

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

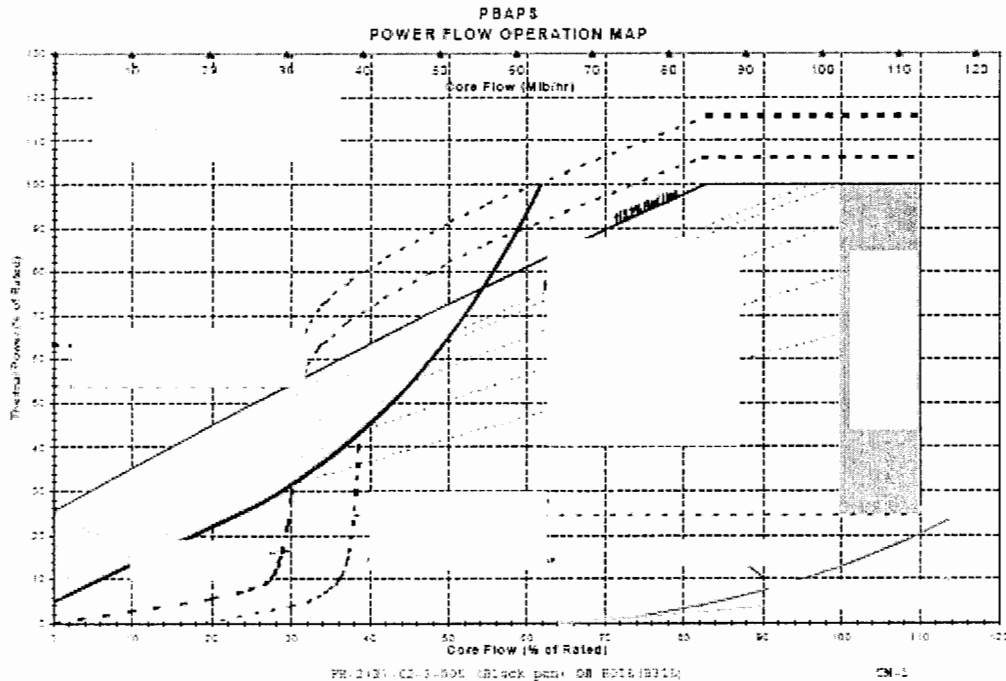
1

ID: 1137623

Points: 1.00

Unit 2 was operating at 75% Reactor power when the following transient occurred:

- The 'A' Recirc Pump tripped.
- Reactor power lowered to 50% power.
- Indicated Core Flow on FR-2-2-3-095 (Black Pen) is 52 Milbm/hr.
- "A" Loop Flow on FI-2-2-3-092B is 5 Milbm/hr.
- "B" Loop Flow on FI-2-2-3-092A is 45 Milbm/hr.
- The 'B' Recirc Pump speed is 1000 RPM.
-



The plant is operating in what region of the Power Flow Operation Map?

- A. Increased Core Flow Region
- B. Normal Operating Region
- C. Region 2, Immediate Exit Region
- D. Recirculation Pump Suction Cavitation Region

Answer: C

Answer Explanation

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Choice		Basis or Justification
Correct:	C	The candidate must subtract 2 times the inactive recirc loop flow from the active recirc loop flow ($52 - (2 \times 5) = 42$ lbm/hr); and with power at 50%, this plots in region 2 of the Power Flow Operations Map.
Distractors:	A	Plausible if the candidate does not correctly perform the loop flow calculation or plot correctly on the Power Flow Operations Map.
	B	Plausible if the candidate does not correctly perform the loop flow calculation or plot correctly on the Power Flow Operations Map.
	D	Plausible if the candidate does not correctly perform the loop flow calculation or plot correctly on the Power Flow Operations Map.

Question 1 Info																																											
Question Type:	Multiple Choice																																										
Status:	Active																																										
Always select on test?	No																																										
Authorized for practice?	No																																										
Points:	1.00																																										
Time to Complete:	0																																										
Difficulty:	1.00																																										
System ID:	1137623																																										
User-Defined ID:	ILT-1540-4-013																																										
Cross Reference Number:	259001AA2.01																																										
Topic:	ILT-1540-4-014- OT-112																																										
Num Field 1:	2015 NRC																																										
Num Field 2:	NA																																										
Text Field:	B																																										
Comments:	<table border="1"> <tr> <th colspan="4">Psychometrics</th></tr> <tr> <th>Level of Knowledge</th><th>Difficulty</th><th>Time Allowance (minutes)</th><th>RO</th></tr> <tr> <td>HIGH</td><td></td><td></td><td>10CRF55.41(b)(5)</td></tr> <tr> <th colspan="4">Source Documentation</th></tr> <tr> <td>Source:</td><td colspan="2">New Exam item</td><td>Previous NRC Exam</td></tr> <tr> <td></td><td colspan="2">Modified Bank</td><td>Other Exam Bank</td></tr> <tr> <td></td><td colspan="2">XILT Exam Bank</td><td></td></tr> <tr> <td>Reference(s):</td><td colspan="3">OT-112, GP-5</td></tr> <tr> <td>Learning Objective:</td><td colspan="3">PLOT-1540-4</td></tr> <tr> <td>K/A System:</td><td colspan="2">295001 Partial of Complete Loss of Forced Core Flow Circulation</td><td>Importance: RO/SRO 3.3/ 3.5</td></tr> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	HIGH			10CRF55.41(b)(5)	Source Documentation				Source:	New Exam item		Previous NRC Exam		Modified Bank		Other Exam Bank		XILT Exam Bank			Reference(s):	OT-112, GP-5			Learning Objective:	PLOT-1540-4			K/A System:	295001 Partial of Complete Loss of Forced Core Flow Circulation		Importance: RO/SRO 3.3/ 3.5
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	K/A Statement:	AK1.02 - Knowledge of the operational implications of the following concepts as they relate to PARTIAL OF COMPLETE LOSS OF FORCED CORE FLOW CIRCULATION: Power/flow distribution
	REQUIRED MATERIALS:	None
	Notes and Comments:	None

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

2

ID: 1137030

Points: 1.00

A small break LOCA has occurred on Unit 3.

The following conditions exist:

- Drywell Pressure is 10 psig and rising
- Drywell Temperature is 250 degrees F and rising
- RPV Level is -165 inches and lowering
- RPV pressure is 750 psig and lowering
- ADS timers have timed out
- No RHR or Core Spray pumps are running

To complete the logic for an Automatic Depressurization System (ADS) initiation the operator must:

- A. Start any individual Core Spray pump.
- B. Start the 3A and 3B Core Spray pumps.
- C. Start the 3C and 3D Core Spray pumps.
- D. Start the 3A and 3D Core Spray pumps.

Answer: D

Answer Explanation		
Choice	Basis or Justification	
Correct:	D	In order for ADS system to initiate the following must be met Drywell pressure above 2 psig, RPV level below -160 inches with a 6 inch confirmatory low level signal and the ADS (115 seconds) initiation timer timed out and either any RHR pump running or the correct combination of Core Spray pumps. RPV level is -165 inches, Drywell pressure is 10 psig and the conditions have existed for 2 minutes ADS Logic requires the correct combination of Core Spray pumps to complete the logic for an initiation. (A or B and C or D). The Core Spray logic required Starting the A and D Core Spray pumps completes this logic.
Distracters:	A	Starting only one Core Spray pump does not complete the logic for an initiation of ADS. Plausible if the candidate confuses the ADS initiation logic requirement for Core Spray with RHR which only requires one RHR pump to be operating.
	B	ADS Logic requires the correct combination of Core Spray pumps to complete the logic for an initiation. (A or B and C or D). Starting the A and B Core Spray pumps does not complete this logic. Plausible if the candidate does not remember the correct combination of pumps required for logic initiation.
	C	ADS Logic requires the correct combination of Core Spray pumps to complete the logic for an initiation. (A or B and C or D). Starting the C and D Core Spray pumps does not complete this logic. Plausible if the candidate does not remember the correct combination of pumps required for logic initiation.

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Question 2 Info																															
Question Type:	Multiple Choice																														
Status:	Active																														
Always select on test?	No																														
Authorized for practice?	No																														
Points:	1.00																														
Time to Complete:	0																														
Difficulty:	0.00																														
System ID:	1137030																														
User-Defined ID:																															
Cross Reference Number:	209001 K1.05																														
Topic:	ILT-5014-5e-002																														
Num Field 1:	NRC 2015																														
Num Field 2:																															
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Notes and Comments:	None																														

EXAMINATION ANSWER KEY

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3

ID: 1137395

Points: 1.00

Unit 3 was at 100% power when a loss of Off-Site power occurs. The following conditions exist:

- Unit 3 Reactor pressure is 100 psig and lowering.
- Unit 3 Drywell pressure is 10 psig and rising.
- Unit 3 RPV level is -100 inches and lowering.
- All Diesel Generators start and load the 4 KV busses.

The 3C RHR pump will start (1) and will be powered from the (2).

- A. (1) immediately
(2) 23 bus
- B. (1) immediately
(2) 33 bus
- C. (1) in 8 seconds
(2) 23 bus
- D. (1) in 8 seconds
(2) 33 bus

Answer: B

Answer Explanation		
Choice	Basis or Justification	
Correct:	B	The RHR pump starts immediately when the 4 KV bus is being powered from the diesel generator. The 3C RHR pump is powered from the E33 bus. To answer this question the candidate must understand: <ul style="list-style-type: none">• that the information presented is a LOCA signal• there is different start logic when started when powered from the diesel generator than the startup feed.• The bus supply for the 3C RHR pump.
Distractors:	A	The RHR pump starting immediately is correct but the E-23 bus is not the correct power supply. Plausible is the candidate does not recall the correct power supply to the 3C RHR pump.
	C	The 8 second time delay only applies to a RHR pump on the startup feed. Plausible if the candidate confuses the 3C start logic. The E-23 bus is not the correct power supply. Plausible is the candidate does not recall the correct power supply to the 3C RHR pump.
	D	The 8 second time delay only applies to a RHR pump on the startup feed. Plausible if the candidate confuses the 3C start logic.

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Question 3 Info																																							
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Status:	Active																																						
Always select on test?	No																																						
Authorized for practice?	No																																						
Points:	1.00																																						
Time to Complete:	0																																						
Difficulty:	1.00																																						
System ID:	1137395																																						
User-Defined ID:																																							
Cross Reference Number:	233000K2.01																																						
Topic:	ILT-5010-2a-002																																						
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REQUIRED MATERIALS:	None																																						
Notes and Comments:	None																																						

EXAMINATION ANSWER KEY

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4

ID: 1104712

Points: 1.00

Torus cooling is in-service on Unit 3 using the "B" RHR and "B" HPSW pumps.

Alarm "E-23 Bus Differential or Overcurrent Relays" is received.

Based on the above condition, Torus cooling would (1) and the "B" loop of RHR (2).

- A. (1) be lost
(2) can be placed in-service in accordance with SO 10.1.D-3 Residual Heat Removal System Torus Cooling using the "D" RHR and "D" HPSW pumps.
- B. (1) be lost
(2) can NOT be placed in-service in accordance with SO 10.1.D-3 Residual Heat Removal System Torus Cooling using the "D" RHR and "D" HPSW pumps.
- C. (1) remain in service
(2) can be maximized using SO 10.1.D-3 Residual Heat Removal System Torus Cooling using the "D" RHR and "D" HPSW pumps.
- D. (1) remain in service
(2) can NOT be maximized using with SO 10.1.D-3 Residual Heat Removal System Torus Cooling using the "D" RHR and "D" HPSW pumps.

Answer: B

Answer Explanation		
Choice		Basis or Justification
Correct:	B	Receipt of the E-23 Bus Diff or Overcurrent Relay alarm indicates that there is a bus fault that results in loss of bus power. Loss of power will cause a loss of the "B" RHR and HPSW pumps (Torus cooling will be lost). With no power to the HPSW discharge valve torus cooling can not be placed in service on the "B" loop. The HPSW would "run out".
Distractors:	A	Receipt of the E-23 Bus Diff or Overcurrent Relay alarm indicates that there is a bus fault that results in loss of bus power. Plausible if the candidate does not recall the power supply to the HPSW pump discharge valve or does not recall that HPSW can not be placed in service with two HPSW pump discharge valves open.
	C	Receipt of the E-23 Bus Diff or Overcurrent Relay alarm indicates that there is a bus fault that results in loss of bus power. Plausible if the candidate does not recall the power supply to the RHR and HPSW pumps and does not understand that E-23 bus will cause a loss of pump power. Plausible if the candidate does not recall the power supply to the HPSW pump discharge valve or does not recall that HPSW can not be placed in service with two HPSW pump discharge valves open.
	D	Receipt of the E-23 Bus Diff or Overcurrent Relay alarm indicates that there is a bus fault that results in loss of bus power. Plausible if the candidate does not recall the power supply to the RHR and HPSW pumps and does not understand that E-23 bus will cause a loss of pump power.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 4 Info																															
Question Type:	Multiple Choice																														
Status:	Active																														
Always select on test?	No																														
Authorized for practice?	No																														
Points:	1.00																														
Time to Complete:	0																														
Difficulty:	1.00																														
System ID:	1104712																														
User-Defined ID:																															
Cross Reference Number:	400000 K2.02																														
Topic:	ILT-5032-2b-001																														
Num Field 1:																															
Num Field 2:																															
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REQUIRED MATERIALS:	None																														
Notes and Comments:	None																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

5

ID: 1137054

Points: 1.00

Unit 2 was initially at 100% power when an Electric ATWS occurs. The following conditions exist:

- 2A Standby Liquid Control (SLC) pump is running
- Both SLC continuity lights are lit
- Reactor pressure is 1050 psig
- 2A SLC pump discharge pressure is 1150 psig
- 2B RWCU pump is in-service vessel to vessel

Based on the above conditions, which of the following statement is correct?

- A. The Squib valves did not fire.
- B. The 2B SLC pump must be started.
- C. APRMs will indicate below 3% within 5 minutes.
- D. RWCU is limiting the rate of power reduction.

