources – Operating)?

A. ONLY ACB-3 (Unit 1 EMER FDR) NOT Operable

B. BOTH ACB-3 AND ACB-4 (Unit 2 EMER FDR) must be NOT Operable

C. ONLY Breaker S1 (STBY BUS 1 TO MFB1) NOT Operable

D. BOTH Breakers S1 AND S2 (STBY BUS 2 TO MFB2) must be NOT Operable

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2011B ONS SRO NRC Examination QUESTION 85

85

C

General Discussion

Answer A Discussion

Incorrect. Plausible since this would be correct regarding the operability of the associated KHU but not the Underground power path.

Answer B Discussion

Incorrect since this would render both KHU's unable o provide power to the Underground power path and both KHU's would be inoperable however the Underground power path itself would remain operable.

Answer C Discussion

Correct. Both S breakers are required to be operable in support of the Underground power path.

Answer D Discussion

Incorrect. Plausible since either S breaker would allow energizing the MFB from the Underground power path therefore it is plausible to believe the power path would be operable as long as it can energize the MFB.

Basis for meeting the KA

Requires adherence the Tech Specs in support of limitation in the facility's license.

Basis for Hi Cog

Basis for SRO only

In accordance with Clarification Guidance for SRO-only Questions:

This question requires knowledge from the basis of TS 3.8.1 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	NEW	

Development References	Student References Provided
Obj ADM-TSS R5 TS 3.8.1 bases	

BWA05 AA2.2 - Emergency Diesel Actuation
Ability to determine and interpret the following as they apply to the (Emergency Diesel Actuation)
(CFR: 43.5 / 45.13)
Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments.

401-9 Comments:	Remarks/Status

2011B ONS SRO NRC Examination QUESTION 86

86

D

SYS013 2.2.25 - Engineered Safety Features Actuation System (ESFAS)
SYS013 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 power = 100%
- SBLOCA occurs on discharge of 1B1 RCP

Which ONE of the following describes the MINIMUM requirements for the HPI system to be able to perform its Safety Function in accordance with Tech Spec 3.5.2 (High Pressure Injection)?

A. BOTH HPI trains must be capable of automatic injection upon an ES actuation ONLY

B. ONE HPI train must be capable of automatic injection upon an ES actuation ONLY

C. BOTH HPI trains must be capable of automatic injection upon an ES actuation AND the Atmospheric Dump Valves must be OPERABLE

D. ONE train of HPI must be capable of automatic injection upon an ES actuation and the other train's discharge header must be capable of being cross connected from the Control Room within 10 minutes.

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2011B ONS SRO NRC Examination QUESTION 86

86

D

General Discussion

Answer A Discussion

Incorrect. Plausible for 2 reasons:
1. ONS has several safety systems that are not single failure proof and therefore require both trains of the system to perform its Safety Function (ex. CFT's, ADV's, etc)
2. HPI is unique in that it requires both trains to mitigate certain SBLOCA's when Rx power is > 75%. This answer is incorrect because one of the trains (but not both) can be manually aligned within 10 minutes of ES and still perform its Safety Function.

Answer B Discussion

Incorrect. Plausible since most all active systems credited with performing a specific safety function in the Safety Analysis have two independent trains to be able to mitigate a signale failure. In most all of those cases, one of the two trains is all that is required to perform the systems credited safety function.

Answer C Discussion

Incorrect. Plausible since the HPI system is unique and does require both HPI trains to inject to mitigate a worst case SBLOCA when Rx power is > 75% however one of the trains can be manual aligned with 10 minutes. The ADV's add plausibility since the ADV's being operable will allow HPI system to mitigate any SBLOCA using one train of HPI as long as Rx power is < 75%.

Answer D Discussion

Correct. With Rx power > 75%, both HPI trains are required to mitigate a worst case SBLOCA with one train required to automatically actuate on ES and the other train required to be capable of being manually aligned with 10 minutes of ES actuation.

Basis for meeting the KA

This question requires knowledge from the bases of TS 3.5.2 which explains why the requirements of the LCO statement for the spec are there (specifically why the crossover valves are required).

Basis for Hi Cog

Basis for SRO only

In accordance with Clarification Guidance for SRO-only Questions:

This question requires knowledge from the basis of TS 3.5.2 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	NEW	

Development References	Student References Provided
Obj ADM-TSS R5 TS 3.5.2 bases	

SYS013 2.2.25 - Engineered Safety Features Actuation System (ESFAS)
SYS013 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

2011B ONS SRO NRC Examination QUESTION 87

87

B

SYS022 2.4.31 - Containment Cooling System (CCS)
SYS022 GENERIC
Knowledge of annunciator alarms, indications, or response procedures. (CFR: 41.10 / 45.3)

Which ONE of the following describes

1) instrumentation required to support the operability of the RB Spray system in accordance with the basis of Tech Spec 3.6.5 (Reactor Building Spray and Cooling Systems)?

2) the RB Spray function(s) credited in the safety analysis that is/are ensured by operating the RB Spray system in accordance with EOP guidance.

A. 1. LPI flow
2. assist in reducing Reactor Building pressure ONLY

B. 1. LPI flow
2. assist in reducing Reactor Building pressure AND reducing Iodine concentration

C. 1. RB Spray flow
2. assist in reducing Reactor Building pressure ONLY

D. 1. RB Spray flow
2. assist in reducing Reactor Building pressure AND reducing Iodine concentration

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2011B ONS SRO NRC Examination QUESTION 87

87

B

General Discussion

Answer A Discussion

Incorrect. First part is correct. Second part is plausible since it is one of the two purposes of the RB Spray system and it is the most obvious purpose since the criteria for throttling RB spray following an accident is in part based on RB pressure. Additional plausibility from the fact that there are TSP baskets in containment credited for Iodine control which makes it plausible to believe RB Spray is credited for RB pressure concerns only.

Answer B Discussion

Correct.

