

EXAM QUESTION HISTORY

Question # _____ RO 1 SRO _____
 TIER 1 Group 1
 KA 000007EK1.05 Importance 3.3

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 .5 55.43 _____

Learning Objective

REP00C 2.01 Given a set of plant and equipment conditions evaluate the conditions to determine the applicable procedure, and from the procedure determine the appropriate EXPECTED ACTIONS or RESPONSE NOT OBTAINED instructions to implement.(E-0)

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference E-0 Rx trip or safety injection

Level of Difficulty (from attachment 3) 3

References required on Exam (Attach copy to this attachment)

None.

Verification Jaws M Boorj Date 2/15/06
 Exam Developer

Validation [Signature] Date 5/22/06
 Operations

Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 1 C000.1298

(1 point(s))

A Reactor Trip occurs from 100% power due to a loss of off-site power. The operators are maintaining RCS T_{avg} at 547°F using the S/G ARV's in automatic control. Which of the following describes the actions the operator must take over the next 3-4 hours to maintain T_{avg} at 547°F and the reason for that action.

- a. The ARV's auto setpoint must be increased since natural circulation flow increases requiring a lower ΔT to remove decay heat.
- b. The ARV's auto setpoint must be increased since decay heat decreases requiring lower ΔT to remove decay heat.
- c. The ARV's auto setpoint must be decreased since natural circulation flow decreases requiring a higher ΔT to remove decay heat.
- d. The ARV auto setpoint must be decreased since decay heat decreases less than the flow decreases requiring a higher ΔT to remove decay heat.

Answer 1

- b. The ARV's auto setpoint must be increased since decay heat decreases requiring lower ΔT to remove decay heat.

Distractor Analysis

- a. Incorrect. Natural circulation flow decreases as decay heat level decreases due to reduced core ΔT .
- b. Correct. As decay heat decreases the reduction of heat into the RCS lowers T_{hot} . In order to restore T_{hot} and maintain T_{avg} SG pressure/temperature must be raised.
- c. Incorrect. Lowering ARV setpoint will lower SG pressure/temperature and reduce RCS T_{avg} .
- d. Incorrect. A lower ΔT is required.

EXAM QUESTION HISTORY

Question # _____ RO 2 SRO _____
 TIER 1 Group 1
 KA 000009EK2.03 Importance 3.0

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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|----------|---|
| _____ | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank <u>INPO</u> # <u>Byron 1 10/29/01</u> |

10CFR55 Content 55.41 .14 55.43 _____

Learning Objective

RES12C 1.02 Given the notes, cautions, and/or major action categories in ES-1.2, Post LOCA Cooldown and Depressurization, explain the basis for same.

Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

Technical Reference ES-1.2 Background

Level of Difficulty (from attachment 3): 2

References required on Exam (Attach copy to this attachment)

None.

Verification [Signature] Date 2/15/06
 Exam Developer

Validation [Signature] Date 5/30/06
 Operations

Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 2 C000.1299 (1 point(s))

Given the following conditions:

- An approximately 1" diameter small break LOCA is in progress
- SI has actuated
- All systems and automatic actions are operating properly.

Which ONE of the following is the reason for maintaining a secondary heat sink in ES1.2, Post LOCA Cooldown and Depressurization?

- a. To ensure removal of RCS heat if any RCPs are still running.
- b. Reflux boiling is the primary means of heat removal prior to voiding in the hot legs.
- c. To provide an alternate means of RCS pressure control.
- d. RCS pressure may remain so high that cooling from injection flow alone is inadequate.

Answer 2

- d. RCS pressure may remain so high that cooling from injection flow alone is inadequate.

Distractor Analysis

- a. Incorrect. Secondary heat sink is maintained to ensure decay heat from the core is removed regardless of RCP status. RCP pump heat is not the source of concern.
- b. Incorrect. On a SBLOCA with SI primary means of heat removal is the energy release from break flow combined with secondary heat removal via subcooled circulation of the RCS.
- c. Incorrect. RCS pressure control is not accomplished by secondary heat removal. In this event the use of injection flow versus break flow balance and PRZR spray/Aux. Spray are used for pressure control.
- d. Correct. Small breaks could result in high RCS pressure and reduced injection flow to the RCS. With reduced injection flow and leak flow decay heat could exceed heat removal.

EXAM QUESTION HISTORY

Question # RO 3 SRO _____
TIER 1 Group 1
KA 000011EK1.01 Importance 4.1

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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| _____ | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank <u>INPO</u> # <u>San Onofre (1/1/2000)</u> |

10CFR55 Content 55.41 .14 55.43 _____

Learning Objective

REP01C 1.02 Given the notes, cautions and/or Major Action Categories in E-1, Loss of Reactor Coolant or Secondary Coolant, explain the basis for same.

Cognitive Level Memory or Fundamental Knowledge X
Comprehension or Analysis _____

Technical Reference ~~E-1 Background~~ FR-C.2 Background

Level of Difficulty (from attachment 3) : 4

References required on Exam (Attach copy to this attachment)

Verification [Signature] Date 2/15/06
Exam Developer
Validation [Signature] Date 5/22/06
Operations
Approved for Use [Signature] Date 5/19/06
Exam Developer

Question 3 C000.1300 (1 point(s))

Per FR-C.2 Response to Degraded Core Cooling, which of the following states the reason for depressurizing the Steam Generators in a large break LOCA?

Steam Generator depressurization _____

- a. enhances RCS heat removal through reflux boiling.
- b. minimizes two phase flow.
- c. prevents the offsite dose rate from exceeding 10CFR100 criteria.
- d. prevents the RCS from exceeding P/T limits.

Answer 3

- a. enhances RCS heat removal through reflux boiling.

Distractor Analysis

- a. Correct. Reducing SG pressure/temperature promotes condensation on the SG tubes primary side and enhances Boiler-Condenser cooling.
- b. Incorrect. Reducing SG pressure/temperature promotes Boiler-Condenser cooling which is two-phase flow.
- c. Incorrect. The accident analysis does not credit SG heat removal/Boiler-Condenser cooling as a heat removal during a large break LOCA, therefore this action does not impact offsite dose rates assumed and will not result in exceeding 10CFR100 limits.
- d. Incorrect. Large break LOCA results in low pressure in the RCS. P/T limits are not approached during this event regardless of SG pressure/temperature.

EXAM QUESTION HISTORY

Question # RO 4 SRO _____
 TIER 1 Group 1
 KA 000015/17AA2.01 Importance 3.0

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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| | New |
| | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank <u> Ginna </u> # <u> B000.0881 </u> |

10CFR55 Content 55.41 .3 55.43 _____

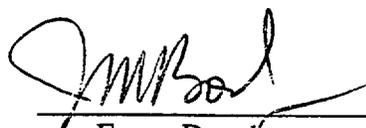
Learning Objective

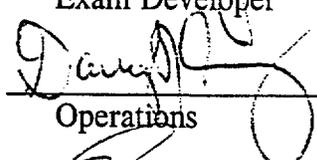
RAP14C 2.01 Determine the most likely malfunction(s) using Attachment RCP Diagnostics.

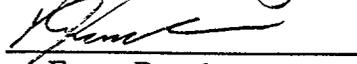
Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

Technical Reference AP-RCP-1
 Level of Difficulty (from attachment 3) : 2

References required on Exam (Attach copy to this attachment)

Verification  Date 2/16/04
 Exam Developer

Validation  Date 5/3/06
 Operations

Approved for Use  Date 5/19/06
 Exam Developer

Question 4 B000.0881 (1 point(s))

Number one RCP seal leakoff for B RCP increases to 8.1 gpm. Prior to taking action for a failure of number 1 seal, what parameters are checked to ensure actual failure per AP-RCP.1 RCP Seal Malfunction?

- a. Labyrinth seal delta P, or seal inlet/outlet temperatures on the affected pump.
- b. B RCP CCW outlet flow, redundant number one seal leakoff flow indication, and ensure CCW temperatures are at 95⁰ F.
- c. Standby CCW pump running, and seal outlet temperature on affected pump.
- d. Compare seal leakoff on affected pump with the other RCP, ensure charging temperature has not decreased.

Answer 4

- a. Labyrinth seal delta P, or seal inlet/outlet temperatures on the affected pump.

Distractor Analysis

- a. Correct. AP-RCP.1, Step 1 RNO states #1 Seal failure is verified by a decrease in labyrinth seal differential pressure or increasing Seal inlet/outlet temperatures.
- b. Incorrect. CCW flow is not affected by a #1 Seal failure.
- c. Incorrect. #1 Seal failure will not cause the standby CCW pump to start.
- d. Incorrect. While seal leakoff flow will be affected on the RCP with a failed #1 Seal, this condition will not impact charging temperature.

Question 5 C000.1301 (1 point(s))

Given the following conditions:

Reactor power is 100%

VCT level transmitter LT-112 fails high (100%)

Which of the following describes what occurs if NO operator action is taken?

VCT level decreases _____

- a. because auto makeup capacity is not able to maintain VCT level with letdown diverted.
- b. with NO auto makeup capability causing charging suction to shift to the RWST.
- c. until charging pumps lose suction and become gas bound.
- d. until auto makeup starts and maintains VCT level.

Answer 5

- c. until charging pumps lose suction and become gas bound.

Distractor Analysis

- a. Incorrect. Automatic Makeup to the VCT will not occur due to the indicated high level.
- b. Incorrect. Diverting letdown to HUT causes VCT level to lower. The automatic suction swap over to the RWST on low VCT level requires both level instruments to be low. Since LT-112 is failed high the swap over will not occur.
- c. Correct. Level in the VCT will lower due letdown being diverted to the HUT with charging aligned to the VCT. Since both channels must be $< 5\%$ to cause the automatic swap over the level will continue to decrease until the VCT empties and charging pump suction is lost.
- d. Incorrect. Automatic Makeup to the VCT will not occur due to the indicated high level.

EXAM QUESTION HISTORY

Question # RO 6 SRO
 TIER 1 Group 1
 KA 000025AK2.02 Importance 3.2

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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|-------------------|---|
| <u> </u> | New |
| <u> </u> | Modified (Attach original and Modified Questions) |
| <u> </u> | Original Bank <u> </u> # <u> </u> |
| <u>X</u> | Bank Originating Bank <u>Ginna</u> # <u>C000.0212</u> |

10CFR55 Content 55.41 .10 55.43

Learning Objective

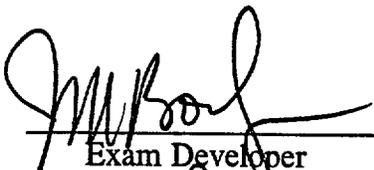
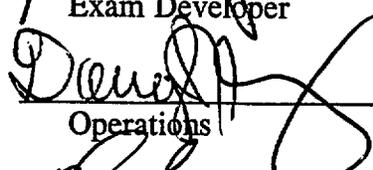
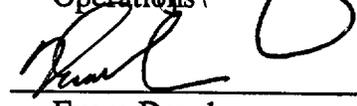
RAP25C 1.03 State the reason/basis for any CAUTIONS, NOTES and/or Major Action Categories in AP-RHR.2 Loss of RHR While Operating at RCS Reduced Inventory Conditions,

Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis

Technical Reference AP-RHR.2 Background
Level of Difficulty (from attachment 3) : 3

References required on Exam (Attach copy to this attachment)

None.

Verification  Date 2/16/06
 Exam Developer
Validation  Date 5/31/06
 Operations
Approved for Use  Date 5/19/06
 Exam Developer

Question 6 C000.0212 (1 point(s))

Major Action Category "Attempt to Restore RHR Cooling" of AP-RHR.1 and .2 differentiates between types of failures when restoring RHR pumps.

- If loss is due to something other than loss of NPSH then an immediate start of the standby pump is attempted.
- If loss is due to loss of NPSH then additional actions are required prior to attempting start of standby pump.

Which one of the following describes the reason or basis for this difference?

- a. It is a PTS concern due to the rapid addition of cold water during an RHR pump start.
- b. There will be a more rapid RCS mass loss if a downstream break exists.
- c. The second pump could be rendered inoperable if a common failure mode exists.
- d. If the second pump is not started, there is a 3 day period of time to correct the problem, but if second pump is started and fails, then the plant will be in a 6 hour Technical Specification.

Answer 6

- c. The second pump could be rendered inoperable if a common failure mode exists.

Distractor Analysis

- a. Incorrect. The additional actions taken ensure that the pump is vented and the lineup is checked prior to starting. This is done to ensure that the pump being started will not also have a flowpath problem since the suction flowpath from the RCS is common to both pumps. The water added is from the RCS and therefore PTS is not a concern.
- b. Incorrect. Downstream leaks would result in a higher mass loss if the is running. Also a downstream leak would cause pump runout not a loss of NPSH.
- c. Correct. Since the suction line is common to both pumps the actions taken ensure that a second pump remains operable.
- d. Incorrect. Delaying action to prevent entering a T.S. Action statement for a second failure is not an appropriate action to take.

EXAM QUESTION HISTORY

Question # RO 7 SRO
 TIER 1 Group 1
 KA 000026AK3.03 Importance 4.0

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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| | New |
| | Modified (Attach original and Modified Questions) |
| | Original Bank # _____ |
| <u> X </u> | Bank Originating Bank <u> Ginna </u> # <u> C 000.0114 </u> |

10CFR55 Content 55.41 .10 55.43

Learning Objective

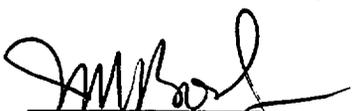
RAP03C 1.03 State the reason/basis for the CAUTIONS, NOTES and/or Major Action Categories in AP-CCW.3, Loss of CCW - Plant Shutdown.

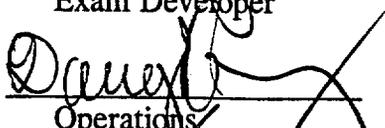
Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

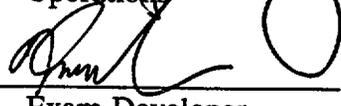
Technical Reference AP-CCW.2 Background Information

Level of Difficulty (from attachment 3) : 2

References required on Exam (Attach copy to this attachment)

Verification  Date 2/16/06
 Exam Developer

Validation  Date 5/27/06
 Operations

Approved for Use  Date 5/18/06
 Exam Developer

Question 7 C000.0114

(1 point(s))

A Caution in AP-CCW.3, Loss of CCW-Plant Shutdown states "If CCW is lost, then seal injection should be maintained to the RCP's until RCS temperature is less than 150°F or until CCW is restored."

Which one of the following statements describes the Reason or Basis for this caution?

- a. To ensure RCP motor cooling is maintained.
- b. To ensure a higher pressure source of water to the thermal barrier area to preclude RCS entering CCW system.
- c. To ensure a higher pressure source of water to the seal area to keep CRUD from the RCS from fouling the seal package.
- d. To ensure RCP seal cooling is maintained.

Answer 7

- d. To ensure RCP seal cooling is maintained.

Distractor Analysis

- a. Incorrect. RCP motor cooling is supplied from CCW; however, there are different temperature requirements for stopping the RCP based on motor cooling.
- b. Incorrect. CCW is supplied to the thermal barrier.
- c. Incorrect. CCW is supplied to the thermal barrier.
- d. Correct. Westinghouse recommends that some seal cooling be maintained above 150°F.

EXAM QUESTION HISTORY

Question # RO 8 SRO _____
 TIER 1 Group 1
 KA 000027 G2.1.23 Importance 3.9

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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| _____ | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank <u>Ginna</u> # <u>C000.0920</u> |

10CFR55 Content 55.41 .10 55.43 _____

Learning Objective

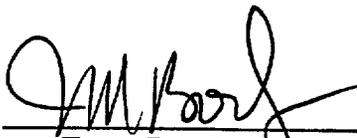
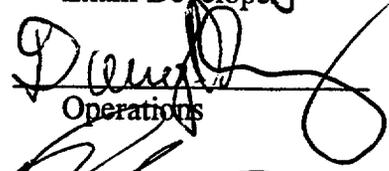
RAP11C.2.01 Given a set of plant and equipment conditions evaluate the conditions to determine the applicable procedure, and from the procedure determine the appropriate EXPECTED ACTIONS or RESPONSE NOT OBTAINED instructions to implement. (AP-PRZR.1)

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference AP-PRZR.1

Level of Difficulty (from attachment 3): 2

References required on Exam (Attach copy to this attachment)

Verification  Date 2/16/06
 Exam Developer
 Validation  Date 5/2/06
 Operations
 Approved for Use  Date 5/19/06
 Exam Developer

Question 8 C000.0920 (1 point(s))

Assume the following conditions:

The reactor is at 100% power (steady state) and the following alarms occur simultaneously:

F-2 PRESSURIZER HI PRESS 2310 PSI
F-26 PZR HI PRESS CHANNEL ALERT 2377 PSI

Immediately followed by: F-10 PRESSURIZER LO PRESS 2205 PSI

Which one of the following actions is performed first in accordance with AP-PRZR.1, Abnormal Pressurizer Pressure?

- a. Reduce turbine load to raise T_{avg} to restore actual pressurizer pressure (by insurge).
- b. Take controller 431K to manual (to close the spray valves).
- c. Trip the bistables for the failed pressurizer pressure channel (to comply with Tech Specs).
- d. Trip the reactor and go to E-0 (Low pressurizer pressure ATWS has occurred).

Answer 8

- b. Take controller 431K to manual (to close the spray valves).

Distractor Analysis

- a. Incorrect. Due to the failure T_{avg} will be lowering; however, the priority is to terminate the pressure reduction then restore T_{avg} .
- b. Correct. The priority is to terminate the pressure reduction.
- c. Incorrect. This action will be performed after the plant is stabilized.
- d. Incorrect. This action will only be taken if the controller in manual will not halt the pressure decrease.

Question 9 C000.1302 (1 point(s))

Given the following conditions:

The Plant is experiencing an ATWS.
The operators are performing their immediate actions.
The HCO is manually inserting control rods.
The CO has reported that Step 2 of FR S.1 has been completed.
Turbine EHC panel indications are deenergized.

What action did the CO perform to satisfactorily complete Step 2, "Verify Turbine Trip"?

- a. Verified both turbine stop valves CLOSED.
- b. Manually tripped the turbine and verified UNIT TRIP light LIT.
- c. Manually closed the control valves.
- d. Manually closed the MSIVs.

Answer 9

- d. Manually closed the MSIVs.

Distractor Analysis

- a. Incorrect. The operator cannot verify valve position due to a loss of power to the indications.
- b. Incorrect. The operator cannot verify valve position due to a loss of power to the indications.
- c. Incorrect. The operator cannot verify valve position due to a loss of power to the indications.
- d. Correct. The operator is directed to close the MISIVs.

EXAM QUESTION HISTORY

Question # _____ RO 10 SRO _____
 TIER 1 Group 1
 KA 000054AK3.05 Importance 4.6

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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| _____ | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank <u>Ginna</u> # <u>C000.0893</u> |

10CFR55 Content 55.41 .10 55.43 _____

Learning Objective

FRH1C 1.02 Given the notes, cautions, and/or major action categories in FR-H.1, Response to Loss of Secondary Heat Sink, explain the basis for same.

Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

Technical Reference FRH.1 Background

Level of Difficulty (from attachment 3) : 4

References required on Exam (Attach copy to this attachment)

Verification [Signature] Date 2/16/06
 Exam Developer
 Validation [Signature] Date 5/2/06
 Operations
 Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 10 C000.0893

(1 point(s))

Per FR-H.1 "Response to loss of Secondary Heat Sink", why is it important to establish bleed and feed quickly if secondary feed can not be restored and heat sink is ineffective?

- a. To prevent RCS pressure from rising above the shutoff head of the charging pumps and preventing injection
- b. To minimize the loss of RCS inventory and potential core uncover
- c. To preclude the formation of superheated steam in the RCS and subsequent high temperature failure of U-tubes
- d. To avoid potential damage to the RCPs which may be required to respond to the developing inadequate cooling condition

Answer 10

- b. To minimize the loss of RCS inventory and potential core uncover

Distractor Analysis

- a. Incorrect. A loss of secondary heat sink will result in the PRZR Spray valves/PORVs opening. This will maintain RCS pressure less than shutoff head of the charging pumps.
- b. Correct. FR-H.1 Background document states that bleed and feed is initiated to conserve RCS inventory.
- c. Incorrect.
- d. Incorrect. RCPs are tripped upon entry into FR-H.1 in order to delay bleed and feed initiation.

EXAM QUESTION HISTORY

Question # RO 11 SRO
 TIER 1 Group 1
 KA 000055G2.4.31 Importance 3.3

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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| <u>X</u> | New |
| <u> </u> | Modified (Attach original and Modified Questions) |
| <u> </u> | Original Bank <u> </u> # <u> </u> |
| <u> </u> | Bank Originating Bank <u> </u> # <u> </u> |

10CFR55 Content 55.41 .7 55.43

Learning Objective

R0701C 2.05 State the conditions which must be met to close the Diesel Generator feed breaker under the following conditions:

- a. Manually
- b. Automatically

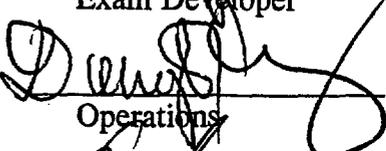
Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis

Technical Reference AR L-5

Level of Difficulty (from attachment 3) : 4

References required on Exam (Attach copy to this attachment)

Verification  Date 2/17/06
 Exam Developer

Validation  Date 5/12/06
 Operations

Approved for Use  Date 5/19/06
 Exam Developer

Question 11 C000.1303

(1 point(s))

Operators are attempting to MANUALLY restore power from the "B" D/G to Bus 16 per AR-L-5, Safeguard Bus Main Breaker Overcurrent Trip.

AR-L-5 lists the actions required to restore Bus 16 in this order.

- 1) Pull Stop the B D/G Breaker to Bus 16
- 2) Place the normal feed breaker switch for Bus 16 to After Trip
- 3) Push the Overcurrent Trip reset pushbutton for Bus 16.
- 4) Place the Normal Feed or B D/G Bus 16 switch to close.

Which of the following is correct regarding the actions and the order in which AR L-5 lists them to be done?

- a. Failing to push the Overcurrent Trip reset pushbutton will result in the inability to close the Bus 16 Normal Feed Breaker.
- b. If the Overcurrent Trip reset push button is pressed before the Bus Normal Feed breaker is placed to After Trip only the D/G supply breaker will be able to be closed.
- c. Placing the Normal Feed Breaker to After Trip is required to allow the reset of the D/G Feed Breaker Lockout when the Overcurrent Trip reset pushbutton is pushed.
- d. Failing to place the D/G Feed breaker in Pull Stop will result in it closing as soon as the Normal Feed breaker is placed in After Trip.

Answer 11

Answer

- c. Placing the Normal Feed Breaker to After Trip is required to allow the reset of the D/G Feed Breaker Lockout when the Overcurrent Trip reset pushbutton is pushed.

Distractor Analysis

- a. Incorrect; The Overcurrent Trip that is reset by this PB locks out the D/G breaker not the normal feed.

b. Incorrect: The Normal Feed Breaker must be in after trip to reset the Overcurrent lockout.

c. Correct: See B

d. Incorrect: The D/G breaker will not close until the Overcurrent Reset PB is pushed.

Ref; AR-L-5.

Question 12 C000.1304

(1 point(s))

During a plant startup, the following conditions exist:

- 2% power
- 11A-12A and 11B-12B 4160 bus x-ties are closed
- Both RCP's are running
- Generator output breakers 9X13A72, 1G13A72 are open
- 100/0 on Circuit 767

If Circuit 767 is lost, which of the following actions will be required by procedure AP-ELEC.1 "Loss of 12A and/or 12B Busses?"

- a. Manually trip the Reactor.
- b. Place rods in manual and control Tavg at 547°F.
- c. Manually control MFRV or bypass valves to restore S/G levels.
- d. Decrease power to less than the point of adding heat.

Answer 12

- a. Manually trip the Reactor.

Distractor Analysis

- a. Correct. The operator is directed to trip the reactor in order to simplify the response.
- b. Incorrect. This is the expected response when RCPs do not lose power. In the given situation the RCPs should be de-energized.
- c. Incorrect. At 2% power AFW should be supplying SG level control.
- d. Incorrect. This action is not procedurally directed.

EXAM QUESTION HISTORY

Question # _____ RO 13 SRO _____
 TIER 1 Group 1
 KA 000058AK1.01 Importance 2.8

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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|----------|---|
| | New |
| <u>X</u> | Modified (Attach original and Modified Questions) |
| | Original Bank <u>Ginna</u> # <u>B063.0008</u> |
| | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 .7 55.43 _____

Learning Objective

R0901C 3.05 Given a list of indications for the instrument bus and DC Power Systems, identify which are available on the MCB.

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference Dwg. 03202-0102

Level of Difficulty (from attachment 3) : 3

References required on Exam (Attach copy to this attachment)

Verification [Signature] Date 2/17/06
 Exam Developer
 Validation [Signature] Date 5/30/06
 Operations
 Approved for Use [Signature] Date 5/19/06
 Exam Developer

The following plant conditions exist:

- 100% power
- All electrical systems are in their normal alignments
- DC Bus A voltmeter on the Main Control Board indicates 134 volts
- Total 'A' Train battery DC amp load is 80 amps
- 'A' Vital Battery Monitor indicates +1 amp
- 1A Battery Charger is out of service for repair

The 1A1 Battery Charger Output Breaker is inadvertently opened by the electricians. What voltage will the crew observe on DC Bus "A" voltmeter and what amp load would be indicated on the Vital Battery Monitoring Cabinet for the "A" Battery?

- a. ~ 125 volts, +1 amps
- b. ~ 125 volts, - 80 amps
- c. ~ 134 volts, +1 amp
- d. ~ 134 volts, -80 amps

Answer 13

- b. ~ 125 volts, - 80 amps

Distractor Analysis

- a. Incorrect. Expected battery voltage would be ~ 125VDC; however, due to loads being supplied by the Battery Chargers/Inverters the DC amp load is 80 amps not + 1 amps. This would be indicated by a - 80 on the meter showing the battery discharging.
- b. Correct. With a loss of both Battery Chargers battery voltage is expected to decrease from a nominal 133.5VDC "float" voltage to a rated voltage of 125VDC. Loading on the battery, per the conditions in the stem, would be 80 amps. This would be indicated by a - 80 on the meter showing the battery discharging.
- c. Incorrect. The voltage indicated is the nominal voltage supplied when the battery is on a "float" charge. With a loss of both chargers battery voltage is expected to drop to rated voltage of 125VDC. Loading on the battery, per the conditions in the stem, would be 80 amps. This would be indicated by a - 80 on the meter showing the battery discharging.

- d. Incorrect.. The voltage indicated is the nominal voltage supplied when the battery is on a "float" charge. With a loss of both chargers battery voltage is expected to drop to rated voltage of 125VDC.

EXAM QUESTION HISTORY

Question # RO 14 SRO _____
TIER 1 Group 1
KA 00062AA1.07 Importance 2.9

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 .7 55.43 _____

Learning Objective

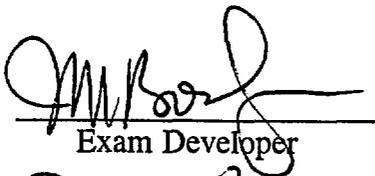
RER04C 5.00 Given a set of plant conditions (and a procedure figure, if needed) evaluate the appropriate parameters and determine the correct course of actions.