Answer: D

Answer Explanation		
Choice		Basis or Justification
Correct:	D	The 2A SLC pump is injecting. SLC pump discharge pressure is slightly higher than Reactor pressure. The Squib continuity lights do not extinguish when the pump switch is taken to START. RWCU did not isolate as required when the SLC pump switch was taken to START due to a problem with the SLC START switch. Because of this RWCU is limiting the rate of power reduction.
Distracters:	A	SLC is injecting the Squib continuity lights do not extinguish when the pump control switch is taken to Start. Plausible if the candidate does not understand the indication of an injecting positive displacement pump and the operation of the Squib valves.
	B	SLC is injecting so there is not a reason to start the 2B SLC pump. Plausible if the candidate does not understand the indication of an injecting positive displacement pump.
	C	SLC is injecting, RWCU did not isolate therefore reactor power will not go from 100% to less than 3% power within 5 minutes as verified on the Peach Bottom simulator. Plausible if the candidate does not recognize that RWCU is in-service and should have isolated automatically when the SLC control switch was taken to Start.

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Question 5 Info			
Question Type:	Multiple Choice		
Status:	Active		
Always select on test?	No		
Authorized for practice?	No		
Points:	1.00		
Time to Complete:	0		
Difficulty:	1.00		
System ID:	1137054		
User-Defined ID:			
Cross Reference Number:			
Topic:	ILT- 5011-6a-002		
Num Field 1:	NRC 2015		
Num Field 2:			
Text Field:			
Comments:	Psychometrics		
	Level of Knowledge	Difficulty	Time Allowance (minutes)
	HIGH		
	RO		
	10CRF55.41(b)(6)		
	Source Documentation		
	Source:	X New Exam item Previous NRC Exam Modified Bank Other Exam Bank ILT Exam Bank	
	Reference(s):	SO 11.1.B-3 Standby Liquid Control System Initiation, PLOT - 5011	
	Learning Objective:	ILT-5011-6a	
	K/A System:	211000 Standby Liquid Control System	Importance: RO / SRO 4.3/ 4.4
	K/A Statement:	K3.01 Knowledge of the effect that a loss or malfunction of the STANDBY LIQUID CONTROL SYSTEM will have on the following: Ability to shutdown the reactor in certain conditions.	
	REQUIRED MATERIALS:	None	
	Notes and Comments:	None	

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

6

ID: 1137055

Points: 1.00

Unit 2 HPCI is injecting into the RPV following a Group I isolation.

The following conditions exist:

- HPCI steam piping area temperature is 210 degrees F and rising
- RPV level is -100 inches and rising slowly
- Drywell pressure is 1 psig and steady
- HPCI pump discharge flow on FI-2-23-108 is 5000 gpm and steady

Based on the above conditions, the HPCI PCIS Group IV isolation _____.

- A. will occur if/when HPCI area temperature reaches 250 degrees F.
- B. will occur if/when RPV level rises above +45 inches.
- C. has failed. Close valve MO-2-23-15 "HPCI Steam Isolation". The breaker for MO-2-23-15 "HPCI Steam Isolation" can remain closed.
- D. has failed. Close valve MO-2-23-15 "HPCI Steam Isolation". The breaker for MO-2-23-15 "HPCI Steam Isolation" must be opened.

Answer: D

Answer Explanation		
Choice		Basis or Justification
Correct:	D	HPCI should have isolated. The area temperature is above the isolation setpoint of 200 degrees F. The reason that C is wrong and D is correct is because with a failed isolation signal the isolation valve will not stay closed with an initiation signal present. When the valve reaches the full closed position the valve will come open automatically because of the initiation signal (-100"). The only way to stop the valve from coming open is to remove the electrical feed.
Distracters:	A	The isolation setpoint is 200 degrees F. Plausible if the candidate confuses the HPCI isolation setpoint with the Reactor Building Main Steam Line isolation setpoint.
	B	The high RPV level trip logic (+45) signal does not affect the isolation setpoint. Plausible if the candidate does not understand the relationship of the high RPV level trip logic and the isolation logic.
	C	MO-15 will not stay closed with the initiation signal present (\leq -48 inches RPV level) and the isolation signal failed. Plausible if the candidate does not understand how the initiation signal affects the MO-15 valve logic.

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Question 6 Info																																							
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User-Defined ID:																																							
Cross Reference Number:	223002 K3.01																																						
Topic:	ILT-5007G-5I-002																																						
Num Field 1:	NRC 2015																																						
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Comments:	<table border="1"> <thead> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> </thead> <tbody> <tr> <td>HIGH</td> <td></td> <td></td> <td>10CRF55.41(b)(7)</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="3">Source Documentation</th> </tr> </thead> <tbody> <tr> <td>Source:</td> <td colspan="2"> <input checked="" type="checkbox"/> New Exam <input type="checkbox"/> Modified Bank <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank </td> </tr> <tr> <td>Reference(s):</td> <td colspan="2">GP-8.F PCIS Isolation - Groups IV and IV-B, COL GP-8.F-Groups IV, and IV-B Isolation, M-1-S-23, M-1-S-36</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="2">PLOT-5007G.5I</td> </tr> <tr> <td>K/A System:</td> <td>223002 Primary Containment Isolation System/Nuclear Steam Supply Shut-off</td> <td>Importance: RO / SRO 3.6/ 3.6</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="2">K3.12 Knowledge of the effect that a loss or malfunction of the PRIMARY CONTAINMENT ISOLATION SYSTEM/NUCLEAR STEAM SUPPLY SHUT-OFF will have on the following: High Pressure Coolant Injection</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="2">None</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="2">None</td> </tr> </tbody> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	HIGH			10CRF55.41(b)(7)	Source Documentation			Source:	<input checked="" type="checkbox"/> New Exam <input type="checkbox"/> Modified Bank <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank		Reference(s):	GP-8.F PCIS Isolation - Groups IV and IV-B, COL GP-8.F-Groups IV, and IV-B Isolation, M-1-S-23, M-1-S-36		Learning Objective:	PLOT-5007G.5I		K/A System:	223002 Primary Containment Isolation System/Nuclear Steam Supply Shut-off	Importance: RO / SRO 3.6/ 3.6	K/A Statement:	K3.12 Knowledge of the effect that a loss or malfunction of the PRIMARY CONTAINMENT ISOLATION SYSTEM/NUCLEAR STEAM SUPPLY SHUT-OFF will have on the following: High Pressure Coolant Injection		REQUIRED MATERIALS:	None		Notes and Comments:	None	
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REQUIRED MATERIALS:	None																																						
Notes and Comments:	None																																						

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

7

ID: 1137066

Points: 1.00

Unit 2 is in an outage.

- The E-222 breaker control switch is in "Normal After Trip".
- The E-322 breaker control switch is in "Normal After Trip".
- The E-223 breaker control switch is in "Normal After Trip".
- The E-323 breaker control switch is in "Normal After Close".
- A Loss of Off-Site power occurs.

Based on the above conditions, the E-2 Diesel Generator will start and:

- A. energize ONLY the E-23 bus.
- B. energize ONLY the E-22 bus.
- C. NOT energize either the E-22 or E-23 bus.
- D. energize BOTH the E-22 bus and the E-23 bus.

Answer: A

Answer Explanation		
Choice		Basis or Justification
Correct:	A	The E-22 bus is not setup for fast transfer because both supply breakers are in "normal after trip". With both 4 KV bus supply breakers for the E-22 bus in normal after trip the logic to transfer to the alternate 4 KV source is disabled, the logic to start the E-2 D/G is disabled and the logic to close the D/G output breaker to the E-22 bus is disabled. The conditions in the stem do not directly indicate which bus is energized and which bus is not. The candidate must determine bus status using the given breaker numbers and the breaker positions. Because of the bus status the E-2 diesel generator will only receive a start signal when the E-23 bus undervoltage condition occurs. When the loss of off-site power occurs the D/G will start and only load the E-23 bus. This is a direct K/A match because it requires the candidate to determine if the diesel generator will automatically start and load based on bus conditions when a loss of offsite power occurs.
Distracters:	B	The E-22 bus can not load since the bus is not setup for fast transfer or automatic Diesel Generator start and loading. Plausible because the candidate must determine based on breaker position if the E-22 bus was energized prior to the loss of off site power. They must also understand the requirements for a diesel to start and load a bus.
	C	The D/G will receive a start signal from the undervoltage on the E-23 bus. Plausible because the candidate must determine the status of the buses based on breaker position then determine how the diesel generator will respond to the loss of power.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	D	The E-22 bus can not load the bus is not setup for fast transfer or automatic Diesel Generator start and loading. Plausible because the candidate must determine based on breaker position if the E-22 bus was energized prior to the loss of off site power. They must also understand the requirements for a diesel to start and load a bus.
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Question 7 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	0.00																																														
System ID:	1137066																																														
User-Defined ID:																																															
Cross Reference Number:	264000K4.08																																														
Topic:	ILT-5052-3h-002																																														
Num Field 1:	NRC 2015																																														
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REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

8

ID: 1137067

Points: 1.00

Consider the following accident scenario:

- T=0 sec Small line break LOCA occurs.
- T=10 sec RPV level is 1 inch, Reactor Scram occurs, and all Control Rods insert to full-in.
- T=25 sec RPV level is -48 inches and lowering, HPCI and RCIC fail to start.
- T=130 sec RPV level is -160 inches; MSIVs are shut, Low Pressure ECCS Pumps are running on minimum flow and all four Emergency Diesel Generators are running.
- T=155 sec Drywell pressure is 2 psig and rising.
- T=200 sec RCIC is manually started and is injecting into the RPV.
- T=210 sec RPV level is steady at -130 inches.

Based on the above conditions, assuming no further operator action and no additional equipment malfunctions, the ADS system will _____.

- A. NOT initiate.
- B. initiate at T=245 seconds
- C. initiate at T=270 seconds
- D. initiate at T=785 seconds

Answer: A

Answer Explanation

Choice		Basis or Justification
Correct:	A	RPV level is recovered above -160 inches before the 115 second timer has timed out. This resets the ADS timer and a blowdown does not occur.
Distracters:	B	Plausible if the candidate does not understand that if RPV level is recovered above -160 inches the logic resets.
	C	Plausible if the candidate does not understand that if RPV level is recovered above -160 inches the logic resets.
	D	Plausible if the candidate does not understand that if RPV level is recovered above -160 inches the logic resets. Plausible if the candidate does not remember that the logic needs either the 2 psig drywell signal or be below -160 inches for 9 minutes.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 8 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
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REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

9

ID: 1098003

Points: 1.00

Unit 3 is at power following a maintenance outage.

The following conditions exist:

- Reactor power is 50% and steady
- Total drive flow is 54% and steady

Bases on the above conditions, a Simulated Thermal Power (STP) flow biased rod block will first occur at approximately ____ (1) ____ percent, and an STP flow biased scram will first occur at approximately ____ (2) ____ percent.

- A. (1) 79.0
(2) 91.0
- B. (1) 87.0
(2) 96.2
- C. (1) 81.3
(2) 93.3
- D. (1) 89.6
(2) 98.8

Answer: D

Answer Explanation		
Choice	Basis or Justification	
Correct:	D	$.65(54)+54.5 = 89.6\%$ is the APRM rod block setpoint based on TRM values. $.65(54)+63.7 = 98.8\%$ for the APRM scram setpoint based on Tech Spec values.
Distracters:	A	These values were derived using an old calculation $(.58w+62)$ for the scram setpoint and $(.58w+50)$ for the rod block setpoint and using 50% flow instead of 54%. Plausible if the candidate does not remember the correct formula for the setpoints. Plausible if the candidate substitute the power value for W instead of flow.
	B	These values were derived using an old calculation $(.58w+62)$ for the scram setpoint and $(.58w+50)$ for the rod block setpoint. Plausible if the candidate does not remember the correct formula for the setpoints.
	C	These values were derived substituting 50% for the flow value. Plausible if the candidate is unsure of which value gets substituted for "W" in the calculation and uses the power value instead of flow.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 9 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1098003																																														
User-Defined ID:																																															
Cross Reference Number:	215005K5.05																																														
Topic:	ILT-5060-4e-001																																														
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REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

2015 NRC RO exam rev 1

Points: 1.00

- A. Circuit Breaker control power is automatically backed up by uninterruptable AC power.
- B. ALL of the Circuit Breakers will automatically trip open due to the loss of the control power.
- C. The Circuit Breakers can NOT be opened manually without Circuit Breaker control power.
- D. If a fault now occurs the Switchgear Circuit Breakers will NOT automatically open.

Answer Explanation

Choice		Basis or Justification
Correct:	D	Correct because the 3SU Switchgear Circuit Breakers can NOT automatically open without control power
Distractors:	A	Wrong because the control power is not backed up. Plausible if the candidate does not understand the source of control power to the 3SU breaker.
	B	Wrong because the 3SU Switchgear Circuit Breakers can NOT automatically open without control power. Plausible if the candidate does not understand the function of control power in the operation of the 3SU breaker.
	C	Wrong because the Circuit Breakers can be manually opened. Plausible if the candidate does not understand the function of control power in the operation of the 3SU breaker.

13 April 2015

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	MEMORY			10CRF55.41(b) (7)
	Source Documentation			
	Source:	<input type="checkbox"/> New Exam item <input type="checkbox"/> Modified Bank <input type="checkbox"/> Bank <input checked="" type="checkbox"/> ILT Exam Bank		<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam
	Reference(s):	PLOT 5053		
	Learning Objective:	PLOT 5053.05b		
	K/A System:	262001 A.C. Electrical Distribution	Importance; RO / SRO 2.6/2.9	
	K/A Statement:	K5.02 - Knowledge of the operational implications of the following concepts as they apply to A.C. ELECTRICAL DISTRIBUTION: Breaker Control		
	REQUIRED MATERIALS:	None		
	Notes and Comments:	None		

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

11

ID: 993231

Points: 1.00

A complete loss of RPS "A" and "B" power on Unit 2 results in a Reactor scram.

Which one of the following identifies the available indications of reactor power in the Main Control Room following the Reactor scram?