The OPERABILITY of RBS train flow instrumentation is not required for OPERABILITY of the corresponding RBS train because system resistance hydraulically maintains adequate NPSH to the RBS pumps and manual throttling of RBS flow is not required. During an event, LPI train flow must be monitored and controlled to support the RBS train pumps to ensure that the NPSH requirements for the RBS pumps are not exceeded. If the flow instrumentation or the capability to control the flow in a LPI train is unavailable then the associated RBS train's OPERABILITY is affected until such time as the LPI train is restored or the associated LPI pump is placed in a secured state to prevent actuation during an event.

During an accident, a minimum of two reactor building cooling trains and one reactor building spray train are required to maintain the containment pressure and temperature following a LOCA. Additionally, one reactor building spray train is required to remove iodine from the containment atmosphere and maintain concentrations below those assumed in the safety analysis.

Answer C Discussion

Incorrect. First part is plausible since it is reasonable to believe that if any flow indication is required to support RB Spray operability it would be RB Spray flow. Second part is plausible since it is one of the two purposes of the RB Spray system and it is the most obvious purpose since the criteria for throttling RB spray following an accident is in part based on RB pressure. Additional plausibility from the fact that there are TSP baskets in containment credited for Iodine control which makes it plausible to believe RB Spray is credited for RB pressure concerns only.

Answer D Discussion

Incorrect. First part is plausible since it is reasonable to believe that if any flow indication is required to support RB Spray operability it would be RB Spray flow. Second part is correct.

Basis for meeting the KA

Question required knowledge of indications required to be available to the operator to support RB Spray operability.

Basis for Hi Cog

Basis for SRO only

In accordance with Clarification Guidance for SRO-only Questions:

This question requires knowledge from the basis of TS 3.6.5 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	MODIFIED	Modified bank ADM160513

Development References	Student References Provided
Obj. PNS-BS R1, ADM-TSS R5 TS 3.6.5 bases PNS-RBS	

SYS022 2.4.31 - Containment Cooling System (CCS)
SYS022 GENERIC
Knowledge of annunciator alarms, indications, or response procedures. (CFR: 41.10 / 45.3)

401-9 Comments:	Remarks/Status

2011B ONS SRO NRC Examination QUESTION 87 87 B

D

2011B ONS SRO NRC Examination QUESTION 88

88

SYS026 2.2.40 - Containment Spray System (CSS)
SYS026 GENERIC
Ability to apply Technical Specifications for a system. (CFR: 41.10 / 43.2 / 43.5 / 45.3)

Given the following Unit 1 conditions:

- Reactor in MODE 3
- Startup in progress

Which ONE of the following states:

1) the MINIMUM Containment Cooling equip required to be OPERABLE while in MODE 3 in accordance with Tech Spec 3.3.5 (Reactor Building Spray and Cooling Systems?

2) if entry into MODE 2 is allowed when the LCO is NOT met while in MODE 3?

A. 1. Two RB Spray Trains and Three RB Cooling Trains
   2. allowed

B. 1. Two RB Spray Trains and Three RB Cooling Trains
   2. NOT allowed

C. 1. One RB Spray Train and Two RB Cooling Trains ONLY
   2. allowed

D. 1. One RB Spray Trains and Two RB Cooling Trains ONLY
   2. NOT allowed

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2011B ONS SRO NRC Examination QUESTION 88

88

D

General Discussion

Answer A Discussion

Incorrect. First part is plausible since it would be correct if in MODE 1 or 2. Second part is plausible since it would be correct if asking about Unit 2 due to the note in TS 3.6.5 making LCO 3.0.4 not applicable for Unit 2.

Answer B Discussion

Incorrect. First part is plausible since it would be correct if in MODE 1 or 2. Second part is correct.

Answer C Discussion

Incorrect. First part is correct. Second part is plausible since it would be correct if asking about Unit 2 due to the note in TS 3.6.5 making LCO 3.0.4 not applicable for Unit 2.

Answer D Discussion

Correct. The LCO statement for TS 3.6.5 requires only one RB spray train and two RB cooling trains when in MODEs 3 and 4. Since the note regarding LCO 3.0.4 being not applicable specifies Unit 2 only, LCO 3.0.4 would still apply to Unit 1 which means that MODE 2 could not be entered until equipment required to meet the LCO in that MODE were operable.

Basis for meeting the KA

Question requires the ability to apply tech specs for a system. Specifically it requires the ability to determine if the LCO requirements of TS 3.6.5 are met for a given MODE and to apply the LCO requirements of TS 3.6.5 to a Unit 1 startup and determine if the startup could continue.

Basis for Hi Cog

Requires application of the Tech Spec to a specific plant condition.

Basis for SRO only

Per Clarification Guidance for SRO-only Questions, this question requires application of requirements of the generic rules of tech specs contained in Section 3. Specifically, it requires knowledge of the requirements of generic TS LCO 3.0.4 and the ability to apply them to specific plant conditions.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	NEW	

Development References

Obj. ADM-ITS R3 ADM-TSS R8
LCO3.0.4
TS 3.6.5

Student References Provided

SYS026 2.2.40 - Containment Spray System (CSS)
SYS026 GENERIC
Ability to apply Technical Specifications for a system. (CFR: 41.10 / 43.2 / 43.5 / 45.3)

401-9 Comments:

Remarks/Status

2011B ONS SRO NRC Examination QUESTION 89

89

A

SYS059 A2.11 - Main Feedwater (MFW) System

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

Failure of feedwater control system .....

Given the following Unit 1 conditions:

Initial Conditions:

- Reactor power = 100%
- MSLB occurs on 1A SG
- BOTH channels of 1A SG AFIS fail to actuate

Current conditions:

- AFIS cannot be Manually actuated

Which ONE of the following states the:

1) Safety Function that AFIS is credited to perform?

2) actions directed by Rule 5 (Main Steam Line Break) that ensure Main Feedwater is isolated to the 1A Steam Generator?