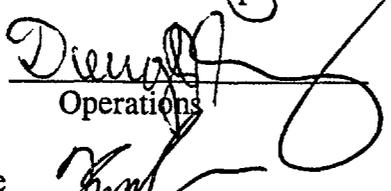
Cognitive Level Memory or Fundamental Knowledge _____
Comprehension or Analysis X

Technical Reference ER-DG.2

Level of Difficulty (from attachment 3) : 3

References required on Exam (Attach copy to this attachment)
None.

Verification  Date 2/18/06
Exam Developer

Validation  Date 5/2/06
Operations

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Exam Developer

Question 14 C000.1305

(1 point(s))

The plant has experienced a loss of Service Water due to a fire in the Screenhouse. The Screenhouse Fire Suppression System is in operation and the following conditions exist:

- Both D/G's have had procedure ER-DG.2, Alternate Cooling to the D/G's performed up to the point of initiating cooling water.
- SBAFW Pump "C" is running to supply the S/G with suction aligned to the city water supply (No CST water available).
- Offsite power has just been lost.

Which of the following states the limitations (if any) on operating the D/G with the above conditions in accordance with ER-DG.2?

- a. Both D/G's can be run at maximum load
- b. One D/G can be run at maximum load if it's SW inlet block valve is closed to prevent back flow into the SW system.
- c. One D/G can be run at reduced load.
- d. SBAFW and D/G's cannot be supplied by city water at the same time.

Answer 14

- c. One D/G can be run at reduced load.

Distractor Analysis

- a/b/d. Incorrect. ER-D/G.2, step 4.2 lists the requirements for the combinations of equipment to be used that are within the capacity of the city water system. The distractors list plausible combinations of equipment based on the given parameters in the stem.
- c. Correct. Based on the given conditions this is the only equipment that can be run.

Question 15 B078.0005

(1 point(s))

A leak on the Instrument Air System results in a loss of air to the normal letdown and excess letdown valves.

Assuming no operator action, which of the following Rx Trip signals (if any) will occur first over the next several hours?

- a. High PRZR Level Reactor Trip
- b. High PRZR Pressure Reactor Trip
- c. Low Pressure PRZR Reactor Trip
- d. No Reactor Trip

Answer 15

- a. High PRZR Level Reactor Trip

Distractor Analysis

- a. Correct. With letdown isolated pressurizer level will rise until the high level trip setpoint is reached.
- b. Incorrect. V7069 does not isolate air to the PRZR Spray valves. These valves will be available to maintain pressure below the high pressure trip.
- c. Incorrect. With letdown isolated an insurge into the pressurizer will cause pressure to rise, not lower.
- d. Incorrect. The reactor should trip on high pressurizer level.

EXAM QUESTION HISTORY

Question # _____ RO 16 SRO _____
 TIER 1 Group 1
 KA W/E05EA2.2 Importance 3.7

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| _____ | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank <u>Ginna</u> # <u>B000.0913</u> |

10CFR55 Content 55.41 .10 55.43 _____

Learning Objective RFRH1C 2.01

Given a set of plant and equipment conditions evaluate the conditions to determine the applicable procedure, and from the procedure determine the appropriate EXPECTED ACTIONS or RESPONSE NOT OBTAINED instructions to implement.(FR-H.1.)

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference FR-H.1

Level of Difficulty (from attachment 3) : 4

References required on Exam (Attach copy to this attachment) FR-H.1

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 Validation [Signature] Date 5/23/06
 Operations
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FR-H.1, Response to Loss of Secondary Heat Sink is in progress. The RCS is being cooled by Bleed and Feed. The Crew is finally able to establish SAFW flow to the 'A' S/G.

The following conditions exist:

- Both CNMT spray pumps: running
- RCS pressure: 980 psig
- Total SI flow: 565 gpm
- CNMT pressure: 8.6 psig
- Hot leg temperatures: 520°F and decreasing
- Core exit temperature: 520°F and decreasing
- RVLIS: 86%
- S/G narrow-range level A: 8% and increasing
- S/G narrow-range level B: 0%

Which one of the following is the next correct procedural action?

- a. Secondary heat sink is adequate, return to procedure and step in effect.
- b. Maintain flow to 'A' S/G until narrow range level is greater than 25% and then return to procedure and step in effect.
- c. Maintain flow to 'A' S/G until narrow range level is greater than 25% and then continue in FR-H.1
- d. Secondary heat sink is adequate, continue in FR-H.1

Answer 16

- c. Maintain flow to 'A' S/G until narrow range level is greater than 25% and then continue in FR-H.1

Distracter Analysis

- a. Incorrect- Heat sink is not adequate. It would be adequate if adverse containment values were not used. Once heat sink is restored direction is to continue until transition is directed by the FRG in affect NOT when the condition is cleared.
- b. Incorrect- Direction to maintain feed is correct to restore heat sink to adequate based on adverse containment. Once heat sink is restored direction is to continue until transition is directed by the FRG in affect NOT when the condition is cleared.

- c. Correct- Direction to maintain feed is correct to restore heat sink to adequate based on adverse containment. Once heat sink is restored direction is to continue until transition is directed by the FRG in affect.
- d. Incorrect- Heat sink is not adequate. It would be adequate if adverse containment values were not used.

EXAM QUESTION HISTORY

Question # _____ RO 17 SRO _____
 TIER 1 Group 1
 KA W/E11EA1.1 Importance 3.9

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| | New |
| | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank <u>Ginna</u> # <u>C033.0034</u> |

10CFR55 Content 55.41 .7 55.43 _____

Learning Objective

REC11C 1.02 Given the notes, cautions and/or Major Action Categories in ECA-1.1, Loss of Emergency Coolant Recirculation, explain the basis for the notes, cautions, and/or Major Action Categories.

Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

Technical Reference AH.18.0 Attachment SFP-RWST, RGE-36, Spent Fuel Pool Cooling System.

Level of Difficulty (from attachment 3) : 2

References required on Exam (Attach copy to this attachment)

Verification [Signature] Date 2/18/06
 Exam Developer
 Validation [Signature] Date 5/23/06
 Operations
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Question 17 C033.0034

(1 point(s))

Transferring water from the Spent Fuel Pit (SFP) to the Refueling Water Storage Tank (RWST) in ECA 1.1, Loss of Emergency Coolant Recirculation Capability, uses only one SFP Cooling Pump to transfer water.

Which pump is used and why?

- a. The 'A' pump is used because of its lower D/G power requirements.
- b. The 'A' pump is used because it does not trip on SFP low level.
- c. The 'B' pump because the 'A' pump is locked off on an SI signal.
- d. The 'B' pump because the 'A' pump cannot be lined up to the RWST.

Answer 17

- b. The 'A' pump is used because it does not trip on SFP low level.

Distractor Analysis

- a. Incorrect. SFP A pump does have a smaller electrical power requirement; however, this is not the reason SFP A pump is run.
- b. Correct. SFP A pump was chosen because it does not trip on low level. This allows transferring a significant amount of water to the RWST in the event that recirculation of spilled coolant cannot be established.
- c. Incorrect. SFP B pump is not used.
- d. Incorrect. SFP B pump is not used.

EXAM QUESTION HISTORY

Question # RO 18 SRO _____
 TIER 1 Group 1
 KA W/E12EK2.2 Importance 3.6

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 .10 55.43 _____

Learning Objective

REC21C 2.01 Given a set of plant and equipment conditions evaluate the conditions to determine the applicable procedure, and from the procedure determine the appropriate EXPECTED ACTIONS or RESPONSE NOT OBTAINED instructions to implement. (ECA-2.1)

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference ECA 2.1

Level of Difficulty (from attachment 3) : 2

References required on Exam (Attach copy to this attachment)
 None.

Verification [Signature] Date 2/18/06
 Exam Developer

Validation [Signature] Date 5/31/06
 Operations

Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 18 C000.1306

(1 point(s))

The operators are performing ECA-2.1 Uncontrolled Depressurization of all Steam Generators.

The following conditions exist:

- Cooldown rate 150°F/hr
- RCS cold leg temperatures 350°F and decreasing
- CNMT pressure -0.2 psig
- "A" S/G level 10% decreasing (320" Wide Range)
- "B" S/G level 0% (250" Wide Range)
- AFW flows - 200 gpm to "A" S/G, 210 gpm "B" S/G

Per ECA-2.1 which of the following is the correct action:

- a. Secure AFW to both S/Gs until level in both is less than 5%, then feed a total of 200 gpm to both S/Gs.
- b. Secure AFW to the "A" S/G. Reduce AFW to the "B" S/G to 50 gpm. When "A" S/G level is less than 5%, adjust AFW to the "A" S/G to 50 gpm.
- c. Reduce AFW to both S/G's to 50 gpm to each Steam Generator.
- d. Adjust AFW to the S/G to a total flow of 200 gpm.

Answer 18

- c. Reduce AFW to both S/G's to 50 gpm to each Steam Generator.

Distractor Analysis

- a. Incorrect. Feedwater flow is reduced to 50 gpm per SG to prevent excessive thermal stresses on the SG tubes. Feedwater flow is not terminated due to this concern.
- b. Incorrect. This is the old procedural guidance. Feedwater is not terminated only reduced to 50 gpm per SG.
- c. Correct. Feedwater flow is maintained at 50 gpm to reduce thermal stresses felt on the SG tubes.
- d. Incorrect. Feedwater flow is reduced to 50 gpm per SG not to a total of 200 gpm. 200 gpm total is a procedural requirement for normal SG flows post-trip.

EXAM QUESTION HISTORY

Question # RO 19 SRO _____
 TIER 1 Group 2
 KA 000001AA2.05 Importance 4.4

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| | New |
| <u>X</u> | Modified (Attach original and Modified Questions) |
| | Original Bank <u>Ginna</u> # <u>C000.0130</u> |
| | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 .10 55.43 _____

Learning Objective

RAP12C 1.02 Recognize the symptoms of AP-RCC.1 Continuous Control Rod Withdrawal/Insertion.

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference AP-RCC.1

Level of Difficulty (from attachment 3) : 3

References required on Exam (Attach copy to this attachment)

Verification _____ Date _____
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use _____ Date _____
 Exam Developer

Question 19 C000.0130

(1 point(s))

The plant is at 90% power when a Tref failure high causes Control Rods to move continuously. Which one of the following is an expected symptom of this condition?

- a. Annunciator E-28 Power Range Rod Drop Rod Stop +/- 5%/5 sec Alarm.
- b. Annunciator C-22 Rod Withdrawal Bank D High 95% Alarm.
- c. Annunciator C-5 PPCS Rod Sequence or Rod Deviation Alarm.
- d. Power Range NIS indicates an radial flux tilt.

Answer 19

- b. Annunciator C-22 Rod Withdrawal Bank D High 95% Alarm.

Distractor Analysis:

- a. Incorrect but plausible, Insertion of the Rod will cause a decrease on the NIS Power range Instruments. However the rate of change would not be great enough to trigger this alarm.
- b. Correct a Tref failure high will result in Rods Stepping out until this alarm is received.
- c. Incorrect but plausible, The Tref failure will not result in rods moving out of sequence without additional failures.
- d. Incorrect but plausible, This failure will likely result in an axial flux tilt but since the rods are moving with proper alignment a radial tilt will not occur.

EXAM QUESTION HISTORY

Question # _____ RO 20 SRO _____
 TIER 1 Group 2
 KA 000003 G2.1.23 Importance 3.9

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| _____ | New |
| <u>X</u> | Modified (Attach original and Modified Questions) |
| _____ | Original Bank <u>INPO</u> # <u>Beaver Valley 1 12/1/2002 Exam</u> |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 .6/10 55.43 _____

Learning Objective

RER11C 4.00 Given a set of plant and equipment conditions (and a procedure figure, if needed) evaluate the appropriate parameters and determine the correct course of action.

Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

Technical Reference ER-RCC.1

Level of Difficulty (from attachment 3) : 3

References required on Exam (Attach copy to this attachment)

Verification [Signature] Date 2/19/06
 Exam Developer

Validation [Signature] Date 4/3/06
 Operations

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 Exam Developer

Given the following conditions:

The Unit is at 85% power. All systems are in a Normal Alignment.

A Control Bank "D" rod drops to the bottom of the core.

The plant is stabilized, the cause of the failure identified and repaired.

Which one of the following describes the method for retrieving the dropped rod in accordance with ER-RCC.1, Retrieval of a Dropped RCC?

- a. The Lift Coils for all rods in Control Bank "D" except the affected rod are disconnected. The Step Counter is set to zero prior to retrieval. The affected rod is withdrawn until the Step Counter is equal to the position of the rest of Control Bank "D".
- b. The Lift Coils for all 4 Control Bank rods except the affected rod are disconnected. The Bank Overlap Unit is set to zero prior to retrieval. The affected rod is withdrawn until the Bank Overlap Unit Counter matches the Group "D" Step Counter.
- c. The Movable Coils for all rods in Control Bank "D" except the affected rod are disconnected. The Step Counter is set to zero prior to retrieval. The affected rod is withdrawn until the Step Counter is equal to the position of the rest of Control Bank "D".
- d. The Lift Coil for the dropped rod in Control Bank "D" is disconnected. The Step Counter is verified at the correct value for Control Bank "D" prior to retrieval. Control Bank "D" is inserted until the Step Counters are equal to the dropped rod position on MRPI.

Answer 20

- a. The Lift Coils for all rods in Control Bank "D" except the affected rod are disconnected. The Step Counter is set to zero prior to retrieval. The affected rod is withdrawn until the Step Counter is equal to the position of the rest of Control Bank "D".

Distractor Analysis

- a. Correct. This is the proper sequence for retrieving a dropped control rod.
- b/c/d Incorrect. These distractors are in the incorrect sequence of performance or provide directions to manipulate components that are not necessary in order to recover a dropped control rod.

EXAM QUESTION HISTORY

Question # RO 21 SRO _____
 TIER 1 Group 2
 KA 000024AK3.02 Importance 4.2

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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| _____ | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank <u>Ginna</u> # <u>C000.1016</u> |

10CFR55 Content 55.41 .10 55.43 _____

Learning Objective

RFRS1C 2.01 Given a set of plant and equipment conditions evaluate the conditions to determine the applicable procedure, and from the procedure determine the appropriate EXPECTED ACTIONS or RESPONSE NOT OBTAINED instructions to implement.(FR-S.1)

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference FR-S.1

Level of Difficulty (from attachment 3) : 3

References required on Exam (Attach copy to this attachment)

Verification [Signature] Date 2/18/06
 Exam Developer
 Validation [Signature] Date 5/31/06
 Operations
 Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 21 C000.1016

(1 point(s))

Given the following:

- Crew has entered FR-S.1, RESPONSE TO REACTOR RESTART/ATWS
- Emergency boration via MOV-350 is not working (MOV jammed)
- 1 Charging pump and 1 Boric Acid pump are running

Which ONE of the following states the next method to be used to establish boric acid injection?

- a. Open RWST to Charging pumps (LCV-112B)
- b. Open the bypass around MOV-350
- c. Open the Blender outlet to the charging pump suction (FCV-110B)
- d. Initiate the "normal boration" flowpath

Answer 21

- d. Initiate the "normal boration" flowpath

Distractor Analysis

- a. Incorrect. FR-S.1, step 4 RNO directs the operator to initiate normal boration at the maximum rate using valve FCV-110A for the given conditions.
- b. Incorrect. This action is not procedurally directed for the given plant conditions.
- c. Incorrect. This directs the usage of the wrong FCV for the given plant conditions.
- d. Correct. This is the action directed by FR-S.1 for the given plant conditions.

EXAM QUESTION HISTORY

Question # RO 22 SRO _____
 TIER 1 Group 2
 KA 000028AK2.02 Importance 2.6

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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| <u> X </u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 .7 55.43 _____

Learning Objective

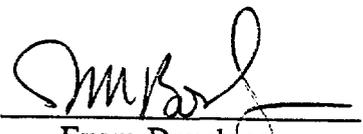
R1901C 5.03 Given a set of plant conditions and an alarming annunciator associated with the Pressurizer Pressure and Level Control system, evaluate plant conditions and determine the appropriate operator respon

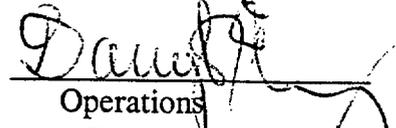
Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference P-10

Level of Difficulty (from attachment 3): 4

References required on Exam (Attach copy to this attachment)

Verification  Date 2/18/06
 Exam Developer

Validation  Date 5/31/06
 Operations

Approved for Use  Date 5/19/06
 Exam Developer

Question 22 C000.1309

(1 point(s))

The Plant is operating at 100% power with all control systems in a normal configuration.

A small leak develops on the reference leg side of PRZR Level LT-428 causing the reference leg level to decrease.

If no operator action is taken, which of the following will result?

- a. Pressurizer level will decrease and be controlled at a lower than normal level.
- b. Pressurizer level will continue to decrease, causing pressurizer pressure to decrease until a reactor trip occurs on low pressurizer pressure.
- c. Pressurizer level will decrease, then increase and be controlled at a higher than normal level.
- d. Pressurizer level will decrease, then increase until a reactor trip occurs on high pressurizer level.

Answer 22

- a. Pressurizer level will decrease and be controlled at a lower than normal level.

Distracter Analysis:

- A. Correct Answer - reference leg leak will cause indicated level to be higher than actual level. Control signal will cause actual level to decrease and will be controlled at the lower level.
- B. Incorrect - level will only decrease until letdown is isolated on low level which will cause pressurizer level to rise above the isolation setpoint and letdown will unisolate. This will result in pressurizer level being controlled at the letdown isolation setpoint.
- C. Incorrect - level will decrease until letdown isolates, however letdown will reinitiate when level rises above 13% and level rise will stop.
- D. Incorrect - see distractor C.

EXAM QUESTION HISTORY

Question # _____ RO 23 SRO _____
TIER 1 Group 2
KA 000036 G2.1.2 Importance 3.0

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 .10 55.43 _____

Learning Objective

RSC02C 2.00

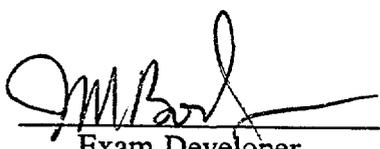
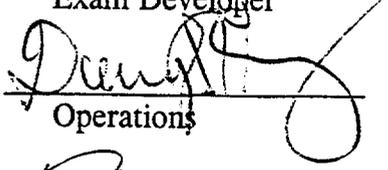
Given a Local Radiation Emergency and using appropriate procedures determine what action the operating shift should implement.

Cognitive Level Memory or Fundamental Knowledge _____
Comprehension or Analysis X

Technical Reference EPIP 1-13

Level of Difficulty (from attachment 3) : 2

References required on Exam (Attach copy to this attachment)

Verification  Date 2/19/06
Exam Developer
Validation  Date 5/30/06
Operations
Approved for Use  Date 5/19/06
Exam Developer

Question 23 C000.1310

(1 point(s))

Reactor defueling operations are in progress.

The Spent Fuel Pool Bridge operator reports that while an assembly that was just removed from the core was being moved from the transfer mechanism to its storage location in the Spent Fuel Pool, the assembly accidentally contacted the wall.

The Bridge operator reports that there are gas bubbles rising from the assembly and the SFP Radiation Monitor (R-05) is alarming.

Per EPIP 1-13, Local Radiation Emergency, which of the following describes the actions required by these conditions?

- a. Place the Plant Ventilation Systems in "Filters In" Mode.
- b. Announce evacuation of the Auxiliary and Contaminated Storage Buildings.
- c. Announce Containment Evacuation and Sound the Containment Evacuation Alarm.
- d. Secure ventilation in the Spent Fuel Pool area and close the isolation dampers.

Answer 23

- b. Announce evacuation of the Auxiliary and Contaminated Storage Buildings.

Distracter Analysis:

- A. Incorrect. EPIP 1-13 and ER-RMS-1 direct maximizing filter flow from the affected area. "Filters In" requires ventilation to be secured to allow blanks to be removed to provide flow through the normally isolated banks.
- B. Correct: EPIP 1-13 step 6.1.2.2 directs evacuation of the Auxiliary and Contaminated Storage Buildings.
- C. Incorrect. Evacuation of Containment would be correct if the incident occurred in the Containment. The alarm used is the Plant Evacuation Alarm not the Containment Evacuation Alarm.
- D. Incorrect. EPIP 1-13 and ER-RMS-1 direct maximizing filter flow from the affected area.

EXAM QUESTION HISTORY

Question # _____ RO 24 SRO _____
 TIER 1 Group 2
 KA 000060AK2.01 Importance 2.6

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| _____ | New |
| <u>X</u> | Modified (Attach original and Modified Questions) |
| _____ | Original Bank <u>Ginna</u> # <u>C072.0019</u> |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 .11 55.43 _____

Learning Objective

R3801C 3.01 List the names of the systems which interface with the Waste Disposal System, and describe the purpose for each interface. To include:

- e. Ventilation
- g. Radiation Monitoring

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference P-9

Level of Difficulty (from attachment 3) : 3

References required on Exam (Attach copy to this attachment)

Verification [Signature] Date 2/19/06
 Exam Developer

Validation [Signature] Date 5/31/06
 Operations

Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 24 C000.1312

(1 point(s))

The Waste Gas Decay tank "D" rupture disc relieves to reduce tank pressure.

Assuming no operator intervention, which radiation monitor would be the first to provide the Control Room indication of the rupture disc failure?

- a. R-33, Nuclear Sample Room Wide Range Monitor
- b. R-13, Auxiliary Building Particulate
- c. R-14, Aux Building Noble Gas
- d. R-35, PASS Panel Wide Range Area Monitor

Answer 24

- c. R-14, Aux Building Noble Gas

Distractor Analysis

- a. Incorrect. The room is normally isolated from the rest of the Auxiliary Building which would delay any response to elevated radiation levels in the Auxiliary Building.
- b. Incorrect. The release would be noble gas not particulate.
- c. Correct. Auxiliary Building ventilation would exhaust to the station vent and R-14 would be the first monitor to detect the increased radiation levels.
- d. Incorrect. R-35 may detect the leakage but does not have indication or alarm in the control room.

EXAM QUESTION HISTORY

Question # RO 25 SRO _____
 TIER 1 Group 2
 KA 000067AA2.04 Importance 3.1

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 .10 55.43 _____

Learning Objective

RER22C 10.00 Given a set of plant conditions (and a procedure figure, if needed) evaluate the appropriate parameters and determine the correct course of action.

Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

Technical Reference ER-FIRE.3

Level of Difficulty (from attachment 3): 4

References required on Exam (Attach copy to this attachment)

Verification [Signature] Date 2/19/06
 Exam Developer

Validation [Signature] Date 5/31/04
 Operations

Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 25 C000.1375

(1 point(s))

A fire has been reported in the Auxiliary Building Basement. The Operators are responding per ER-FIRE.3, Alternate Shutdown for a Aux Building Basement/Mezzanine Fire.

For this fire location which of the following lists equipment that may be affected?

- a. MOVs 850A or 850B RHR Suction from Sump B may open due to a "Hot Short".
- b. Control Power may be lost to Bus 18.
- c. Instrument Cables from both Source Range NIS channels N-31 and N-32 may be damaged due to their lack of separation.
- d. Both PORVs 430 and 431C may have damaged control circuits.

Answer 25

- a. MOVs 850A or 850B RHR Suction from Sump B may open due to a "Hot Short".

Distractor Analysis

A. Correct: ER-FIRE.3 Contains actions to locally close MOV 856 to prevent backflow to the sump in the event that the 850 valve were to inadvertently open due to a fire in this location.

B/C/D Incorrect: All these components and their associated cabling are not in the fire area and are unaffected. The actions given are actions from the Control complex or cable tunnel fires and are the actions taken when the stated component is affected by the fire.

EXAM QUESTION HISTORY

Question # _____ RO 26 SRO _____
 TIER 1 Group 2
 KA W/E06EA1.1 Importance 3.8

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|--|
| | New |
| | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank <u>INPO</u> # <u>BV2 5/21/05</u> |

10CFR55 Content 55.41 .4 55.43 _____

Learning Objective

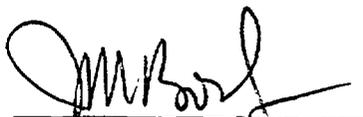
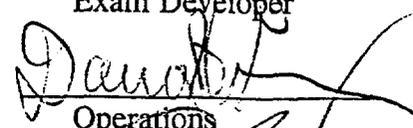
RFRC1C 2.01 Given a set of plant and equipment conditions evaluate the conditions to determine the applicable procedure, and from the procedure determine the appropriate EXPECTED ACTIONS or RESPONSE NOT OBTAINED instructions to implement.(FR-C.1.)

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X _____

Technical Reference FR-C.1 , Drawing 33013-1353

Level of Difficulty (from attachment 3) : 4

References required on Exam (Attach copy to this attachment)

Verification  Date 2/19/06
 Exam Developer
 Validation  Date 4/3/04
 Operations
 Approved for Use  Date 5/30/06
 Exam Developer

Question 26 C000.1314

(1 point(s))

The Unit was operating at 100% power when a reactor trip occurred due to a LOCA. All Safety Injection systems failed to operate and the crew entered FR-C.1, Response to Inadequate Core Cooling.

Given the following:

- The Control Room Supervisor has directed the depressurization of all intact SG's to 200 psig using the steam dump valves to dump steam at the maximum rate.
- All Main Steam Isolation Valves (MSIV's) are open and the condenser is available.
- HC-484, Steam Dump Controller is in MANUAL.
- Tavg is 575°F and rising
- Pressurizer Pressure is 1950 psig
- The Steam Dump Control Mode Selector Switch is in the MANUAL position.

Which ONE of the following would occur as SG pressure is reduced if the S1 signal is NOT RESET prior to commencing the depressurization?

- a. All steam dump valves will close due to reducing SG pressure below the setpoint on HC-484.
- b. The Main Steamline Isolation will occur when Tavg reaches 545°F with maximum steam flow established.
- c. All steam dump valves will interlock closed due to a loss of Steam Dump Arming signal caused by the step change in steam flow.
- d. Main Steamline Isolation will occur when pressurizer pressure reaches 1750 psig.

Answer 26

- b. The Main Steamline Isolation will occur when Tavg reaches 545°F with maximum steam flow established.

DISTRACTOR ANALYSIS

- A. Incorrect - HC-484 setpoint has no effect with controller in MANUAL
- C. Incorrect - Steam Dump Arming Circuit senses a drop in steam flow with the Steam Dump Mode Selector in Auto to "arm" the steam dumps.

D. Incorrect - plausible distractor if assumption is made that SI would actuate as pressure drops below the SI setpoint of 1750 psig. Since SI is already actuated this condition would not cause a steamline isolation.