	<u>Indication</u>	<u>Location</u>
A.	APRM only	20C037 only
B.	WRNM only	20C036 only
C.	APRM only	20C005 and 20C037
D.	WRNM only	20C005 and 20C036

Answer: D

Answer Explanation		
Choice		Basis or Justification
Correct:	D	The WRNM system does not receive any power from RPS, therefore a loss of RPS will not affect the WRNM indications or functions. WRNM displays on both the 20C005 and the 20C036 panels will remain available. A and B RPS busses supply all inputs to the Quad Low Voltage Power Supplies for all 4 of the APRMs. If both channels of RPS were lost, all four 2-out-of-4 logic modules and all four ARPM channels would lose power.
Distractors:	A	Incorrect. A and B RPS busses supply all inputs to the Quad Low Voltage Power Supplies for all 4 of the APRMs. If both channels of RPS were lost, all four 2-out-of-4 logic modules and all four ARPM channels would lose power. Also, the location is not correct. Panel 20C036 is where the WRNM moduled are located, not the APRM module.
	B	Incorrect. WRNM displays on both the 20C005 and the 20C036 panels will remain available.
	C	Incorrect. A and B RPS busses supply all inputs to the Quad Low Voltage Power Supplies for all 4 of the APRMs. If both channels of RPS were lost, all four 2-out-of-4 logic modules and all four ARPM channels would lose power.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 11 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	0.00																																														
System ID:	993231																																														
User-Defined ID:	ILT-5060C-3B-002																																														
Cross Reference Number:	215003 K6.01																																														
Topic:	ILT-5060C-6b-002 Loss of Power to ODAs/Recorders																																														
Num Field 1:	2015 NRC																																														
Num Field 2:	N/A																																														
Text Field:	A																																														
Comments:	<table border="1"> <thead> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> </thead> <tbody> <tr> <td>MEMORY</td> <td></td> <td></td> <td>10CRF55.41(b)(7)</td> </tr> <tr> <th colspan="4">Source Documentation</th> </tr> <tr> <td>Source:</td> <td colspan="2"> New Exam item Modified Bank XILT Exam Bank </td> <td> Previous NRC Exam Other Exam Bank </td> </tr> <tr> <td>Reference(s):</td> <td colspan="3">PLOT 5060C</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="3">PLOT 5060C-6b</td> </tr> <tr> <td>K/A System:</td> <td colspan="2">215003 Intermediate Range Monitors (IRM) System</td> <td>Importance: RO / SRO 3.8/ 3.8</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="3">K6.01 Knowledge of the effect that a loss or malfunction of the following will have on the INTERMEDIATE RANGE MONITOR (IRM) SYSTEM: Reactor protection system (power supply)</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="3">None</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="3">None</td> </tr> </tbody> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	MEMORY			10CRF55.41(b)(7)	Source Documentation				Source:	New Exam item Modified Bank XILT Exam Bank		Previous NRC Exam Other Exam Bank	Reference(s):	PLOT 5060C			Learning Objective:	PLOT 5060C-6b			K/A System:	215003 Intermediate Range Monitors (IRM) System		Importance: RO / SRO 3.8/ 3.8	K/A Statement:	K6.01 Knowledge of the effect that a loss or malfunction of the following will have on the INTERMEDIATE RANGE MONITOR (IRM) SYSTEM: Reactor protection system (power supply)			REQUIRED MATERIALS:	None			Notes and Comments:	None		
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K/A System:	215003 Intermediate Range Monitors (IRM) System		Importance: RO / SRO 3.8/ 3.8																																												
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REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

12

ID: 1098022

Points: 1.00

A LOCA has occurred on Unit 2. The following conditions exist:

- RPV level is -200 inches and steady
- Drywell pressure is 7 psig and rising slowly
- MO-2-14-12B, "Core Spray Injection Valve" is open
- The "B" and "D" Core Spray pumps are running
- Core Spray flow as indicated on FI-2-14-50B is 7000 gpm

Based on the above conditions, reactor pressure is approximately ____ (1) ____, there ____ (2) ____ Adequate Core Cooling.

- A. (1) 300 psig
(2) is
- B. (1) 300 psig
(2) is not
- C. (1) 400 psig
(2) is
- D. (1) 400 psig
(2) is not

Answer: A

Answer Explanation		
Choice		Basis or Justification
Correct:	A	With injection RPV pressure must be less than the Core Spray discharge pressure of 330 psig. Core Spray flow is above the value for spray cooling with RPV level above -226 inches.
Distractors:	B	Plausible if the candidate does not recognize that ACC is established even with low level (above -226 inches) with adequate Steam Cooling.
	C	Plausible if the candidate does not understand the Core Spray discharge pressure with respect to Reactor pressure. 400 psig is close to the 450 psig signal for the injection valves to open. The candidate could confuse the injection valve setpoint with the Shutoff head of the Core Spray pump.
	D	Plausible if the candidate does not recognize that ACC is established even with low level (above -226 inches) with adequate Steam cooling. Plausible if the candidate does not understand the Core Spray discharge pressure with respect to Reactor pressure. 400 psig is close to the 450 psig signal for the injection valves to open. The candidate could confuse the injection valve setpoint with the Shutoff head of the Core Spray pump.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 12 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1098022																																														
User-Defined ID:																																															
Cross Reference Number:	209001A1.04																																														
Topic:	ILT-5014-9k.4-001																																														
Num Field 1:	NRC 2015																																														
Num Field 2:																																															
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REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

13

ID: 994536

Points: 1.00

- A plant transient has resulted in a loss of power to 20Y034 and a subsequent failure of Unit 2 RPS to initiate a reactor scram.
- The Reactor Operator has placed the Standby Liquid Control (SLC) Control Switch to the 'Start System A' position.
- Print M-1-S-46 sheets 1 and 2 are provided separately for reference.

Based on the above condition, which of the following describes the 2A SLC Pump response, including indications? The 2A SLC Pump _____.

- A. starts,
both squib valves fire,
running indication red light is lit,
both squib valve continuity lights are lit
- B. starts,
both squib valves fire,
running indication red light is NOT lit,
both squib valve continuity lights are NOT lit
- C. does NOT start,
both squib valves do NOT fire,
not running indication green light is lit,
both squib valve continuity lights are lit
- D. does NOT start,
both squib valves do NOT fire,
the not running indication green light is NOT lit,
both squib valve continuity lights are NOT lit

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	Standby Liquid Control (SLC) Pump, squib continuity and discharge manual valve position indication (HV-18) light indications are powered not from the pump breaker, but from 2(3)0Y34 Panel. Squib valve power comes from the SLC pump motor control center which is not affected by a loss of 20Y34.
Distractors:	A	Incorrect. A loss of 20Y34 causes loss of power to lights on C005A. There would be no red running light indication nor any squib continuity lights lit under a loss of 20Y34.
	C	Incorrect. A loss of 20Y34 does not affect ability to start SLC. Pump power is from emergency related bus E-124-R-C. However, all related panel indicating lights are off.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	D	Incorrect. A loss of 20Y34 does not affect ability to start SLC. Pump power is from emergency related bus E-124-R-C
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Question 13 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	994536																																														
User-Defined ID:																																															
Cross Reference Number:	211000K6.03																																														
Topic:	ILT-5011-7c-001																																														
Num Field 1:	NRC 2015																																														
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REQUIRED MATERIALS:	Provide M-1-S-46, Sheets 1 and 2 to the student																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

14

ID: 1098332

Points: 1.00

Unit 3 was operating at 100% power with Torus temperature at 89°F

A small break LOCA occurred and ADS has initiated.

Following the ADS blowdown the following conditions exist:

- RPV level is 10 inches and rising
- RPV pressure is 100 psig and lowering
- All RHR and Core Spray pumps are injecting
- Drywell pressure is 8 psig and lowering
- Torus level is fluctuating between 14.65 feet and 14.85 feet

Based on the above conditions, Torus temperature will be ____ (1) ____ the T-102 Torus temperature entry condition.

Long-term decay heat removal requires a minimum of ____ (2) ____ RHR and HPSW pump(s).

- A. (1) less than
(2) one
- B. (1) less than
(2) two
- C. (1) greater than
(2) one
- D. (1) greater than
(2) two

Answer: C

Answer Explanation		
Choice		Basis or Justification
Correct:	C	An ADS blowdown will cause Torus temperature to rise above 95 degrees F which is the T-102 entry condition for high Torus temperature. Based on performing a blowdown on the simulator Torus temperature will rise approximately 50°F. This is information that the candidate will have learned from performing blowdowns during simulator training. One RHR pump with its associated HPSW pump is sufficient to handle decay heat load by design per The HPSW DBD section 3.0..
Distractors:	A	Incorrect. An ADS blowdown will cause Torus temperature to rise above 95 degrees F which is the T-102 entry condition for high Torus temperature. Plausible if the candidate does not recall that an ADS blowdown includes 5 open SRVs and a significant amount of energy to the Torus.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

B	Incorrect. An ADS blowdown will cause Torus temperature to rise above 95 degrees F which is the T-102 entry condition for high Torus temperature. One RHR pump with its associated HPSW pump is sufficient to handle decay heat load by design. Plausible if the candidate does not remember these design conditions.
D	Incorrect. One RHR pump with its associated HPSW pump is sufficient to handle decay heat load by design.

Question 14 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1098332																																														
User-Defined ID:																																															
Cross Reference Number:	218000A1.06																																														
Topic:	ILT-5001G-9k.6-001																																														
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Reference(s):	T-102, PLOT-5001G																																														
Learning Objective:	PLOT-5001G-9k.6																																														
K/A System:	218000 Automatic Depressurization System		Importance: RO / SRO 4.1 / 4.3																																												
K/A Statement:	A1.06 Ability to predict and/or monitor changes in parameter associated with operating the AUTOMATIC DEPRESSURIZATION SYSTEM controls including: Suppression pool temperature																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

15

ID: 1098361

Points: 1.00

- Unit 2 and 3 were at 100% power when a Station Blackout occurs.
- Unit 2 HPCI is injecting into the RPV to control RPV level.
- A significant steam leak occurs just downstream of MO-2-23-16 "HPCI Steam Supply Isolation Valve" causing a HPCI isolation signal.

Ans

The SBO occurred 15 minutes before the steam leak.

Based on the above conditions, choose the correct statement below regarding the HPCI system response and additional mitigating actions.

The HPCI steam leak will _____.

- A. automatically isolate. Bypass the high temperature isolation using SE-11 ATTACHMENT X, "Defeat of the HPCI and RCIC Steam Line High Temperature Isolation".
- B. automatically isolate. Start RCIC using RRC 13.1-2, "RCIC System Operation During a Plant Event" to control RPV water level.
- C. NOT automatically isolate. Isolate HPCI using GP-8.F "PCIS Isolation - Groups IV and IV-B"
- D. NOT automatically isolate. Trip HPCI using RRC 23.1-2, "HPCI System Operation During a Plant Event" to minimize the steam leak into the HPCI room.

Answer: B

Answer Explanation		
Choice		Basis or Justification
Correct:	B	Even with a station blackout (SBO) HPCI MO-2-23-16 will close to isolate the leak since the logic and valve power is DC. Then candidate must understand which valves in the HPCI system are AC powered and which valves are DC powered. They must understand where the leak is in relation to the DC powered valve that will affect the isolation. When HPCI is out of Service RCIC will be the only system available to inject during a SBO event.
Distractors:	A	It is not appropriate to bypass the High temperature isolation with a steam leak. SE-11 Att X is only used to bypass the high temperature condition due to a lack of ventilation flow. Plausible if the candidate does not recall the purpose of SE-11 Att X.
	C	HPCI will isolate. GP-8 F is not required to perform the isolation because the isolation would have occurred. Plausible is the candidate does not recall that MO-2-23-16 is D.C. powered.
	D	HPCI will isolate. Tripping HPCI will not reduce the steam flow to the HPCI room. Plausible is the candidate does not recall that MO-2-23-16 is D.C. powered. Plausible if the candidate does not understand that the turbine trip will not minimize steam flow to the HPCI room.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 15 Info																																																					
Question Type:	Multiple Choice																																																				
Status:	Active																																																				
Always select on test?	No																																																				
Authorized for practice?	No																																																				
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Cross Reference Number:	206000 A2.04																																																				
Topic:	ILT-5023-7c-002																																																				
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Learning Objective:	PLOT 5023-7c																																																				
K/A System:	206000 High Pressure Coolant Injection System		Importance: RO / SRO 2.7/ 3.0																																																		
K/A Statement:	A2.04 Ability to (a) predict the impacts of the following on the HIGH PRESSURE COOLANT INJECTION SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: A.C. failures																																																				
REQUIRED MATERIALS:	None																																																				
Notes and Comments:	None																																																				

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

16

ID: 1098490

Points: 1.00

RCIC is aligned for injection following a Group I isolation. The following conditions exist:

- HPCI is unavailable
- RPV level is -100 inches and steady
- RPV pressure is 1050 psig and steady
- RCIC system flow is 60 gpm
- RCIC turbine speed is 2600 rpm
- The RCIC flow controller has failed to operate in automatic

Based on the above conditions, choose the correct answer with respect to RCIC system operation and required operator action.

The RCIC system will ____ (1) ____ and the required operator action is to ____ (2) ____.

- A. (1) cause damage to the turbine exhaust check valve due to low RCIC RPMs
(2) secure RCIC using SO 13.1-2, Section E, "RCIC System Shutdown".
- B. (1) cause damage to the turbine exhaust check valve due to low RCIC RPMs
(2) place the RCIC flow controller in manual and raise flow to 600 gpm using SO 13.1.C-2, "RCIC System Automatic Initiation Response".
- C. (1) pump the Condensate Storage Tank to the Torus
(2) secure RCIC using RRC 13.1-2, Section E, "RCIC System Shutdown".
- D. (1) pump the Condensate Storage Tank to the Torus
(2) place the RCIC flow controller in manual and raise flow to 600 gpm using SO 13.1.C-2, "RCIC System Automatic Initiation Response".