A. 1. Maintain Containment pressure within design limits
   2. Trip both Main FDWPT's and close 1FDW-31 and 1FDW-33 (Main Feedwater Block Valves)

B. 1. Maintain Containment pressure within design limits
   2. Trip both Main FDWPT's and close 1FDW-32 and 1FDW-35 (Main Feedwater Control Valves)

C. 1. Prevent an inadvertent return to criticality
   2. Trip both Main FDWPT's and close 1FDW-31 and 1FDW-33

D. 1. Prevent an inadvertent return to criticality
   2. Trip both Main FDWPT's and close 1FDW-32 and 1FDW-35

2011B ONS SRO NRC Examination QUESTION 89

89

A

General Discussion

Answer A Discussion

Correct. AFIS is credited in the Containment analysis for a MSLB to prevent quickly isolate feedwater to the SG's to prevent exceeding design limits on RB pressure. Rule 5 directs tripping both MFDWP's and closing the Main and Startup block valves.

Answer B Discussion

Incorrect. First part is correct. Second part is plausible since AFIS closes the Main and Startup control valves and NOT the block valves.

Answer C Discussion

Incorrect. First part is plausible since there are certain MSLB's that can result in a return to criticality due to the reactivity added by the RCS cooldown and the RCS cooldown is a function of the inventory of secondary water in the affected SG. It is therefore reasonalbe to believe that AFIS isolation of feedwater supply to the affected SG is intended to limit the inventory supplied to the SG in an effort to limit the cooldown to prevent the return to critical. Second part is correct

Answer D Discussion

Incorrect. First part is plausible since there are certain MSLB's that can result in a return to criticality due to the reactivity added by the RCS cooldown and the RCS cooldown is a function of the inventory of secondary water in the affected SG. It is therefore reasonalbe to believe that AFIS isolation of feedwater supply to the affected SG is intended to limit the inventory supplied to the SG in an effort to limit the cooldown to prevent the return to critical. Second part is plausible since AFIS closes the Main and Startup control valves and NOT the block valves.

Basis for meeting the KA

Requires knowledge of the impact of a failure of a feedwater control system (AFIS controls FDWP operation as well as feedwater valve positions) and procedural steps taken that will isolate FDW to the SG if AFIS fails to operate.

Basis for Hi Cog

Requires analyzing a system failure to determine the consequences of the failure as well as a detailed knowledge of precedure steps related to a MSLB.

Basis for SRO only

In accordance with Clarification Guidance for SRO-only Questions:

This question requires knowledge from the basis of TS 3.3.11 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	Comprehension	NEW	

Development References
Obj ADM-TSS R5 TS 3.3.11 basis Rule 5

Student References Provided

SYS059 A2.11 - Main Feedwater (MFW) System

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

Failure of feedwater control system .....

401-9 Comments:	Remarks/Status

2011B ONS SRO NRC Examination QUESTION 90

90

C

SYS103 A2 04 - Containment System

Ability to (a) predict the impacts of the following malfunctions or operations on the containment system 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)

Containment evacuation (including recognition of the alarm) .....

Given the following Unit 1 conditions:

Initial conditions:

- Reactor in MODE 6
- Fuel offload in progress
- Penetration openings exist due to Containment penetration work in progress

Current conditions

- Control Room notified that a Fuel Assembly has been dropped
- 1SA-8 B-9 (PROCESS MONITOR RADIATION HIGH) actuates
- 1RIA-3 (Fuel Transfer Canal Area Monitor) HIGH alarm actuates
- 1RIA-49 (RB Gas) HIGH alarm actuates
- RB Evacuation Alarm sounds

Which ONE of the following states the:

1) source of the AUTOMATIC operation of the RB Evacuation Alarm?

2) Abnormal Procedure that will be directed FIRST?

A. 1. 1RIA-3
   2. AP/1/A/1700/009 (Spent Fuel Damage)

B. 1. 1RIA-3
   2. AP/1/A/1700/018 (Abnormal Release of Radioactivity)

C. 1. 1RIA-49
   2. AP/1/A/1700/009 (Spent Fuel Damage)

D. 1. 1RIA-49
   2. AP/1/A/1700/018 (Abnormal Release of Radioactivity)

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2011B ONS SRO NRC Examination QUESTION 90

90

C

General Discussion

Answer A Discussion

Incorrect. First part is plausible since 1RIA-3 does sound a local alarm. Additionally plausible since it would be correct if asking about another area monitor in the RB (1RIA-4). Second part is correct.

Answer B Discussion

Incorrect. First part is plausible since 1RIA-3 does sound a local alarm. Additionally plausible since it would be correct if asking about another area monitor in the RB (1RIA-4). Second part is plausible since the entry conditions for the AP are met.

Answer C Discussion

Correct. 1RIA-49 sounds the RB evacuation alarm and 1RIA-3 does not. AP.9 has direction to notify Containment Closure Coordinator to ensure any open penetration are isolated in accordance with the Containment Closure Control procedure. These penetration must be isolated within 30 minutes therefore AP/9 would be the AP needing immediate attention.

Answer D Discussion

Incorrect. First part is correct. Second part is plausible since the entry conditions for the AP are me

Basis for meeting the KA

Discussed KA with Chief on 5/31. Agreed that recognizing conditions that would cause the alarm would meet intent of KA. Question requires the ability to predict the automatic operation of the RB evacuation alarm and use procedures to mitigate the consequences of the malfunction that caused the RB evacuation alarm,

Basis for Hi Cog

Requires analyzing plant conditions and making choices based on priorities of actions contained in procedures.

Basis for SRO only

In accordance with Clarification Guidance for SRO-only Questions, this question requires assessing plant conditions and selecting a procedure with which to proceed to mitigate the event.

Since entry conditions for multiple AP's are met, it cannot be answered by just knowing entry conditions. It requires detailed knowledge of the content of the procedure to make the correct choice.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	NEW	

Development References	Student References Provided
Obj EAP-APG R9 AP/9 AP/18	

SYS103 A2 04 - Containment System

Ability to (a) predict the impacts of the following malfunctions or operations on the containment system 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)

Containment evacuation (including recognition of the alarm) .....