EXAM QUESTION HISTORY

Question # RO 27 SRO _____
 TIER 1 Group 2
 KA W/E09/EK1.3 Importance 3.3

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| | New |
| <u>X</u> | Modified (Attach original and Modified Questions) |
| | Original Bank <u>INPO</u> # <u>Summer 1 9/17/02</u> |
| | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 .14 55.43 _____

Learning Objective

RES02C 2.01 Given a set of plant and equipment conditions evaluate the conditions to determine the applicable procedure, and from the procedure determine the appropriate EXPECTED ACTIONS or RESPONSE NOT OBTAINED instructions to implement.(ES-0.2)

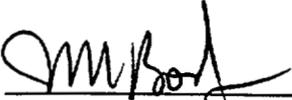
Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

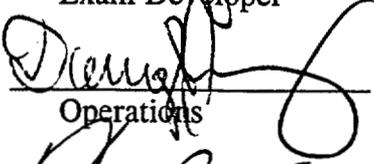
Technical Reference ES-0.2 Background

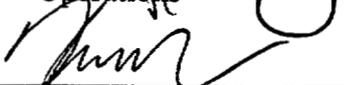
Level of Difficulty (from attachment 3) : 3

References required on Exam (Attach copy to this attachment)

- EOP figures; 3.0 Natural Circ C/D with shroud fans
- 3.1 Natural Circ C/D without shroud fans
- 3.2 Natural Circ C/D with void in upper head

Verification  Date 2/20/06
 Exam Developer

Validation  Date 5/30/06
 Operations

Approved for Use  Date 5/19/06
 Exam Developer

Question 27 C000.1307

(1 point(s))

Given the following conditions:

- Loss of off-site power has occurred
- Reactor and Turbine trip has occurred
- Natural circulation conditions have been established
- Both Control Rod Shroud Fans are inoperable
- Power is available to ES Bus 14 and ES Bus 16

Which of the following RCS cold leg wide range temperature and pressure relationships are acceptable for a Natural Circulation cooldown?

- a. 250°F and 300 psig
- b. 400°F and 1600 psig
- c. 450°F and 1700 psig
- d. 250°F and 200 psig

Answer 27

- b. 400°F and 1600 psig

Distracter Analysis:

Distracter A Incorrect - is plausible answer only if Figure 3 RCS P/T limits during Natural Circulation cooldown with shroud fans curve.

B Correct - Using Fig 3.1 RCS P/T limits during Natural Circulation cooldown without shroud fans curve.

Distracter C Incorrect - is plausible answer only if Figure 3 RCS P/T limits during Natural Circulation cooldown with shroud fans curve.

Distracter D Incorrect - is a plausible answer only if ES-0.3 and Figure 3.2.

EXAM QUESTION HISTORY

Question # RO 28 SRO _____
 TIER 2 Group 1
 KA 003K1.10 Importance 3.0

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| _____ | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank <u>Ginna</u> # <u>B320.0019</u> |

10CFR55 Content 55.41 .10 55.43 _____

Learning Objective

R1301C 5.12 STATE THE BASIS FOR THE FOLLOWING PRECAUTIONS OF S-2.1:
RCS Temperature

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference 5-2.1, Step 4.12

Level of Difficulty (from attachment 3): 4

References required on Exam (Attach copy to this attachment)

Verification [Signature] Date 2/20/06
 Exam Developer
 Validation [Signature] Date 5/30/06
 Operations
 Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 28 B320.0019

(1 point(s))

A reactor coolant pump start is required.

- PRZR Level = 85%
- Loop Cold Leg Temperatures:
 - "A" Loop (TR-450) = 180 degrees F
 - "B" Loop (TR-451) = 190 degrees F
- Steam Generator Handhole Temperatures:
 - "A" = 185 degrees F (pyrometer)
 - "B" = 195 degrees F (pyrometer)

Which one of the following actions will satisfy the procedural requirements of S-2.1, Reactor Coolant Pump Operation, for starting an RCP with the conditions given above?

- a. Raising "A" loop cold leg temperature greater than or equal to "A" steam generator handhole temperature will allow the start of the "A" RCP.
- b. Raising "A" loop cold leg temperature greater than or equal to "B" cold leg temperature will allow the start of the "A" RCP.
- c. Lowering "B" loop cold leg temperature less than or equal to the lower of "A" and "B" steam generator handhole temperatures will allow the start of the "B" RCP.
- d. Lowering PRZR level to 35% will allow the start of the "A" RCP.

Answer 28

- d. Lowering PRZR level to 35% will allow the start of the "A" RCP.

Distractor analysis

a/b/c Incorrect. In order to start a RCP both RCS loops must meet the temperature requirements.

EXAM QUESTION HISTORY

Question # RO 29 SRO _____
 TIER 2 Group 1
 KA 004K4.13 Importance 3.2

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| | New |
| | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank <u>Ginna</u> # <u>C004.0018</u> |

10CFR55 Content 55.41 .3 55.43 _____

Learning Objective

R1601C 2.02 Explain the operation of the following components under the given conditions:

Cognitive Level Memory or Fundamental Knowledge X

 Comprehension or Analysis _____

Technical Reference Drawing 10905-0717

Level of Difficulty (from attachment 3) : 2

References required on Exam (Attach copy to this attachment)

Verification [Signature] Date 2/20/06
 Exam Developer

Validation [Signature] Date 5/30/06
 Operations

Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 29 C004.0018

(1 point(s))

Letdown Orifice Valves, AOV 200A, B, and AOV 202 automatically close on a _____.

- a. CNMT Vent isolation signal.
- b. manual safety injection signal.
- c. closed signal from AOV 371 letdown isolation valve.
- d. closed signal from AOV 427 letdown from Loop B valve.

Answer 29

- d. closed signal from AOV 427 letdown from Loop B valve.

Distractor Analysis

- a. Incorrect. CVI isolation signal only repositions CTMT Ventilation systems.
- b. Incorrect. Manual SI signal only positions/starts SI components.
- c. Incorrect. AOV-371 is not interlocked with the letdown orifice valves.
- d. Correct. AOV-427 closing will close the letdown orifice valves.

EXAM QUESTION HISTORY

Question # RO 30 SRO _____
 TIER 2 Group 1
 KA 004K6.31 Importance 3.1

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 .10 55.43 _____

Learning Objective

REC00C 1.02 Given the notes, cautions, and/or major action categories of ECA-0.0, Loss of all AC Power, explain the reason/basis for the notes, cautions, or major action categories..

Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

Technical Reference ECA-0.0 Background Document

Level of Difficulty (from attachment 3) : 4

References required on Exam (Attach copy to this attachment)

Verification _____ Date _____
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use _____ Date _____
 Exam Developer

Question 30 C000.1315

(1 point(s))

Which of the following states limitations on restoration of seal injection flow (if any) during a recovery from a Loss of All AC Power in accordance with ECA-0.1, Loss of All AC Power Without SI Required?

- a. Since seal cooling is not lost, normal seal injection can be restored at any time.
- b. Limit seal injection flow rates to cooldown the #1 seals at a rate of less than 100°F/hr.
- c. Do not restore seal injection. Cooldown the RCP seals by performing an RCS cooldown.
- d. Limit seal injection flow rates to cooldown the #1 seals at a rate of less than 60°F/hr.

Answer 30

- c. Do not restore seal injection. Cooldown the RCP seals by performing an RCS cooldown.

Distractor Analysis

- a. Incorrect. Seal cooling is isolated, therefore seal injection cannot be restored.
- b. Incorrect. Seal injection flow will not be restored and the cooldown rate is not 100°F/hr for natural circulation.
- c. Correct. The WOG recommends that rather than risk a seal failure that the seals be cooled down while the plant is being cooled down.
- d. Incorrect. Seal injection flow will not be restored due to the extended time that it was lost. The WOG recommends that the seals be cooled down using the plant.

EXAM QUESTION HISTORY

Question # RO 31 SRO _____
 TIER 2 Group 1
 KA 005K6.03 Importance 2.5

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|--|
| _____ | New |
| <u>X</u> | Modified (Attach original and Modified Questions) |
| _____ | Original Bank <u>INPO</u> # <u>Millstone 7/16/04</u> |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 .5 55.43 _____

Learning Objective

R2501C 6.01

Given a set of plant conditions and a failure of one of the following major components in the RHR system, predict how the system will respond.

RHR Heat Exchangers

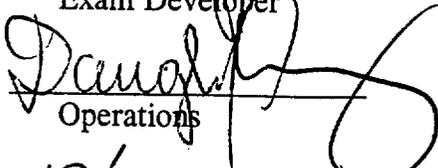
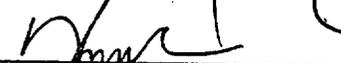
Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference AP-CCW.1

Level of Difficulty (from attachment 3): 4

References required on Exam (Attach copy to this attachment)

None

Verification  Date 2/20/06
 Exam Developer
 Validation  Date 5/30/06
 Operations
 Approved for Use  Date 5/19/06
 Exam Developer

The plant is being cooled down on RHR following 400 days of operation at full power. The following conditions exist:

- Both RHR pumps are running
- RCS Temperature 180°F
- RCS Pressure 370 psi
- "A" RCP is running
- Charging is in manual
- Letdown is 40 gpm
- Seal return is 1 gpm/pump
- HCV-626 is in Auto set at 1800 gpm
- A tube in the "B" RHR Heat Exchanger fails resulting in a 100 gpm leak.

Assuming no operator action, what will happen during this event?

- a. Flow through the RHR pumps increase, RCS pressure decreases, RCP #1 Seal ΔP decreases, ΔP limits on the RCP #1 seal will be exceeded.
- b. CCW surge tank level decreases until tank empties then the CCW pumps become air bound resulting in loss of cooling.
- c. CCW surge tank level increases, RCV-17 closes, level increase until the surge tank is water solid, then pressure between CCW and RHR equalizes stopping the leak.
- d. Flow through the RHR pumps decrease, RCS pressure decreases, RCP #1 seal ΔP decreases, ΔP limits on the RCP #1 seals will be exceeded.

Answer 31

- a. Flow through the RHR pumps increase, RCS pressure decreases, RCP #1 Seal ΔP decreases, ΔP limits on the RCP #1 seal will be exceeded.

Distractor Analysis

- a. Correct.
- b. Incorrect. The RHR system is at a higher pressure than the CCW system so a leak in the RHR HX will be from the RHR system into the CCW system. CCW Surge Tank level will rise.

- c. Incorrect. The CCW Surge Tank level will rise; however, the CWW Surge Tank relief valve should lift and prevent the CCW Surge Tank from going water solid.
- d. Incorrect. RHR flow should rise (1800 gpm normal flow + 100 gpm leak) to 1900 gpm indicated flow.

EXAM QUESTION HISTORY

Question # RO 32 SRO _____
 TIER 2 Group 1
 KA 005G.2.1.32 Importance 3.4

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|-------------------------------------|---|
| <input type="checkbox"/> | New |
| <input type="checkbox"/> | Modified (Attach original and Modified Questions) |
| <input type="checkbox"/> | Original Bank _____ # _____ |
| <input checked="" type="checkbox"/> | Bank Originating Bank <u>Ginna</u> # <u>C005.0047</u> |

10CFR55 Content 55.41 .10 55.43 _____

Learning Objective

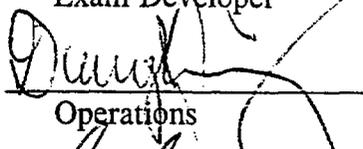
R2501C 5.02 Describe the operational concerns with respect to subcooling and the RHR system.

Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

Technical Reference O-2.2/CAT M07623

Level of Difficulty (from attachment): 4

References required on Exam (Attach copy to this attachment)

Verification  Date 2/20/06
 Exam Developer
 Validation  Date 5/31/06
 Operations
 Approved for Use  Date 5/19/06
 Exam Developer

Question 32 C005.0047

(1 point(s))

O-2.2 has hardened steps to hold closed MOV-857s, RHR pump discharge to SI valves, when on RHR cooling greater than 200°F. Which one of the following is the reason for this action?

- a. Ensure hot water not introduced to SI suction which could cause vapor binding if SI needed for injection.
- b. Ensure mode 4 separation of trains requirements satisfied
- c. Ensure hot water not recycled back to RWST
- d. RHR NPSH concern when on cooling and providing SI suction.

Answer 32

- a. Ensure hot water not introduced to SI suction which could cause vapor binding if SI needed for injection.

Distractor Analysis

- a. Correct. The possibility exists, that with these valves open, that the hot RCS fluid would be introduced into the SI pump suction causing vapor binding to occur.
- b. Incorrect. In MODE 4 only one train of ECCS is required, therefore train separation criteria is not of concern.
- c. Incorrect. Based on the normal plant lineup for RHR operation no flowpath exists that would introduce hot water back to the RWST.
- d. Incorrect. NPSH should not be a concern when RHR is aligned to the RCS during a plant shutdown. NPSH is only a concern when the RCS is being drained.

EXAM QUESTION HISTORY

Question # RO 33 SRO _____
 TIER 2 Group 1
 KA 006K4.17 Importance 3.8

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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| _____ | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank <u>Ginna</u> # <u>C006.017</u> |

10CFR55 Content 55.41 .7 55.43 _____

Learning Objective

R2601C 4.05 Discuss the automatic operations of MOV 871 A and B, 1C SI pump discharge valves, on a failure of A and/or B SI pumps to start.

Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

Technical Reference RGE-26

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment)

Verification [Signature] Date 2/20/06
 Exam Developer
 Validation [Signature] Date 5/31/06
 Operations
 Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 33 C006.0017

(1 point(s))

Following an SI actuation SI pumps 1A and 1B fail to start.

Which one of the following statements describes the response of C SI pump discharge valves?

- MOV 871A, C SI Pump Discharge to A SI Pump Header
- MOV 871B, C SI Pump Discharge to B SI Pump Header

- a. MOV-871A will close, but 871B will remain open, if both initially open.
- b. MOV-871A and B will remain open, if both were initially open.
- c. MOV-871A and B will open, if initially closed.
- d. MOV-871A and B will close, if initially open.

Answer 33

- b. MOV-871A and B will remain open, if both were initially open.

Distractor Analysis

- a. Incorrect. With both 1A and 1B SI pumps failing to start both valves should remain open. This is true if only 1A pump failed to start.
- b. Correct. This interlock ensures that the 1C SI pump will be able to supply both headers if the 1A and 1B pumps fail to start.
- c. Incorrect. The interlock is designed to operate in the closed direction, the valves will not automatically open if shut. Manual operator action is required.
- d. Incorrect. The valves will remain open based on 1A and 1B SI pump breaker position.

EXAM QUESTION HISTORY

Question # _____ RO 34 SRO _____
 TIER 2 Group 1
 KA 007K5.02 Importance 3.1

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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|-------------------------------------|---|
| <input checked="" type="checkbox"/> | New |
| <input type="checkbox"/> | Modified (Attach original and Modified Questions) |
| <input type="checkbox"/> | Original Bank _____ # _____ |
| <input type="checkbox"/> | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 .3/10 55.43 _____

Learning Objective

R1401C 5.01 List the names of the systems which interface with the Pressurizer and Pressurizer Relief Tank, and describe the purpose for each interface to include for PRZR:

a. PRT

Cognitive Level Memory or Fundamental Knowledge
 Comprehension or Analysis _____

Technical Reference O-1.1/S-2.3A

Level of Difficulty (from attachment 3): 4

References required on Exam (Attach copy to this attachment)

Verification [Signature] Date 2/20/06
 Exam Developer
 Validation [Signature] Date 5/31/06
 Operations
 Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 34 C000.1371

(1 point(s))

Given the following plant conditions:

O-1.1, Plant Heatup from Cold Shutdown to Hot Shutdown, is in progress.
RCS Fill and vent using O-1B, Vacuum Refill of the Reactor Coolant System, is complete.
Preparations for drawing a bubble in the Pressurizer are being made.

Which one of the following describes the condition of the PRT prior to raising RCS pressure and heating up the pressurizer to draw a steam bubble?

- a. Filled between 30 & 50% and vented to atmosphere via a vent hose to prevent overpressurization if the PORV's lift.
- b. Filled between 30 & 50% and pressurized between 1 and 3 psig with Nitrogen to prevent an explosive Hydrogen-Oxygen mixture if the PORV's lift.
- c. Filled between 61 & 84% and vented to atmosphere via a vent hose to prevent overpressurization if the PORV's lift.
- d. Filled between 61 & 84% and pressurized between 1 and 3 psig with Nitrogen to prevent an explosive Hydrogen-Oxygen mixture if the PORV's lift.

Answer 34

- d. Filled between 61 & 84% and pressurized between 1 and 3 psig with Nitrogen to prevent an explosive Hydrogen-Oxygen mixture if the PORV's lift.

O-1B, places the PRT in service following vacuum fill by performing procedure S-2.3A, Restoring the PRT to Service following Maintenance. S-2.3A purges the Oxygen from the PRT and establishes a nitrogen overpressure of 1-3 psig and a level of 61-84%. Procedure P-2, Reactor Coolant System Precautions and Limitations Subsection 6.5, Pressure Relief Tank, states "A nitrogen gas blanket should be maintained from 1 to 3 psig (PI-440A) in the PRT during normal operations to prevent the formation of an explosive Hydrogen-Oxygen mixture."

DISTRACTER ANALYSIS

- A) INCORRECT. Level is below normal band. Vent to atmosphere condition is incorrect but reasonable as during RCS fill the PZR and PRT are vented during the later stages of the fill when raising pressurizer level and establishing solid RCS condition (Step 5.5.1).
- B) INCORRECT. Level is below normal band.

C) INCORRECT. Level is correct however the vent condition is incorrect. Vent to atmosphere condition is reasonable as during RCS fill the PZR and PRT are vented during the later stages of the fill when raising pressurizer level and establishing solid RCS condition (Step 5.5.1).

EXAM QUESTION HISTORY

Question # RO 35 SRO
 TIER 2 Group 1
 KA 008A2.02 Importance 3.2

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|--------------|---|
| _____ | New |
| <u> X </u> | Modified (Attach original and Modified Questions) |
| _____ | Original Bank <u> Ginna </u> # <u> B008.0013 </u> |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 .10 55.43

Learning Objective

RAP02C 2.01 Given a set of plant and equipment conditions evaluate the conditions to determine the applicable procedure, and from the procedure determine the appropriate EXPECTED ACTIONS or RESPONSE NOT OBTAINED instructions to implement. (AP-CCW.2)

Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis

Technical Reference AP-CCW.2

Level of Difficulty (from attachment 3): 4

References required on Exam (Attach copy to this attachment)

Verification _____ Date _____
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use _____ Date _____
 Exam Developer

Question 35 C000.1318

(1 point(s))

Which of the following describes the actions required by AP-CCW.2, Loss of CCW During Power Operation, if CCW Surge Tank Level can NOT be maintained greater than 10%?

- a. Continue attempts to restore level, if surge tank level is less than 10% for greater than 2 minutes, THEN trip the Rx, trip both RCPs, THEN go to E-0.
- b. Pull stop both CCW Pumps, trip both RCPs, THEN trip the Rx, THEN transition to E-0.
- c. Isolate letdown and excess letdown, trip the Rx, perform Immediate Actions of E-0, THEN trip both RCPs and place CCW Pumps in pull stop.
- d. Monitor RCP temperatures if any RCP bearing temp is > 200 °F, THEN trip the Rx, perform Immediate Actions of E-0, THEN trip affected RCPs.

Answer 35

- c. Isolate letdown and excess letdown, trip the Rx, perform Immediate Actions of E-0, THEN trip both RCPs and place CCW Pumps in pull stop.

Distracter Analysis

- Distracter 1- Reasonable distracter as attempting to restore level is directed when condition is observed, 2 minute criteria is also reasonable distracter as it is applicable to operation of RCPs without CCW cooling.
- Distracter 2- Actions are applicable however they are incomplete and in the wrong sequence.
- Distracter 3- Reasonable distracter as the 200°F criteria is applicable for a loss of the CCW Pumps.

EXAM QUESTION HISTORY

Question # RO 36 SRO _____
TIER 2 Group 1
KA 008A4.10 Importance 3.1

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 3/10 55.43 _____

Learning Objective

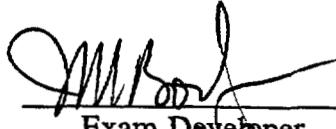
R2801C 3.08 Requirements on and for the CCWS for different conditions of the power plant. Pump and Heat exchanger combo for normal ops, RHR, Recirc.)

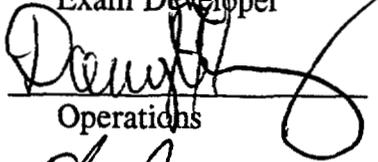
Cognitive Level Memory or Fundamental Knowledge X
Comprehension or Analysis _____

Technical Reference O-2.1/O-2.2

Level of Difficulty (from attachment 3): 2

References required on Exam (Attach copy to this attachment)

Verification  Date 2/21/06
Exam Developer

Validation  Date 5/30/06
Operations

Approved for Use  Date 5/19/06
Exam Developer

Question 36 C000.1317

(1 point(s))

Which of the following describes the MINIMUM Component Cooling Water (CCW) configuration required to support a cool down of the RCS to Cold Shutdown?

- a. Both Trains of CCW are in service for the entire cooldown from Hot Standby
- b. One CCW pump in service until RCS is less than 200°F, then both trains of CCW in service to support Residual Heat Removal operations.
- c. One CCW pump in service provides adequate cooling for the entire cooldown from Hot Standby.
- d. One CCW pump in service until RCS is less than 350°F, then both trains of CCW in service to support Residual Heat Removal operations.

Answer 36

- d. One CCW pump in service until RCS is less than 350°F, then both trains of CCW in service to support Residual Heat Removal operations.

Distractor Analysis

- a. Incorrect. This assumes that the components normally cooled by CCW add heat to the system during a plant shutdown/cooldown.
- b. Incorrect. This assumes that the SGs are used for heat removal until 200°F is reached. This is not true, RHR is placed in service before the SGs can no longer be used for heat removal.
- c. Incorrect. This assumes that the heat removed by one RHR HX being cooled by CCW is 100%. Capacity of CCW to remove RHR heat is 50%. It is 100% for the ECCS function.
- d. Correct. In order to maintain components being cooled by CCW within limits a second train of CCW will be placed in service to support RHR operations.

EXAM QUESTION HISTORY

Question # RO 37 SRO _____
 TIER 2 Group 1
 KA 010K2.02 Importance 2.5

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| | Bank Originating Bank _____ # _____ |

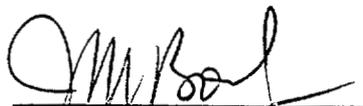
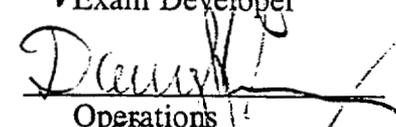
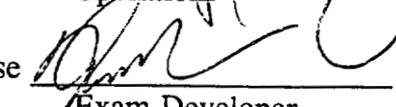
10CFR55 Content 55.41 .3 55.43 _____

Learning Objective

Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

Technical Reference P-12

Level of Difficulty (from attachment 3) : 2
 References required on Exam (Attach copy to this attachment)

Verification  Date 2/21/06
 Exam Developer
 Validation  Date 5/30/06
 Operations
 Approved for Use  Date 5/19/06
 Exam Developer

Question 37 C000.1319

(1 point(s))

Which of the following normally provides power to the Pressurizer Spray Valve Controllers PCV-431A/B?

- a. MQ 483 Inverter
- b. Instrument Bus C
- c. DC Bus A
- d. TSC Battery System

Answer 37

- b. Instrument Bus C

Answer - ALL MCB Controllers (except FRV's and Bypasses) are powered from Instrument Bus C breaker 15. Reference P-12 Appendix A.

Distracter A- Reasonable distracter MQ 483 Inverter supplies power for redundant instrumentation.

Distracter C- Reasonable distracter as DC Bus A does supply power to several solenoid valves. Spray valves are solenoid operated.

Distracter D- TSC Battery is used as an alternate backup source if a DC Train becomes unavailable.

EXAM QUESTION HISTORY

Question # _____ RO 38 SRO _____
 TIER 2 Group 1
 KA 012K5.02 Importance 3.1

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|--|
| _____ | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank <u>INPO</u> # <u>Braidwood 1 7/17/2002</u> |

10CFR55 Content 55.41 .7 55.43 _____

Learning Objective

R3501C 4.07 List all reactor trips; give setpoint, logic, and basis for each.

Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

Technical Reference Tech Specs B3.3.1

Level of Difficulty (from attachment 3) : 2

References required on Exam (Attach copy to this attachment)

Verification Date 2/21/06
 Exam Developer
 Validation Date 4/30/06
 Operations
 Approved for Use Date 5/19/06
 Exam Developer

Question 38 C000.1370

(1 point(s))

Which of the following reactor protection system trips serves as a back-up to the Power Range Neutron Flux-High trip and is designed to ensure the the allowable heat generation rate (kW/ft) of the fuel is not exceeded?

- A) RCS Low Flow (Two Loops)
- B) OP Δ T
- C) Pressurizer Pressure- Low
- D) OT Δ T

Answer 38

- B) OP Δ T

Tech Spec 3.3.1 Bases for OP Δ T Trip states "The Overpower Δ T trip Function ensures that protection is provided to ensure the integrity of the fuel (i.e., no fuel pellet melting and less than 1% cladding failure) under all possible overpower conditions. This trip Function also limits the required range of the Overtemperature Δ T trip Function and provides a backup to the Power Range Neutron Flux-High Setpoint trip. The Overpower Δ T trip Function ensures that the allowable heat generation rate (kW/ft) of the fuel is not exceeded."

DISTRACTER ANALYSIS

- A) INCORRECT. Tech Spec 3.3.1 Bases for RCS Low Flow Trip states "The Reactor Coolant Flow-Low (Two Loops) trip Function ensures that protection is provided against violating the DNBR limit due to low flow in both RCS loops while avoiding reactor trips due to normal variations in loop flow."
- C) INCORRECT. Tech Spec 3.3.1 Bases for Pressurizer Pressure-Low Trip states "The Pressurizer Pressure-Low trip Function ensures that protection is provided against violating the DNBR limit due to low pressure."
- D) INCORRECT. Tech Spec 3.3.1 Bases for OT Δ T Trip states "The Overtemperature Δ T trip Function is provided to ensure that the design limit departure from nucleate boiling ratio (DNBR) is met. This trip Function also limits the range over which the Overpower Δ T trip Function must provide protection."

EXAM QUESTION HISTORY

Question # RO 39 SRO _____
 TIER 2 Group _____
 KA 012A4.02 Importance 3.3

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| _____ | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank <u>Ginna</u> # <u>B012.0016</u> |

10CFR55 Content 55.41 .7 55.43 _____

Learning Objective

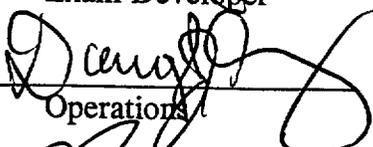
R3501C 4.12 Discuss the function and use of the bistable switches and associated proving lamps, in the protection racks.

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference ER-INST.1

Level of Difficulty (from attachment 3) : 3

References required on Exam (Attach copy to this attachment)

Verification  Date 2/21/06
 Exam Developer
 Validation  Date 5/30/06
 Operations
 Approved for Use  Date 5/19/06
 Exam Developer

Question 39 B012.0016

(1 point(s))

With the plant at power, Tavg channel 403 failed high. During the defeat of the failed channel, the bistable switches for HIGH T'AVG (LOOP B-1) and LOW T'AVG (LOOP B-1) were both placed in trip position, and both of the associated proving lamps energized.

Which of the following explains the status of the proving lamp indications?

- a. The High Tavg proving lamp indication is incorrect because Ch. 403 failing high should have already caused the proving lamp to energize prior to placing the bistable switch in trip. The Low Tavg is correct because its bistable should have remained energized upon the failure
- b. The High Tavg and Low Tavg proving lamps are correct because placing there respective bistable switch in defeat energizes them.
- c. The High Tavg proving lamp is incorrect because with Ch.403 failed high the High Tavg bistable should have deenergized. When the switch is placed in defeat the lamp should not energize. The Low Tavg lamp is correct because its bistable should have remained energized upon the failure.
- d. Both lamp indications are incorrect because for this Tavg channel failure both bistables should deenergize resulting in both proving lamps being deenergized.