Answer: D

Answer Explanation		
Choice		Basis or Justification
Correct:	D	With the low system flow condition of only 60 gpm the RCIC system will pump the CST through the open min-flow valve to the Torus. RPV level is below the -48 inch automatic initiation setpoint SO 13.1.C directs that RCIC not be secured until RPV level is returned to the normal band.
Distractors:	A	Turbine damage will not occur if RCIC turbine RPM above 2200 rpm. RCIC must remain in-service with low RPV level. Plausible if the candidate does not recall the caution stating RCIC should not be operated with speed below 2200 rpm. Plausible if the candidate does not understand that securing RCIC would violate SO 13.1.C.
	B	Turbine damage will not occur if RCIC turbine RPM above 2200 rpm. RCIC must remain in-service with low RPV level. Plausible if the candidate does not recall the caution stating RCIC should not be operated with speed below 2200 rpm.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	C	RCIC must remain in-service with low RPV level. Plausible if the candidate does not understand that securing RCIC would violate SO 13.1.C.
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Question 16 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1098490																																														
User-Defined ID:																																															
Cross Reference Number:	217000 A2.10																																														
Topic:	ILT-5013-7e-001																																														
Num Field 1:	2015 NRC																																														
Num Field 2:																																															
Text Field:																																															
Comments:	<table border="1"> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> <tr> <td>HIGH</td> <td></td> <td></td> <td>10CRF55.41(b)(7)</td> </tr> <tr> <th colspan="4">Source Documentation</th> </tr> <tr> <td>Source:</td> <td colspan="3"> XNew Exam item Previous NRC Exam Modified Bank Other Exam Bank ILT Exam Bank </td> </tr> <tr> <td>Reference(s):</td> <td colspan="3">SO 13.1.C, PLOT 5013, ARC 222 B-1</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="3">PLOT 5013.7e</td> </tr> <tr> <td>K/A System:</td> <td colspan="2">217000 Reactor Core Isolation Cooling System</td> <td>Importance: RO / SRO 3.1/ 3.1</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="3">A2.10 - Ability to (a) predict the impacts of the following on the REACTOR CORE ISOLATION COOLING SYSTEM (RCIC); and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Turbine control system failure</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="3">None</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="3">None</td> </tr> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	HIGH			10CRF55.41(b)(7)	Source Documentation				Source:	XNew Exam item Previous NRC Exam Modified Bank Other Exam Bank ILT Exam Bank			Reference(s):	SO 13.1.C, PLOT 5013, ARC 222 B-1			Learning Objective:	PLOT 5013.7e			K/A System:	217000 Reactor Core Isolation Cooling System		Importance: RO / SRO 3.1/ 3.1	K/A Statement:	A2.10 - Ability to (a) predict the impacts of the following on the REACTOR CORE ISOLATION COOLING SYSTEM (RCIC); and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Turbine control system failure			REQUIRED MATERIALS:	None			Notes and Comments:	None		
Psychometrics																																															
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
HIGH			10CRF55.41(b)(7)																																												
Source Documentation																																															
Source:	XNew Exam item Previous NRC Exam Modified Bank Other Exam Bank ILT Exam Bank																																														
Reference(s):	SO 13.1.C, PLOT 5013, ARC 222 B-1																																														
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K/A System:	217000 Reactor Core Isolation Cooling System		Importance: RO / SRO 3.1/ 3.1																																												
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REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

17

ID: 993215

Points: 1.00

- A transient and plant trip from 100% power occurred on Unit 2.
- Reactor pressure was observed to reach 1150 psig.

Based on the above conditions, a total of _____ should have opened to limit RPV pressure.

- A. 4 SRVs
- B. 8 SRVs
- C. 11 SRVs
- D. 11 SRVs and 3 Safety Valves

Answer: B

Answer Explanation		
Choice	Basis or Justification	
Correct:	B	As required by Technical Specifications, SRV lift setpoints are: 4 SRVs at 1135 psig, 4 SRVs at 1145psig, 3 SRVs at 1155 psig, and 3 Safety Valves at 1260 psig. With a pressure of 1150 eight SRVs will have opened.
Distractors:	A	Plausible if the candidate does not recall the SRV lift points.
	C	Plausible if the candidate does not recall the SRV lift points.
	D	Plausible if the candidate does not recall the SRV and SV lift points.

Question 17 Info																
Question Type:		Multiple Choice														
Status:		Active														
Always select on test?		No														
Authorized for practice?		No														
Points:		1.00														
Time to Complete:		0														
Difficulty:		0.00														
System ID:		993215														
User-Defined ID:																
Cross Reference Number:		239002 A3.02														
Topic:		ILT-5001A-3d-002														
Num Field 1:		2015 NRC														
Num Field 2:		N/A														
Text Field:		A														
Comments:		<table><tr><th colspan="4">Psychometrics</th></tr><tr><td>Level of Knowledge</td><td>Difficulty</td><td>Time Allowance (minutes)</td><td>RO</td></tr><tr><td>MEMORY</td><td></td><td></td><td>10CRF55.41(b)(3)</td></tr></table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	MEMORY			10CRF55.41(b)(3)
Psychometrics																
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO													
MEMORY			10CRF55.41(b)(3)													

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	Source Documentation	
	Source:	<div> <div>New Exam item</div> <div>Previous NRC Exam</div> <div>Modified Bank</div> <div>Other Exam Bank</div> </div>
		XILT Exam Bank
	Reference(s):	PBAPS Tech Specs 3.4.3, PLOT 5001A
	Learning Objective:	PLOT-5001A-3d
	K/A System:	<div> <div>239002 Relief/Safety Valves</div> <div>Importance: RO / SRO 4.3/ 4.3</div> </div>
	K/A Statement:	A3.02 - Ability to monitor automatic operations of the RELIEF/SAFETY VALVES including: SRV operation on high reactor pressure
	REQUIRED MATERIALS:	None
	Notes and Comments:	None

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

18

ID: 1118556

Points: 1.00

A transient from 100% Reactor power has resulted in the following conditions on Unit 3:

- A loss of normal feedwater has occurred
- RPV level has lowered to -60 inches
- All automatic initiations and isolations have occurred as required
- NO operator actions have been performed

Based on the above conditions, select the status of the Standby Gas Treatment (SBGT) System fans and filter train status.

Standby Gas Treatment Fans ____ (1) ____ started and the dampers for the ____ (2) ____ SBGT Filter Train(s) is/are open.

- A. (1) B and C
(2) A and B
- B. (1) B and C
(2) B only
- C. (1) A and C
(2) A and B
- D. (1) A, B, and C
(2) A and B

Answer: A

Answer Explanation		
Choice		Basis or Justification
Correct:	A	A Group III PCIS isolation has occurred due to reactor level being less than +1 inch. Since the transient occurred on Unit 3 the B and C SBGT fans will automatically start and both the A and B SBGT filter trains will align for service.
Distractors:	B	Incorrect. Both the A and B SBGT filter trains will align for service, not just the B train. Plausible if the candidate thinks that only the B filter train lines up for Unit 3 only.
	C	Incorrect. The A SBGT fan will only start on a Group III isolation signal on Unit 2. Not the case here.
	D	Incorrect. Plausible based on that all three SBGT fans start with both filter trains align if a dual-unit transient occurs. This event is on Unit 3 only.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 18 Info																																	
Question Type:	Multiple Choice																																
Status:	Active																																
Always select on test?	No																																
Authorized for practice?	No																																
Points:	1.00																																
Time to Complete:	3																																
Difficulty:	2.00																																
System ID:	1118556																																
User-Defined ID:	ILT-5009A-4A-001																																
Cross Reference Number:	288000 K4.03																																
Topic:	ILT-5009A-4a-002 Rx Lo Lo Level / status of vent and sbgt																																
Num Field 1:	2015 NRC																																
Num Field 2:																																	
Text Field:																																	
Comments:	<table border="1"> <thead> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> </thead> <tbody> <tr> <td>HIGH</td> <td></td> <td></td> <td>10CRF55.41(b)(9)</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="2">Source Documentation</th> </tr> </thead> <tbody> <tr> <td>Source:</td> <td> <input type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input checked="" type="checkbox"/> ILT Exam Bank </td> </tr> <tr> <td>Reference(s):</td> <td>GP-8.B; GP-8.B COL</td> </tr> <tr> <td>Learning Objective:</td> <td>PLOT-5009a-3a</td> </tr> <tr> <td>K/A System:</td> <td>261000 – Standby Gas Treatment System</td> </tr> <tr> <td>Importance:</td> <td>RO / SRO 3.0 / 2.9</td> </tr> <tr> <td colspan="2">K/A Statement: A3.03 – Ability to monitor automatic operations of the STANDBY GAS TREATMENT SYSTEM including: Valve operation</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td>NONE</td> </tr> <tr> <td>Notes and Comments:</td> <td></td> </tr> </tbody> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	HIGH			10CRF55.41(b)(9)	Source Documentation		Source:	<input type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input checked="" type="checkbox"/> ILT Exam Bank	Reference(s):	GP-8.B; GP-8.B COL	Learning Objective:	PLOT-5009a-3a	K/A System:	261000 – Standby Gas Treatment System	Importance:	RO / SRO 3.0 / 2.9	K/A Statement: A3.03 – Ability to monitor automatic operations of the STANDBY GAS TREATMENT SYSTEM including: Valve operation		REQUIRED MATERIALS:	NONE	Notes and Comments:	
Psychometrics																																	
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																														
HIGH			10CRF55.41(b)(9)																														
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K/A System:	261000 – Standby Gas Treatment System																																
Importance:	RO / SRO 3.0 / 2.9																																
K/A Statement: A3.03 – Ability to monitor automatic operations of the STANDBY GAS TREATMENT SYSTEM including: Valve operation																																	
REQUIRED MATERIALS:	NONE																																
Notes and Comments:																																	

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

19

ID: 1102305

Points: 1.00

During performance of GP-11.E, "Reactor Protection System - Scram and ARI Reset" the URO takes the "Scram Reset" switch in the Group 1 and 4 position.

With respect to the four (4) white scram group light on the RPS panels (C015 and C017), this action will cause _____.

- A. four (4) white scram group lights to light on the C015 panel ONLY
- B. four (4) white scram group lights to light on the C017 panel ONLY
- C. two (2) white scram group lights to light on BOTH C015 and C017 panels
- D. no change in indication until the "Scram Reset" switch is taken to position Group 2 and 3.

Answer: C

Answer Explanation		
Choice		Basis or Justification
Correct:	C	When the scram reset switch is taken to the position 1 and 4. It closes the scram inlet and outlet valves for two of the four rod groups. The white lights on both the C015 and C017 panels are indications of the rod group reset.
Distractors:	A	Plausible if the candidate does not understand how the scram reset logic functions. The candidate could believe that turn the switch to position 1 and 4 resets the "A" logic causing all 4 lights on C015 to light.
	B	Plausible if the candidate does not understand how the scram reset logic functions. The candidate could believe that turn the switch to position 1 and 4 resets the "B" logic causing all 4 lights on C017 to light.
	D	Plausible if the candidate does not understand how the scram reset logic functions. GP-11.E for the scram reset does not have the operator check the lights until the scram reset switch is taken to position 1 and 4 then 2 and 3. At this point all for the white lights would be lit.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 19 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	0.00																																														
System ID:	1102305																																														
User-Defined ID:																																															
Cross Reference Number:	212000 A4.14																																														
Topic:	ILT-5060F-9g-001																																														
Num Field 1:	2015 NRC																																														
Num Field 2:																																															
Text Field:																																															
Comments:	<table border="1"> <thead> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> </thead> <tbody> <tr> <td>MEMORY</td> <td></td> <td></td> <td>10CRF55.41(b)(6)</td> </tr> <tr> <th colspan="4">Source Documentation</th> </tr> <tr> <td>Source:</td> <td colspan="2"> <input checked="" type="checkbox"/> New Exam item <input type="checkbox"/> Modified Bank <input type="checkbox"/> ILT Exam Bank </td> <td> <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank </td> </tr> <tr> <td>Reference(s):</td> <td colspan="3">GP-11E, M-1-S-54</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="3">PLOT 5060F-9g</td> </tr> <tr> <td>K/A System:</td> <td colspan="2">212000 Reactor Protection System</td> <td>Importance: RO / SRO 3.8/ 3.8</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="3">A4.14 Ability to manually operate and/or monitor in the control room: Reset system following system activation</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="3">None</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="3">None</td> </tr> </tbody> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	MEMORY			10CRF55.41(b)(6)	Source Documentation				Source:	<input checked="" type="checkbox"/> New Exam item <input type="checkbox"/> Modified Bank <input type="checkbox"/> ILT Exam Bank		<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank	Reference(s):	GP-11E, M-1-S-54			Learning Objective:	PLOT 5060F-9g			K/A System:	212000 Reactor Protection System		Importance: RO / SRO 3.8/ 3.8	K/A Statement:	A4.14 Ability to manually operate and/or monitor in the control room: Reset system following system activation			REQUIRED MATERIALS:	None			Notes and Comments:	None		
Psychometrics																																															
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
MEMORY			10CRF55.41(b)(6)																																												
Source Documentation																																															
Source:	<input checked="" type="checkbox"/> New Exam item <input type="checkbox"/> Modified Bank <input type="checkbox"/> ILT Exam Bank		<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank																																												
Reference(s):	GP-11E, M-1-S-54																																														
Learning Objective:	PLOT 5060F-9g																																														
K/A System:	212000 Reactor Protection System		Importance: RO / SRO 3.8/ 3.8																																												
K/A Statement:	A4.14 Ability to manually operate and/or monitor in the control room: Reset system following system activation																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