401-9 Comments:	Remarks/Status

2011B ONS SRO NRC Examination QUESTION 91

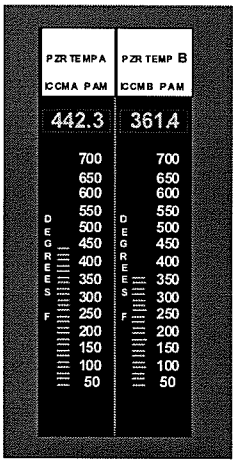
91

C

SYS016 2.1.7 - Non-Nuclear Instrumentation System (NNIS)
SYS016 GENERIC
Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation. (CFR: 41.5 / 43.5 / 45.12 / 45.13)

Given the following Unit 1 conditions:

- Reactor power = 100%
- Pressurizer temperature indicates as shown below



Which ONE of the following describes ALL Tech Spec 3.3.8 (PAM Instrumentation) Condition(s) that apply (if any)?

REFERENCE PROVIDED

A. NO Tech Spec 3.3.8 Condition applies

B. Condition A ONLY

C. Condition A and C ONLY

D. Condition A, C, and H

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2011B ONS SRO NRC Examination QUESTION 91

91

C

General Discussion

This question requires an understanding that there are only two channels of Pressurizer temperature. One channel includes Pressurizer level 1 & 2 and the other channel is Pressurizer level 3. TS 3.3.8 requires both channels operable (per TS 3.3.8 Table 3.3.8-1. That means that either Pressurizer level 1 or 2 has to be operable as well as Pzr level 3 to meet the LCO requirments of TS 3.3.8. Additionally, Pzr temp A feeds both Pzr level 1 and 2 and Pzr temp B feeds Pzr level 3. This means that a loss of Pzr temp A renders both Pressurizer levels 1 and 2 inoperable and a loss of Pzr temp B renders Pzr level 3 NOT operable.

Answer A Discussion

Incorrect and plausible. TS 3.3.8 does not specifically require Pzr temperature to be operable. If the candidate does not know TS bases information that requires the required pressurizer level channels to be temperature compensated then this would be the choice made since the temperature instruments are not specifically listed as required instrumentation in TS 3.3.8.

Answer B Discussion

Incorrect. Plausible since it would be correct if the candidate were to have the misconception that one of the temperatures being displayed was accurate. Believing that either temperature is correct for 100% power would lead to this choice.

Answer C Discussion

Correct. TS 3.3.8 requires that either Pzr level 1 or 2 AND Pzr level 3 be operable. With both Pzr temps being inaccurate, NO pressurizer levels are Operable therefore Condition A AND C would apply.

Answer D Discussion

Incorrect and plausible. It is reasonable that when applying TS 3.3.8 to immediately go to table 3.3.8-1 and entering the condition specified in the right hand column for the PAM instrument with an inoperability. Additionally, this would be correct if the inoperability's continued beyond the 7 day Completion time of Condition C.

Basis for meeting the KA

Requires evaluating plant performance (comparing Reactor power level to indicated Pzr levels) and making an operational judgment based on instrument interpretation. Specifically, it requires knowing that Pzr temp for 100% power is 649 degrees therefore it is Pzr temp B that is malfunctioned and therefore Pzr level 3 is NOT operable.

Basis for Hi Cog

Requires analyzing plant conditions and correctly applying TS 3.3.8 based on the analysis.

Basis for SRO only

In accordance with Rev. 1 of "Clarification Guidance for SRO-only Questions":
This question is SRO in that it requires application of TS 3.3.8 and is not a directl lookup. Correct application of the spec cannot be performed based solely on systems knowledge.
This question cannot be answered Solely on 1 hr or less TS knowledge.
This question cannot be answered based on "above the line" TS information.
This question cannot be answered with TS Safety Limit information.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	MODIFIED	NRC ILT39 Q91 MODIFIED

Development References

Obj IC-RCI R13,15,16,17,18, ADM-TSS R1, R5
TS 3.3.8
TS 3.3.8 bases
IC-RCI

Student References Provided

TS 3.3.8

SYS016 2.1.7 - Non-Nuclear Instrumentation System (NNIS)
SYS016 GENERIC
Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation. (CFR: 41.5 / 43.5 / 45.12 / 45.13)

401-9 Comments:

Remarks/Status

2011B ONS SRO NRC Examination QUESTION 91

91

C

2011B ONS SRO NRC Examination QUESTION 92

92

B

SYS034 K4.01 - Fuel Handling Equipment System (FHES)
Knowledge of design feature(s) and/or interlock(s) which provide for the following: (CFR: 41.7)
Fuel protection from binding and dropping .....

Given the following Unit 3 conditions:

- Reactor in MODE 6
- Core offload in progress
- Main Fuel Bridge is withdrawing a fuel assembly that appears to be binding

The __(1)__ interlock will stop the withdrawal of the fuel assembly to prevent fuel damage and in accordance with OP/0/A/1506/001 (Fuel and Component Handling), __(2)__ must either be present or give concurrence prior to bypassing the interlock.

Which ONE of the following completes the statement above?

A. 1. Hoist Overload
   2. the Operations Shift Manager ONLY

B. 1. Hoist Overload
   2. any licensed SRO

C. 1. Hoist Up Travel
   2. the Operations Shift Manager ONLY

D. 1. Hoist Up Travel
   2. any licensed SRO

2011B ONS SRO NRC Examination QUESTION 92

92

B

General Discussion

Answer A Discussion

Incorrect. The first part is correct The second part is plausible since it is common to require specifically that the OSM approve deviation from normal activities. Additionally plausible since the OSM is a licensed SRO.