Answer 39

- c. The High Tavg proving lamp is incorrect because with Ch.403 failed high the High Tavg bistable should have deenergized. When the switch is placed in defeat the lamp should not energize. The Low Tavg lamp is correct because its bistable should have remained energized upon the failure.

Distractor Analysis

- a. Incorrect. With the channel failing high the bistable is already tripped and high light should not energize when the channel is bypassed.
- b. Incorrect. With the channel fails the light for the direction it failed in, High/Low, should not energize when the channel is defeated.

- c. Correct. The high light should not energize when the channel is defeated.
- d. Incorrect. Only the bistable associated with the trip should have deenergized. The low Tavg bistable should remain energized.

EXAM QUESTION HISTORY

Question # RO 40 SRO _____
 TIER 2 Group 1
 KA 013K3.01 Importance 4.4

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| | New |
| <u>X</u> | Modified (Attach original and Modified Questions) |
| | Original Bank <u>INPO</u> # <u>Farley 1 5/30/2003</u> |
| | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 .7 55.43 _____

Learning Objective

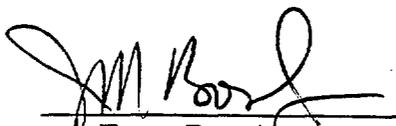
R2701C 3.06 Describe the cause -effect relationship between the ESFAS and the ECCS.

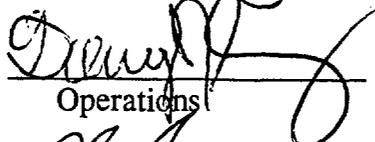
Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

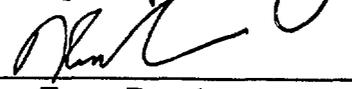
Technical Reference USAR Chapter 15

Level of Difficulty (from attachment 3): 4

References required on Exam (Attach copy to this attachment)

Verification  Date 2/21/06
 Exam Developer

Validation  Date 3/22/06
 Operations

Approved for Use  Date 5/19/06
 Exam Developer

Question 40 C000.1320

(1 point(s))

A large break LOCA occurs with a malfunction of the ESF Sequencers which prevents the automatic energizing of both trains of ESF components.

Assuming no operator action is taken for 10 minutes after the event, which ONE of the following correctly describes the effect this situation has on the fuel?

- a. The delay in cooling can lead to fuel temperatures in excess of design limits which would result in fuel damage and cladding failure.
- b. Cladding failure can occur due to the uncontrolled cooling caused by the rapid vaporization of the reactor coolant and the quenching action of the SI Accumulators emptying.
- c. Fuel integrity is maintained as the reflux cooling provided is sufficient to cool the core for up to 10 minutes after the onset of the LOCA event.
- d. Fuel integrity is maintained by the quenching action of the SI Accumulators followed by the natural circulation cooling provided by the Reactor Coolant loops and the Steam Generators.

Answer 40

- a. The delay in cooling can lead to fuel temperatures in excess of design limits which would result in fuel damage and cladding failure.

Distracter b- Cladding failure can occur due to the uncontrolled cooling caused by the rapid vaporization of the reactor coolant and the quenching action of the SI Accumulators emptying.

Distracter c- Fuel integrity is maintained as the reflux cooling provided is sufficient to cool the core for up to 10 minutes after the onset of the LOCA event.

Distracter d- Fuel integrity is maintained by the quenching action of the SI Accumulators followed by the natural circulation cooling provided by the Reactor Coolant loops and the Steam Generators.

EXAM QUESTION HISTORY

Question # _____ RO 41 SRO _____
 TIER 2 Group 1
 KA 022 G2.1.23 Importance 3.9

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 .9 55.43 _____

Learning Objective

R2201C 2.02

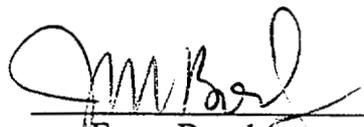
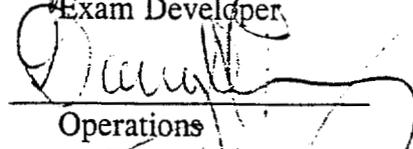
Given a P&ID of the Containment Ventilation System, discuss the flowpath and location of the following components.

- g) Containment Shutdown Purge Supply Unit
- h) Containment Purge Exhaust System

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference S-23.2.2

Level of Difficulty (from attachment 3) : 3
 References required on Exam (Attach copy to this attachment)

Verification  Date 2/21/06
 Exam Developer
 Validation  Date 5/30/06
 Operations
 Approved for Use  Date 5/30/06
 Exam Developer

Question 41 C000.1322

(1 point(s))

The Plant is in Mode 5 with Containment Purge in service.
Containment Purge Supply and Exhaust Fans A are running.
The Equipment Hatch is open.

Personnel at the hatch report that air is flowing out of the hatch.

Which of the following actions will establish a negative pressure in Containment?

- a. Stop the Containment Purge Supply Fan A by placing the control switch in pull stop.
- b. Close the Containment Purge Inlet Damper (V-5869) by placing the control switch in Close.
- c. Stop Containment Purge Supply Fan A by opening the supply breaker to the Fan on the MCC.
- d. Start Containment Purge Exhaust Fan B by placing the control switch to Start.

Answer 41

- c. Stop Containment Purge Supply Fan A by opening the supply breaker to the Fan on the MCC.

Distracter Analysis:

Answer: Per S-23.2.2, Containment Purge Procedure, Step 5.1.22, the supply fan is stopped by opening the supply breaker at the MCC to control air flow. There is no switch for the Supply Fan, it is operated with the Exhaust Fan.

Distracter A- There is no switch for the supply fan only, placing the Containment Purge A Control Switch in pull stop would stop both the supply and exhaust fans.

Distracter B- Closing V-5869 will also stop the supply and exhaust fans when the damper closes.

Distracter D- Starting the second Purge Exhaust Fan will also start the supply fan which will not ensure a negative pressure.

EXAM QUESTION HISTORY

Question # _____ RO 42 SRO _____
 TIER 2 Group 1
 KA 022K4.02 Importance 3.1

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 .9 55.43 _____

Learning Objective

R2201C 2.01 Discuss the interrelationship between the following components of the Containment Ventilation System.

- a) Containment Recirc Filter and Cooling Unit
- e) Containment Post-Accident Charcoal Filters

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference USAR Chapter 6.2.2

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment)

Verification [Signature] Date 2/24/04
 Exam Developer
 Validation [Signature] Date 5/30/06
 Operations
 Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 42 C000.1321

(1 point(s))

The Plant is operating at 100% power with normal system configuration.

Containment Recirc Fans A & B are running.

A LOCA occurs in Containment.

The following conditions are noted in Containment:

Containment Pressure is 6 psig and rising

Containment Temperature is 220°F and rising

Which of the following describes the configuration of the Containment Cooling System in response to this event?

- a. Containment Recirc Fans A & C are running discharging to the Distribution Header, Containment Recirc Fans B & D are running discharging to the Charcoal Filter Units.
- b. Containment Recirc Fans A & C are running discharging to the Charcoal Filter Units, Containment Recirc Fans B & D are running discharging to the Distribution Header.
- c. All four Containment Recirc Fans are running discharging to the Charcoal Filter Units.
- d. All four Containment Recirc Fans are running discharging to the Distribution Header.

Answer 42

- b. Containment Recirc Fans A & C are running discharging to the Charcoal Filter Units, Containment Recirc Fans B & D are running discharging to the Distribution Header.

Distracter A- Reasonable distracter as 2 fans discharge to filters and 2 discharge to the distribution header, however the combination is incorrect.

Distracter C- Reasonable distracter as all four fans start however only 2 discharge to the filter units.

Distracter D- Reasonable distracter as all four fans start however 2 discharge to the filter units as described above.

Question 43 C000.1323

(1 point(s))

The plant has experienced a Large Break LOCA.

RCS Pressure is 20 psig

Containment Pressure is 20 psig

ES-1.3, Transfer to Cold Leg Recirculation, is in progress and recirculation flow has been established with both RHR Pumps running.

Both SI Pumps have been secured.

Both Containment Spray Pumps are running.

The following conditions are noted by the HCO:

RHR pump A & B discharge pressures are rapidly fluctuating from 0 psig to 150 psig.

RHR Pump A & B motor amps are oscillating significantly

Per ES-1.3 which of the following describes the action to be taken in response to these conditions?

- a. Stop both Containment Spray Pumps, stop all but one RHR Pump, and reduce RHR Flow to as low as possible without going below the minimum injection flow rate.
- b. Stop both Containment Spray Pumps, stop both RHR Pumps, start at least one RCDT Pump and establish the minimum injection flow rate.
- c. Stop all but one Containment Spray Pump, stop all but one RHR Pump, and reduce RHR Flow to as low as possible without going below the minimum injection flow rate.
- d. Stop all but one Containment Spray Pump, stop both RHR Pumps, start at least one RCDT Pump and establish the minimum injection flow rate.

Answer 43

- a. Stop both Containment Spray Pumps, stop all but one RHR Pump, and reduce RHR Flow to as low as possible without going below the minimum injection flow rate.

Distracter Analysis:

Answer: Per ES-1.3 Step 9 All CS pumps running with suction from RHR are stopped, All but one RHR pump is stopped and flow is reduced to as low as possible without violating Figure 6 (Minimum RCS Injection)

- Distracter B- Reasonable distracter as ECA-1.3, Response to Sump B Blockage, is entered if the actions of ES-1.3 do not stop the cavitation. Direction to stop the SI Pumps or CS Pumps with indications of cavitation is contained in a note in ECA-1.3. The RCDT Pumps are physically able to pump from the sump but the procedural direction in this situation does not use them.
- Distracter C- Reasonable distracter as it is a variation of the correct answer and is incorrect because it leave a Containment Spray Pump running.
- Distracter D- Reasonable distracter as it is a combination of Distracters 1 & 2. It minimizes flow and establishes an alternate flowpath for the CS Pump suction.

EXAM QUESTION HISTORY

Question # RO 44 SRO
 TIER 2 Group 1
 KA 039 A1.05 Importance 3.2

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 .5 55.43 _____

Learning Objective

ROP01 1.01

Given the procedure and any plant conditions, interpret and apply the precautions, cautions, notes, and steps.

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference T-16A

Level of Difficulty (from attachment 3) : 3

References required on Exam (Attach copy to this attachment)

Verification [Signature] Date 2/24/06
 Exam Developer

Validation [Signature] Date 4/30/06
 Operations

Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 44 C000.1324

(1 point(s))

A plant Startup from a mid-cycle maintenance outage is in progress using O-1.2, Plant Startup from Hot Shutdown to Full Load.

Reactor Power is 2% and stable.

Blowdown recovery has been placed in service and Blowdown flow has been established.

Main Steam Line Warming is in progress and an operator is ready to open the MSIV Bypass valves to initiate flow and equalize pressure across the MSIV's.

Which of the following describes the INITIAL response of SG Pressure and Tavg if the local operator opened the MSIV Bypasses too far?

- a. Steam Generator Pressure would decrease, Tavg would increase
- b. Steam Generator Pressure would increase, Tavg would increase
- c. Steam Generator Pressure would decrease, Tavg would decrease
- d. Steam Generator Pressure would increase, Tavg would decrease.

Answer 44

- c. Steam Generator Pressure would decrease, Tavg would decrease.

Distractor Analysis

- a. Incorrect. Steam pressure would lower due to the rise in steam flow. Tavg would lower due to the Control Rods being in Manual and the effects of lowering Tsat for the SGs. Tsat lowering would cause Tcold to lower lowering Tavg.
- b. Incorrect. Both parameters would lower not rise.
- c. Correct. Steam pressure would lower due to the rise in steam flow. Tavg would lower due to the Control Rods being in Manual and the effects of lowering Tsat for the SGs. Tsat lowering would cause Tcold to lower lowering Tavg.
- d. Incorrect. Both parameters should lower.

EXAM QUESTION HISTORY

Question # RO 45 SRO _____
 TIER 2 Group 1
 KA 059 K3.04 Importance 3.6

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 .5 55.43 _____

Learning Objective

R4301C 5.05

Given a set of plant conditions, and a failure of one of the following major components in the Feedwater System, predict the effects on continued plant operation.

a. MFPs

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X _____

Technical Reference: AR-K-18

Level of Difficulty (from attachment 3) : 4

References required on Exam (Attach copy to this attachment)

Verification [Signature] Date 2/24/06
 Exam Developer

Validation [Signature] Date 5/5/06
 Operations

Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 45 C000.1325

(1 point(s))

The plant is operating at 80% power
All control systems are in a normal configuration

Which of the following describes the immediate (within 1-2 minutes) response of the RCS to a LOW failure of the Main Feedwater Pump A Oil Pressure Switch (PS-2041)? (Assume no operator action)

- a. RCS Temperature will increase, RCS Pressure will decrease.
- b. RCS Temperature will decrease, RCS Pressure will decrease.
- c. RCS Temperature will increase, RCS Pressure will increase.
- d. RCS Temperature will decrease, RCS Pressure will increase.

Answer 45

- c. RCS Temperature will increase, RCS Pressure will increase.

Distracter Analysis:

Answer- PS-2041 failing low causes a trip of the A MFW pump. Lower Feed flow causes RCS Temp & Pressure to rise.

Distracter a/b/c- All incorrect as they do not reflect RCS response to a loss of a Feedwater Pump
(See answer)

Distracter references response from P-10, Instrument Failure Reference Manual.

EXAM QUESTION HISTORY

Question # RO 46 SRO _____
 TIER 2 Group 1
 KA 059 A4.12 Importance 3.4

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| _____ | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank <u>Ginna</u> # <u>B035.0009</u> |

10CFR55 Content 55.41 .5 55.43 _____

Learning Objective

R4401C 3.03

Explain how the Main Feed Regulating and Bypass Valves respond to the following when in auto or manual:

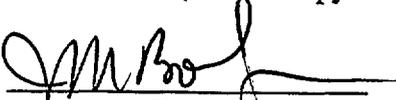
- a. Reactor trip with Tavg < 554 degrees
- b. Steam Generator Level > 85%
- c. Safety Injection System
- d. Rx trip with Tavg > 554 degrees

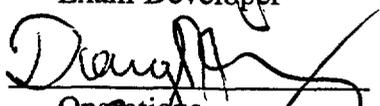
Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: RGE-44

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment)

Verification  Date 2/24/06
 Exam Developer

Validation  Date 5/30/06
 Operations

Approved for Use  Date 5/19/06
 Exam Developer

Question 46 B035.0009

(1 point(s))

The plant is operating at 98% power when a Reactor Trip occurs. With regard to the Main feedwater control valves:

- a. If T_{avg} increases to $>554^{\circ}\text{F}$, the FRVs will snap open.
- b. If T_{avg} is $< 554^{\circ}\text{F}$, the FRVs will modulate open on ADFCS level error
- c. If T_{avg} is $> 554^{\circ}\text{F}$, the FRVs will modulate open on ADFCS flow error
- d. If T_{avg} is $< 554^{\circ}\text{F}$, the FRVs will close.

Answer 46

- d. If T_{avg} is $< 554^{\circ}\text{F}$, the FRVs will close.

Distractor Analysis

- A. Incorrect. ADFCS will control valve position on a reactor trip when $T_{avg} > 554^{\circ}\text{F}$. Valves do not "Snap open"
- B. Incorrect. If T_{avg} is $< 554^{\circ}\text{F}$ the FRV's do not respond to ADFCS demand.
- C. Incorrect. FRV's respond to an ADFCS level error signal not a flow error post trip.
- D. Correct. Post trip when T_{avg} is less than 554°F , the logic commands the FRVs to close.

EXAM QUESTION HISTORY

Question # RO 47 SRO _____
 TIER 2 Group 1
 KA 061 K5.05 Importance 2.7

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|--|
| _____ | New |
| <u>X</u> | Modified (Attach original and Modified Questions) Original Bank <u>INPO</u> # <u>Davis Besse 5/10/04</u> Bank Originating Bank # _____ |

10CFR55 Content 55.41 .14 55.43 _____

Learning Objective R4201C 19.02

Given a set of plant conditions and a failure of a major component in the Auxiliary Feedwater System, predict the effects on continued plant operation.

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: T-41A

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 2/24/06
 Exam Developer

Validation [Signature] Date 5/3/06
 Operations

Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 47 C000.1326

(1 point(s))

The Secondary AO reports to the Control Room that the pump casing for the Turbine Driven Auxiliary Feedwater Pump (TDAFP) is too hot to touch.

The temperature with a contact pyrometer indicated 231 deg. F.

He reports that the Feedwater line out of the pump is also hot.

Which of the following describes the impact this condition has on the operation of the Auxiliary Feedwater System?

- a. Hot water in the steam line causes damage to the turbine when the Auxiliary Feed Pump is started.
- b. Hot water accumulates in the pump casing causing turbine overspeed when the Auxiliary Feed Pump is started.
- c. Steam in the turbine casing condenses and fills the casing with water resulting in differential turbine temperatures and turbine shaft bowing.
- d. Steam fills the pump casing and prohibits the pump from pumping water.

Answer 47

- d. Steam fills the pump casing and prohibits the pump from pumping water.

Distractor Analysis

- a. Incorrect. Condensation in the steam lines and filling the lines with water could lead to turbine overspeed, however pump casing voiding does not cause condensation in the steam lines.
- b. Incorrect. Elevated temperatures would reduce fluid density, if the assumption is made the reduction is enough to prevent speed control on initial start and overspeed trip is a logical result.
- c. Incorrect. Steam binding in the pump would not result in turbine casing condensation.
- d. Correct. Indication provided is indicative of steam binding of TDAFP which results in a loss of the ability to pump water.

EXAM QUESTION HISTORY

Question # RO 48 SRO _____
 TIER 2 Group 1
 KA 062 A3.05 Importance 3.5

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| | New |
| | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank Ginna # <u>C062.0055</u> |

10CFR55 Content 55.41 .7 55.43 _____

Learning Objective R0701C 2.08

Given a diagram of the 480 Volt Distribution System, identify which MCC supply breakers will trip under the following conditions:

- a. Undervoltage on the bus
- b. Safety Injection Signal

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: P-12

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 2/25/06
 Exam Developer

Validation [Signature] Date 5/30/06
 Operations

Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 48 C062.0055

(1 point(s))

Given the following information:

- The electrical system is in a normal at-power lineup
- No SI signal is present

Subsequently an undervoltage condition occurs on 480VAC safeguards bus 16

Which ONE of the following actions will occur automatically?

- a. The normal feeder breaker for bus 16 will trip.
- b. The bus 15 to bus 16 tie breaker will close.
- c. Component Cooling Pump 1B breaker will trip and reload onto the bus.
- d. Aux Feed Pump 1B will sequence onto the bus after 32 seconds.

Answer 48

- a. The normal feeder breaker for bus 16 will trip.

Distractor Analysis

- a. Correct. The UV relay will pick up and cause the normal feeder breaker to trip.
- b. Incorrect. The Bus 15 to Bus 16 Tie Breaker is a manually operated breaker. There are no automatic actions associated with the breaker.
- c. Incorrect. CCW Pump B does not trip on a UV signal with no SI present.
- d. Incorrect. Component Cooling Pump B breaker will not trip on a UV signal. It remains closed.

EXAM QUESTION HISTORY

Question # RO 49 SRO _____
 TIER 2 Group 1
 KA 063 A2.01 Importance 2.5

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 7/10 55.43 _____

Learning Objective RER07C 1.04

Given a set of plant conditions (and a procedure figure, if needed) evaluate the appropriate parameters and determine the correct course of action.

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: ER-ELEC.2

Level of Difficulty (from attachment 3): 4

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 2/25/06
 Exam Developer

Validation [Signature] Date 5/2/06
 Operations

Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 49 C000.1372

(1 point(s))

The plant is operating at 100% power with all systems in a normal configuration

The following indications are received in the Control Room:

Annunciator J-15, BATTERY CHRGR FAILURE OR PA INVERTER TROUBLE, is LIT

Annunciator J-21, 1A OR 1B BATTERY UNDERVOLTAGE, is LIT

Annunciator J-23, BATTERY BANK GROUND, is LIT

Multiple Annunciators on several panels are also LIT

Battery A Voltage indicates 0 volts.

Which of the following describes the impact this condition has on plant operation and the actions required as a result?

- a) Letdown and Excess Letdown valves fail as is. Dispatch an AO to check the Battery Bank and check for positive or negative ground and transfer 11A/12A control power to "B" Battery.
- b) The Reactor and Turbine trip. Carry out the immediate actions of E-0, Reactor Trip or Safety Injection, then dispatch an operator to transfer 11A/12A control power and locally open the Generator Exciter Field Breaker.
- c) MFW Isolation Valves to SG A fail open. Dispatch an AO to check the Battery Bank and check for positive or negative ground and transfer DC Train A to the TSC Battery.
- d) Generator Output Breakers fail as is. Trip the Reactor and carry out the immediate actions of E-0, Reactor Trip or Safety Injection, then dispatch an operator to transfer 11A/12A control power and locally open the Generator Output Breakers.

Answer 49

- b) The Reactor and Turbine trip. Carry out the immediate actions of E-0, Reactor Trip or Safety Injection, then dispatch an operator to transfer 11A/12A control power and locally open the Generator Exciter Field Breaker.

DISTRACTER ANALYSIS

- a) INCORRECT. Per ER-ELEC.2, Letdown (AOV 200A, 200B & 202) and Excess Letdown (AOV 310) fail closed. Reasonable distracter as an AO is dispatched to check the bus and transfer control power to allow restoration of 11A bus post trip.
- c) INCORRECT. Per ER-ELEC.2, MFW Isolation Valves to A SG fail closed. Reasonable distracter as an AO is dispatched to check the bus and transfer control power to allow

restoration of 11A bus post trip. However DC Train A is not transferred to the TSC battery until the cause is verified NOT to be the DC Bus (Step 4.1.3.1).

- d) INCORRECT. Per ER-ELEC.2, Generator Output Breakers Trip (4.1.2.2). Trip of reactor and entering E-0 are reasonable distracter if operator assumes the reactor should have tripped. Local operator actions are appropriate for the Generator output breaker failure.

EXAM QUESTION HISTORY

Question # RO 50 SRO _____
 TIER 2 Group 1
 KA 064 K1.02 Importance 3.1

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| _____ | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank Ginna # <u>C064.0052</u> |

10CFR55 Content 55.41 4/7 55.43 _____

Learning Objective REC00C 1.02

Given the notes, cautions, and/or major action categories of ECA-0.0, Loss of all AC Power, explain the reason/basis for the notes, cautions, or major action categories..

Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

Technical Reference: ECA-0.0 BKGRD

Level of Difficulty (from attachment 3): 2

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 2/25/06
 Exam Developer

Validation [Signature] Date 5/2/06
 Operations

Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 50 C064.0052

(1 point(s))

When restoring power in ECA-0.0, Loss of All AC Power, the operator is directed to verify at least one SW pump running for each running DG.

Which one of the following is the reason for this requirement?

- a. To establish a heat sink for core cooling restoration.
- b. To establish cooling water for safeguards pump seals.
- c. To establish a stable DG load to prevent DG overspeed.
- d. To establish cooling water to DG lube oil and jacket water heat exchangers.

Answer 50

- d. To establish cooling water to DG lube oil and jacket water heat exchangers.

Distractor Analysis

- a. Incorrect. This is a long term concern. SW cools the CCW HXs which will be needed to bring the plant to Cold Shutdown. On a loss of all AC power the plant will be initially cooled down on natural circulation and the use of the ARVs/TDAFWP.
- b. Incorrect. The safeguard pump seals are cooled by CCW. There is enough capacity to prevent exceeding any temperature requirements without SW being supplied to the CCW HXs.
- c. Incorrect. The diesel when running will have load applied based on plant requirements. Adding a SW pump will not prevent an overspeed condition.
- d. Correct. The diesels can survive a short period of time without cooling water supplied but SW is verified to ensure that adequate cooling is provided.

EXAM QUESTION HISTORY

Question # RO 51 SRO _____
 TIER 2 Group 1
 KA 073 A1.01 Importance 3.2

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| _____ | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank Ginna # <u>C072.0022</u> |

10CFR55 Content 55.41 5 55.43 _____

Learning Objective R3901C 1.03

Identify the purpose of the various monitors in the Radiation Monitoring System.

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: RGE-39

Level of Difficulty (from attachment 3): 2

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 2/24/06
 Exam Developer

Validation [Signature] Date 5/3/06
 Operations:

Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 51 C072.0022

(1 point(s))

Which ONE of the following conditions would cause an ALARM condition on the Containment Service Water radiation monitor R-16? (Assume that a Service Water leak exists on an operating Air Handling Unit):

- a. A small break LOCA at EOL, causing containment pressure to increase to 6 psig.
- b. A large break LOCA at MOL, causing containment pressure to increase to 50 psig.
- c. A major steam leak at BOL, causing containment pressure to increase to 50 psig.
- d. Pressurizer PORV leakage at EOL, causing PRT rupture disk rupture and containment pressure to increase to 3 psig.

Answer 51

- b. A large break LOCA at MOL, causing containment pressure to increase to 50 psig.

Distractor Analysis

- a. Incorrect. SW header pressure is higher than CTMT pressure therefore the leakage would be into the CTMT.
- b. Correct. CTMT pressure is high enough to cause leakage into the SW system from any environmental leaks.
- c. Incorrect. This answer would be correct if a SGTL/SGTR was also present.
- d. Incorrect. While radiation levels would be increasing, CTMT pressure is still too low to cause leakage into the SW system.

EXAM QUESTION HISTORY

Question # RO 52 SRO _____
 TIER 2 Group 1
 KA 076 A3.02 Importance 3.7

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|--|
| _____ | New |
| _____ | Modified (Attach original and Modified Questions) Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank Ginna # <u>C076.0030</u> |

10CFR55 Content 55.41 4 55.43 _____

Learning Objective R5101C 4.05

Describe how the SW System responds for the following conditions:

- a. Any SI signal
- b. Undervoltage on bus 17/18 no SI signal
- c. SI signal with undervoltage present.

Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

Technical Reference: UFSAR Chapter 9

Level of Difficulty (from attachment 3): 2

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 2/26/06
 Exam Developer

Validation [Signature] Date 5/31/06
 Operations

Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 52 C076.0030

(1 point(s))

Which one of the following actions occur in the Service Water System when a SI signal occurs (assume no other signals present)?

- a. Non-selected SW pump trip/selected pumps auto start
- b. Service water isolation occurs
- c. Service water outlets from CNMT coolers open
- d. Service water isolates to CCW Heat Exchangers

Answer 52

- c. Service water outlets from CNMT coolers open.

Distractor Analysis

- a. Incorrect. With no loss of bus voltage the running SW pump will remain running on a SI initiation.
- b. Incorrect. This isolation occurs on low SW header pressure. With the SW pump still running a low pressure should not occur.
- c. Correct. SW valves realign to provide CTMT cooling in a post-LOCA environment.
- d. Incorrect. SW will be supplied to the CCW HXs to provide post-LOCA cooling.

EXAM QUESTION HISTORY

Question # RO 53 SRO _____
 TIER 2 Group 1
 KA 078 K2.01 Importance 2.7

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| _____ | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank Ginna # <u>B078.0017</u> |

10CFR55 Content 55.41 4 55.43 _____

Learning Objective R4701C 5.01

Given a set of plant conditions and a failure of one of the following major components in the Instrument/Service Air system, predict how the system will respond.