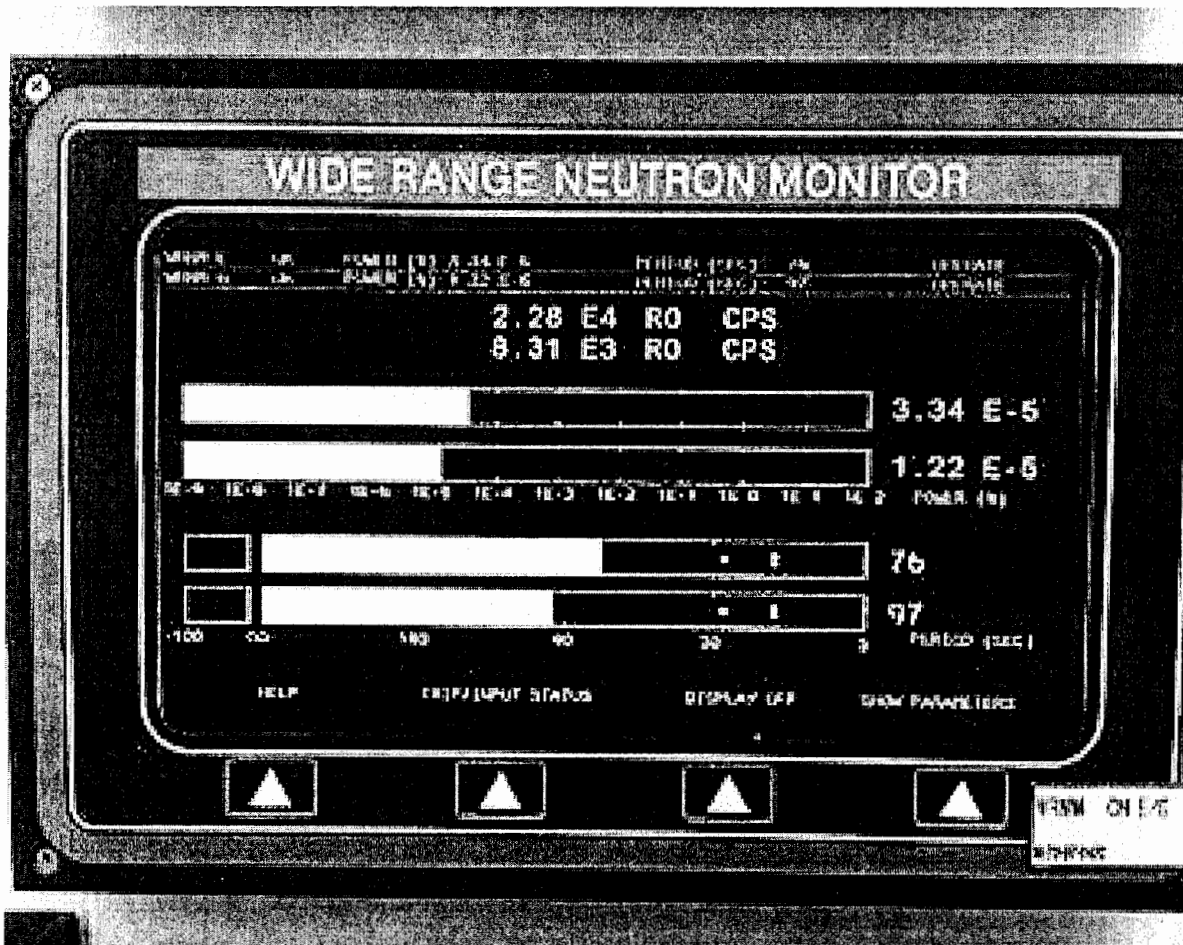
2015 NRC RO exam rev 1

20

ID: 1104746

Points: 1.00

- A Reactor startup is in progress on Unit 2.
- The start up has exceeded three doublings of the initial count rate.
- The next control rod to be withdrawn is at position 8 and is NOT a designated as a High worth rod.
- A picture of a WRNM display is below.



Choose the correct statement with respect to the reactor startup.

Control rod withdraw can _____.

- A. continue. Use single notch withdraw.
- B. continue. Use continuous withdraw.
- C. NOT continue. Allow period to drop to 150 seconds before continuing to withdraw control rods.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

- D. NOT continue. Allow period to drop to 250 seconds before continuing to withdraw control rods.

Answer: D

Answer Explanation		
Choice	Basis or Justification	
Correct:	D	The indications on the WRNM indicate that the reactor is below the point of adding heat and Period is approximately 100 seconds. Since this is not an identified high worth rod, per GP-2 while in this condition the operator must allow period to decay to 250 second before beginning to withdraw control rods if three doublings has been exceeded.
Distractors:	A	Having the rod at position 8 and greater than three doublings requires the operator to think about whether single notch withdraw is required or continuous withdrawal is acceptable. Plausible if the candidate does not recall the requirement to allow period to decay or if the candidate cannot properly interpret the indications on the WRNM display.
	B	Having the rod at position 8 and greater than three doublings requires the operator to think about whether single notch withdraw is required or continuous withdrawal is acceptable. Plausible if the candidate does not recall the requirement to allow period to decay or if the candidate cannot properly interpret the indications on the WRNM display.
	C	Plausible if the candidate does not recall the value at which rod withdraw can begin again.

Question 20 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	0			
Difficulty:	1.00			
System ID:	1104746			
User-Defined ID:				
Cross Reference Number:	215004A4.03			
Topic:	ILT5060C-9a-001			
Num Field 1:	2015 NRC			
Num Field 2:				
Text Field:				
Comments:	Psychometrics			
	Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
	HIGH			10CRF55.41(b)(10)
	Source Documentation			
	Source:			

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	XNew Exam item	Previous NRC Exam	
	Modified Bank	Other Exam Bank	
	ILT Exam Bank		
	Reference(s):	GP-2	
	Learning Objective:	PLOT-5060C-9a	
	K/A System:	215004 Source Range Monitor (SRM) System	Importance: RO / SRO 2.9/ 2.7
	K/A Statement:	A4.03 - Ability to manually operate and/or monitor in the control room: CRT Displays: Plant-Specific	
REQUIRED MATERIALS:		None	
Notes and Comments:		None	

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

21

ID: 994785

Points: 1.00

Given the following:

- A AIR COMP TROUBLE (216 B-1) alarm is received
- The 'A' Air Compressor (2AK001) indicates "tripped" on Panel 20C012
- Investigation shows the 'A' Air Compressor tripped on high receiver pressure
- 'A' Instrument Air Receiver (2AT006) pressure is currently 105 psig

Per ARC 216 B-1, which one of the following is correct regarding reset of the 'A' Air Compressor trip?

- A. The trip can only be reset at Control Panel 20C012.
- B. The trip can only be reset locally at the compressor.
- C. Air receiver pressure does NOT allow the air compressor trip to be reset.
- D. Air receiver pressure allows the air compressor trip to automatically reset.

Answer: B

Answer Explanation		
Correct:	B	Per ARC-216 B-1, a high receiver pressure trip occurs at 120 psig. Since normal system pressure is 100 to 115 psig, current receiver pressure (105 psig) allows compressor reset. Per the NOTE in ARC-216 B-1, a compressor trip can only be reset locally by depressing the "Reset-Start" button located at the tripped compressor.
Distractors:	A	Per the NOTE in ARC-216 B-1, a compressor trip can only be reset locally by depressing the "Reset-Start" button located at the tripped compressor. There is no reset available from the main control room.
	C	Per ARC-216 B-1, a high receiver pressure trip occurs at 120 psig. Since normal system pressure is 100 to 115 psig, current receiver pressure (105 psig) allows compressor reset.
	D	Per the NOTE in ARC-216 B-1, a compressor trip can only be reset locally by depressing the "Reset-Start" button located at the tripped compressor.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 21 Info																																													
Question Type:	Multiple Choice																																												
Status:	Active																																												
Always select on test?	No																																												
Authorized for practice?	No																																												
Points:	1.00																																												
Time to Complete:	0																																												
Difficulty:	1.00																																												
System ID:	994785																																												
User-Defined ID:	ILT-5036-8C-001																																												
Cross Reference Number:	300000 2.4.31																																												
Topic:	ILT-5036-8c-001 Given the following: *A AIR COMP TROUBLE (216 B-1) alarm is received. *The 'A' Air																																												
Num Field 1:	2015 NRC																																												
Num Field 2:																																													
Text Field:	NRC-09-1																																												
Comments:	<table border="1"> <thead> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> </thead> <tbody> <tr> <td>HIGH</td> <td></td> <td></td> <td>10CRF55.41(b)(7)</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="3">Source Documentation</th> </tr> </thead> <tbody> <tr> <td>Source:</td> <td>New Exam item</td> <td>Previous NRC Exam</td> </tr> <tr> <td></td> <td>Modified Bank</td> <td>Other Exam Bank</td> </tr> <tr> <td></td> <td colspan="2">XILT Exam Bank</td> </tr> <tr> <td>Reference(s):</td> <td colspan="2">ARC-216 B-1</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="2">PLOT-5036-8c</td> </tr> <tr> <td>K/A System:</td> <td>300000 Instrument Air System</td> <td>Importance: RO / SRO 4.2/ 4.1</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="2">2.4.31 Knowledge of annunciator alarms, indications, or response procedures.</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="2">None</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="2">None</td> </tr> </tbody> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	HIGH			10CRF55.41(b)(7)	Source Documentation			Source:	New Exam item	Previous NRC Exam		Modified Bank	Other Exam Bank		XILT Exam Bank		Reference(s):	ARC-216 B-1		Learning Objective:	PLOT-5036-8c		K/A System:	300000 Instrument Air System	Importance: RO / SRO 4.2/ 4.1	K/A Statement:	2.4.31 Knowledge of annunciator alarms, indications, or response procedures.		REQUIRED MATERIALS:	None		Notes and Comments:	None	
Psychometrics																																													
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REQUIRED MATERIALS:	None																																												
Notes and Comments:	None																																												

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

22

ID: 1140635

Points: 1.00

Given the following:

- Unit 2 was at full power when a loss of all off-site power occurred.
- Diesel Generator E-1 failed to start.
- RPV level is -10 inches and steady.
- Reactor pressure is 950 psig.
- CRD ACCUMULATOR LO PRESS/HI LEVEL (211 E-2) is in alarm.
- 2A DC POWER PANEL LO VOLTAGE (209 C-3) is in alarm.
- 2A DC Bus voltage at Panel 20C021 (CSR) is 90 VDC.

Which one of the following actions is required to be performed for these conditions?

- A. Determine plant impact of low DC Bus voltage in accordance with SE-13, "Loss of a 125 or 250 VDC Safety Related Bus".
- B. Restart the 2A CRD pump IAW SO 3.1-2, "CRD Hydraulic System Startup with the System Filled and Vented".
- C. Place the alternate 2A battery charger in service IAW SO 57B.1-2, "125/250 Volt Station Battery Charger Operations".
- D. Transfer the 2A battery charger power source from E-124-T-B to E-134-T-B IAW AO 57B.6-2, "Transfer of 125 V Battery Charger 2AD003 to Alternate Power and Return to Normal."

Answer: A

Answer Explanation		
Correct:	A	This is an SE-13 entry condition. The referenced alarm and voltage on a safety-related 125 VDC distribution panel less than 107.45 VDC requires entry into SE-13. The candidate must make a determination based on the parameters given that DC electrical distribution is degraded and procedure entry is warranted.
Distractors:	B	Cannot start the 2A CRD pump to the loss of power to the E-12 bus.
	C	Both the normal and alternate supply to the battery charger comes from the same source, which is E-12 bus.
	D	This evolution can only be done when in mode 4 or 5 , specified in AO 57B.6-2, prerequisite 2.1.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 22 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	3																																														
Difficulty:	0.00																																														
System ID:	1140635																																														
User-Defined ID:	ILT-5057-6B-002																																														
Cross Reference Number:	263000 2.4.21																																														
Topic:	ILT-5057-6B-004																																														
Num Field 1:	2015 NRC																																														
Num Field 2:																																															
Text Field:	2008 NRC exam question 23																																														
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Psychometrics																																															
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K/A System:	263000 D.C. Electrical Distribution		Importance: RO / SRO 4.0/ 4.6																																												
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REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

23

ID: 1102784

Points: 1.00

The following conditions exist on Unit 3:

- The Reactor is in Mode 5
- LPRM string replacements are in progress
- SO 10.1.C-3 "Residual Heat Removal System Precise Reactor Temperature Control" is in progress with the following lineup:
 - "C" HPSW pump is in service through the "C" RHR Heat Exchanger
 - "A" RHR pump is in service in shutdown cooling
 - HV-3-32-32228A, "ILRT HPSW Cooling Bypass Valve" is partially open.
- RHR flow is 6000 gpm
- RPV temperature is 110 degrees F. and rising slowly

P&IDs M-315 Sheet 3, and M-361 Sheet 3, are provided for reference.

Per SO 10.1.C-3, in order to lower RPV temperature the operator shall:

- A. raise RHR flow to 7000 gpm.
- B. start a second HPSW Pump.
- C. throttle OPEN HV-3-32-32228A.
- D. throttle CLOSED HV-3-32-32228A.

Answer: C

Answer Explanation		
Choice		Basis or Justification
Correct:	C	SO 10.1.C-3 "Residual Heat Removal System Precise Reactor Temperature Control" directs that to adjust RPV temperature, throttle HV-3-32-22228A, "ILRT HPSW Cooling Bypass Valve" is throttled to maintain RPV temperature. HV-3-32-22228A, "ILRT HPSW Cooling Bypass Valve" must be throttled open to provide more cooling to the "A" RHR heat exchanger.
Distractors:	A	SO 10.1.B-3 "Residual Heat Removal System Shutdown Cooling Mode Manual Start" has a caution "Do NOT exceed RHR flow rate of 6500 gpm IF in-core instrumentation is NOT supported by blade guides OR fuel bundles on all sides unless greater flow is required to maintain desired Reactor water temperature below Technical Specification limits. Since LPRM strings are being replaced flow can not be raised to 7000 gpm. Plausible if the candidate does not recall this caution.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	B	While this may provide some additional cooling due to higher pressure, SO 10.1.C-3 does not provide any guidance to start additional HPSW pumps while in precise temperature control mode.
	D	Throttling closed HV-3-32-22228A, "ILRT HPSW Cooling Bypass Valve" would reduce the flow to the "A" RHR heat exchanger and cause temperature to rise. Plausible if the candidate does not understand the valve lineup required to maintain precise temperature control.

Question 23 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	0			
Difficulty:	1.00			
System ID:	1102784			
User-Defined ID:				
Cross Reference Number:	205000K5.03			
Topic:	ILT5010-4e-001			
Num Field 1:	2015 NRC			
Num Field 2:				
Text Field:				
Comments:	Psychometrics			
	Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
	HIGH			10CRF55.41(b)(7)
	Source Documentation			
	Source:	XNew Exam item Modified Bank ILT Exam Bank		Previous NRC Exam Other Exam Bank
	Reference(s):	SO 10.1.C-3, "Residual Heat Removal System Precise Reactor Temperature Control", M-361, M-315, SO 10.1.B-3 "Residual Heat Removal System Shutdown Cooling Mode Manual Start", SO 32.1.A-3, "High Pressure Service Water System Startup and Normal Operations"		
	Learning Objective:	PLOT 5010 4e		
	K/A System:	205000 Shutdown Cooling System (RHR Shutdown Cooling Mode)		Importance: RO / SRO 2.8/ 3.1

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	K/A Statement:	K5.03 - Knowledge of the operational implications of the following concepts as they apply to SHUTDOWN COOLING SYSTEM (RHR SHUTDOWN COOLING MODE: Heat removal mechanisms
	REQUIRED MATERIALS:	P&IDs M-361 Sheet 3, M-315 Sheet 3
	Notes and Comments:	None

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

24

ID: 995190

Points: 1.00

The following conditions exist on Unit 2:

- A reactor startup is in progress
- Critical data has just been recorded
- The "B" and "D" Wide Range Neutron Monitor (WRNM) channels trip INOP simultaneously

With respect to alarms, rod blocks, and scram signals, the plant impact from the WRNM system will be _____.