Answer B Discussion

Correct. The hoist overload interlock will automatically stop upward movement of the hoist when the setting of 2500 lbs is reached. A licensed SRO is required to authorize bypassing the interlock,

Answer C Discussion

Incorrect. First part is plausible since this interlock will also stop upward travel of the hoist however it is only in effect when the grapple is disengaged. The second part is plausible since it is common to require specifically that the OSM approve deviation from normal activities. Additionally plausible since the OSM is a licensed SRO.

Answer D Discussion

Incorrect. First part is plausible since this interlock will also stop upward travel of the hoist however it is only in effect when the grapple is disengaged. Second part is correct.

Basis for meeting the KA

Requires knowledge of interlocks on the main fuel bridge that are designed to prevent damage of a fuel assembly from binding during withdrawal.

Basis for Hi Cog

Basis for SRO only

In accordance with Clarification Guidance for SRO-only Questions:

Requires knowledge of procedures and limitations involved with fuel handling.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Memory	NEW	

Development References	Student References Provided
Obj FH-FHS R36 FH-FHS op/1506/01	

SYS034 K4.01 - Fuel Handling Equipment System (FHES)

Knowledge of design feature(s) and/or interlock(s) which provide for the following: (CFR: 41.7)

Fuel protection from binding and dropping .....

401-9 Comments:	Remarks/Status

2011B ONS SRO NRC Examination QUESTION 93

93

C

SYS071 A2.02 - Waste Gas Disposal System (WGDS)

Ability to (a) predict the impacts of the following malfunctions or operations on the Waste Gas Disposal System ; 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)

Use of waste gas release monitors, radiation, gas flow rate, and totalizer ..

Given the following plant conditions:

- "A" GWD tank release in progress
- The Waste Gas Discharge Flow monitor fails

Which ONE of the following describes actions required in accordance with SLC 16.11.3 (Radioactive Effluent Monitoring Instrumentation)?

REFERENCE PROVIDED

A. The release is NOT allowed to continue with the flow monitor inoperable therefore it must be immediately terminated

B. The release may continue as long as two independent samples are taken and immediately analyzed

C. The release may continue as long as the release flow rate is estimated immediately and once per 4 hours thereafter

D. The release may continue for up to one hour with no additional actions required

---

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2011B ONS SRO NRC Examination QUESTION 93

93

C

General Discussion

Answer A Discussion

Incorrect. Plausible since this is one of the options provided by SLC 16.11.3 Conditions J however there is an "OR" that will allow the release to continue if the flow rate is estimated.

Answer B Discussion

Incorrect. Plausible since this is correct actions for the RIA's monitoring the release being inoperable per Condition I.

Answer C Discussion

Correct. The flow device being inoperable during a release requires entry into Condition C of SLC 16.11.3. Condition C references table 16.11.3-2 which requires entry into Condition J. That conditions allows continuing the release if the flow rate is estimated immediately and once/4 hours thereafter.

Answer D Discussion

Incorrect. This would be a correct action if the monitoring device were taken out of service for planned maintenance per the NOTE in Condition J.

Basis for meeting the KA

Requires the ability to predict the impact of a failed flow monitoring device during the release of a waste gas tank and use SLC 16.11.3 to mitigate the consequences of the failure.

Basis for Hi Cog

Requires the ability to use SLC 16.11.3.

Basis for SRO only

In accordance with "Clarrification Guidance for SRO-Only Question" this question requires application of Required Actions.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	NEW	

Development References	Student References Provided
Obj. ADM-ITS R3, R6 SLC 16.11.3	SLC 16.11.3

SYS071 A2.02 - Waste Gas Disposal System (WGDS)

Ability to (a) predict the impacts of the following malfunctions or operations on the Waste Gas Disposal System ; 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)

Use of waste gas release monitors, radiation, gas flow rate, and totalizer ..

401-9 Comments:	Remarks/Status

2011B ONS SRO NRC Examination QUESTION 94

94

A

GEN2.1 2.1.1 - GENERIC - Conduct of Operations
Conduct of Operations
Knowledge of conduct of operations requirements. (CFR: 41.10 / 45.13)

Given the following plant conditions:

- Unit 1 Reactor power = 100%
- Unit 2 Reactor power = 100%
- Unit 1 and Unit 2 Control Room SRO's are both inside the Control Room

Which ONE of the following activities is an acceptable activity for the Unit 1 Control Room SRO in accordance with OMP 2-01 (Duties and Responsibilities of On Shift Personnel)?

A. Leave the Control Room area for 3 minutes without giving a complete turnover

B. Serve as the Reactivity Management SRO during Control Rod withdrawal

C. Serve as the Evolution SRO during a specific activity

D. Fill the NRC Communicator role

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2011B ONS SRO NRC Examination QUESTION 94

94

A

General Discussion

Answer A Discussion

Correct. In accordance with OMP 2-01... If the CR SRO is outside the Control Room for greater than 5 minutes, a complete turnover to another on-duty SRO (Plant SRO, or the other CR SRO for units 1 or 2) must be made. For times less than 5 minutes, a complete turnover is not required.

Answer B Discussion

Incorrect. Plausible since this is a unique position and it is an SRO specific postion separate from all other positions that is addressed in OMP 2-01. However this position actually reports to the Control Room SRO. Additionally plausible since this position has the same license requirements as the Control Room SRO (Nuclear Shift Supervisor with an active SRO license).

Answer C Discussion

Incorrect. Plausible since this is an SRO specific requirement for activities requiring dedicated oversight (other than reactivity management activities) that is specifically addressed in OMP 2-01 however this position actually reports to the Control Room SRO.

Answer D Discussion

Incorrect. Plausible since it is an SRO specific requirement that is addressed in OMP 2-01 however this activity is performed by the Plant SRO. Additionally, ONS requires 2 CR SRO's for Units 1&2 which is more than the minimum required by 10CFR49. The fact that we have an additional CR SRO makes it plausible that one of them could perform the NRC Communicator role.

Basis for meeting the KA

Requires knowledge of acceptable conduct of for a control room SRO.