- a. Instrument Air Compressor A and B
- f. 'C' Instrument Air Compressor
- g. 'C' Compressor Dryer Unit

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: 33013-0652

Level of Difficulty (from attachment 3): 2

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 2/26/06
 Exam Developer

Validation [Signature] Date 5/30/03
 Operations

Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 53 B078.0017

(1 point(s))

The following plant conditions exist:

- 100% power
- 'C' Instrument Air compressor is running
- All major control systems in AUTO
- Service and Instrument Air are cross-connected per T-1C, Instrument Air/Service Air Cross Connect

Subsequently Bus 15 deenergizes

Without Operator action, which one of the following Air Compressors will be running?

- a. 'A' Instrument Air Compressor
- b. 'B' Instrument Air Compressor
- c. 'C' Instrument Air Compressor
- d. Service Air Compressor

Answer 53

- a. 'A' Instrument Air Compressor

Distractor Analysis

b/c/d Incorrect. These air compressors are powered from 480VAC Bus 15.

Question 54 C000.1328

(1 point(s))

While at 100% power, which ONE of the following conditions represents a loss of primary containment integrity IAW Technical Specifications?

- a. During an inspection of the equipment hatch, it is determined that the equipment hatch is not sealed properly.
- b. An electrician opens the outer containment airlock door to perform maintenance activities without prior approval.
- c. Main Steam Isolation Valve 3517 stroke time is discovered to be outside the allowable limit of 5 seconds.
- d. An operator enters containment but leaves the inner airlock door OPEN.

Answer 54

- a. During an inspection of the equipment hatch, it is determined that the equipment hatch is not sealed properly.

Distracter Analysis

Answer- This condition renders the equipment hatch inoperable by providing a direct path from containment to atmosphere which constitutes a loss of containment integrity

Distracter b- Opening one door of the containment airlock is permitted and does not constitute a loss of containment integrity per Tech Spec 3.6.2

Distracter c- Main Steam isolation Valve 3517 is a containment isolation valve, however Note 1 of Tech Spec 3.6.3 states that the spec does not apply to MSIV's in Mode 1. MSIV's are covered under Tech Spec 3.7.2. This condition does render the MSIV inoperable but the spec that applies is 3.7.2.

Distracter d- Opening one door of the containment airlock is permitted and does not constitute a loss of containment integrity per Tech Spec 3.6.2

EXAM QUESTION HISTORY

Question # RO 55 SRO _____
 TIER 2 Group 1
 KA 103 G2.1.14 Importance 2.5

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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|-------------------------------------|---|
| <input checked="" type="checkbox"/> | New |
| <input type="checkbox"/> | Modified (Attach original and Modified Questions) |
| <input type="checkbox"/> | Original Bank _____ # _____ |
| <input type="checkbox"/> | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 9/10 55.43 _____

Learning Objective _____

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis

Technical Reference: S-23.2.2

Level of Difficulty (from attachment 3): 4

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 2/27/06
 Exam Developer

Validation [Signature] Date 4/25/06
 Operations

Approved for Use [Signature] Date 5/19/05
 Exam Developer

Question 55 C000.1329

(1 point(s))

The plant is in Mode 6 with preparations in progress to fill the Refueling Cavity for refueling operations.

The Containment Coordinator requests that the Containment Purge System be shutdown temporarily to support the preparations.

The Outage Schedule does not contain an activity to stop Containment Purge.

Per S-23.2.2, Containment Purge Procedure whose approval is required to stop Containment Purge Fans?

- a. Work Control Center Supervisor
- b. Work Week Coordinator
- c. Plant Manager
- d. Outage Planning

Answer 55

- d. Outage Planning

Distracter Analysis

Answer- S-23.2.2, Containment Purge Procedure, Step 4.8.1 states "All requests for changes in fan configuration shall be approved by Outage Planning."

Distracter a- Reasonable distracter as this is a member of the outage organization responsible for coordinating scheduled activities

Distracter b- Reasonable distracter as this is a member of the Online Work Management organization responsible for coordinating scheduled activities

Distracter c- Reasonable distracter as this is a member of Plant Senior Management Team.

EXAM QUESTION HISTORY

Question # RO 56 SRO _____
TIER 2 Group 2
KA 001 A3.04 Importance 3.5

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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|-------------------------------------|---|
| <input checked="" type="checkbox"/> | New |
| <input type="checkbox"/> | Modified (Attach original and Modified Questions) |
| <input type="checkbox"/> | Original Bank _____ # _____ |
| <input type="checkbox"/> | Bank Originating Bank # _____ |

10CFR55 Content 55.41 5/6 55.43 _____

Learning Objective R3001C 5.04

Given a set of plant conditions, predict the effects of a malfunction of a lift disconnect switch.

Cognitive Level Memory or Fundamental Knowledge _____
Comprehension or Analysis

Technical Reference: AP-RCC.3 Background Step 7

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 2/27/06
Exam Developer

Validation [Signature] Date 5/2/06
Operations

Approved for Use [Signature] Date 5/19/06
Exam Developer

Question 56 C000.1330

(1 point(s))

During a power ascension from 50% power the lift coil disconnect for the Control Bank D Rod C-7 develops a high resistance connection and fails open.

Assuming the condition goes undetected, which of the following would be the effect this condition would have on core power distribution?

- a. The flux in the area of the rod would be depressed resulting in a negative Axial Flux Tilt (ΔI).
- b. The flux in the area of the rod would be depressed resulting in a lower Quadrant Power Tilt Ratio in the affected Quadrant.
- c. The flux in the area of the rod would be higher resulting in a higher Quadrant Power Tilt Ratio in the affected Quadrant.
- d. The flux in the area of the rod would be higher resulting in a positive Axial Flux Tilt (ΔI).

Answer 56

- b. The flux in the area of the rod would be depressed resulting in a lower Quadrant Power Tilt Ratio in the affected Quadrant.

DISTRACTER ANALYSIS

Distracter a&d- Rods withdraw on a power increase. The affected rod would not move with the rest of the bank. This will result in depressed flux in the quadrant but would not affect (ΔI).

Distracter c - Rods withdraw on a power increase. The affected rod would not move with the rest of the bank. This will result in depressed flux in the quadrant not higher flux.

EXAM QUESTION HISTORY

Question # RO 57 SRO _____
TIER 2 Group 2
KA 011 K1.04 Importance 3.8

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| _____ | New |
| <u>X</u> | Modified (Attach original and Modified Questions) Original Bank <u>INPO</u> # <u>Kewaunee 12/11/2000</u> |
| _____ | Bank Originating Bank # _____ |

10CFR55 Content 55.41 7 55.43 _____

Learning Objective RER06C

Given a set of plant conditions (and a procedure figure, if needed) evaluate the appropriate parameters and determine the correct course of action.

Cognitive Level Memory or Fundamental Knowledge _____
Comprehension or Analysis X

Technical Reference: ER-INST.1/P-10

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 2/27/06
Exam Developer

Validation [Signature] Date 5/30/06
Operations

Approved for Use [Signature] Date 5/19/06
Exam Developer

Question 57 C000.1331

(1 point(s))

Given the following conditions:

- The plant is at 100% power
- PRZR level transmitter LT-428 has failed to ZERO
- All actions of ER-INST.1, "Reactor Protection Bistable Defeat After Instrumentation Loop Failure", associated with removing LT-428 from service are complete.

Shortly after the bistable had been defeated the operator notes the following

- PRZR level transmitter LT-426 reads 100%
- PRZR level transmitter LT-427 reads 46% and is lowering.

What actions (if any) are required to be performed by the Operator?

- a. Re-enter ER-INST.1 Section 4.5 to respond to the failure of LT-426.
- b. Commence a plant shutdown to comply with Tech Spec 3.0.3.
- c. Carry out the immediate actions of E-0, Reactor Trip or Safety Injection
- d. No action required. The remaining level transmitter satisfies the minimum operability requirements.

Answer 57

- c. Carry out the immediate actions of E-0, Reactor Trip or Safety Injection

Distracter Analysis:

Distracter a- ER-INST.1 would be applicable for a pZR level failure however this failure will result in a plant trip on 2/3 pressurizer level bistables.

Distracter b- Tech Spec 3.0.3 is a reasonable spec to apply as less than the required pZR level channels is operable.

Distracter d- Failure to recognized plant impact would make this a reasonable answer.

Question 58 C000.1332

(1 point(s))

Which of the following conditions indicates that Core Exit Thermocouples Train A Display Panel is no longer scanning the Train A Thermocouples?

- a. CHAN A FAIL light is lit on Display Panel, Plant Process Computer Point CETA indicates FAIL.
- b. CHAN A FAIL light is lit on Display Panel, Plant Process Computer Point CETA indicates ALARM, and ALL Train A thermocouple points on the Incore Thermocouples SPDS Display Turn Red.
- c. CHAN A ALARM light is lit on Display Panel, Plant Process Computer Point CETA indicates ALARM, and ALL Train A thermocouple points on the Incore Thermocouples SPDS Display Turn RED.
- d. CHAN A ALARM light is lit on Display Panel, Plant Process Computer Point CETA indicates FAIL.

Answer 58

- a. CHAN A FAIL light is lit on Display Panel, Plant Process Computer Point CETA indicates FAIL

Distractor Analysis

- a. Correct.
- b. Incorrect. Computer point will not go into alarm and display will not turn red.
- c. Incorrect. Channel Display Alarm Light will not light and computer status will not indicate alarm status.
- d. Incorrect. Channel Display Alarm light will not be lit.

EXAM QUESTION HISTORY

Question # RO 59 SRO _____
TIER 2 Group 2
KA 034 A4.01 Importance 3.3

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | New |
| <input type="checkbox"/> | Modified (Attach original and Modified Questions) |
| <input type="checkbox"/> | Original Bank _____ # _____ |
| <input type="checkbox"/> | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 10/11 55.43 _____

Learning Objective RRF02C 7.00

List equipment and personnel requirements when moving irradiated fuel in either:

a. Containment

b. Aux Building

Cognitive Level Memory or Fundamental Knowledge _____
Comprehension or Analysis

Technical Reference: O-15.1

Level of Difficulty (from attachment 3): 4

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 3/1/06
Exam Developer

Validation [Signature] Date 5/2/06
Operations

Approved for Use [Signature] Date 5/19/06
Exam Developer

Question 59 C000.1373

(1 point(s))

Refueling Activities are in progress in the Containment Building. While performing Daily Checks it is noted that the sample pump for R-11, Containment Air Particulate Monitor, is not running.

Which of the following statements is applicable to this condition?

- a. R-11 is OPERABLE and refueling activities may continue. The sample pump is not normally running when purge is in service supplying sample flow.
- b. R-11 is INOPERABLE and refueling activities may continue as long as R-10A, Containment Iodine Monitor is operable for Containment Vent Isolation.
- c. R-11 is INOPERABLE and refueling activities must be stopped due to Containment Vent Isolation Instrumentation being inoperable.
- d. R-11 is OPERABLE and refueling activities may continue. The Containment Air Particulate Monitor sample pump is only required for the RCS leak detection function of the monitor.

Answer 59

- c. R-11 is INOPERABLE and refueling activities must be stopped due to Containment Vent Isolation Instrumentation being inoperable.

Distractor Analysis

- a. Incorrect. R-11 is not operable and refueling activities must be halted until R-11 is made operable.
- b. Incorrect. R-11 is inoperable and refueling cannot continue even if R-10A is operable. R-11 is required to be operable.
- c. Correct. With R-11 inoperable refueling activities must be stopped.
- d. Incorrect. R-11 inoperable makes the CVI instrumentation inoperable. The backup criticality monitoring is not lost when R-11 is inoperable.

EXAM QUESTION HISTORY

Question # RO 60 SRO _____
 TIER 2 Group 2
 KA 041 K5.06 Importance 2.5

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| _____ | Bank Originating Bank # _____ |

10CFR55 Content 55.41 5 55.43 _____

Learning Objective RIC05C 1.02

State the effects on control and protection systems from Steam Header Pressure and Turbine First Stage Pressure channel failures; include expected plant and equipment response

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: UFSAR Chap 15

Level of Difficulty (from attachment 3): 4

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 3/1/04
 Exam Developer

Validation [Signature] Date 5/3/06
 Operations

Approved for Use [Signature] Date 5/19/06
 Exam Developer

The plant is performing a startup from a midcycle outage.

Reactor Power is currently stable at 3% power.

Tavg is at 547°F being controlled by the Condenser Steam Dumps

Main Feedwater Pump A has been placed in service and AFW Pumps have been placed in their Safeguard alignment.

Preparations are being made to enter MODE 1 and synchronize to the grid.

Which of the following describes the impact on the fuel cladding if the operator inadvertently adjusts the Steam Dump Controller setpoint to 800 psig?

- a. The rapid power reduction caused by the negative reactivity added by the cooldown will reduce fuel clad temperature.
- b. The rapid power increase caused by the positive reactivity added by the cooldown will raise fuel cladding temperature.
- c. The power increase which results from the positive reactivity added by the heatup will raise fuel cladding temperature.
- d. The power reduction which results from the negative reactivity added by the heatup will reduce fuel cladding temperature.

Answer 60

- b. The rapid power increase caused by the positive reactivity added by the cooldown will raise fuel cladding temperature.

Distracter Analysis:

Distracter a- Setting controller to 800 psig reduces steam pressure by 205 psig from current setpoint of 1005 psig. This adds positive reactivity due to MTC from the cooldown that results.

Distracter c- This action results in a cooldown vice heatup

Distracter d- This action results in a power increase and a cooldown.

EXAM QUESTION HISTORY

Question # RO 61 SRO _____
 TIER 2 Group 2
 KA 055 K3.01 Importance 2.5

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| _____ | Bank Originating Bank # _____ |

10CFR55 Content 55.41 4 55.43 _____

Learning Objective R4101C 2.03

Given a set of plant conditions and a failure of one of the following major components in the Main Turbine and Turbine Auxiliary System, predict how the system will respond.

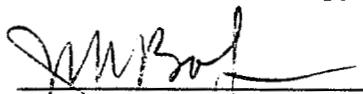
c. Air Ejector

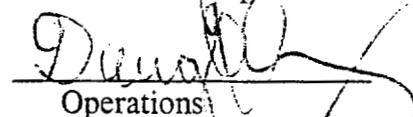
Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: UFSAR Chap 10 Dwg 33013-1921

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification  Date 3/2/06
 Exam Developer

Validation  Date 5/3/06
 Operations

Approved for Use  Date 5/19/06
 Exam Developer

Question 61 C000.1335

(1 point(s))

What would be the effect on Main Condenser vacuum if Valve 3422, Air Ejector Condenser Steam Control AOV, were to fail closed while the plant is operating at 100% power?

- a. Main Condenser vacuum would increase due to the increase in Gland Sealing Steam pressure caused by the isolation.
- b. Main Condenser vacuum would decrease and stabilize at the point where the condensing action of the steam flow over the condenser tubes can maintain vacuum.
- c. Main Condenser vacuum will be unaffected as the Priming Ejectors will automatically maintain vacuum when the primary steam source is isolated.
- d. Main Condenser vacuum would decrease to less than 20" resulting in an auto turbine trip.

Answer 61

- d. Main Condenser vacuum would decrease to less than 20" resulting in an auto turbine trip.

Distracter Analysis:

Distracter a- Gland Sealing pressure would increase, however at this power level the turbine glands are self sealing and the excess steam would be controlled by the Steam Seal supply system. The effect of the loss of air removal would also far exceed the effect of increased gland sealing.

Distracter b- At 100% power the condensing action alone is not adequate to maintain vacuum. The non-condensable gases in the condensate would come out of solution in the condenser and vacuum will rise with no method of removal available.

Distracter c- The Priming Ejectors can be used however they will not automatically be placed in service.

Question 62 C000.1336

(1 point(s))

A Liquid Release is in progress from the A Monitor Tank.
R-18, Liquid Waste Disposal Monitor, alarms HIGH

Which of the following combinations correctly reflects the status of the Release Valve RCV-18 and the Monitor Tank Pump?

| | <u>RCV-18</u> | <u>Monitor Tank Pump</u> |
|----|---------------|--------------------------|
| a. | Closed | Stopped |
| b. | Closed | Running |
| c. | Open | Stopped |
| d. | Open | Running |

Answer 62

| | | |
|----|--------|---------|
| a. | Closed | Stopped |
|----|--------|---------|

Distracter Analysis:

RCV 18 auto closes on High Alarm and Monitor Tank Pump receives a Trip signal.

EXAM QUESTION HISTORY

Question # RO 63 SRO _____
 TIER 2 Group 2
 KA 072 G2.1.33 Importance 3.4

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 11 55.43 _____

Learning Objective R3901C 5.02

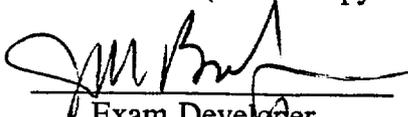
Recognize the components covered by Tech Specs

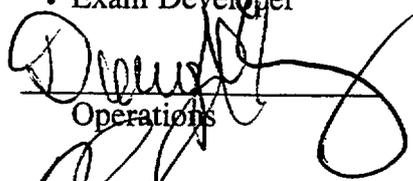
Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: PT-17.1

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification  Date 3/3/06
 Exam Developer

Validation  Date 5/2/06
 Operations

Approved for Use  Date 5/19/06
 Exam Developer

Question 63 C000.1337

(1 point(s))

The plant at 100% power

Operators are performing a Channel Check of Containment High Range Radiation Monitor Channel R29

The operator notes the following:

- R29 Green SAFE/RESET Light is NOT LIT, and
- R29 meter indicates less than 0 RAD/hr and does not respond when the Electronic Check Source (ECS) button is pressed.

The operator checks Containment High Range Radiation Monitor Channel R30

- R30 Green SAFE/RESET light is LIT and
- R30 meter indicates less than 0 RAD/hr and responds upscale when the Electronic Check Source (ECS) button is pressed.

Which of the following describes the action required (if any) for this condition?

- a. Declare R-30 INOPERABLE and comply with Tech Spec 3.3.3, Post Accident Monitoring (PAM) Instrumentation
- b. Declare R29 INOPERABLE and comply with Tech Spec 3.3.5, Containment Ventilation Isolation Instrumentation.
- c. Declare R-29 INOPERABLE and comply with Tech Spec 3.3.3, Post Accident Monitoring (PAM) Instrumentation
- d. No action is required, only one channel is required to be OPERABLE in this mode.

Answer 63

- c. Declare R-29 inoperable and comply with Tech Spec 3.3.3, Post Accident Monitoring (PAM) Instrumentation

Distracter Analysis:

Distracter a- Low Range Victoreen Models can be set up to have the Green SAFE/RESET light go out when indicating below minimum scale. This could allow candidate to conclude that R-30 is not indicating properly.

Distracer b- This answer would be correct if the candidate mistakenly believes the Containment Vent Isolation on High Radiation Function is provided by R-29 vice R-11.

Distracter d- Required minimum number of channels is 2. Tech Spec 3.3.3 must be entered.

EXAM QUESTION HISTORY

Question # RO 64 SRO _____
 TIER 2 Group 2
 KA 079 A2.01 Importance 2.9

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 4 55.43 _____

Learning Objective R4701C 5.01

Given a set of plant conditions and a failure of one of the following major components in the Instrument/Service Air system, predict how the system will respond.

d. Service Air Header

e. Instrument Air Header

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: AP-IA.1, UFSAR Chap 9

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 3/3/06
 Exam Developer

Validation [Signature] Date 5/3/06
 Operations

Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 64 C000.1338

(1 point(s))

The plant is operating with the Service and Instrument Air Systems cross-connected with the "C" Instrument Air Compressor in service supplying both Instrument and Service Air Loads in accordance with T-1.C, INSTRUMENT AIR/SERVICE AIR CROSSCONNECT.

Which of the following describes the system response if Valve 7000, SA/IA CROSSCONNECT LOW PRESSURE AUTOMATIC ISOLATION VALVE, fails closed?

- a. Service Air Pressure will drop. The Service Air Compressor will automatically start when Service Air pressure drops to 115 psig to restore service air pressure.
- b. Service Air Pressure will drop. The Service Air Compressor must be manually started by closing the supply breaker from the MCB Rear to restore service air pressure.
- c. Instrument Air Pressure will drop. The Instrument Air Compressor A or B must be manually started by closing the supply breaker from the MCB Rear to restore instrument air pressure.
- d. Instrument Air Pressure will drop. The Instrument Air Compressor A & B will automatically start when Instrument Air pressure drops to 105 psig to restore service air pressure.

Answer 64

- b. Service Air Pressure will drop. The Service Air Compressor must be manually started by closing the supply breaker from the MCB Rear to restore service air pressure.

Distracter Analysis:

- Distracter a- Service Air Pressure will drop however the Service Air compressor will not auto start. If it is running it will load at 115 psig.
- Distracter c- Instrument Air Pressure will not drop. Also the IA Compressors have an auto start feature at 105. Manual starting would not be required in the manner described.
- Distracter d- Instrument Air Pressure will not drop in the condition. The auto start feature described is correct.

EXAM QUESTION HISTORY

Question # RO 65 SRO _____
 TIER 2 Group 2
 KA 086 K6.04 Importance 2.6

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| _____ | Bank Originating Bank # _____ |

10CFR55 Content 55.41 4 55.43 _____

Learning Objective _____

Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

Technical Reference: SC 3.16.2.6, SC 3.16 2.3

Level of Difficulty (from attachment 3): 2

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 3/3/06
 Exam Developer

Validation [Signature] Date 5/2/06
 Operations

Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 65 C000.1339

(1 point(s))

Which of the following describes the impact on the Fire Detection System from a loss of AC power to Satellite Station A (SSA).

- a. Fire Detectors will go into Trouble Status and alarm function will be lost, Internal Battery will provide power to the panel.
- b. Fire Detectors will continue to provide alarm function, panel will auto swap to alternate AC power source.
- c. Fire Detectors will go into Trouble Status and alarm function will be lost, panel will auto swap to alternate AC power source.
- d. Fire Detectors will continue to provide alarm function, Back up Battery in Battery Room B will provide power to the panel.

Answer 65

- d. Fire Detectors will continue to provide alarm function, Back up Battery in Battery Room B will provide power to the panel.

Distractor Analysis

- a. Incorrect. Detectors will continue to function normally, backup battery is not internal on SSA. SSB has internal backup battery.
- b. Incorrect. SSA Backup power is from battery located in Battery Room B. Pyrotechnics Panels have AC backup; however, they do not automatically swap over.
- c. Incorrect. SSA Backup power is from battery located in Battery Room B. Pyrotechnics Panels have AC backup; however, they do not automatically swap over.
- d. Correct.

EXAM QUESTION HISTORY

Question # RO 66 SRO _____
 TIER 3 Group _____
 KA 2.1.3 Importance 3.0

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 10 55.43 _____

Learning Objective RAD23C 4.01

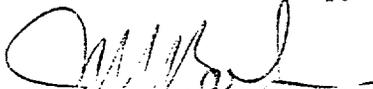
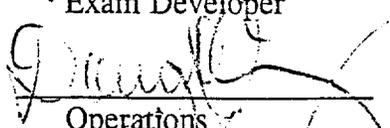
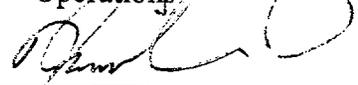
Describe the turnover process as outlined in Operations Shift Turnover, OPS-SHIFT-TURNOVER, including duties prior to assuming the shift, types of items to cover, and shift supervisor duties shortly after turnover.

Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

Technical Reference: OPS-SHIFT-TURNOVER

Level of Difficulty (from attachment 3): 2

References required on Exam (Attach copy to this attachment) None

| | | | |
|------------------|--|------|-------------------------|
| Verification |  _____ Exam Developer | Date | <u>3/4/06</u> _____ |
| Validation |  _____ Operations | Date | <u>5/30/06</u> _____ |
| Approved for Use |  _____ Exam Developer | Date | <u>5/19/06</u> _____ |

Question 66 C000.1340

(1 point(s))

OPS-SHIFT-TURNOVER, Operations Shift Turnover, requires the off going shift to document a review of the O-6.13, Daily Surveillance Log, prior to turnover to the oncoming shift.

In accordance with OPS-SHIFT-TURNOVER, this review is required to be documented by _____.

- a. signing the O-6.13 Complete block on Attachment 3, Shift Turnover Checklist.
- b. logging completion and review in the control room log.
- c. signing the offgoing shift's section of O-6.13.
- d. initialing for completion of the review on Attachment 1, Shift Relief Turnover Checklist Control Room.

Answer 66

- c. signing the offgoing shift's section of O-6.13.

Distracter Analysis

Answer- OPS-SHIFT-TURNOVER, Operations Shift Turnover, Step 5.1.1 states "The off-going Shift Manager (SM), Control Room Operator and Shift Technical Advisor (STA), shall review the O-6.13 for surveillance applicability and completeness. Documentation of this review shall be performed by signing the off-going's shift section of O-6.13."

Distracter a- reasonable distracter as Attachment 3 contains the documentation of the review of plant status.

Distracter b- reasonable distracter as logging into official record would document completion however the procedure specifies signature requirements.

Distracter d- Reasonable distracter as Attachment 1 is a checklist used to specify required review items.

Question 67 C045.0085

(1 point(s))

The "interface valve" in the main turbine support system is _____.

- a. an orifice which supplies autostop oil from EHC.
- b. a solenoid which couples generator trips to the turbine hydraulics.
- c. a valve normally held closed by autostop pressure that opens to dump EHC pressure to effect a turbine trip.
- d. a normally closed check valve which allows bearing oil to act as a backup autostop oil source.

Answer 67

- c. a valve normally held closed by autostop pressure that opens to dump EHC pressure to effect a turbine trip.

Distractor Analysis

a/b/d Incorrect. These distractors do not meet the definition of an "interface valve" as defined by Westinghouse.

EXAM QUESTION HISTORY

Question # RO 68 SRO _____
 TIER 3 Group _____
 KA 2.2.22 Importance 3.4

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| _____ | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank Ginna # <u>B300.0048</u> |

10CFR55 Content 55.41 10 55.43 _____

Learning Objective R1401C 7.01

Recognize the components covered by Tech Specs.

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: Tech Spec Section 3.4.13

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 3/5/06
 Exam Developer

Validation [Signature] Date 3/20/06
 Operations

Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 68 B300.0048

(1 point(s))

While the plant is operating at full power, the PRZR SAFETY VALVE OUTLET HI TEMP alarm is received. Leakage through one of the pressurizer safety valves is indicated. Pressurizer level and pressure are maintained within normal operating bands by the associated auto control systems. Calculated leakage is 3 gpm.

State the technical specification restrictions (if any) placed on plant operation based on this condition.

(Assume that the PRT can be periodically drained and maintained within its operating bands.)

- a. No Tech Spec. restrictions. The RCS Leakage LCO satisfied.
- b. The shift has 4 hrs to reduce RCS Leakage or 6 hrs to be in HSD and 36 hrs CSD
- c. The shift has 6 hrs to be in HSD and 36 hrs to CSD
- d. The shift has 15 min to correct or be in HSD in 6 hrs and < 322 degrees within 12 hours

Answer 68

- a. No Tech Spec restrictions. The RCS Leakage LCO satisfied.