- A. alarm ONLY; no rod blocks or scram signals
- B. alarm and rod block ONLY; no scram signals
- C. alarm, rod block, AND half scram ONLY
- D. alarm, rod block, AND full scram

Answer: C

Answer Explanation		
Choice		Basis or Justification
Correct:	C	INOP failure is a "trip" signal. One in each trip system will generate a full scram, the "High/INOP" annunciator, and a control rod block. WRNM "B" is RPS B. WRNM "D" is RPS B. INOP will result in Rod Block and Scram input. RPS Logic for WRNM is 1 out of 4 taken twice. Rod Block, RPS HALF-SCRAM, and Alarm logics are all satisfied.
Distractors:	A	INOP failure is a "trip" signal. One in each trip system will generate a full scram, the "High/INOP" annunciator, and a control rod block. Plausible if candidate does not equate INOP with ROD BLOCK function.
	B	INOP failure is a "trip" signal. One in each trip system will generate a full scram, the "High/INOP" annunciator, and a control rod block. Plausible if candidate does not equate INOP with TRIP function for RPS (HALF SCRAM since both WRNM Channels are RPS B).
	D	A full scram will result from a trip signal in each channel. Plausible if candidate does not recognize that WRNM "B" and "D" are in the same RPS channel.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 24 Info																																																							
Question Type:	Multiple Choice																																																						
Status:	Active																																																						
Always select on test?	No																																																						
Authorized for practice?	No																																																						
Points:	1.00																																																						
Time to Complete:	0																																																						
Difficulty:	1.00																																																						
System ID:	995190																																																						
User-Defined ID:	13 CERT																																																						
Cross Reference Number:	215004 K3.01																																																						
Topic:	ILT 5060C-6a-001																																																						
Num Field 1:	2015 NRC																																																						
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Text Field:																																																							
Comments:	<table border="1"> <thead> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> </thead> <tbody> <tr> <td>HIGH</td> <td></td> <td></td> <td>10CFR55.41(b)(6)</td> </tr> <tr> <th colspan="4">Source Documentation</th> </tr> <tr> <td>Source:</td> <td colspan="2">New Exam item</td> <td>Previous NRC Exam</td> </tr> <tr> <td></td> <td colspan="2">Modified Bank</td> <td>Other Exam Bank</td> </tr> <tr> <td></td> <td colspan="3">XILT Exam Bank</td> </tr> <tr> <td>Reference(s):</td> <td colspan="3">ARC-210 J-2</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="3">PLOT - 5060C-6a</td> </tr> <tr> <td>K/A System:</td> <td colspan="2">215004 - Source Range Monitor (SRM) System</td> <td>Importance: RO / SRO 3.4/ 3.4</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="3">K3.01 – Knowledge of the effect that a loss or malfunction of the SOURCE RANGE MONITOR (SRM) SYSTEM will have on the following: RPS</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="3">NONE</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="3">None</td> </tr> </tbody> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	HIGH			10CFR55.41(b)(6)	Source Documentation				Source:	New Exam item		Previous NRC Exam		Modified Bank		Other Exam Bank		XILT Exam Bank			Reference(s):	ARC-210 J-2			Learning Objective:	PLOT - 5060C-6a			K/A System:	215004 - Source Range Monitor (SRM) System		Importance: RO / SRO 3.4/ 3.4	K/A Statement:	K3.01 – Knowledge of the effect that a loss or malfunction of the SOURCE RANGE MONITOR (SRM) SYSTEM will have on the following: RPS			REQUIRED MATERIALS:	NONE			Notes and Comments:	None		
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Learning Objective:	PLOT - 5060C-6a																																																						
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REQUIRED MATERIALS:	NONE																																																						
Notes and Comments:	None																																																						

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

25

ID: 1140285

Points: 1.00

Unit 2 was initially operating at 100% power.

- A small break LOCA resulted in Drywell pressure rising to 2.8 psig.
- 10 minutes later, AO-00475-2, "SBGT 'A' Filter Outlet" closes and cannot be reopened.
- The SBGT System is expected to remain in service for an extended period of time.

Which one of the following describes (1) the impact of these conditions on SBGT system operation and (2) the actions required by SO 9A.1.C, "Response to SBGT System Automatic Start"?

The valve closure (1) prevent SBGT from maintaining Secondary Containment at a negative pressure. The operator must (2).

- A. (1) will
(2) start the "C" SBGT fan
- B. (1) will
(2) secure the "A" SBGT Filter Train
- C. (1) will NOT
(2) start the "C" SBGT fan
- D. (1) will NOT
(2) secure the "A" SBGT Filter Train

Answer: D

Answer Explanation		
Choice		Basis or Justification
Correct:	D	Either filter train is 100% capacity. Closing the outlet damper does not prevent the system for maintaining design negative pressure in the Secondary Containment. SO 9A. 1.C directs closure of one inlet and outlet valve if the system is to remain in service for an extended period of time. Additionally with the filter train inlet valve open and the outlet closed the heater will be on. A caution in SO 9A.1.B, "SBGT System Manual Startup directs the operator to minimize the amount of time with no flow through the filter train to prevent overheating.
Distractors:	A	Each filter train is 100% capacity so negative pressure will be maintained. Plausible if the candidate does not understand the design of SBGT filter trains. Since both trains automatically start it is plausible to believe that both are needed. Starting the "C" SBGT fan is an incorrect action. Starting an additional fan through the one operating filter train provides not benefit. Since any fan can be used for either filter train, starting a fan is a plausible action however it will not improve conditions and is not directed by procedure.
	B	Each filter train is 100% capacity so negative pressure will be maintained. Plausible if the candidate does not understand the design of SBGT filter trains. Since both trains automatically start it is plausible to believe that both are needed.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	C	Starting the "C" SBTG fan is an incorrect action. Starting an additional fan through the one operating filter train provides no benefit. Since any fan can be used for either filter train, starting a fan is a plausible action however it will not improve conditions and is not directed by procedure.
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Question 25 Info																																							
Question Type:	Multiple Choice																																						
Status:	Active																																						
Always select on test?	No																																						
Authorized for practice?	No																																						
Points:	1.00																																						
Time to Complete:	0																																						
Difficulty:	1.00																																						
System ID:	1140285																																						
User-Defined ID:																																							
Cross Reference Number:	261000A2-06																																						
Topic:	ILT5009A-10e-001																																						
Num Field 1:	2015 NRC																																						
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Text Field:	2009 NRC Exam question 16																																						
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EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	REQUIRED MATERIALS:	None
	Notes and Comments:	None

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

26

ID: 1137526

Points: 1.00

The following conditions exist on Unit 2:

- Group I isolation has occurred
- RCIC is injecting into the RPV
- RPV level is -20 inches and rising
- CST level is 5 feet and lowering

In accordance with procedure T-102, "Primary Containment Control", RCIC must be secured when Torus level reaches ____ (1) ____ in order to prevent ____ (2) ____.

- A. (1) 6 ft
(2) vortexing
- B. (1) 6 ft
(2) pressurizing Primary Containment
- C. (1) 9.5 ft
(2) vortexing
- D. (1) 9.5 ft
(2) pressurizing Primary Containment

Answer: A

Answer Explanation		
Choice		Basis or Justification
Correct:	A	T-102, "Primary Containment Control" states that RCIC is secured when Torus level reaches 6 ft due to vortexing.
Distractors:	B	T-102 requires HPCI to be removed from service due to pressurizing containment. If Torus level drops below 9.5 feet, the HPCI exhaust line will be uncovered. If this occurs, HPCI exhausts directly to the Torus atmosphere and without pressure suppression. This will directly pressurize the containment. This effect is significant enough to threaten containment integrity to the point that HPCI must be secured to protect Primary Containment even if HPCI is required to assure adequate core cooling. RCIC is not included in this instruction because the energy the RCIC turbine exhaust can add to the containment is small and the turbine would likely trip on high exhaust pressure should elevated containment pressure occur. Plausible if the candidate confuses the reason for securing HPCI with RCIC.
	C	Plausible if the candidate confuses the level to secure RCIC with the level to secure HPCI.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	D	Plausible if the candidate confuses the level to secure RCIC with the level to secure HPCI. If Torus level drops below 9.5 feet, the HPCI exhaust line will be uncovered. If this occurs, HPCI exhausts directly to the Torus atmosphere and without pressure suppression. This will directly pressurize the containment. This effect is significant enough to threaten containment integrity to the point that HPCI must be secured to protect Primary Containment even if HPCI is required to assure adequate core cooling. RCIC is not included in this instruction because the energy the RCIC turbine exhaust can add to the containment is small and the turbine would likely trip on high exhaust pressure should elevated containment pressure occur. Plausible if the candidate confuses the reason for securing HPCI with RCIC.
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Question 26 Info			
Question Type:	Multiple Choice		
Status:	Active		
Always select on test?	No		
Authorized for practice?	No		
Points:	1.00		
Time to Complete:	0		
Difficulty:	0.00		
System ID:	1137526		
User-Defined ID:			
Cross Reference Number:	217000K1.03		
Topic:	ILT-5013-5c-007		
Num Field 1:	2015 NRC		
Num Field 2:			
Text Field:			
Comments:	Psychometrics		
	Level of Knowledge	Difficulty	Time Allowance (minutes)
	MEMORY		
			RO
			10CRF55.41(b)(8)
	Source Documentation		
	Source:	<input checked="" type="checkbox"/> New Exam item Previous NRC Exam <input type="checkbox"/> Modified Bank Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
	Reference(s):	T-102	
	Learning Objective:	PLOT 5013-5c	
	K/A System:	217000 Reactor Core Isolation Cooling System (RCIC)	Importance RO / SRO 3.6/ 3.6
	K/A Statement:	K1.03 Knowledge of the physical connections and/or cause-effect relationships between REACTOR CORE ISOLATION COOLING SYSTEM (RCIC) and the following: Suppression pool	
	REQUIRED MATERIALS:	None	

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	Notes and Comments:	None

27

ID: 1102977

Points: 1.00

A Reactor startup is in-progress on Unit 3.

- Reactor Power is 50%.
- Rod 02-27 is selected and is to be withdrawn to position 48.

For the above conditions, select the correct statement below with respect to the Rod Block Monitor (RBM) response.

The RBM will _____.

- A. NOT initiate a rod block on rod 02-27 as local power rises.
- B. initiate a rod block on rod 02-27 if local power rises to 114%.
- C. initiate a rod block on rod 02-27 if local power rises to 119%.
- D. initiate a rod block on rod 02-27 if local power rises to 124%.

Answer: A

Answer Explanation		
Choice		Basis or Justification
Correct:	A	The RBM is bypassed when an edge rod is selected. Rod 02-27 is an edge rod. The rod block monitor will not initiate rod blocks. The RBM has a high, medium and low set point based on power level. 50% power was selected; this requires the candidate to think about the different setpoints based on power level
Distractors:	B	Plausible if the candidate does not recall that the RBM is bypassed when an edge rod is selected. The setpoint of 114% is the RBM High Trip Setpoint (HTSP) for Unit 3. The Low Trip Setpoint (LTSP) is the applicable RBM setpoint at 50% reactor power.
	C	Plausible if the candidate does not recall that the RBM is bypassed when an edge rod is selected. The setpoint of 119% is the RBM Intermediate Trip Setpoint (ITSP) for Unit 3. The Low Trip Setpoint (LTSP) is the applicable RBM setpoint at 50% reactor power.
	D	Plausible if the candidate does not recall that the RBM is bypassed when an edge rod is selected. The setpoint of 124% is the RBM LTSP for Unit 3. The Low Trip Setpoint (LTSP) is the applicable RBM setpoint at 50% reactor power.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 27 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1102977																																														
User-Defined ID:																																															
Cross Reference Number:	215002K1.06																																														
Topic:	ILT-5060-5h-001																																														
Num Field 1:	2015 NRC																																														
Num Field 2:																																															
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Psychometrics																																															
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
HIGH			10CRF55.41(b)(6)																																												
Source Documentation																																															
Source:	<input checked="" type="checkbox"/> New Exam item <input type="checkbox"/> Modified Bank <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank																																														
Reference(s):	PLOT-5060, ARC-311 C3, COLR Section 6.0																																														
Learning Objective:	PLOT-5060-5h																																														
K/A System:	215002 Rod Block Monitor System	Importance: RO / SRO 3.0 / 3.1																																													
K/A Statement:	K1.06 - Knowledge of the physical connections and/or cause-effect relationships between ROD BLOCK MONITOR SYSTEM and the following: Control rod selection																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

28

ID: 1139747

Points: 1.00

Unit 2 is operating at 100% power when the following occurs:

- The "D" MSL radiation monitor has fails downscale and the channel has not been tripped.
- The "C" MSL radiation monitor trips upscale.
- The "B" RPS Bus de-energizes due to a fault.

Based on these conditions;

The Reactor is ____ (1) ____ and the ____ (2) ____ MSL Radiation Monitors are de-energized.