Basis for Hi Cog

Basis for SRO only

Requires knowledge of SRO only specific administrative requirements when filling the Control Room SRO position.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Memory	NEW	

Development References	Student References Provided
Obj ADM-OMP R5 ADM-OMP OMP 2-01	

GEN2.1 2.1.1 - GENERIC - Conduct of Operations

Conduct of Operations

Knowledge of conduct of operations requirements. (CFR: 41.10 / 45.13)

401-9 Comments:	Remarks/Status

2011B ONS SRO NRC Examination QUESTION 95

95

B

GEN2.1 2.1.41 - GENERIC - Conduct of Operations
Conduct of Operations
Knowledge of the refueling process. (CFR: 41.2 / 41.10 / 43.6 / 45.13)

Given the following Unit 2 conditions:

Initial conditions:
- Time = 0100
- Refueling in progress
- FTC level = 22 feet stable
- No water additions are being made to the system
- 2A LPI train is operable and in service

Current conditions:
- Time = 2300
- Refueling SRO desires stopping the 2A LPI Pump to aid in inserting a fuel assembly

Which ONE of the following:

1) states whether the 2A LPI pump may be stopped in accordance with OP/2/A/1502/007 (Operations Defueling /Refueling Responsibilities)?

2) describes the Tech Spec bases for allowing/NOT allowing the pump to be stopped?

A. 1. 2A LPI Pump may be stopped for up to 1 hour per 8 hour period.
2. Spent Fuel Cooling system provides adequate backup decay heat removal.

B. 1. 2A LPI Pump may be stopped for up to 1 hour per 8 hour period.
2. FTC level is within TS limits and provides adequate backup decay heat removal.

C. 1. 2A LPI Pump may NOT be stopped
2. Spent Fuel Cooling system can NOT provide adequate backup decay heat removal.

D. 1. 2A LPI Pump may NOT be stopped
2. FTC level is below TS limits and cannot provide adequate backup decay heat removal.

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2011B ONS SRO NRC Examination QUESTION 95

95

B

General Discussion

Re-arranged answers

Answer A Discussion

Incorrect: First part is correct. 2nd part is incorrect but plausible since Spent Fuel Cooling (SFC) would be aligned in the "Refueling Mode" which means that it is connected to the fuel transfer canal. In that alignment it helps to provide decay heat removal and would therefore be a plausible reason to allow temporarily securing the operating LPI pump..

Answer B Discussion

CORRECT: TS 3.9.4 (Refueling Ops- DHR and Coolant Circulation –High Water Level) is in effect as water level is ≥ 21.34 ft. This condition requires only 1 DHR loop to be operable and in service since the water can provide adequate backup decay heat removal. TS and Refueling procedures limits & precautions allow SRO to grant permission for the operating loop to be secured for up to 1 hour every 8 hours with adequate level.

Answer C Discussion

Incorrect: First part is incorrect but plausible if TS 3.9.5 criteria are misapplied to this situation. TS3.9.5 (DHR and Coolant Circulation – Low Water Level) requires 2 operable DHR loops with one loop in service (no time is allowed for a pump to be secured). 2nd part is incorrect but plausible since Spent Fuel Cooling (SFC) would be aligned in the "Refueling Mode" which means that it is connected to the fuel transfer canal. In that alignment assessing its ability to help provide DHR is plausible.

Answer D Discussion

Incorrect: First part is incorrect but plausible if TS 3.9.5 criteria are misapplied to this situation. TS3.9.5 (DHR and Coolant Circulation – Low Water Level) requires 2 operable DHR loops with one loop in service (no time is allowed for a pump to be secured). 2nd part is wrong but plausible in that it would be true if level was below the refueling level of 21.34 ft.

Basis for meeting the KA

Requires knowledge of fuel handling procedures and specific requirements of FTC water level

Basis for Hi Cog

Basis for SRO only

First part requires knowledge of procedures and limitations involved in core alterations (43.6), TS and Bases (43.2). Second part requires knowledge of the Basis of Tech Spec 3.9.4 and is not systems knowledge.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Memory	BANK	2009A NRC Q95

Development References

FH-FHS R21, / ADM-TSS R5, R6
OP/2/A/1502/007
TS 3.9.4
TS 3.9.5
TS 3.9.4 bases

Student References Provided

GEN2.1 2.1.41 - GENERIC - Conduct of Operations
Conduct of Operations
Knowledge of the refueling process. (CFR: 41.2 / 41.10 / 43.6 / 45.13)

401-9 Comments:

Remarks/Status

2011B ONS SRO NRC Examination QUESTION 96

96

C

GEN2.2 2.2.17 - GENERIC - Equipment Control

Equipment Control

Knowledge of the process for managing maintenance activities during power operations, such as risk assessments, work prioritization, and coordination with the transmission system operator. (CFR: 41.10 / 43.5 / 45.13)

Given the following Unit 1 condition:

- Reactor power = 100%
- Critical Activity Plan as described in NSD 213 (Risk Management Process) is being implemented
- The Critical Activity Plan has reached a required hold point
- Holding at this point in the Critical Activity Plan could cause a reactor trip

In accordance with NSD 213 (Risk Management Process), which ONE of the following states the LOWEST level of management that has the authority to waive the "hold" that is required by the Complex Activity Plan?

A. Station Manager

B. Superintendent of Operations

C. Operations Shift Manager

D. Control Room SRO

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2011B ONS SRO NRC Examination QUESTION 96

96

C

General Discussion

Answer A Discussion

Incorrect. Plausible since NSD 213 explains that the station manager is responsible for approval of Critical Activity Plans through the PORC process.

Answer B Discussion

Incorrect. Plausible since NSD 2134 does specific that the Superintendent of Ops will determine the level of management attention required for a given test or evolution and can approve Critical Activity Plans.

Answer C Discussion

Correct, NSD 213 states that the OSM can:

Approve waiver of any or all of the requirements of this directive for plant conditions which must be addressed promptly to avoid station operation in a manner not in the best interest of safety. This includes avoiding unnecessary shutdown transients.