Distractor Analysis

- a. Correct. This answer assumes that once the leakage has been classified as identified the new T.S. limit of 10 gpm applies. As long as total leakage is < 10 gpm there are no restrictions.
- b. Incorrect. This applies the Action statement for exceeding the Unidentified Leakage T.S.
- c. Incorrect. This applies the Action statement for 3.0.3.
- d. Incorrect. This Action statement does not apply for the situation.

EXAM QUESTION HISTORY

Question # RO 69 SRO _____
TIER 3 Group _____
KA 2.2.27 Importance 2.6

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| _____ | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank Ginna # <u>B034.0011</u> |

10CFR55 Content 55.41 10 55.43 _____

Learning Objective RRF02C 4.00

Given the procedure and any plant conditions, interpret and apply the precautions, cautions, notes, and steps.

Cognitive Level Memory or Fundamental Knowledge X
Comprehension or Analysis _____

Technical Reference: O-15.1, RF-65.2

Level of Difficulty (from attachment 3): 4

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 3/5/06
Exam Developer

Validation [Signature] Date 5/31/06
Operations

Approved for Use [Signature] Date 5/19/06
Exam Developer

Question 69 B034.0011

(1 point(s))

Which one of the following has authority to direct the manipulator crane operator to unlatch from a fuel assembly being installed in the core in accordance with O-15.1, Administrative Requirement Checklist For Entry To Mode 6 and Refueling Conditions?

- a. Refueling SRO
- b. Data taker
- c. Reactor Engineer
- d. Core physics monitor/ 1/M plotter

Answer 69

- d. Core physics monitor/ 1/M plotter

Distractor Analysis

a/b/c Incorrect. All the individuals identified are involved in fuel movement; however, they do not have the authority as defined by the procedure.

EXAM QUESTION HISTORY

Question # RO 70 SRO _____
 TIER 3 Group _____
 KA 2.2.34 Importance 2.8

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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|----------|--|
| _____ | New |
| <u>X</u> | Modified (Attach original and Modified Questions) Original Bank <u>INPO</u> # <u>Byron 1 12/10/2003</u> |
| _____ | Bank Originating Bank # _____ |

10CFR55 Content 55.41 5 55.43 _____

Learning Objective RRT08C 1.07

State the reason for any precaution, caution or note listed in O-1.2.2.

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: O-1.2.1, O-1.2.2

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 3/6/06
 Exam Developer

Validation [Signature] Date 4/30/06
 Operations

Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 70 C000.1341

(1 point(s))

A Critical Rod Position Calculation has been completed to determine an Estimated Critical Position (ECP) for a Beginning of Life (BOL), Negative Moderator Temperature Coefficient (MTC) reactor startup that is to be performed 5 hours after a trip from a 60 day full power run.

Which of the following events or conditions will result in the ACTUAL critical control rod height being LOWER than the PREDICTED control rod height in the ECP? (Consider each item separately)

- a. Main Steam Header pressure is decreased by 100 psi just prior to criticality.
- b. The startup is delayed 2 hours.
- c. The EOL Integrated Rod Worth Table was used instead of the BOL Table for the ECP calculation.
- d. A new boron sample shows a current boron concentration 20 ppm higher than that used in the ECP calculation.

Answer 70

- a. Main Steam Header pressure is decreased by 100 psi just prior to criticality.

Distracter Analysis

Answer- Cooldown caused by drop in steam pressure adds positive reactivity and results in a lower rod position than estimated at criticality.

Distracter b- Delay from 6 hours to 8 hours from a 100% power history results in additional Xenon in the core and adds negative reactivity which results in a higher rod position than estimated at criticality.

Distracter c- Using EOL table vice BOL table results in a higher integral rod worth value being used and results in a higher rod height than estimated at criticality.

Distracter d- Additional Boron adds negative reactivity and results in a higher rod height than estimated at criticality.

EXAM QUESTION HISTORY

Question # RO 71 SRO _____
 TIER 3 Group _____
 KA 2.3.9 Importance 2.5

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 13 55.43 _____

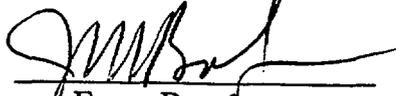
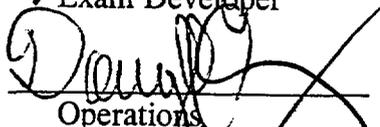
Learning Objective _____

Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

Technical Reference: CH-RETS-MINIPURGE, S-23.2.2

Level of Difficulty (from attachment 3): 4

References required on Exam (Attach copy to this attachment) None

| | | | |
|------------------|---|------|----------------|
| Verification |  | Date | <u>3/8/06</u> |
| | Exam Developer | | |
| Validation |  | Date | <u>5/30/06</u> |
| | Operations | | |
| Approved for Use |  | Date | <u>5/19/06</u> |
| | Exam Developer | | |

Question 71 C000.1342

(1 point(s))

Which one of the following actions requires Radiochemist or Health Physicist authorization?

- a. Obtaining a release sample from the containment atmosphere
- b. Initiating Mini-Purge in preparation for a plant Shutdown.
- c. Starting a Containment Post-Accident Charcoal Fan
- d. Changing Containment Recirc Fan configuration

Answer 71

- b. Initiating Mini-Purge in preparation for a plant Shutdown.

Distracter Analysis

Answer- Initiating a Containment pressure reduction requires a CH-RETS-MINIPURGE, Attachment 1, Containment Mini-Purge Release Form. The release is authorized by the Radiochemist or Health Physicist using this form.

Distracter a- Obtaining a sample from containment does not require specific authorization from the Radiochemist or Health Physicist (CH-RETS-SAMP-CV).

Distracter c- Starting a Containment Auxiliary Charcoal fan is done IAW S-23.5, Post-Accident Charcoal Filter Operation, does not require authorization from the Radiochemist or Health Physicist.

Distracter d- Containment Recirc Fan configuration changes are done IAW S-23-1 thru 4. These procedures do not require authorization of Radiochemist or Health Physicist.

EXAM QUESTION HISTORY

Question # RO 72 SRO _____
 TIER 3 Group _____
 KA 2.3.11 Importance 2.7

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
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| _____ | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank Ginna # <u>C000.1073</u> |

10CFR55 Content 55.41 13 55.43 _____

Learning Objective R3801C 3.01

List the names of the systems which interface with the Waste Disposal System, and describe the purpose for each interface. To include:

e. Ventilation

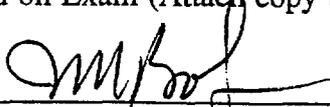
g. Radiation Monitoring

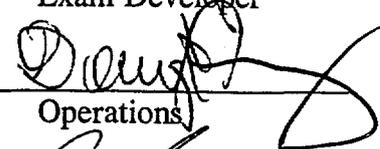
Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

Technical Reference: S-4.2.5

Level of Difficulty (from attachment 3): 2

References required on Exam (Attach copy to this attachment) None

Verification  Date 3/10/06
 Exam Developer

Validation  Date 5/31/06
 Operations

Approved for Use  Date 5/19/06
 Exam Developer

Question 72 C000.1073

(1 point(s))

Per S-4.2.5, Release of Gas Decay Tank what precautions (if any) are taken to release a Gas Decay Tank if the activity in the tank is identified as being elevated?

- a. Increase the setpoint of R-14 prior to releasing and initially throttle RCV 14 open to 50%
- b. Initiate release slowly, make small adjustments to RCV 14 allowing time for R-14 to stabilize.
- c. Initiate release by first opening RCV-14 to approximately 50%, R-14 reading should monitor the release in less than 1 minute.
- d. Open RCV-14 fully to release as much of the tank as possible, record R-14 reading every 5 minutes for the RP's to calculate release dose rates.

Answer 72

- b. Initiate release slowly, make small adjustments to RCV 14 allowing time for R-14 to stabilize.

Distractor Analysis

- a. Incorrect. R-14 setpoint is based on not exceeding release limits, raising the setpoint will cause more activity to be released. RCV-14 is throttled to maintain a constant release rate not a constant position.
- b. Correct. Procedure S-4.2.5, step 4.4 describes allowing time for R-14 to stabilize.
- c. Incorrect. RCV-14 position is base on maintaining a constant release rate and bill be varied during a release.
- d. Incorrect. RCV-14 position is based on maintaining a constant release rate. The valve may be fully opened; however, this occurs near the end of the release when the WDT pressure is low.

Question 73 C320.0910

(1 point(s))

Given the following:

- Crew is responding to a S/G tube leak per procedure AP-SG.1, S/G TUBE LEAK
- The leak appears to be getting larger

Which ONE of the following will require transition from AP-SG.1 to E-0, REACTOR TRIP OR SI?

- a. Unable to attain Hot Shutdown in 6 hours
- b. SG Tube Leakage has been verified to be 1 gpm
- c. Normal Letdown is lost, and Excess L/D is unavailable
- d. Leakage exceeds charging capacity

Answer 73

- d. Leakage exceeds charging capacity

Distractor Analysis

- a. Incorrect. The requirement to achieve Hot Shutdown within 6 hours is the T.S. Action for exceeding the T.S. limit on SGTL. Violation of this time requirement does not require that a reactor trip be initiated.
- b. Incorrect. If SGTL is greater than allowed by T.S. then an orderly shutdown will be performed. T.S. Actions statements for allowable leakage do not require a reactor trip be performed.
- c. Incorrect. Whether letdown is available or not is not a determining factor in deciding if a reactor trip is required. The ability to maintain PRZR level in the program band is.
- d. Correct. This is a definition of a SGTR which causes the transition to E-0 from AP-SG.1.

EXAM QUESTION HISTORY

Question # RO 74 SRO _____
 TIER 3 Group
 KA 2.4.22 Importance 3.0

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| _____ | Bank Originating Bank # _____ |

10CFR55 Content 55.41 10 55.43 _____

Learning Objective REP50C 1.04

Describe the purpose of the Critical Safety Function status trees, and their relation to the Functional Restoration Procedures.

Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

Technical Reference: WOG ERG Executive Summary

Level of Difficulty (from attachment 3): 2

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 3/11/06
 Exam Developer

Validation [Signature] Date 5/30/06
 Operations

Approved for Use [Signature] Date 5/19/06
 Exam Developer

Question 74 C000.1343

(1 point(s))

Critical Safety Function Status Trees are prioritized in a specific order. This order was established so they protect the barriers against fission product release to the public from the _____.

- a. least likely to fail (containment) to the most likely to fail (fuel matrix/cladding).
- b. most likely to fail (Reactor Coolant System) to the least likely to fail (fuel matrix/cladding).
- c. farthest from the source (containment) to the closest barrier to the source (fuel matrix/cladding).
- d. closest barrier to the source (fuel matrix/cladding) to the farthest from the source (containment).

Answer 74

- d. closest barrier to the source (fuel matrix/cladding) to the farthest from the source (containment).

Distracter Analysis

Answer- WOG ERG Executive Summary, Description of ERG Development Program, states "Prioritization of the Critical Safety Functions is based directly on the barrier concept from which they were developed. Since the first barrier to fission product release is the fuel matrix/cladding, The Critical Safety Functions related to this barrier are given the highest priority. (Pages 20 & 21 of WOG ERG Executive Summary, Description of ERG Development Program)

Distracter a- reasonable distracter as it is a variation on the correct answer with prioritization based on likelihood of failure rather than the protection of the barriers in order from the fission product source.

Distracter b- reasonable distracter as it is a variation on the correct answer with prioritization based on likelihood of failure rather than the protection of the barriers in order from the fission product source.

Distracter d- reasonable in that applies the barrier concept however the order is incorrect.

EXAM QUESTION HISTORY

Question # RO 75 SRO _____
TIER 3 Group
KA 2.4.24 Importance 3.3

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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|-------------------------------------|---|
| <input checked="" type="checkbox"/> | New |
| <input type="checkbox"/> | Modified (Attach original and Modified Questions) |
| <input type="checkbox"/> | Original Bank _____ # _____ |
| <input type="checkbox"/> | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 10 55.43 _____

Learning Objective RAP33C 2.01

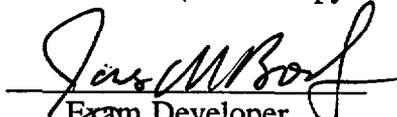
Given a set of plant and equipment conditions evaluate the conditions to determine the applicable procedure, and from the procedure determine the appropriate EXPECTED ACTIONS or RESPONSE NOT OBTAINED instructions to implement (AP-SW.2)

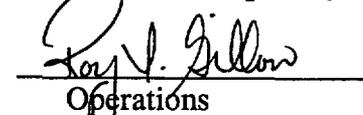
Cognitive Level Memory or Fundamental Knowledge _____
Comprehension or Analysis

Technical Reference: AP-SW.2

Level of Difficulty (from attachment 3): 4

References required on Exam (Attach copy to this attachment) none

Verification  Date 7/6/04
Exam Developer

Validation  Date 07/06/2006
Operations

Approved for Use  Date 7/6/06
Exam Developer

Question 75 C000.1344

(1 point(s))

The following conditions exist:

Offsite Power has been lost

Both Diesel Generators have started and re-energized the appropriate essential busses.

Service Water Pumps A ,B, and C are NOT running

Service Water Pump D is running

Attempts to start Service Water pumps A, B, and C have been unsuccessful.

Which of the following describes the action(s) required per AP-SW-.2, Loss of Service Water?

- a. Trip the reactor, perform the immediate actions of E-0, Reactor Trip or Safety Injection, then trip all RCP's.
- b. Pull Stop DG B and immediately depress the voltage shutdown pushbutton.
- c. Pull Stop DG A and immediately depress the voltage shutdown pushbutton.
- d. Pull Stop both DG's and immediately depress the voltage shutdown pushbuttons.

Answer 75

- c. Pull Stop DG A and immediately depress the voltage shutdown pushbutton.

Distracter Analysis

Answer- AP-SW.2 step 2.a RNO directs the operator to pull stop the affected DG and immediately depress the voltage shutdown pushbutton if any DG is running without adequate SW cooling. With both loop A SW pumps not running and only one SW pump in B loop the A DG is the affected DG.

Distracter a- Reasonable distracter as this is the action directed by AP-SW.2 Step 2 RNO if no SW Pumps are running.

Distracter b- Reasonable distracter as this is the correct action for the B loop SW Pumps vice the A loop pumps.

Distracter d- Reasonable distracter as this action would be correct if both SW loops were affected.

EXAM QUESTION HISTORY

Question # RO _____ SRO 1
TIER 1 Group 1
KA 000007 G 2.1.33 Importance 4.0

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 _____ 55.43 2

Learning Objective RRT08C 3.01

Recognize the components covered by Tech Specs.

Cognitive Level Memory or Fundamental Knowledge _____
Comprehension or Analysis X

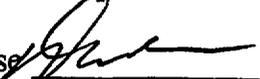
Technical Reference: Tech Spec 3.1.1

Level of Difficulty (from attachment 3): 2

References required on Exam (Attach copy to this attachment) None

Verification  Date 4/28/06
Exam Developer

Validation _____ Date _____
Operations

Approved for Use  Date 5/23/06
Exam Developer

Question 1 C000.1345 (1 point(s))

The plant has experienced a Reactor Trip from 100% power.

The following post trip conditions are noted :

Reactor Trip Breakers - OPEN

Neutron Flux - DECREASING on both Intermediate Range NI's

MRPI Indications - Rod C-9 - 230 steps

Rod J-4 - 80 steps

All other Rods On Bottom

Turbine Stop Valves - CLOSED

AC Emergency Busses - Busses 14 & 18 = 475 volts

Busses 16 & 17 = 480 volts

RCS Pressure - 2200 psig and stable

S/G pressures - 1000 psig and stable

Containment pressure is 0.1 psig and stable

RCS Tavg = 545°F and trending up

S/G levels - A - 7% and trending up

B - 5% and trending up

Based on the conditions above which of the following Technical Specifications is applicable?

- a. Technical Specification 3.1.1, Shutdown Margin
- b. Technical Specification 3.1.2, Core Reactivity
- c. Technical Specification 3.8.9, Distribution Systems
- d. Technical Specification 3.6.4, Containment Pressure

Answer 1

- a. Technical Specification 3.1.1, Shutdown Margin

Distracter Analysis

Answer- More than one rod not fully inserted requires entry into Tech Spec 3.1.1 for Shutdown Margin to ensure 1% margin is maintained. Adequate shutdown margin definition assumes only one rod fails to insert.

Distracter b- Tech Spec is only applicable in Mode 1

Distracter c- AC Emergency Busses voltage levels are adequate to support the AC Distribution System. No indication is given to declare the distribution system inoperable per Tech Spec 3.8.9.

Distracter d- Containment Pressure is >-2 psig and < 1 psig therefore entry into Tech Spec 3.6.4 is not required.

EXAM QUESTION HISTORY

Question # RO _____ SRO 2
 TIER 1 Group 1
 KA 000022 AA2.01 Importance 3.8

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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| _____ | New |
| <u>X</u> | Modified (Attach original and Modified Questions) |
| | Original Bank <u>Ginna</u> # <u>B004.0030</u> |
| _____ | Bank Originating Bank # _____ |

10CFR55 Content 55.41 _____ 55.43 5

Learning Objective RAP05C 1.02

Recognize the symptoms of AP-CVCS.1, CVCS Leak.

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

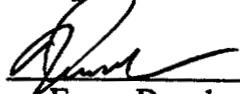
Technical Reference: AP-CVCS.1

Level of Difficulty (from attachment 3): 4

References required on Exam (Attach copy to this attachment) None

Verification  Date 4/23/06
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use  Date 5/23/06
 Exam Developer

Question 2 C000.1346 (1 point(s))

During normal 100% power operations, the following conditions occur:

- (B-9) RCP 1A Labyrinth Seal Low Diff Press 15" H₂O, alarms
- (B-10) RCP 1B Labyrinth Seal Low Diff Press 15" H₂O alarms
- (A-4) Regenerative Letdown Outlet Hi Temp 395°F, alarms
- Letdown line flow erratic
- Low pressure letdown line pressure erratic
- "A" RCP seal injection = 0 gpm
- "B" RCP seal injection = 0 gpm
- Charging line flow = 0 gpm
- Charging Pump Discharge Pressure = 1900 psig
- R-4, R13 and R14 are trending up
- Auxiliary Building Sump Level High Alarms frequency has increased.

Based upon these symptoms, which of the following describes the initiating condition and the procedure that provides direction to address the condition?
(HCV-142, Charging Flow to Regenerative Heat Exchanger)

- a. All Charging Pumps tripped
AP-CVCS.3, Loss of All Charging Flow
- b. Charging line leak outside containment upstream of HCV-142
AP-CVCS.1, CVCS Leak
- c. Charging line leak inside containment downstream of HCV-142
AP-CVCS.3, Loss of All Charging Flow
- d. Charging line leak outside containment downstream of HCV-142
AP-CVCS.1, CVCS Leak

Answer 2

- b. Charging line leak outside containment upstream of HCV-142
AP-CVCS.1, CVCS Leak

Distracter Analysis

Answer- AP-CVCS.3 Step 2 provides guidance for checking for Charging Pump Leaks. Discharge pressure < RCS pressure with no flow and indications of increased leakage into the Aux Building (sump levels and rad monitors) are indication of a Charging Line Leak in the Aux building. The leak is upstream of HCV-142

because a leak downstream of HCV-142 would be downstream of the flow indicator and result in the leak flow being indicated on the Flow indicator. Conditions given satisfy entry condition into CVCS.1 however if CVCS.3 were entered it would direct entry into CVCS.1 at step 2.

- Distracter a- At least 1 charging pump must be running as discharge pressure is 1900 psig.
- Distracter c- No indication of leakage in containment are given and leak has to be upstream of HCV-142 as discussed above.
- Distracter d- See reasoning in Answer analysis above.

EXAM QUESTION HISTORY

Question # RO _____ SRO 3
 TIER 1 Group 1
 KA 000027 AA2.06 Importance 3.9

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| _____ | Bank Originating Bank # _____ |

10CFR55 Content 55.41 _____ 55.43 5

Learning Objective

RAP11C 1.02

Recognize the symptoms of AP-PRZR.1, Abnormal Pressurizer Pressure.

RAP11C 2.01

Given a set of plant and equipment conditions evaluate the conditions to determine the applicable procedure, and from the procedure determine the appropriate EXPECTED ACTIONS or RESPONSE NOT OBTAINED instructions to implement. (AP-PRZR.1)

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

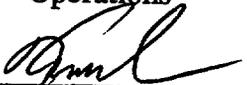
Technical Reference: AP-PRZR.1

Level of Difficulty (from attachment 3): 2

References required on Exam (Attach copy to this attachment) None

Verification  Date 4/28/06
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use  Date 5/23/06
 Exam Developer

Question 3 C000.1347 (1 point(s))

The plant is operating at 100% power.
All systems are in a normal configuration for power operations.

The Control Room operators notice the following conditions:

All 4 pressurizer pressure instruments indicate 2025 psig and trending down
Reactor Power is 100% and stable
Pressurizer heaters are all energized
Spray Valve AOV-431A green light is LIT and red light OUT
Spray Valve AOV-431B green light LIT red light LIT
The Spray Valve Controllers have been placed in manual and demands set to zero.
Spray Valve position does not change in response to the controllers.

Which of the following describes the correct procedure to use and the actions required by that procedure?

- a. AP-PRZR.1, ABNORMAL PRESSURIZER PRESSURE
Trip the reactor, perform immediate actions of E-0, Reactor Trip or Safety Injection, then trip RCP A.
- b. O-5.1, LOAD REDUCTIONS
Reduce power to less than 49% and then trip RCP A.
- c. O-5.1, LOAD REDUCTIONS
Reduce power to less than 49% and then trip RCP B.
- d. AP-PRZR.1, ABNORMAL PRESSURIZER PRESSURE
Trip the reactor, perform immediate actions of E-0, Reactor Trip or Safety Injection, then trip RCP B.

Answer 3

- d. AP-PRZR.1, ABNORMAL PRESSURIZER PRESSURE
Trip the reactor, perform immediate actions of E-0, Reactor Trip or Safety Injection, then trip RCP B.

Distracter Analysis

Answer- Indications provided for spray valve position are consistent with 431A being closed and 431B being indeterminate as no indication is present. Operator response per AP-PRZR.1 after verifying that no pressure channel failure or power transient is causing the pressure reduction is to attempt to close the spray valve by

placing the controllers in manual and reducing demand to zero. (Step 5 RNO)
When valve does not repond direction is to Trip Rx, carry out Immediate actions
of E-0 the trip the affected RCP. Spray Valve 431B is the affected valve therefore
RCP B is tripped.

- Distracter a- Reasonable distracter as initial resonse is correct, however if conclusion of
affected valve is incorrect the candidate could pick RCP A to trip instead of RCP
B.
- Distracter b- Reasonable distracter in that it reduces power to less than the P-8, Single Loop,
setpoint using O-5.1 then trips the affected RCP.
- Distracter c- Reasonable distracter in that it reduces power to less than the P-8, Single Loop,
setpoint using O-5.1 then trips the unaffected RCP.

EXAM QUESTION HISTORY

Question # RO _____ SRO 4
 TIER 1 Group 1
 KA 000038 G2.4.6 Importance 4.0

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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| <u>X</u> | New |
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| _____ | Original Bank _____ # _____ |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 _____ 55.43 5

Learning Objective REP03C 2.01- Given a set of plant and equipment conditions evaluate the conditions to determine the applicable procedure, and from the procedure determine the appropriate EXPECTED ACTIONS or RESPONSE NOT OBTAINED instructions to implement. (E-3)

REC31C 2.01- Given a set of plant and equipment conditions evaluate the conditions to determine the applicable procedure, and from the procedure determine the appropriate EXPECTED ACTIONS or RESPONSE NOT OBTAINED instructions to implement. (ECA-3.1)

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: E-3 & ECA-3.1

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification _____ Date _____
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use _____ Date _____
 Exam Developer

Question 4 C000.1376 (1 point(s))

The Reactor Tripped from 100% power

Post -Trip the following conditions exist:

- RCS Pressure is 1350 psig and lowering
- Tavg is 510°F and stable
- Containment Pressure is 0.1 psig and stable
- "A" SG level is 60% NR and increasing at 3%/minute.
- "B" SG level is 55% NR and increasing at 2%/minute.
- Auxiliary Feedwater is isolated to both SGs.
- Both SGs are at 940 psig.
- Both MSIVs are closed.
- The following Radiation Monitors are in alarm:
 - R15 & 15A, Air Ejector Radiation Monitors
 - R19, Blowdown Radiation Monitor
 - R31 & 32, SG A & B Steamline Radiation Monitors

Which of the following describes the procedure flowpath from E-0, Reactor Trip or Safety Injection, to respond to these conditions?

- a. E-3, Steam Generator Tube Rupture to ES-3.2, Post SGTR Cooldown Using Blowdown
- b. E-3, Steam Generator Tube Rupture to ECA-3.1, SGTR With Loss of Reactor Coolant - Subcooled Recovery Desired
- c. E-2, Faulted Steam Generator Isolation to ECA-2.1, Uncontrolled Depressurization of Both Steam Generators
- d. E-2, Faulted Steam Generator Isolation to E-3, Steam Generator Tube Rupture

Answer 4

ANSWER:

- b. E-3, Steam Generator Tube Rupture to ECA-3.1, SGTR With Loss of Reactor Coolant - Subcooled Recovery Desired.

DISTRACTOR ANALYSIS

- a. INCORRECT. E-0 Step 25 provides routing to E-3 based upon Secondary Radiation Levels however the routing from E-3 would be to ECA-3.1 based upon both SG Levels rising

uncontrollably at step 10.b of E-3 or at Step 9.b if the determination is made that no intact SG is available for steaming.

- b. CORRECT. See discussion in Distractor a analysis
- c. INCORRECT. Failure to recognize the conditions given as a SGTR could result in determination that reduced RCS Temp and pressure are a result of the lower than normal SG Pressures and lead to diagnosis of these conditions as Faulted SG's and route through E2 to ECA-2.1 as both SGs are at reduced pressure. The SG pressure reduction in this case is due to the SI Flow cooling off the RCS and therefore reducing SG pressure.
- d. INCORRECT. Failure to recognize the conditions given as a SGTR could result in determination that reduced RCS Temp and pressure are a result of the lower than normal SG Pressures and lead to diagnosis of these conditions as Faulted SG's and route through E2. The Secondary Rad levels are checked in E-2 and would result in eventual routing to E-3.

KA- 038 G2.4.7

EXAM QUESTION HISTORY

Question # RO _____ SRO 5
 TIER 1 Group 1
 KA 000054 AA2.05 Importance 3.7
 Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| _____ | Bank Originating Bank # _____ |

10CFR55 Content 55.41 _____ 55.43 5

Learning Objective RFRH1C 1.02

Given the notes, cautions, and/or major action categories in FR-H.1, Response to Loss of Secondary Heat Sink, explain the basis for same..

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: LER 2005-001-00, AP-FW.1

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification _____ Date _____
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use _____ Date _____
 Exam Developer

Question 5 C000.1377 (1 point(s))

The Plant is operating at 35% Power.
All systems are in a normal configuration.

The following event occurs:

A power supply failure in the Advanced Digital Feedwater Control System occurs which deenergizes the system.

Which of the following describes the impact (if any) this failure will have on the Main Feedwater System AND the procedure entered as a result of this impact?