- A. (1) at power
(2) A and B
- B. (1) shutdown
(2) A and B
- C. (1) at power
(2) B and D
- D. (1) shutdown
(2) B and D

Answer: D

Answer Explanation		
Choice	Basis or Justification	
Correct:	D	The C MSL rad monitor is tripped up scale giving a A channel half scram. When the B RPS trips power to the "B" and "D" radiation monitors will be lost. A loss of power will cause a trip of the B and D rad monitors. That will generate a B channel half scram. The result will be a scram and the the Reactor will be shutdown.
Distractors:	A	Plausible if the candidate does not understand that the B RPS powers the B and D rad monitors. Plausible if the candidate does not understand how the MSL rad monitors are arranged in RPS logic.
	B	Plausible if the candidate does not understand that the B RPS powers the B and D rad monitors.
	C	Plausible if the candidate does not understand how the MSL rad monitors are arranged in RPS logic.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 28 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	0.00																																														
System ID:	1139747																																														
User-Defined ID:																																															
Cross Reference Number:	272000K2.01																																														
Topic:	ILT-5063-2a-004																																														
Num Field 1:	2015 NRC																																														
Num Field 2:																																															
Text Field:																																															
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Psychometrics																																															
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
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Source:	XNew Exam item Previous NRC Exam Modified Bank Other Exam Bank ILT Exam Bank																																														
Reference(s):	M-1-S-54, PLOT-5063																																														
Learning Objective:	PLOT-5063-2a																																														
K/A System:	272000 Radiation Monitoring System		Importance: RO / SRO 2.5/ 2.8																																												
K/A Statement:	K2.01- Knowledge of electrical supplies to the following: Main steamline radiation monitors																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

29

ID: 1103404

Points: 1.00

Unit 2 is operating at 70% power with a reactor startup in progress. The following conditions exist:

- "A" and "B" Condensate pumps are in-service
- "B" and "C" Reactor feed pumps are in-service
- RPV level is at 23 inches being controlled in automatic
- "A" Steam Jet Air Ejector is in-service
- "A" Steam packing exhauster is in-service
- MO-2-05-2104A, "A" Steam Packing Exhauster/ "A" SJAE Condenser condensate inlet valve fails closed due to a malfunction

Based on the above conditions, what is (1) the plant impact, and (2) the required Operator response?

- A. (1) lowering RFP suction pressure
(2) reduce Reactor power per GP-9, "Fast Reactor Power Reduction"
- B. (1) lowering Main Condenser vacuum
(2) reduce Reactor power per GP-9-2, "Fast Reactor Power Reduction"
- C. (1) loss of Feedwater flow
(2) perform a GP-4 "Manual Reactor Scram"
- D. (1) rising Main Stack radiation levels
(2) place the "B" SPE in-service

Answer: B

Answer Explanation		
Choice		Basis or Justification
Correct:	B	The SPE/SJAE isolation valves are interlocked with the steam isolation valve for the SJAE. When MO-2104A/MO-2105A fail closed they cause an isolation of the "A" SJAE. This will cause a loss of vacuum because non-condensable gasses are no longer being removed. Normal operation is for the MO-2104B/MO-2105B to be open. This facilitates placing the "B" SJAE in service. Placing the "B" SJAE in-service will stop the vacuum drop.
Distractors:	A	Incorrect because the normal operation is for the MO-2104B/MO-2105B to be open. Because the "B" line is open, closure of the A line does not restrict flow and will not cause a reduction in RFP suction pressure. Plausible if the candidate does not understand the normal line up or the design of the system. The system is designed to allow all flow to go through one header therefore no reduction in suction pressure.
	C	Since MO-2104B and 2105B are normally open there is not a loss of feedwater flow to the RPV. Plausible if the candidate does not recall that MO-2104B and 2105B are normally open. If a complete loss of feedwater had occurred then placing the Mode Switch in shutdown would be an appropriate action.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	D	When MO-2104A and MO-2105A close the "A" SPE would isolate. This would make Main Stack radiation levels drop not rise. Plausible is the candidate does not understand the operation of the SPE. Since the "A" SPE will isolate place the "B" SPE would be a correct action.
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Question 29 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1103404																																														
User-Defined ID:																																															
Cross Reference Number:	256000K3.08																																														
Topic:	ILT-5005-6e-001																																														
Num Field 1:	2015 NRC																																														
Num Field 2:																																															
Text Field:																																															
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Psychometrics																																															
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
HIGH			10CRF55.41(b)(7)																																												
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Source:	XNew Exam item Modified Bank ILT Exam Bank		Previous NRC Exam Other Exam Bank																																												
Reference(s):	M-307, PLOT 5005																																														
Learning Objective:	PLOT 5005-6e																																														
K/A System:	256000 Reactor Condensate System		Importance: RO / SRO 2.8/ 2.8																																												
K/A Statement:	K3.08 - Knowledge of the effect that a loss or malfunction of the REACTOR CONDENSATE SYSTEM will have on the following: SJAE																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

30

ID: 1137548

Points: 1.00

A leak from the Torus into the Torus room causes Torus level to lower to 11 feet.

The (1) vacuum breakers will operate at (2).

- A. (1) Torus - Drywell
(2) 0.1 psid
- B. (1) Torus - Drywell
(2) 0.75 psid
- C. (1) Reactor Building - Torus
(2) 0.1 psid
- D. (1) Reactor Building - Torus
(2) 0.75 psid

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	First the candidate must determine that lowering Torus level causes a low pressure condition in the Torus. Next the candidate must understand the operation of the Reactor Building to Torus vacuum breaker. The Reactor Building to Torus vacuum breakers open on high Reactor Building (RB) to Torus DP to limit Primary Containment (PC) pressure drop that could exceed the negative PC design pressure.
Distractors:	A	Part 1 of the question is wrong the Torus to Drywell vacuum breakers will not operate for this condition. Plausible if the candidate does not understand the purpose of the Torus to Drywell vacuum breakers and believe the vacuum breakers open on low Torus pressure. These vacuum breakers open on low Drywell pressure. Part 2 of the answer is correct the Torus to Drywell vacuum breakers do function to prevent a low pressure condition in the Drywell. The Torus to Drywell vacuum breakers do open at .1 psid, however this is not the vacuum breaker that will open.
	B	Part 1 of the question is wrong the Torus to Drywell vacuum breakers will not operate for this condition. Plausible if the candidate does not understand the purpose of the Torus to Drywell vacuum breakers and believe the vacuum breakers open on low Torus pressure. These vacuum breakers open on low Drywell pressure. Part 2 of the answer is wrong.
	C	Part 1 is correct. Part 2 is wrong. Containment overpressure protection is supplied through manual operation. Plausible if the candidate does not understand the purpose of the vacuum breakers and believe the vacuum breakers open on high containment pressure RB pressure vs low containment pressure. The Reactor Building-Torus vacuum vacuum breakers open at .75 psid not .1 psid.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 30 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1137548																																														
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Cross Reference Number:	290001K5.01																																														
Topic:	ILT-5009-3a-003 Design function of Vacuum Breakers																																														
Num Field 1:	2015 NRC																																														
Num Field 2:	N/A																																														
Text Field:	A																																														
Comments:	<table border="1"> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> <tr> <td>HIGH</td> <td></td> <td></td> <td>10CRF55.41(b)(9)</td> </tr> <tr> <th colspan="4">Source Documentation</th> </tr> <tr> <td>Source:</td> <td colspan="2"> <input checked="" type="checkbox"/> New Exam item <input type="checkbox"/> Modified Bank <input type="checkbox"/> ILT Exam Bank </td> <td> Previous NRC Exam Other Exam Bank </td> </tr> <tr> <td>Reference(s):</td> <td colspan="3">PLOT 5009</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="3">PLOT-5009-3a</td> </tr> <tr> <td>K/A System:</td> <td colspan="2">290001 Secondary Containment</td> <td>Importance: RO / SRO 3.3/ 3.4</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="3">K5.01- Knowledge of the operational implications of the following concepts as they apply to SECONDARY CONTAINMENT: Vacuum breaker operation</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="3">None</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="3">None</td> </tr> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	HIGH			10CRF55.41(b)(9)	Source Documentation				Source:	<input checked="" type="checkbox"/> New Exam item <input type="checkbox"/> Modified Bank <input type="checkbox"/> ILT Exam Bank		Previous NRC Exam Other Exam Bank	Reference(s):	PLOT 5009			Learning Objective:	PLOT-5009-3a			K/A System:	290001 Secondary Containment		Importance: RO / SRO 3.3/ 3.4	K/A Statement:	K5.01- Knowledge of the operational implications of the following concepts as they apply to SECONDARY CONTAINMENT: Vacuum breaker operation			REQUIRED MATERIALS:	None			Notes and Comments:	None		
Psychometrics																																															
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
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Reference(s):	PLOT 5009																																														
Learning Objective:	PLOT-5009-3a																																														
K/A System:	290001 Secondary Containment		Importance: RO / SRO 3.3/ 3.4																																												
K/A Statement:	K5.01- Knowledge of the operational implications of the following concepts as they apply to SECONDARY CONTAINMENT: Vacuum breaker operation																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

31

ID: 1137551

Points: 1.00

During a Radwaste Floor Drain Sample Tank release to the Conowingo Pond per ST-C-095-805-2, "Liquid Radwaste Discharge", the RADWASTE DISCH HI RADIATION (218 B-2) alarm is received.

Upon receipt of THIS alarm, the release (1) automatically isolate.
The radiation units associated with this release are measured in (2).

- A. (1) will not
(2) mRem
- B. (1) will not
(2) counts/second
- C. (1) will
(2) mRem
- D. (1) will
(2) counts/second

Answer: B

Answer Explanation		
Choice		Basis or Justification
Correct:	B	The high alarm level does not cause the isolation. The dose rate is calculated in counts per second as determined by procedures ST-C-095-805-2 "Liquid Radwaste Discharge".
Distractors:	A	Part 1 is correct, the high alarm level does not cause the isolation. Part 2 is not correct, the isolation is on dose rate not dose. Plausible if the candidate confuses or does not understand the difference between dose and dose rate.
	C	Part 1 is not correct the hi alarm level does not cause the isolation. Plausible if the candidate does not understand the Radwaste isolation logic and the associated alarms. Part 2 is not correct, the isolation occurs bases on dose rate not on dose. Plausible if the candidate confuses or does not understand the difference between dose and dose rate.
	D	Part 1 is not correct the hi alarm level does not cause the isolation. Plausible if the candidate does not understand the Radwaste isolation logic and the associated alarms.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 31 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1137551																																														
User-Defined ID:																																															
Cross Reference Number:	268000K501																																														
Topic:	ILT-5020-4a-002																																														
Num Field 1:	2015 NRC																																														
Num Field 2:																																															
Text Field:																																															
Comments:	<table border="1"> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> <tr> <td>MEMORY</td> <td></td> <td></td> <td>10CRF55.41(b)(13)</td> </tr> <tr> <th colspan="4">Source Documentation</th> </tr> <tr> <td>Source:</td> <td colspan="3"> <input type="checkbox"/> New Exam item <input type="checkbox"/> Modified Bank <input checked="" type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank <input checked="" type="checkbox"/> X ILT Exam Bank </td> </tr> <tr> <td>Reference(s):</td> <td colspan="3">PLOT-5063, ARC-218 B-2, ARC 216 L-3, ST-C-095-805-2</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="3">PLOT-5020-3a</td> </tr> <tr> <td>K/A System:</td> <td colspan="2">268000 Radwaste</td> <td>Importance: RO / SRO 2.7/ 3.0</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="3">K5.01 - Knowledge of the operational implications of the following concepts as they apply to RADWASTE: Units of radiation, dose, and dose rate</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="3">None</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="3">None</td> </tr> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	MEMORY			10CRF55.41(b)(13)	Source Documentation				Source:	<input type="checkbox"/> New Exam item <input type="checkbox"/> Modified Bank <input checked="" type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank <input checked="" type="checkbox"/> X ILT Exam Bank			Reference(s):	PLOT-5063, ARC-218 B-2, ARC 216 L-3, ST-C-095-805-2			Learning Objective:	PLOT-5020-3a			K/A System:	268000 Radwaste		Importance: RO / SRO 2.7/ 3.0	K/A Statement:	K5.01 - Knowledge of the operational implications of the following concepts as they apply to RADWASTE: Units of radiation, dose, and dose rate			REQUIRED MATERIALS:	None			Notes and Comments:	None		
Psychometrics																																															
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K/A System:	268000 Radwaste		Importance: RO / SRO 2.7/ 3.0																																												
K/A Statement:	K5.01 - Knowledge of the operational implications of the following concepts as they apply to RADWASTE: Units of radiation, dose, and dose rate																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

32

ID: 1119138

Points: 1.00

Unit 3 is operating at 40% power when a sustained loss of Instrument Air occurs.

A loss of Instrument Air header pressure causes the ____ (1) ____ Main Steam Isolation Valves to close. This will result in a ____ (2) ____ scram signal.

- A. (1) inboard
(2) high RPV pressure
- B. (1) inboard
(2) MSIV valve closure logic
- C. (1) outboard
(2) MSIV valve closure logic
- D. (1) outboard
(2) high RPV pressure

Answer: C

Answer Explanation		
Choice		Basis or Justification
Correct:	C	The outboard Main Steam Isolation Valves (MSIVs) do not have accumulators to hold the valves open. As Instrument Air pressure lowers the MSIVs will close. RPS design is that when 3 of 4 MSIV lines begin to closure a scram signal is generated this is to prevent both the high pressure and hi flux scram signals from generating the scram. Because the Reactor is initially at 50% power the Reactor high pressure signal would be the backup scram signal (not high flux) that would initiate if the MSIV closure failed.
Distractors:	A	Inboard MSIVs use Instrument Nitrogen as the motive force. Inboard MSIVs also have accumulators that will both hold the MSIVs open and provide the force to rapidly close the MSIVs. Plausible if the candidate does not recall the motive force for the inboard MSIVs and is not familiar with the arrangement of the accumulator. The high pressure scram signal is the backup that would initiate if the MSIV closure signal were to fail. Plausible if the candidate does recall the purpose of each scram signal and when they function as the primary and when they are a backup signal.
	B	Inboard MSIVs use Instrument Nitrogen as the motive force. Inboard MSIVs also have accumulators that will both hold the MSIVs open and provide the force to rapidly close the MSIVs. Plausible if the candidate does not recall the motive force for the inboard MSIVs.
	D	The high pressure scram signal is the backup that would initiate if the MSIV closure signal were to fail. Plausible if the candidate does recall the purpose of each scram signal and when they function as the primary and when they are a backup signal.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 32 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	0.00																																														
System ID:	1119138																																														
User-Defined ID:																																															
Cross Reference Number:	239001K6.02																																														
Topic:	ILT-5001A-7b-002																																														
Num Field 1:	2015 NRC																																														
Num Field 2:																																															
Text Field:																																															
Comments:	<table border="1"> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> <tr> <td>MEMORY</td> <td></td> <td></td> <td>10CRF55.41(b)(7)</td> </tr> <tr> <th colspan="4">Source Documentation</th> </tr> <tr> <td>Source:</td> <td colspan="3"> <div> <div>XNew Exam item</div> <div>Modified Bank</div> <div>Previous NRC Exam</div> <div>Other Exam Bank</div> <div>ILT Exam Bank</div> </div> </td> </tr> <tr> <td>Reference(s):</td> <td colspan="3">ON-119, M-1-S-23</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="3">PLOT-5001A-7b</td> </tr> <tr> <td>K/A System:</td> <td>239001 Main and Reheat Steam System</td> <td colspan="2">Importance: RO / SRO 3.2 / 3.2</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="3">K6..02 - Knowledge of the effects that a loss or malfunction of the following will have on the MAIN AND REHEAT STEAM SYSTEM: Plant air system</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="3">None</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="3">None</td> </tr> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	MEMORY			10CRF55.41(b)(7)	Source Documentation				Source:	<div> <div>XNew Exam item</div> <div>Modified Bank</div> <div>Previous NRC Exam</div> <div>Other Exam Bank</div> <div>ILT Exam Bank</div> </div>			Reference(s):	ON-119, M-1-S-23			Learning Objective:	PLOT-5001A-7b			K/A System:	239001 Main and Reheat Steam System	Importance: RO / SRO 3.2 / 3.2		K/A Statement:	K6..02 - Knowledge of the effects that a loss or malfunction of the following will have on the MAIN AND REHEAT STEAM SYSTEM: Plant air system			REQUIRED MATERIALS:	None			Notes and Comments:	None		
Psychometrics																																															
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REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

33

ID: 1137575

Points: 1.00

Unit 3 RWCU is operating in the Dump Mode to the Main Condenser.