Answer D Discussion

Incorrect. Plausible since this position is a licensed SRO with an Active license who is responsible for the safe operation of the Unit and in most other situations acts as the final say for activities on the associated unit.

Basis for meeting the KA

Requires knowledge of managing high risk activities (which would include performing a risk assessment) during power operations..

Basis for Hi Cog

Basis for SRO only

Requires knowledge of Administrative requirements that are specific to the SRO position

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Memory	NEW	

Development References	Student References Provided
Obj Adm-SD R15 ADM-SD NSD 213	

GEN2.2 2.2.17 - GENERIC - Equipment Control

Equipment Control

Knowledge of the process for managing maintenance activities during power operations, such as risk assessments, work prioritization, and coordination with the transmission system operator. (CFR: 41.10 / 43.5 / 45.13)

401-9 Comments:	Remarks/Status

D

2011B ONS SRO NRC Examination QUESTION 97

97

GEN2.2 2.2.37 - GENERIC - Equipment Control
Equipment Control
Ability to determine operability and/or availability of safety related equipment. (CFR: 41.7 / 43.5 / 45.12)

Given the following Unit 2 conditions:

- Date = 10-1
- Time = 1200
- A Tech Spec required surveillance on an instrument channel with a frequency of 12 hours has just been discovered NOT performed since 1200 on 9-26.

Which ONE of the following describes the status of the associated equipment in accordance with Tech Specs if the surveillance is NOT performed?

A. Immediately declare the equipment NOT OPERABLE

B. Remains OPERABLE until no later than 10-2 at 0000

C. Remains OPERABLE until no later than 10-2 at 0300

D. Remains OPERABLE until no later than 10-2 at 1200

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2011B ONS SRO NRC Examination QUESTION 97

97

D

General Discussion

Answer A Discussion

Incorrect. Plausible since it represents "Time of Discovery" of the missed surveillance.

Answer B Discussion

Incorrect. Plausible since the frequency of the SR is 12 hours and this represents 12 hours from discovery of the missed surveillance.

Answer C Discussion

Incorrect. Plausible since the frequency of the SR is 12 hours and this represents 1.25 times the 12 hour frequency from discovery of the missed surveillance as allowed by SR 3.0.2.

Answer D Discussion

Correct. SR 3.0.3 allows 24 hours or the limit of the specified frequency whichever is greater to perform a missed surveillance prior to declaring the equipment Not Operable. With a 12 hour surveillance, 24 hours is allowed to perform the surveillance prior to declaring the equipment inoperable.

Basis for meeting the KA

Requires generic application of the ability to determine when a piece of equipment must be declared inoperable if its associated surveillances are not performed.

Basis for Hi Cog

Requires knowledge of the generic Tech Spec rules of SR's and the ability to apply the rules.

Basis for SRO only

In accordance with the "Clarification Guidance" this question requires the application of the generic rules of Tech Spec (SR 3.0.3) to make operability determinations.

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	Comprehension	NEW	

Development References	Student References Provided
Obj. ADM-ITS R3 SR 3.0.3	

GEN2.2 2.2.37 - GENERIC - Equipment Control
Equipment Control
Ability to determine operability and/or availability of safety related equipment. (CFR: 41.7 / 43.5 / 45.12)

401-9 Comments:	Remarks/Status

2011B ONS SRO NRC Examination QUESTION 98

98

B

GEN2.3 2.3.4 - GENERIC - Radiation Control
Radiation Control
Knowledge of radiation exposure limits under normal or emergency conditions. (CFR: 41.12 / 43.4 / 45.10)

Given the following Unit 1 conditions:

Initial conditions:
- Reactor power = 100%

Current conditions:
- RCS pressure = 1136 psig slowly decreasing
- Core SCM = 0°F
- RB pressure = 11.6 psig slowly decreasing
- 1A SG pressure = 1010 psig slowly decreasing
- 1B SG pressure = 1008 psig slowly decreasing

Which ONE of the following:

1) states whether Emergency Dose Limits are in effect?

2) describes the maximum (TEDE) dose (rem) that an NEO will be allowed to receive while performing a time critical task outside of the control room without exceeding any applicable limits?

A. 1. Yes
   2. 25

B. 1. Yes
   2. 5

C. 1. No
   2. 25

D. 1. No
   2. 2

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2011B ONS SRO NRC Examination QUESTION 98

98

B

General Discussion

Re-arranged answers

Answer A Discussion

Incorrect: First part is correct. Second part is incorrect. Second part is plausible because 25 rem is the limit for lifesaving activities and these activities are normally associated with major events such as the SBLOCA described in the stem.

Answer B Discussion

CORRECT: Plant conditions indicate a LOCA is occurring. This requires EDLs to be in effect. 5 rem is the maximum dose that could be received under EDLs for performing Time Critical Tasks.

Answer C Discussion

Incorrect: First part is incorrect. Plausible if they misdiagnose a MSLB. Second part is incorrect. Second part is plausible because 25 rem is the limit for lifesaving activities and these activities are normally associated with major events such as the SBLOCA described in the stem.

Answer D Discussion

Incorrect: First part is incorrect. Plausible if they misdiagnose a MSLB. Second part is incorrect. Plausible in that 2 rem is the normal administrative limit and this would be a correct answer if EDL's were not in affect.

Basis for meeting the KA

Requires knowledge of conditions that impact initiating Emergency Does Limits and what dose limits apply once they are initiated.

Basis for Hi Cog

Requires analyzing plant data to determine the event that has occurred and then applying knowledge of EDL's to that event.