- a. The Feedwater Regulating Valves will fail as is,
The running Main Feedwater Pump will trip on High Discharge Pressure.
AP-FW.1, Abnormal Main Feedwater Flow, is entered
- b. The Feedwater Regulating Valves will fail closed,
The running Main Feedwater Pump will continue to run,
AP-FW.1, Abnormal Main Feedwater Flow, is entered
- c. The Feedwater Regulating Valves will transfer to manual,
The running Main Feedwater Pump will trip on High Discharge Pressure,
AR-G-20, ADFCS System Transfer to Manual Control, is entered
- d. The Feedwater Regulating Valves will transfer to manual,
The running Main Feedwater Pump will continue to run,
AR-G-20, ADFCS System Transfer to Manual Control, is entered

Answer 5

ANSWER:

- b. The Feedwater Regulating Valves will fail closed,
The running Main Feedwater Pump will continue to run,
AP-FW.1, Abnormal Main Feedwater Flow, is entered

Loss of power to the ADFCS cabinet will send a close valve signal to the Feed Regulation valves. The output signal from the system to the I/P converter for the valve positioner is normally a 4-20 ma signal. When power to the cabinet is lost the signal fails to 0 which will close the FRV's. This results in a loss of Main Feed to the SG's. The MFP;'s are not affected by the ADFCS system directly. The recirc valves for the MFP's will protect the MFP's. AP-FW.1 entry conditions are met.

DISTRACTER ANALYSIS:

- a. **INCORRECT.** The FRV's go closed and the MFP's will continue to run with the recirc valves open.
- c. **INCORRECT.** The FRV's do not transfer to manual. AR-G-20, does not provide guidance for this condition.
- d. **INCORRECT.** See distracers a & c.

EXAM QUESTION HISTORY

Question # RO _____ SRO 6
 TIER 1 Group 1
 KA 000057 G2.4.6 Importance 4.0

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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|----------|---|
| | New |
| <u>X</u> | Modified (Attach original and Modified Questions) |
| | Original Bank <u>Ginna</u> # <u>C063.0044</u> |
| | Bank Originating Bank # _____ |

10CFR55 Content 55.41 _____ 55.43 5

Learning Objective RER09C 2.00

Recognize the entry conditions for ER-INST.3

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: ER-INST.3, P-10

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification  Date 4/28/06
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use  Date 5/22/06
 Exam Developer

Question 6 C000.1349 (1 point(s))

Given the following plant conditions:

- Plant initially at full power, steady-state operation
- Annunciator E-6, LOSS "A" INSTRUMENT BUS, is LIT, along with numerous alarms

Which ONE of the following statements is correct regarding this condition?

- a. A turbine runback will occur, AP-TURB.2, TURBINE LOAD REJECTION, is entered to provide direction.
- b. A turbine runback will occur, ER-INST.3, INSTRUMENT BUS POWER RESTORATION, is entered to provide direction.
- c. A turbine runback will not occur, ER-INST.3, INSTRUMENT BUS POWER RESTORATION, is entered to provide direction.
- d. A reactor trip will occur, E-0, REACTOR TRIP OR SAFETY INJECTION, is entered to provide direction.

Answer 6

- c. A turbine runback will not occur, ER-INST.3, INSTRUMENT BUS POWER RESTORATION, is entered to provide direction.

Distracter Analysis

- a. Incorrect- Reasonable distracter as previous configuration of the runback circuit required only one channel signal (OPAT or OTAT) to cause a Turbine runback. This failure will result in one channel signal to fail. AP-TURB.2 is the correct procedure for a turbine runback.
- b. Incorrect- Reasonable distracter as stated above. Procedure referenced is correct for the Instrument bus failure but not for the assumed runback.
- c. Correct- Turbine runback signal requires 2 channels to initiate the runback. ER-INST.3 provides direction. Annunciator Response (AR-E-6) directs the operator to ER-INST.3.
- d. Incorrect- Reactor Trip requires 2 trip signals. This failure would only result in one.

EXAM QUESTION HISTORY

Question # RO _____ SRO 7
 TIER 1 Group 2
 KA 000024 AA2.05 Importance 3.9

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 _____ 55.43 2/5

Learning Objective

R2901C 4.01

Recognize the components covered by Tech Specs.

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

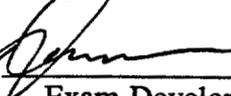
Technical Reference: Tech Spec 3.1.6

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) Figure COLR-3

Verification  _____ Date 4/28/06
 Exam Developer

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 Operations

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 Exam Developer

Question 7 C000.1350

(1 point(s))

Initial conditions:

Reactor Power 50%

MFP A is held for corrective maintenance

All other controls and systems are in a normal configuration.

The following events occur:

The plant experiences a load rejection due to a significant grid disturbance.

The plant responds to reduce power to 10%

Generator Load is stabilized at 20 MWe

Control Bank B is at 195 steps

Control Bank C is at 70 steps

Which of the following describes the applicable Technical Specifications applicable for this control rod configuration and the action required to correct the condition?

- a. Technical Specification 3.1.6, Control Bank Insertion Limits
Initiate Boration to restore adequate Shutdown Margin and Control Banks B & C are above the rod insertion limit.
- b. Technical Specification 3.1.4, Rod Group Alignment Limits
Realign Rod Banks C and D and Reset the bank overlap unit per ER-RCC.2, Restoring a Misaligned RCC
- c. No Technical Specifications are applicable to this condition.
Initiate Boration as directed by Alarm Responses AR-C-16 & C-24 to clear the alarm condition.
- d. Technical Specification 3.1.7, Rod Position Indication
No further action is required as thermal power is less than 50% required for inoperable bank indication.

Answer 7

- a. Technical Specification 3.1.6, Control Bank Insertion Limits
Initiate Boration to restore adequate Shutdown Margin and Control Banks B & C are above the rod insertion limit.

Distracter Analysis

- Answer- AR-C-16/24 direct boration and refer to Tech Spec 3.1.6. which requires boration to restore SDM which is assured by operating above the RIL Curve. The Rod Positions given are below the limit curve on Figure 3 of the COLR and therefore require boration to restore above the RIL and assure adequate SDM.
- Distracter b- TS 3.1.7 addresses individual rod misalignment from the group position not for a group being inserted too far. Actions given are consistent with correcting the condition. The overlap between bank C and D is incorrect (95 step vs. 100 steps) but is still within the allowable 100 +/- 5 steps.
- Distracter c- Failure to recognize the rods are below the limit curve could result in selection of this distracter. The alarm response procedures direct boration as stated.
- Distracter d- Misinterpretation of rod position indication given could result in conclusion that Position Indication is applicable. Action for TS 3.1.7 directs power reduction to < 50% power.

EXAM QUESTION HISTORY

Question # _____ RO _____ SRO 8
 TIER 1 Group 2
 KA 000059 G2.1.33 Importance 4.0

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| _____ | Bank Originating Bank # _____ |

10CFR55 Content 55.41 _____ 55.43 2

Learning Objective

R3901C 6.02

Given a set of plant conditions and a copy of the ODCM and ODCM referenced material be able to apply the ODCM. To include: controls, applicability, applying action items, surveillances and the use of basis to aid in application.

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: ODCM Table 3.1-1

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 4/28/06
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use [Signature] Date 5/23/06
 Exam Developer

Question 8 C000.1351 (1 point(s))

During a release of the "A" monitor tank, the HCO notices the display for Waste System Process Monitor (R-18) is reading EEEE.

R-18 was indicating 2.73 E^3 cpm shortly after the release was started.

Which of the following statements is correct concerning this condition?

- a. Declare the monitor INOPERABLE and immediately collect two independent samples and perform independent verification of the release rate, activity calculations and valve lineups to comply with CH-RETS-LIQ-REL, Liquid Waste Release.
- b. Declare the monitor INOPERABLE and immediately terminate the release to comply with the requirements of the Offsite Dose Calculation Manual Section 3.1, Liquid Effluent Monitors.
- c. No action is required. The monitor is responding normally to the reduced background activity due to the higher sample flow through the monitor during monitor tank releases.
- d. Declare the monitor INOPERABLE and verify the operability of the High Conductivity Waste Process Monitor (R-22) to comply with the requirements of the Offsite Dose Calculation Manual Section 3.1, Liquid Effluent Monitors.

Answer 8

- b. Declare the monitor inoperable and immediately terminate the release to comply with the requirements of the Offsite Dose Calculation Manual Section 3.1, Liquid Effluent Monitors.

Explanation- The indication provided is indicative of a detector failure. The monitor will not respond to radiation present in the sample stream with a failed detector. The monitor will not provide its protective action to alarm and terminate the release and is therefore inoperable. ODCM Section 3.1 allows for releases with R-18 inoperable but requires independent samples be drawn and analyzed and performance independent verification of the release rate, activity calculations and valve lineups PRIOR TO commencing the release. Since these conditions have not been met the release must be terminated until the tank is re-sampled and these requirements are met.

Distracter Analysis

Distracter a. This answer is correct for initiating a release with an inoperable monitor. These actions are required PRIOR TO commencing the release. Any release in progress

when the monitor is declared inoperable must be terminated until the requirements can be met. CH-RETS-LIQ-REL contains a precaution related to these ODCM requirements.

- Distracter c. Reasonable distracter in that if the tank activity is very low it may cause the reading to drop as it essentially flushes the background from the detector. However the RE was reading normal after the release was started and sample flow rate does not change during the release.
- Distracter d. Reasonable distracter as R-22 is a release monitor however for a different flowpath.

EXAM QUESTION HISTORY

Question # _____ RO _____ SRO 9
 TIER 1 Group 2
 KA W/E10 EA2.2 Importance 3.9

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| _____ | Bank Originating Bank # _____ |

10CFR55 Content 55.41 _____ 55.43 5

Learning Objective

RES03C 2.01

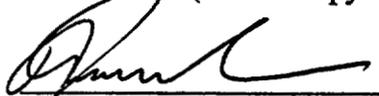
Given a set of plant and equipment conditions evaluate the conditions to determine the applicable procedure, and from the procedure determine the appropriate EXPECTED ACTIONS or RESPONSE NOT OBTAINED instructions to implement.(ES-0.3)

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

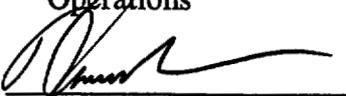
Technical Reference: ES-0.3, EOP Fig. 3.0, 3.1, 3.2

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) ES-0.3, EOP Fig. 3.0, 3.1, 3.2,

Verification  Date 4/25/06
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use  Date 5/23/06
 Exam Developer

Question 9 C000.1352 (1 point(s))

Given the following initial conditions:

The plant tripped due to a loss of Offsite Power

Both Diesel Generators failed to start

ECA-0.0, LOSS OF ALL AC POWER, was implemented.

Actions to locally isolate the RCS have been completed.

Bus 14 has been reenergized from DG A

The crew properly routed to ES-0.2, NATURAL CIRCULATION COOLDOWN

Due to RCS leakage concerns the crew routed to ES-0.3, NATURAL CIRCULATION COOLDOWN WITH STEAM VOID IN VESSEL.

Cooldown to 335°F has been started.

The following conditions exist:

- Busses 11A and 11B are deenergized
- SI Accumulators are isolated
- Control Rod Shroud Fan A is running
- RCS cooldown rate = 85°F/hr
- RCS cold leg temperature = 380°F
- RCS pressure = 580 psig
- PRZR level = 25% and stable
- RVLIS level = 97% and stable
- CETC Average Temperatures 400°F

Which of the following statement is correct for the conditions described?

- a. RCS Pressure is below the minimum Subcooling Limit, raise pressure to restore Subcooling Margin and prevent further head voiding.
- b. RCS Pressure is below the limit, raise RCS pressure and hold for 20 hours before decreasing below 1000 psig to prevent upper head boiling.
- c. Continue cooling down at current rate and depressurize the RCS to place the plant in a cold shutdown condition.
- d. RCS Cooldown rate is excessive, Cooldown rate is limited to 60°F/hr to prevent excessive cooldown of the RCP Seals and prevent seal damage.

Answer 9

d. RCS Cooldown rate is excessive, Cooldown rate is limited to 60°F/hr to prevent excessive cooldown of the RCP Seals and prevent seal damage.

Distracter Analysis

Answer- Correct. Pressure temperature relationship is within the limits of Curves on Figure 3.2. Caution before step for starting cooldown states "IF RCP Seal cooling to any RCP is lost, then the RCS Cooldown rate shall not exceed 60°F/hr." The step basis document states the reason for the 60°F/hr limit is based upon the vendor manual limit of 1°F/min to prevent damage to the seals. Actions to isolate the RCS (Attachment 21) closes the supply valves to the RCP seals, therefore this caution applies to the conditions given.

Distracter a- Reasonable distracter in that this P/T relationship is satisfactory unless the minimum subcooling curve is misread.

Distracter b- Reasonable distracter if Fig. 3.1 for NC C/D without Shroud Fans is used it requires a 20 hour hold at 1000 psig. ES-0.2 refers to Fig 3.1 if less than 2 shroud fans are running. This curve does not apply during ES-0.3 as a void is expected.

Distracter c- Reasonable distracter if the candidate fails to recognize that RCP Seal cooling was isolated then a cooldown rate of 100°F/hr is acceptable.

EXAM QUESTION HISTORY

Question # RO _____ SRO 10
 TIER 1 Group 2
 KA W/E16 G2.4.30 Importance 3.6

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| _____ | Bank Originating Bank # _____ |

10CFR55 Content 55.41 _____ 55.43 5

Learning Objective RSC02C 12.00

Given various hypothetical situations, correctly determine protective action recommendations using EPIP 2-1.

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: EPIP-1.0 and 2.1

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) EPIP-1.0

Verification [Signature] Date 4/28/06
 Exam Developer

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 Exam Developer

Question 10 C000.1353

(1 point(s))

The plant has experienced a Reactor Trip due to a Loss of Coolant Accident in containment
The following conditions exist:

RCS Pressure is 400 psig

Core Exit Thermocouple Temperature is 690°F

RVLIS Level is 53%

Containment Pressure is 26 psig

Both CS Pumps and Recirc Fans are running

Containment Radiation-

- R29=1050R/hour

- R30=1060R/hour

Which of the following statements is correct concerning Initial Protective Action
Recommendations required for the conditions given?

- a. Protective Action Recommendation to Evacuate the affected Emergency Response Planning Areas and Shelter the remaining areas shall be made when initial event notification is made.
- b. No Protective Action Recommendation is required as this event does not warrant evacuation or sheltering.
- c. Protective Action Recommendation to Shelter the affected Emergency Response Planning Areas and Evacuate the remaining areas shall be made as soon as possible after the initial event notification is made.
- d. Protective Action Recommendation will be made based upon results of Offsite Dose Monitoring (Survey Team Data) and Technical Support Center Recommendations.

Answer 10

- a. Protective Action Recommendation to Evacuate the affected Emergency Response Planning Areas and Shelter the remaining areas shall be made when initial event notification is made.

Justification:

Containment Radiation Levels warrant classification as a General Emergency based on EAL 2.3.3. EPIP 1.4, General emergency, requires use of EPIP 2-1, Protective Action Recommendations. EPIP 2-1 specifies the minimum PAR for a GE is to Evacuate the affected EPRA's and shelter the remaining areas. It also specifies the PARs be issued upon initial declaration of a GE.

Distracter Analysis

- B) Incorrect. Reasonable distracter if the candidate does not classify the event as a GE. Other than the CTMT Rad readings the conditions support a classification as a Site Area Emergency.
- C) Incorrect. Reasonable distracter in that it is a variation of the correct answer, but reverses the sheltering and evacuation recommendations and the notification requirements are not consistent with the procedural guidance.
- D) Incorrect. Reasonable distracter as EAL 5.2.5 is based upon dose projections and field surveys to declare a GE. However the current radiation readings in CNMT warrant an immediate classification.

EXAM QUESTION HISTORY

Question # RO _____ SRO 11
TIER 2 Group 1
KA 005 G2.4.4 Importance 4.3

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| _____ | Bank Originating Bank # _____ |

10CFR55 Content 55.41 _____ 55.43 5

Learning Objective

RAP25C 1.02

Recognize the symptoms of AP-RHR.2, Loss of RHR while Operating at RCS Reduced Inventory Conditions.

Cognitive Level Memory or Fundamental Knowledge _____
Comprehension or Analysis X

Technical Reference: AP-RHR.2

Level of Difficulty (from attachment 3): 2

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 4/20/06
Exam Developer

Validation _____ Date _____
Operations

Approved for Use [Signature] Date 5/23/06
Exam Developer

Question 11 C000.1354

(1 point(s))

Initial Conditions:

- The plant is in Mode 5
- RCS Temperature is 108°F
- RHR Train A is in service @ 900 gpm
- RCS Loop B level is 18 inches to support planned SG Inspections

The following indications are received:

- Annunciator A-20, RESIDUAL HEAT REMOVAL LOOP LOW FLOW 400 GPM, is alarming intermittently.
- FI-626 & FI-689, RHR SYSTEM FLOW, are both fluctuating between 200 gpm and 1100 gpm.
- All other indications remain unchanged

Which of the following procedures is appropriate to enter for the conditions above?

- a. AP-RCS.4, SHUTDOWN LOCA
- b. AP-RHR.1, LOSS OF RHR
- c. AP-RHR.2, LOSS OF RHR WHILE OPERATING AT RCS REDUCED INVENTORY CONDITIONS
- d. AP-RCS.1, REACTOR COOLANT LEAK

Answer 11

- c. AP-RHR.2, LOSS OF RHR WHILE OPERATING AT RCS REDUCED INVENTORY CONDITIONS

Distracter Analysis

- A) INCORRECT. No indication of RCS leakage is given to direct entry into this procedure. AP-RHR.2 provides guidance to restore RCS inventory if a leak is identified. Reasonable distracter if assumption of loss of NPSH is due to lowering level in RCS without regard to conditions stated.
- B) INCORRECT. AP-RHR.1 is applicable when RCS level is > 64 inches. Reasonable distracter if purpose of procedure or definition of reduced inventory are overlooked.

D) **INCORRECT.** No indication of RCS Leakage is given. Reasonable distracter if assumption of loss of NPSH is due to lowering level in RCS.

EXAM QUESTION HISTORY

Question # RO _____ SRO 12
 TIER 2 Group 1
 KA 061 G2.2.25 Importance 3.7

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| _____ | Bank Originating Bank # _____ |

10CFR55 Content 55.41 _____ 55.43 2

Learning Objective

R4201C 21.03

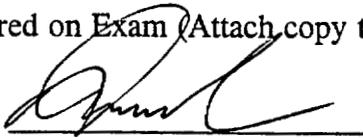
Explain the basis for the specifications and actions, related to limiting conditions for operations

Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

Technical Reference: Tech Spec 3.7.5 Basis

Level of Difficulty (from attachment 3): 4

References required on Exam (Attach copy to this attachment) None

Verification  Date 4/28/06
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use  Date 5/23/06
 Exam Developer

Which of the following statements is correct concerning the bases of the Auxiliary Feedwater System requirements for operability?

The LCO for Auxiliary Feedwater System ensures that the _____

- a. no single failure will prevent the Motor and Turbine Driven Auxiliary Feedwater Pumps from delivering inventory to either SG to assure removal of decay heat and other residual heat from the Reactor Coolant System.
- b. Auxiliary Feedwater Pumps will provide enough cooling to prevent operation of the Pressurizer Power Operated Relief Valves (PORV's) following a loss of all Feedwater event combined with failure of a single train to actuate.
- c. system will perform its design safety function to mitigate the consequences of accidents that could result in a recriticality due to a Main Steam Line break combined with a failure of one control rod to insert.
- d. Auxiliary Feedwater Pumps will provide sufficient flow to prevent water relief from the PORV's on a Loss of MFW, and flow is limited to prevent over pressurization of Containment during a Main Steam Line break inside CNMT.

Answer 12

- d. Auxiliary Feedwater Pumps will provide sufficient flow to prevent water relief from the PORV's on a Loss of MFW, and flow is limited to prevent over pressurization of Containment during a Main Steam Line break inside CNMT.

Distracter Analysis

- A) **INCORRECT.** A single failure HELB event in the Intermediate Building is assumed to render all 3 AFW Pumps inoperable. The Standby AFW System is required to mitigate this assumed failure.
- B) **INCORRECT.** PORV'S are assumed to lift to aid in mitigating the pressure rise due to the loss of heat sink. The bases contains a statement that the capacity of AFW will prevent challenging the PORV's from lifting due to a water solid condition in the Pressurizer (caused by the insurge). It does not state that the PORV won't operate, however USAR

chapter 15 states the pressurizer safeties may lift during a Loss of All Feedwater event and the PORV is assumed to operate normally which increases the insurge effect..

- C) **INCORRECT.** High flow limit on AFW is based upon limiting energy addition to containment to prevent over-pressurization not to prevent restart.

EXAM QUESTION HISTORY

Question # RO _____ SRO 13
 TIER 2 Group 1
 KA 062 A2.05 Importance 3.3

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| _____ | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank INPO # <u>IP3 12/11/03</u> |

10CFR55 Content 55.41 _____ 55.43 5

Learning Objective

REC00C 2.01

Given a set of plant and equipment conditions evaluate the conditions to determine the applicable procedure, and from the procedure determine the appropriate EXPECTED ACTIONS or RESPONSE NOT OBTAINED instructions to implement. (ECA-0.0)

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: ECA-0.0

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification _____ Date _____
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use _____ Date _____
 Exam Developer

Question 13 C000.1356

(1 point(s))

Given the following plant conditions:

RCS Temperature- 450 degrees F

RCS Pressure- 1400 psig

An RCS Cooldown is in progress

A Loss of All Offsite Power has just occurred.

No 480V AC Buses are Energized

Both Emergency Diesel Generators did not start and will not start

Based on these conditions, which of the following is correct concerning the procedure to enter and the actions required?

- A. Enter ECA- 0.0, "Loss of All AC Power", Pull stop the listed AC Emergency Bus loads to prevent an uncontrolled start of large loads on Safeguards AC Buses.
- B. Enter ECA- 0.0, "Loss of All AC Power", Pull stop the listed AC Emergency Bus loads to prevent an uncontrolled cooldown of the Reactor Coolant System.
- C. Enter AP-ELEC.1 "Loss of 12A and/or 12B Busses", Pull stop the listed AC Emergency Bus loads to prevent an uncontrolled start of large loads on Safeguards AC Buses.
- D. Enter AP-ELEC.1 "Loss of 12A and/or 12B Busses", Pull stop the listed AC Emergency Bus loads to prevent an uncontrolled cooldown of the Reactor Coolant System.

Answer 13

- A. Enter ECA- 0.0, "Loss of All AC Power", Pull stop the listed AC Emergency Bus loads to prevent an uncontrolled start of large loads on Safeguards AC Buses.

Given conditions require entry into ECA-0.0. The entry conditions for AP-ELEC.1 may be met however, the procedure is not intended to be used if ALL AC busses are deenergized. A-503.1, Emergency and Abnormal Operating Procedure Usage Guide provides procedure hierarchy and EOP entry has precedence over AP entry. AP-ELEC.1 does not address the conditions present.

Distracter Analysis

- B) INCORRECT. Reasonable distracter as the correct procedure is entered and the actions taken are correct however the reason for the actions is incorrect.
- C) INCORRECT. Reasonable distracter as the symptoms listed for entry into the AP are present, however the procedure is not intended to be used if all AC Power is lost.

D) **INCORRECT. Reasonable distracter based on a combination of Distracter B & C.**

EXAM QUESTION HISTORY

Question # RO _____ SRO 14
 TIER 2 Group 1
 KA 064 A2.17 Importance 2.6

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| _____ | Bank Originating Bank # _____ |

10CFR55 Content 55.41 _____ 55.43 5

Learning Objective

R0701C 3.01

List the automatic actions that will occur with an undervoltage condition which actuates the Safeguards undervoltage devices, include:

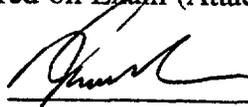
- a. Logic to start and load diesel
- b. Logic to cause load shedding

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

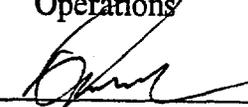
Technical Reference: Tech Spec SR-3.8.1.9, OPS-SHIFT-RESP, UFSAR Chap.8 Table 8.3-2A/B

Level of Difficulty (from attachment 3): 4

References required on Exam (Attach copy to this attachment) None

Verification  Date 4/28/06
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use  Date 5/23/06
 Exam Developer

Question 14 C000.1357

(1 point(s))

Emergency Diesel Generator A is tested using PT-12.1, EMERGENCY DIESEL GENERATOR A.

D/G A Bus Supply Breakers (Bus 14 & 18) are closed and the D/G is loaded to 2050 kw

The following events occur:

The plant experiences a Design Basis LOCA inside containment.

The Bus 14 Load Shed relay fails to open the non-essential load breakers on Bus 14.

Which of the following describes the impact this event has on the D/G and the actions required (if any)?

- a. D/G A Bus Supply Breaker to Bus 14 will open. Verify a Service Water pump is running to cool D/G A.
- b. D/G A will shift to control on the Electrical Governor. Place the Unit/Parallel Switch to "Unit" after load sequencing is complete.
- c. D/G A will be overloaded. Open the breakers for the non essential loads on Bus 14.
- d. D/G A will continue to run normally. No operator action is required.

Answer 14

- c. D/G A will be overloaded. Open the breakers for the non essential loads on Bus 14.

Failure to load shed will leave the CCW Pump, Charging Pump and other loads running on Bus 14. This loading combined with the load from an SI with Containment Spray and recirc fans that is caused by the Large Break LOCA will result in overloading the D/G. A-503.1 provides direction for the operator to take manual action if auto action fails.

Distracter Analysis:

- A) **INCORRECT.** Reasonable distracter as the Normal Supply Breaker does get an open signal on an SI. Verifying a SW Pump running is a normal action for a DG running to ensure cooling.
- B) **INCORRECT.** Reasonable distracter This similar to the response in PT-12.1 attachment 8, however the governor switches to the Mechanical not the Electrical
- D) **INCORRECT.** See correct answer discussion above.

EXAM QUESTION HISTORY

Question # _____ RO _____ SRO 15
TIER 2 _____ Group 1
KA 076 A2.02 Importance 3.1

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|-------------------------------------|---|
| <input checked="" type="checkbox"/> | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 _____ 55.43 5

Learning Objective

RAP19C 1.02

Recognize the symptoms of AP-SW.1, Service water Leak.

RAP19C 2.01

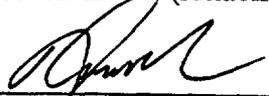
Given a set of plant and equipment conditions evaluate the conditions to determine the applicable procedure, and from the procedure determine the appropriate EXPECTED ACTIONS or RESPONSE NOT OBTAINED instructions to implement.(AP-SW.1)

Cognitive Level Memory or Fundamental Knowledge _____
Comprehension or Analysis

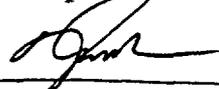
Technical Reference: AP-SW.1

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification  Date 4/28/06
Exam Developer

Validation _____ Date _____
Operations

Approved for Use  Date 5/23/06

Question 15 C000.1358

(1 point(s))

The plant is operating at 100% power
All systems are in a normal configuration
Service Water Pumps A, C & D are running

The following conditions are noted:

Computer Point P2160, SERVICE WATER PUMP A & B HEADER, alarms LOW

PI-2160, SW LOOP A HEADER PRESS, is indicating 48 psig.

PI-2161, SW LOOP A HEADER PRESS, is indicating 55 psig.

No other Annunciators are currently LIT

The operators have taken actions to throttle SW to components but are unable to restore SW pressure to above the alarm setpoint..

Based upon the conditions above what is the correct procedure to enter for this condition and what action will be required?

- A) AP-SW.1, SERVICE WATER LEAK. If the condition can not be corrected, initiate a controlled shutdown due to loss of cooling flow to plant equipment.
- B) AP-SW.2, LOSS OF SERVICE WATER. If the condition can not be corrected then trip the reactor and enter E-0, REACTOR TRIP OR SAFETY INJECTION.
- C) AP-SW.1, SERVICE WATER LEAK. If the condition can not be corrected then trip the reactor and enter E-0, REACTOR TRIP OR SAFETY INJECTION.
- D) AP-SW.2, LOSS OF SERVICE WATER. If the condition can not be corrected, initiate a controlled shutdown due to loss of cooling flow to plant equipment.

Answer 15

- A) AP-SW.1, SERVICE WATER LEAK. If the condition can not be corrected, initiate a controlled shutdown due to loss of cooling flow to plant equipment.

AP-SW.1 is the correct procedure based upon the conditions given. Computer point P2160 is an entry condition into AP-SW.1 & AP-SW.2, however pressures given indicate that service water pumps are still running. No indication is given which is consistent with a SW Pump Trip. If a SW pump were to trip Annunciator J-9 would be expected. The action stated is consistent with step 3.b which states if either SW Loop pressure is < 55 psig and can not be corrected then perform a controlled shutdown while continuing in this procedure.

DISTRACTER ANALYSIS:

- B) **INCORRECT.** No indication is given which is consistent with a SW Pump Trip therefore AP-SW.2 is not the correct procedure to enter. If a SW pump were to trip Annunciator J-9 would be expected. Reactor trip is not directed unless SW pressure is less than 40 psig with 3 pumps in service.

- C) AP-SW.1 is the correct procedure based upon the conditions given. Computer point P2160 is an entry condition into AP-SW.1 & AP-SW.2, however pressures given indicate that service water pumps are still running. No indication is given which is consistent with a SW Pump Trip. If a SW pump were to trip Annunciator J-9 would be expected. Reactor trip is not directed unless SW pressure is less than 40 psig with 3 pumps in service.

- D) **INCORRECT.** No indication is given which is consistent with a SW Pump Trip therefore AP-SW.2 is not the correct procedure to enter. The action stated is consistent with step 3.b which states if either SW Loop pressure is < 55 psig and can not be corrected then perform a controlled shutdown while continuing in this procedure.

EXAM QUESTION HISTORY

Question # RO _____ SRO 16
 TIER 2 Group 2
 KA 029 G2.4.30 Importance 3.6

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|--|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| _____ | Bank Originating Bank # _____ |

10CFR55 Content 55.41 _____ 55.43 5

Learning Objective RSC01C 1.00

Given any emergency classification level and using appropriate procedures, determine which offsite agencies must be notified and which RG&E emergency response facilities are to be manned.

RSC02C 3.00

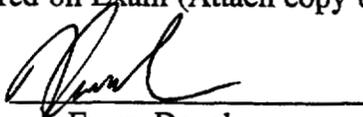
Using the appropriate EPIP procedure and a given set of plant conditions:
Classify the event

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: EPIP-1.0, EPIP-1.5

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) EPIP-1.0

Verification  Date 4/28/06
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use  Date 5/27/06
 Exam Developer

Question 16 C000.1359

(1 point(s))

The Plant is operating at 100% power.

Containment Mini-Purge is in service in preparation for a planned containment entry.

The purge has been completed and Containment Mini Purge is being secured.

The Mini-Purge Exhaust Valves both fail to close.

Attempts to close the valves have been unsuccessful.

Which of the following correctly describes the minimum Emergency Facility activation and the offsite notifications required for this condition?

- a. Activate the TSC support organization. Notify New York State, Wayne and Monroe counties within 15 minute and the NRC within 1 hour.
- b. Activate the TSC, EOF, Survey Center and Joint Emergency News Center. Notify the NRC within 1 hour and the State of New York, Wayne and Monroe counties immediately after notifying the NRC.
- c. Activate the TSC, EOF, Survey Center and Joint Emergency News Center. Notify New York State, Wayne and Monroe counties within 15 minute and the NRC within 1 hour.
- d. Activate the TSC. Notify the NRC within 1 hour and the State of New York, Wayne and Monroe counties immediately after notifying the NRC.

Answer 16

- a. Activate the TSC support organization. Notify New York State, Wayne and Monroe counties within 15 minute and the NRC within 1 hour.

Conditions given are applicable to EAL 4.1.1 and require declaration of an UNUSUAL EVENT. Per EPIP-1.1, UNUSUAL EVENT, and EPIP-1.5, NOTIFICATIONS, Attachment 1, the TSC is staffed and notification requirements are to notify state and counties within 15 minutes and the NRC within 1 hour.

DISTRACTER ANALYSIS:

- B) INCORRECT. Emergency Facilities are consistent with an ALERT or higher and the notification requirements are reversed.
- C) INCORRECT. Emergency Facilities are consistent with an ALERT or higher.

D) INCORRECT. Emergency Facilities are correct however the notification requirements are reversed.

EXAM QUESTION HISTORY

Question # RO _____ SRO 17
 TIER 2 Group 2
 KA 034 A2.03 Importance 4.0

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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|-------------------------------------|---|
| <input checked="" type="checkbox"/> | New |
| _____ | Modified (Attach original and Modified Questions) |
| _____ | Original Bank _____ # _____ |
| _____ | Bank Originating Bank _____ # _____ |

10CFR55 Content 55.41 _____ 55.43 2

Learning Objective

R3601C 5.01

Recognize the components covered by TRM.

R3601C 5.02

Given a set of plant conditions and a copy of TRM and referenced material be able to apply the TRM. To include: LCO, applicability, applying action items, surveillances, and the use of basis to aid in application..

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis

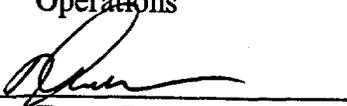
Technical Reference: TRM TR-3.9.1

Level of Difficulty (from attachment 3): 4

References required on Exam (Attach copy to this attachment) None

Verification  _____ Date 4/28/06
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use  _____ Date 5/23/06
 Exam Developer

Question 17 C000.1360

(1 point(s))

The plant is in Mode 6 and has been shutdown for 9 days.
Reactor Refueling is in progress for a full core offload.

A fuel assembly removed from the core has been placed into a storage location in Region 2 of the Spent Fuel Pool.

The TRM TR 3.9.1, FUEL STORAGE IN SPENT FUEL POOL, requirements associated with the placement of this assembly _____.

- a. are met. Storage in Region 2 is allowed in any location for fuel decayed <60 days. No action is required.
- b. may be met. Storage in Region 2 is allowed provided proper checkerboard configuration is maintained. Verify proper checkerboard pattern and relocate assembly to restore pattern if required.
- c. are not met. Storage in Region 2 is not allowed in any location for fuel decayed <60 days. Immediately move the assembly to a Region 1 storage location in a proper checkerboard pattern.
- d. are not met. Storage in Region 2 is not allowed in any location for fuel decayed <60 days. Immediately move the assembly to a Region 1 storage location. No restriction applies in Region 1.

Answer 17

- c. are not met. Storage in Region 2 is not allowed in any location for fuel decayed <60 days. Immediately move the assembly to a Region 1 storage location in a proper checkerboard pattern.

DISTRACTER ANALYSIS:

- A) INCORRECT. TRM 3.9.1 does not allow storage of fuel assemblies with <60 days decay in Region 2.
- B) INCORRECT. See Answer A. Checkerboard configuration applies to storage in Region 1
- D) INCORRECT. See answer C. Region 1 requires a checkerboard pattern for fuel with <60 days decay.

EXAM QUESTION HISTORY

Question # RO _____ SRO 18
 TIER 2 Group 2
 KA 086 A2.04 Importance 3.9

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
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| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| _____ | Bank Originating Bank # _____ |

10CFR55 Content 55.41 _____ 55.43 5

Learning Objective

RER22C 10.00

Given a set of plant conditions (and a procedure figure, if needed) evaluate the appropriate parameters and determine the correct course of action.

RER22C 4.00

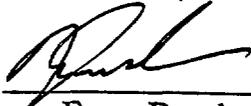
Given a set of plant conditions, identify the appropriate ER-FIRE series to implement.

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

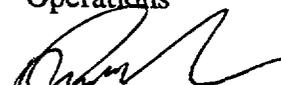
Technical Reference: ER-FIRE.0, ER-FIRE.3

Level of Difficulty (from attachment 3): 4

References required on Exam (Attach copy to this attachment) None

Verification  _____ Date 4/20/06
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use  _____ Date 5/23/06
 Exam Developer

Question 18 C000.1361

(1 point(s))

The following conditions exist:

The plant is operating at 100%
All systems are in a normal configuration.

The following indications are noted:

Annunciator K-31 Alarms

Zone S01, AUX BUILDING 235-8 BSMT CABLE TRAYS, on FCP-1

- First and Second Alarms are LIT
- Flow Alarm is NOT LIT

An AO reports a fire in one of the cable trays in the Aux Building Basement.

Which of the following correctly identifies the potential impact (if any) of this condition on the MCB Controls and Indications, and the procedure used to address this impact?

- a. The fire does not have the potential to significantly impact MCB controls and indications. ER-FIRE.0, CR RESPONSE TO FIRE ALARMS AND REPORTS, is entered first. If the fire is not controlled then refer to SC-3, FIRE EMERGENCY PLAN, for guidance on plant control.
- b. The Fire has the potential to significantly impact MCB controls and indications. ER-FIRE.3, ALTERNATE SHUTDOWN FOR AUX BUILDING BASEMENT/MEZZANINE FIRE., is entered first then refer to ER-FIRE.0, CR RESPONSE TO FIRE ALARMS AND REPORTS.
- c. The fire does not have the potential to significantly impact MCB controls and indications. FRP-4.0, AUXILIARY BUILDING BASEMENT, is entered first. If the fire is not controlled then refer to SC-3, FIRE EMERGENCY PLAN, for guidance on plant control.
- d. The Fire has the potential to significantly impact MCB controls and indications. ER-FIRE.0, CR RESPONSE TO FIRE ALARMS AND REPORTS, is entered first. If the fire is not controlled then go to ER-FIRE.3, ALTERNATE SHUTDOWN FOR AUX BUILDING BASEMENT/MEZZANINE FIRE

Answer 18

- d. The Fire has the potential to significantly impact MCB controls and indications. ER-FIRE.0, CR RESPONSE TO FIRE ALARMS AND REPORTS, is entered first. If the fire is not controlled then go to ER-FIRE.3, ALTERNATE SHUTDOWN FOR AUX BUILDING BASEMENT/MEZZANINE FIRE

DISTRACTER ANALYSIS

- A) **INCORRECT.** This fire location presents a significant potential for MCB impact.
- B) **INCORRECT.** ER-FIRE.0 is the first procedure entered and then ER-FIRE.3 is directed from ER-FIRE.0.
- C) **INCORRECT.** This fire location presents a significant potential for MCB impact. The FRP is entered after ER-FIRE.0 and is used to provide information to the Fire Brigade captain for local actions. It contains control room responsibilities and provides guidance to refer to ER-FIRE.3 if Safe shutdown equipment is affected. SC-3 provides a description of the site Fire Protection contingency plans and does not provide operator actions directly.

EXAM QUESTION HISTORY

Question # RO _____ SRO 19
 TIER 3 Group
 KA 2.1.7 Importance 4.4

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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| _____ | New |
| <u>X</u> | Modified (Attach original and Modified Questions) |
| _____ | Original Bank <u>INPO</u> # <u>Kewaunee 9/2/02</u> |
| _____ | Bank Originating Bank # _____ |

10CFR55 Content 55.41 _____ 55.43 1

Learning Objective

RTH07C 4.10

State the reason for any precaution, caution or note listed in O-6.3 and O-6.3.1

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: O-6.3

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification  Date 4/28/06
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use  Date 5/23/06
 Exam Developer

Question 19 C000.1362

(1 point(s))

Following a refuel outage, a normal plant startup and power escalation to 100% was initiated. The reactor achieved exactly 100% rated power (1520 MWt) approximately four (4) hours ago. During a review of the first performance of O-6.3, Maximum Unit Power, since achieving 100% power, you notice the value entered by the HCO for Total Blowdown flow has been mistakenly entered as 80 gpm instead of the actual value of 180 gpm.

In addition to directing that the input be corrected and O-6.3 be re-performed, the CRF shall _____.

- a. direct the HCO to raise power slightly since the calorimetric will now be reading lower than 1520 MWt.
- b. direct a power reduction to ensure the 8 hour average does not exceed 1520 MWt.
- c. direct that no reactor power adjustments be made for the next eight hours so an accurate 8-hour power average is obtained.
- d. direct that no reactor power adjustments be made for the next 4 hours and then make adjustments to power as required.

Answer 19

- b. direct a power reduction to ensure the 8 hour average does not exceed 1520 MWt.

Incorrect input of blowdown flow lower than actual results in calculating heat balance power lower than actual. When the correct value is used heat balance power calculation would be above the original calculation. A power reduction should be performed to ensure 8 hour average does not exceed 100% (1520 MWt)

DISTRACTER ANALYSIS

- A) **INCORRECT.** Raising power would be inappropriate based upon inaccurate Calorimetric.
- C) **INCORRECT.** Holding power steady will result in 8 hour average above 100%.
- D) **INCORRECT.** Holding power steady will result in 8 hour average above 100%.

EXAM QUESTION HISTORY

Question # RO _____ SRO 20
 TIER 3 Group
 KA 2.2.5 Importance 2.7

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|---|
| <u>X</u> | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| _____ | Bank Originating Bank # _____ |

10CFR55 Content 55.41 _____ 55.43 3

Learning Objective

RAD32C 1.02

Describe the duties, responsibilities and authorities (as applicable) of the key personnel identified by the procedure.

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: IP-DES.3

Level of Difficulty (from attachment 3): 4

References required on Exam (Attach copy to this attachment) None

Verification _____ Date _____
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use _____ Date _____
 Exam Developer

Which of the following is a Temporary Modification that can be approved by the Shift Manager prior to obtaining the normal approvals?

- a. Installation of a hose to supply alternate cooling to the only available D/G per ER-DG.2 during a LOCA with a Loss of Offsite Power.
- b. Installation of a jumper which will allow starting a Motor Driven AFW Pump to restore Feedwater following a Reactor Trip and Loss of all Feedwater.
- c. Lifting a lead to prevent a Condensate Booster Pump from tripping on low suction pressure to due to a pressure switch malfunction.
- d. Installing a jumper to bypass an overcurrent trip on an SI pump during low head injection phase of a LOCA with both trains of RHR supplying flow to the core.

Answer 20

- b. Installation of a jumper which will allow starting a Motor Driven AFW Pump to restore Feedwater following a Reactor Trip and Loss of all Feedwater.

IP-DES.3, TEMPORATY MODIFICATIONS, section 3.5 allows "actions necessary to prevent the automatic actuation of a safety system or entry into a reporting classification as defined in EPIC 1-0." Restoring Feedwater after a loss of feed event prevents the event from progressing to higher severity classifications and protects the public.

DISTRACTER ANALYSIS:

- A) **INCORRECT.** This activity is directed by a PORC approved procedure and is therefore not a TM.
- C) **INCORRECT.** This activity is being performed to prevent a plant transient/trip. Step 3.5.4 of IP-DES.3, TEMPORATY MODIFICATIONS, states "Ginna management does not consider a normal plant trip a significant enough consequence to warrant use of this process unless significant equipment complications would increase the consequences of a reactor trip."
- D) **INCORRECT.** Overriding a protective function in this condition is not warranted as the RHR Pumps can supply adequate injection flow to cool the core in the low head injection phase of a LOCA. The increase in safety margin is offset by the potential for equipment damage due to bypassing the overcurrent trip.

EXAM QUESTION HISTORY

Question # RO _____ SRO 21
TIER 3 Group
KA 2.2.25 Importance 3.7

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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| _____ | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank INPO # <u>Cook 1 4/29/04</u> |

10CFR55 Content 55.41 _____ 55.43 2

Learning Objective

RRF03C 4.02

Given a set of plant conditions and a copy of Tech Specs and Tech Spec referenced material (i.e. COLR) be able to apply the Tech Specs. to include: LCO, applicability, applying action items, surveillances and the use of basis to aid in application.

Cognitive Level Memory or Fundamental Knowledge X
Comprehension or Analysis _____

Technical Reference: Tech Spec Section 3.9.4/3.9.5

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification [Signature] Date 4/28/06
Exam Developer

Validation _____ Date _____

Approved for Use [Signature] Date 5/23/06
Exam Developer

Question 21 C000.1364

(1 point(s))

The plant is in Mode 6 with the refueling cavity level at 23 ft. 8 inches above reactor vessel flange. The A RHR pump is operating in the shutdown cooling mode. Maintenance has requested that the B RHR pump breaker be swapped with a refurbished breaker. The breaker swap and a functional test is expected to take 45 minutes.

Per Technical Specifications which ONE of the following describes the correct response and the reason?

This activity is _____.

- a. NOT allowed because two RHR pumps are required to provide adequate circulation in the event of a boron dilution incident.
- b. NOT allowed because a standby RHR pump is required to provide alternate core cooling if the operating RHR pump trips.
- c. allowed as long as the standby pump is removed for less than 1 hour since this minimizes the risk from a dilution incident.
- d. allowed because one RHR pump is sufficient to provide adequate cooling capacity to remove decay heat and adequate circulation in the event of a boron dilution incident.

Answer 21

ANSWER

- d. allowed because one RHR pump is sufficient to provide adequate cooling capacity to remove decay heat and adequate circulation in the event of a boron dilution incident.

DISTRACTER ANALYSIS

- A Incorrect Only one pump is required;
- B Incorrect Only one pump is required;
- C Incorrect The operating pump may be stopped for one hour.

EXAM QUESTION HISTORY

Question # RO _____ SRO 22
 TIER 3 Group
 KA 2.3.4 Importance 3.1

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

| | |
|----------|--|
| | New |
| | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank INPO # <u>Prairie Island 8/19/05</u> |

10CFR55 Content 55.41 _____ 55.43 4

Learning Objective

RSC02C 17.00

Using appropriate procedures, state the emergency radiation exposure guidelines for immediate entry into high radiation areas for lifesaving actions and for termination of radiation releases or to prevent further degradation of vital equipment.

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: EPIP-2.8

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification _____ Date _____
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use _____ Date _____
 Exam Developer

Question 22 C000.1365

(1 point(s))

You are the Emergency Coordinator (EC) during a LOCA outside containment.

A worker is critically injured and unconscious in the RHR pit. The Duty RP Tech estimates that each of the two proposed rescue team members will receive 30 REM while rescuing the injured person.

Which of the following describes the correct course of action in accordance with EPIP 1-8, SEARCH AND RESCUE, and EPIP 2-8, VOLUNTARY ACCEPTANCE OF EMERGENCY RADIATION EXPOSURE?

- A) The EC can authorize only volunteers to rescue the injured person.
- B) The EC can assign personnel to rescue the injured person.
- C) The EC must receive the Radiation Protection and Chemistry Manager's permission to authorize exceeding the 4 REM dose limit for the volunteer rescuers.
- D) The EC cannot authorize the entry with this expected dose. Plant Manager's approval is required to allow volunteers to use emergency dose limits.

Answer 22

- A) The EC can authorize only volunteers to rescue the injured person.

EPIP 2-8, Attachment 1 authorization is by Emergency Coordinator.

DISTRACTER ANALYSIS

- B) INCORRECT. Emergency Exposure is voluntary. EC can not assign
- C) INCORRECT. RP & Chemistry Manager controls dose up to 4 REM. Above 4 REM the EC is the approval authority.
- D) INCORRECT. EC can authorize this exposure.

EXAM QUESTION HISTORY

Question # RO _____ SRO 23
 TIER 3 Group
 KA G.2.3.8 Importance 3,2

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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| _____ | New |
| _____ | Modified (Attach original and Modified Questions) |
| | Original Bank _____ # _____ |
| <u>X</u> | Bank Originating Bank Ginna # <u>C000.1061</u> |

10CFR55 Content 55.41 _____ 55.43 4

Learning Objective

Cognitive Level Memory or Fundamental Knowledge X
 Comprehension or Analysis _____

Technical Reference: CH-RETS-GDT-REL attachment 1

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification _____ Date _____
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use _____ Date _____
 Exam Developer

Question 23 C000.1366

(1 point(s))

Which of the following conditions meet the MINIMUM requirements for releasing a Gas Decay Tank?

- a. The Gas Decay Tank has been isolated and held for at least 30 days
- b. Both Auxiliary Building Main Exhaust Fans (1A & 1B) are running
- c. R-14, Plant Vent Noble Gas Monitor, operable and alarms properly set.
- d. The release will be initiated within 24 hours of tank sample time.

Answer 23

- c. R-14, Plant Vent Noble Gas Monitor, operable and alarms properly set.

Shift Manager (Supervisor) portion of release permit requires rad monitor status to be recorded/reviewed prior to authorization of the release. (CH-RETS-GDT-REL Attachment 1, Gas Decay Tank Release Form)

DISTRACTER ANALYSIS

- A) INCORRECT. 30 day decay time is not a requirement for the release.
- B) INCORRECT. Only one Aux Building Main Exhaust Fan is in service is required to be in service.
- D) INCORRECT. The release must be initiated within 12 hours of sample time.

EXAM QUESTION HISTORY

Question # RO _____ SRO 24
 TIER 3 Group
 KA 2.4.1 Importance 4.6

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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|----------|---|
| | New |
| <u>X</u> | Modified (Attach original and Modified Questions) Original Bank <u>INPO</u> # <u>Prairie Island 2 8/16/02</u> Bank Originating Bank # _____ |

10CFR55 Content 55.41 _____ 55.43 5

Learning Objective

REP00C 1.03

Recognize abnormal indications for system operating parameters, which are entry level conditions/symptoms for E-0, Reactor Trip or Safety Injection.

REP00C 1.04

State the immediate actions of E-0, Reactor Trip or Safety Injection.

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: E-0

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification  Date 4/28/06
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use  Date 5/23/06
 Exam Developer

The Plant is initially operating at 100% Power
K-26, "GENERATOR LOCKOUT RELAY" has alarmed.
PZR level is lowering
PZR pressure is lowering
Bus 16 has de-energized and D/G B has failed to start
All but 5 control rods have rod bottom indications
Reactor power is 7%

What procedure must be entered FIRST and what is the basis for the FIRST immediate action for that procedure?

- A) E-0, "Reactor Trip or Safety Injection," The turbine is tripped to prevent an uncontrolled cooldown of the RCS.
- B) E-0, "Reactor Trip or Safety Injection," Reactor trip is verified to ensure that the only heat being added to the RCS is from decay heat and RCP heat.
- C) FR-S.1, "Response to Nuclear Power Generation/ATWS," The turbine is tripped to maintain RCS inventory.
- D) FR-S.1, "Response to Nuclear Power Generation/ATWS," Reactor trip is verified to ensure that the only heat being added to the RCS is from decay heat and RCP heat.

Answer 24

- B) E-0, "Reactor Trip or Safety Injection," Reactor trip is verified to ensure that the only heat being added to the RCS is from decay heat and RCP heat.

A-503.1, Emergency and Abnormal Operating Procedure Users Guide, step 3.5.2.3 for entry into EOP Network states "Unless otherwise directed by the procedure in effect, if at any time a reactor trip or safety injection occurs or is required, the operator will enter E-0. The conditions given indicate a reactor trip has occurred therefore E-0 is the first procedure entered and transition to other EOP procedures is made from E-0.

DISTRACTER ANALYSIS

- A) **INCORRECT.** Reasonable distracter as procedure entered is correct however the action is the second step of the procedure not the first. The basis for the step is also correct for the action given.
- C) **INCORRECT.** The procedure given is not the first procedure entered. Reasonable distracter as the conditions given indicate reactor power is >5% power which is the

threshold value for a transition to FR-S.1 in E-0. The action given is the second immediate action in FR-S.1 however the basis for the action is correct.

- D) **INCORRECT.** The procedure given is not the first procedure entered. Reasonable distracter as the conditions give indicate the reactor power is >5% power which is the threshold value for a transition to FR-S.1 in E-0. The action given is the first immediate action and the basis given is also correct.

EXAM QUESTION HISTORY

Question # _____ RO _____ SRO 25
 TIER 3 Group
 KA 2.4.46 Importance 3.6

Source of Question (Note: Attach question and any subsequent modifications to this attachment)

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| _____ | New |
| <u>X</u> | Modified (Attach original and Modified Questions) |
| _____ | Original Bank <u>INPO</u> # <u>Point Beach 2005</u> |
| _____ | Bank Originating Bank # _____ |

10CFR55 Content 55.41 _____ 55.43 5

Learning Objective

REP01C 1.02

Given the notes, cautions and/or Major Action Categories in E-1, Loss of Reactor Coolant or Secondary Coolant, explain the basis for same.

Cognitive Level Memory or Fundamental Knowledge _____
 Comprehension or Analysis X

Technical Reference: E--, E-1, ES-1.2

Level of Difficulty (from attachment 3): 3

References required on Exam (Attach copy to this attachment) None

Verification  Date 4/28/06
 Exam Developer

Validation _____ Date _____
 Operations

Approved for Use  Date 5/27/06
 Exam Developer

Question 25 C000.1368

(1 point(s))

Consider the following conditions:

- The Plant was at 100% reactor power with all systems in a normal configuration.
- A 1" RCS pipe has been sheared off inside Containment.

ALARMS

1. B-8, RWST HI-LO Level
2. K-18, Main Feedwater Pumps Tripped
3. C-11/12, Accumulator 1A/1B Press
4. F-14, Charging Pump Speed

PROCEDURE TITLES:

- A. AP-RCS.1, Reactor Coolant Leak;
- B. AP-TURB.5, Rapid Load Reduction;
- C. E-0, Reactor Trip or Safety Injection;
- D. ES-1.2, Post LOCA Cooldown and Depressurization
- E. E-1, Loss of Reactor or Secondary Coolant;
- F. O-2.2, Plant Shutdown from Hot Shutdown to Cold Conditions;

Select which alarms would be consistent with these conditions and which is the correct procedural flowpath.

| | EXPECTED ALARMS | PROCEDURAL FLOWPATH |
|----|------------------------|----------------------------|
| A. | Only 4 | A to B to F |
| B. | Only 2 and 4 | A to B to D |
| C. | Only 2 and 4 | C to E to D |
| D. | 1, 2, 3 and 4 | C to E to F |

Answer 25

C. Only 2 and 4 C to E to D

Two of the listed alarms would be expected, Accumulator 1A/1B Press, which is received at ~720 PSIG RCS pressure and RWST Level would not be expected. Once RCS pressure drops below SI pump Shutoff Head, then the SI pumps will have sufficient capacity to maintain RCS pressure above Accumulator discharge pressure. Cold shutdown is expected to be reached prior to depleting the RWST to the Low Level alarm. ES-1.2 isolates the accumulators when RCS pressure is <1000

DISTRACTER ANALYSIS

A: Incorrect, if examinee fails to recognize that a 1" pipe break represents a Small Break LOCA well beyond the capacity of the Charging system, this may be selected.

B: Incorrect, if examinee recognizes that VCT level will be lost when letdown is isolated and charging swaps to RWST, the RWST level alert would be an expected alarm. However, if the VCT emptied and charging swapped to the RWST, a trip would be required.

D: Incorrect, Accumulator 1A/1B Press is not expected per above discussion.