Basis for SRO only

The SRO acts as the procedure director and the SRO alone evaluates facility conditions to determines if EDLs are in affect and therefore determine the exposure limits of operators under his control performing activities to mitigate the event. Additionally, requires ability to assess plant conditions and determine the requirements of administrative procedures (OMP 1-18) apply based on radiation hazards.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Memory	BANK	2009 NRC Q99

Development References	Student References Provided
Obj. ADM-OMP R10,52 OMP 1-18	

GEN2.3 2.3.4 - GENERIC - Radiation Control

Radiation Control

Knowledge of radiation exposure limits under normal or emergency conditions. (CFR: 41.12 / 43.4 / 45.10)

401-9 Comments:	Remarks/Status

2011B ONS SRO NRC Examination QUESTION 99

99

A

GEN2.4 2.4.18 - GENERIC - Emergency Procedures / Plan
Emergency Procedures / Plan
Knowledge of the specific bases for EOPs. (CFR: 41.10 / 43.1 / 45.13)

Given the following Unit 1 conditions:

Initial Conditions
- SBLOCA has occurred
- BOTH Main Feedwater pumps have tripped
- Rule 2 is complete
- ONE HPI train injecting
- Unit 3 is supplying the Aux Steam header

Current conditions:
- BOTH MDEFWP's have failed to start

Which ONE of the following describes:

1) the actions that will be directed by the Procedure Director?

2) the reasons for the actions being directed?

A. 1. FULLY depressurize both Steam Generators
   2. Initiates a rapid cooldown to LPI

B. 1. FULLY depressurize both Steam Generators
   2. Ensures Steam Generators do not become a heat source during cooldown

C. 1. RAPIDLY depressurize both Steam Generators to 250 psig ONLY
   2. Initiates a rapid cooldown to LPI

D. 1. RAPIDLY depressurize both steam generators to 250 psig ONLY
   2. ensures steam generators do not become a heat source during cooldown

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2011B ONS SRO NRC Examination QUESTION 99

99

A

General Discussion

Answer A Discussion

Correct. With HPI degraded (only one train injecting) there may not be sufficient core cooling. With AS available to the TDEFWP, both Steam Generators are fully depressurized in support of performing a rapid RCS cooldown to LPI.

Answer B Discussion

Incorrect. First part is correct. Second part is plausible since maintaining Steam Generators as a heat sink instead of a heat source is a real concern during cooldown. In other sections of the LOSCM tab the EOP directs maintaining SG pressure less than RCS pressure during the cooldown to ensure SG's are a heat sink and not a heat source.

Answer C Discussion

Incorrect. First part is plausible since it would be correct if AS was not available for the TDEFWP. Second part is correct.

Answer D Discussion

Incorrect. First part is plausible since it would be correct if AS was not available for the TDEFWP. Second part is plausible since maintaining Steam Generators as a heat sink instead of a heat source is a real concern during cooldown. In other sections of the LOSCM tab the EOP directs maintaining SG pressure less than RCS pressure during the cooldown to ensure SG's are a heat sink and not a heat source.

Basis for meeting the KA

Requires knowledge of the bases for fully depressurizing both SG's during a LOSCM with degraded HPI.

Basis for Hi Cog

Requires analyzing plant conditions and determining a correct course of action based on the analysis.

Basis for SRO only

In accordance with Clarification Guidance for SRO-only Questions:

Requires assessing plant conditions and determining a section of the procedure with which to proceed. It cannot be answered based solely on systems knowledge or entry conditions. Plant data must be assessed and then the correct section of the procedure applied (rapid cooldown or normal cooldown to LPI).

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	NEW	

Development References	Student References Provided
Obj EAP-LOSCM R18 EAP-LOSCM	

GEN2.4 2.4.18 - GENERIC - Emergency Procedures / Plan

Emergency Procedures / Plan

Knowledge of the specific bases for EOPs. (CFR: 41.10 / 43.1 / 45.13)

401-9 Comments:	Remarks/Status

2011B ONS SRO NRC Examination QUESTION 100

100

B

GEN2.4 2.4.28 - GENERIC - Emergency Procedures / Plan
Emergency Procedures / Plan
Knowledge of procedures relating to a security event (non-safeguards information). (CFR: 41.10 / 43.5 / 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 525kv Switchyard AND the 230kv Switchyard

Time = 1215
- Intruders have gained access to the Unit 1&2 blockhouse and have rendered the contents useless

Which ONE of the following:

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

2) states the EAL classification required by the conditions at Time = 1215?

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

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2011B ONS SRO NRC Examination QUESTION 100

100

B

General Discussion

Answer A Discussion

Incorrect. First part is correct. Second part is plausible since identifying the intruders at the CT-4 blockhouse places them inside the Protected Area and that alone would require a SAE.

Answer B Discussion

Correct. Since both switchyards are inside the Owner Control Fence but outside of the Protected Area, 1205 would be an Alert bases on Encl. 4.6 of RP/1000/01.The Unit 1&2 blockhouse contains CT-4 and Unit 1&2 Main Feeder Buses. With that equipment not available, most shutdown safety functions would be unavailable and therefore a General Emergency would be correct.

Answer C Discussion

Incorrect. First part is plausible since 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). That misconception would result in determining a SAE would be correct. Second part is plausible since identifying the intruders at the CT-4 blockhouse places them inside the Protected Area and that alone would require a SAE.

Answer D Discussion

Incorrect. First part is plausible since 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). That misconception would result in determining a SAE would be correct. Second part is correct.

Basis for meeting the KA

Requires knowledge of RP/1000/01 as it relates to security events.

Basis for Hi Cog

Requires more than one mental step in that it requires realizing that a loss of the CT-4 blockhouse will result in a loss of the MFB's which are required to power equipment necessary to achieve and maintain shutdown conditions.

Basis for SRO only

Requires EAL determinations which are activities performed only by SRO's and have SRO specific objectives.

Job Level	Cognitive Level	QuestionType	Question Source
SRO	Comprehension	NEW	

Development References

Obj EAP-SEP R12
EAP-SEP
RP/1000/01

Student References Provided

RP/1000/01

GEN2.4 2.4.28 - GENERIC - Emergency Procedures / Plan

Emergency Procedures / Plan

Knowledge of procedures relating to a security event (non-safeguards information). (CFR: 41.10 / 43.5 / 45.13)

401-9 Comments:

Remarks/Status