Dump flow is 100 gpm when pressure downstream of CV-55 "Dump Controller" rises to 190 psig.

Based on the above information Dump Flow will?

- A. isolate.
- B. rise until downstream pressure is below 190 psig.
- C. lower until downstream pressure is below 190 psig.
- D. remain at 100 gpm.

Answer: A

Answer Explanation		
Choice	Basis or Justification	
Correct:	A	A downstream pressure of 190 psig will cause an isolation of CV-55.
Distractors:	B	There is a pressure control valve down stream of CV-55 that will attempt to control downstream pressure. Plausible if the candidate does not understand that CV-55 will isolate at 140 psig.
	C	Plausible if the candidate does not understand that CV-55 only has manual control and believes that there is an automatic feedback mechanism to the control valve.
	D	Plausible if the candidate does not understand how the control circuit to CV-55 works or believes that the setpoint for isolation is above 190 psig.

Question 33 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	0			
Difficulty:	1.00			
System ID:	1137575			
User-Defined ID:				
Cross Reference Number:	204000A2.14			
Topic:	ILT-5012-5g-003			
Num Field 1:	2015 NRC			
Num Field 2:				
Text Field:				
Comments:	Psychometrics			
	Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
	HIGH			10CRF55.41(b)(5)
	Source Documentation			

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	Source:	XNew Exam item Modified Bank ILT Exam Bank	Previous NRC Exam Other Exam Bank
	Reference(s):	PLOT-5012	
	Learning Objective:	PLOT 5012-5g	
	K/A System:	204000 Reactor Water Cleanup System	Importance RO / SRO 2.9/ 2.9
	K/A Statement:	A1.07 - Ability to predict and/or monitor changes in parameters associated with operating the REACTOR WATER CLEANUP SYSTEM controls including: RWCU drain flow	
	REQUIRED MATERIALS:	None	
	Notes and Comments:	None	

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

34

ID: 1137586

Points: 1.00

A LOCA is in progress on Unit 2.

Torus sprays were placed in service per T-204, "Initiation of Containment Sprays Using RHR".

Current conditions:

- RPV pressure is 550 psig
- RPV level is +20 inches
- Torus pressure is 1.9 psig

Based on current conditions, torus sprays ____ (1) ____ automatically isolated and the operator shall ____ (2) ____.

- A. (1) have
(2) align RHR for normal operations using T-204, "Initiation of Containment Sprays Using RHR" return to normal section
- B. (1) have
(2) align RHR for normal operations using SO 10.1.A-2, "Residual Heat Removal System Set Up for Automatic Operation"
- C. (1) have not
(2) secure Torus sprays immediately per T-204, "Initiation of Containment Sprays Using RHR"
- D. (1) have not
(2) secure Torus sprays when Torus pressure reaches 1 psig per T-204, "Initiation of Containment Sprays Using RHR"

Answer: C

Answer Explanation		
Choice		Basis or Justification
Correct:	C	Torus Spray valve MO-2(3)-10-38A(B) does not get an automatic closure signal unless there is a LOCA signal, which there is not. T-204 directs that Torus spray be secured before Torus pressure drops to 2 psig. T-204 also direct the operator how to secure the Torus spray lineup.
Distractors:	A	Torus Spray valve MO-2(3)-10-38A(B) does not get an automatic closure signal unless there is a LOCA signal, which ther is not. Plausible if the candidate confuses the low pressure logic with the LOCA initiation logic.
	B	Torus Spray valve MO-2(3)-10-38A(B) does not get an automatic closure signal unless there is a LOCA signal, wich there is not. Plausible if the candidate confuses the low pressure logic with the LOCA initiation logic.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	D	Torus sprays are to be secured before 2 psig per T-204. Waiting to 0 psig would not be correct. Plausible if the candidate does not understand the requirements of T-204.
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Question 34 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1137586																																														
User-Defined ID:																																															
Cross Reference Number:	230000A2.14																																														
Topic:	ILT 5010-10w-002																																														
Num Field 1:	2015 NRC																																														
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Text Field:																																															
Comments:	<table border="1"> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> <tr> <td>HIGH</td> <td></td> <td></td> <td>10CRF55.41(b)(7)</td> </tr> <tr> <th colspan="4">Source Documentation</th> </tr> <tr> <td>Source:</td> <td colspan="3"> <div> <div>XNew Exam item</div> <div>Modified Bank</div> <div>Previous NRC Exam</div> <div>Other Exam Bank</div> <div>ILT Exam Bank</div> </div> </td> </tr> <tr> <td>Reference(s):</td> <td colspan="3">T-204, Initiation of Containment Sprays Using RHR</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="3">PLOT 5010-10w</td> </tr> <tr> <td>K/A System:</td> <td>230000 RHR/LPCI: Torus/Suppression Pool Spray Mode</td> <td colspan="2">Importance: RO / SRO 3.2/ 3.5</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="3">A2.14 - Ability to (a) predict the impacts for the following on the RHR/LPCI: Torus/Suppression Pool Spray Mode; and (b) based on those predictions, use procedures to correct, control or mitigate the consequences of those abnormal conditions or operations: Low (or negative) suppression pool pressure during system operation</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="3">None</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="3">None</td> </tr> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	HIGH			10CRF55.41(b)(7)	Source Documentation				Source:	<div> <div>XNew Exam item</div> <div>Modified Bank</div> <div>Previous NRC Exam</div> <div>Other Exam Bank</div> <div>ILT Exam Bank</div> </div>			Reference(s):	T-204, Initiation of Containment Sprays Using RHR			Learning Objective:	PLOT 5010-10w			K/A System:	230000 RHR/LPCI: Torus/Suppression Pool Spray Mode	Importance: RO / SRO 3.2/ 3.5		K/A Statement:	A2.14 - Ability to (a) predict the impacts for the following on the RHR/LPCI: Torus/Suppression Pool Spray Mode; and (b) based on those predictions, use procedures to correct, control or mitigate the consequences of those abnormal conditions or operations: Low (or negative) suppression pool pressure during system operation			REQUIRED MATERIALS:	None			Notes and Comments:	None		
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REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

35

ID: 1103704

Points: 1.00

- The indicating lights for the "A" and "B" Service Water pumps and the "A" and "B" Fuel Pool Service Water Booster pumps are as follows:
 - Green light OFF
 - Red light ON
- Alarm 216 D-5, "B FUEL POOL SERV WATER BOOSTER PUMP OVERCURRENT" is received.

For the above conditions, what is the required operator response per Alarm Response Card 216 D-5?

- A. Trip the "B" Fuel Pool Booster pump.
Place the "C" Fuel Pool Booster pump in-service.
- B. Trip the "B" Fuel Pool Booster pump.
Verify the "C" Fuel Pool Booster pump auto starts.
- C. Verify the "B" Fuel Pool Booster pump trips.
Place the "C" Fuel Pool Booster pump in-service.
- D. Verify the "B" Fuel Pool Booster pump trips.
Verify the "C" Fuel Pool Booster pump auto starts.

Answer: C

Answer Explanation		
Choice		Basis or Justification
Correct:	C	When the overcurrent alarm is received the Booster pump should trip. Starting the "C" pump will return system parameters to normal.
Distractors:	A	Plausible if the candidate does not recall that the Fuel Pool Booster pumps trip when the overcurrent alarm is received. There are pump overcurrent alarms (HPSW for example) that do not trip when the overcurrent alarm is received.
	B	Plausible if the candidate does not recall that the Fuel Pool Booster pumps trip when the overcurrent alarm is received. There are pump overcurrent alarms (HPSW for example) that do not trip when the overcurrent alarm is received. There is no automatic start of the Fuel Pool Water Booster Pumps. Plausible if the candidate does not recall that the Fuel Pool water Booster pumps do not have an auto start feature like the RBCCW pumps for example.
	D	There is no automatic start of the Fuel Pool Water Booster Pumps. Plausible if the candidate does not recall that the Fuel Pool water Booster pumps do not have an auto start feature like the RBCCW pumps for example.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 35 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	0.00																																														
System ID:	1103704																																														
User-Defined ID:																																															
Cross Reference Number:	233000A3.03																																														
Topic:	ILT-5019-11-001																																														
Num Field 1:	2015 NRC																																														
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Psychometrics																																															
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
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K/A System:	233000 Fuel Pool Cooling and Clean-up		Importance: RO / SRO 2.6/ 2.6																																												
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REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

36

ID: 1103707

Points: 1.00

A hydraulic ATWS exists on Unit 2.

As power is reduced, a Rod Worth Minimizer (RWM) insert rod block occurs.

Based on the above conditions, control rods can be inserted by:

- A. placing the Rod Control switch (3A-S2) in the "IN" position
- B. venting the scram air header in accordance with T-214 "Isolating and Venting the Scram Air Header"
- C. placing the Emergency In/Notch Override switch (3A-S3) in the "EMERG ROD IN" position ONLY
- D. bypassing the RWM AND placing the Emergency In/Notch Override switch (3A-S3) in the "EMERG ROD IN" position

Answer: D

Answer Explanation		
Choice		Basis or Justification
Correct:	D	The RWM must be bypassed to allow the Emergency in switch to continuously insert the control rod.
Distractors:	A	An insert rod block exists. Normal rod movement with the rod control switch is prevented by the insert block. Plausible if candidate does not understand the relationship between the RWM and RMCS.
	B	Since a hydraulic ATWS exists, the scram air header is already depressurized. T-214 will have no effect. Plausible if the candidate does not understand that the scram air header would already be depressurized because of the hydraulic ATWS.
	C	An insert rod block exists. Rod movement with the Emergency In/Notch override switch is prevented without bypassing the RWM. Plausible if candidate does not understand the relationship between the RWM and RMCS.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 36 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	0.00																																														
System ID:	1103707																																														
User-Defined ID:																																															
Cross Reference Number:	201002A4.02																																														
Topic:	ILT5062-3f-001																																														
Num Field 1:	2015 NRC																																														
Num Field 2:																																															
Text Field:																																															
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Psychometrics																																															
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
MEMORY			10CRF55.41(b)(6)																																												
Source Documentation																																															
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Reference(s):	T-220, M-1-S-20																																														
Learning Objective:	PLOT-5062-3f																																														
K/A System:	201002 Reactor Manual Control System	Importance: RO / SRO 3.5/ 3.5																																													
K/A Statement:	A4.02 Ability to manually operate and/or monitor in the control room: Emergency in/notch override switch																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

37

ID: 1140325

Points: 1.00

The 2B Reactor Feed Pump (RFP) is being started per SO 6C.1.C-2, "Startup of Second or Third Reactor Feedwater Pump".

The following indications exist for the 2B RFP:

- Speed is 2800 RPM
- MSC SELECT is lit
- M/A PERMISSIVE is lit
- M/A SELECT is NOT lit
- M/A is in MANUAL

Based on these indications, the 2B RFP is ready to be transferred to (1).
In order to complete the transfer, the operator must depress (2).

- A. (1) the M/A Station
(2) M/A SELECT
- B. (1) the M/A Station
(2) AUTO on the M/A Station
- C. (1) the Master Level Controller
(2) AUTO on the M/A Station
- D. (1) the Master Level Controller
(2) AUTO on the Master Level Controller

Answer: A

Answer Explanation		
Choice		Basis or Justification
Correct:	A	Per SO 6C.1.C-2, these are the indications expected prior to transferring RFP control from MSC to the M/A Station. The transfer is completed by depressing M/A SELECT.
Distractors:	B	Depressing AUTO on the M/A Station transfers RFP control to the Master Level Controller. Plausible if the candidate does not understand the actions required to transfer control to the M/A station. Depressing is a correct action to transfer M/A station control to the Master controller.
	C	RFP control must be transferred to the M/A Station before transferring to the MLC. M/A SELECT is lit and MSC SELECT is not lit when the M/A Station has control of the RFP. Plausible if the candidate does not understand the sequence required to transfer control to the MLC and believe that control can occur directly from the MSC.
	D	D RFP control must be transferred to the M/A Station before transferring to the MLC. M/A SELECT is lit and MSC SELECT is not lit when the M/A Station has control of the RFP. Plausible if the candidate does not understand the sequence of step required in the transfer of the Feedwater system to master auto control.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 37 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1140325																																														
User-Defined ID:																																															
Cross Reference Number:	259001 2.1.31																																														
Topic:	ILT-5006-9g-001																																														
Num Field 1:	2015 NRC																																														
Num Field 2:																																															
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Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
HIGH			10CRF55.41(b)(7)																																												
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Learning Objective:	PLOT 5006-9d																																														
K/A System:	259001 Reactor Feedwater System		Importance: RO / SRO 4.6/ 4.3																																												
K/A Statement:	2.1.31 - Ability to locate control room switches, controls and indications, and to determine that they correctly reflect the desired plant lineup.																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

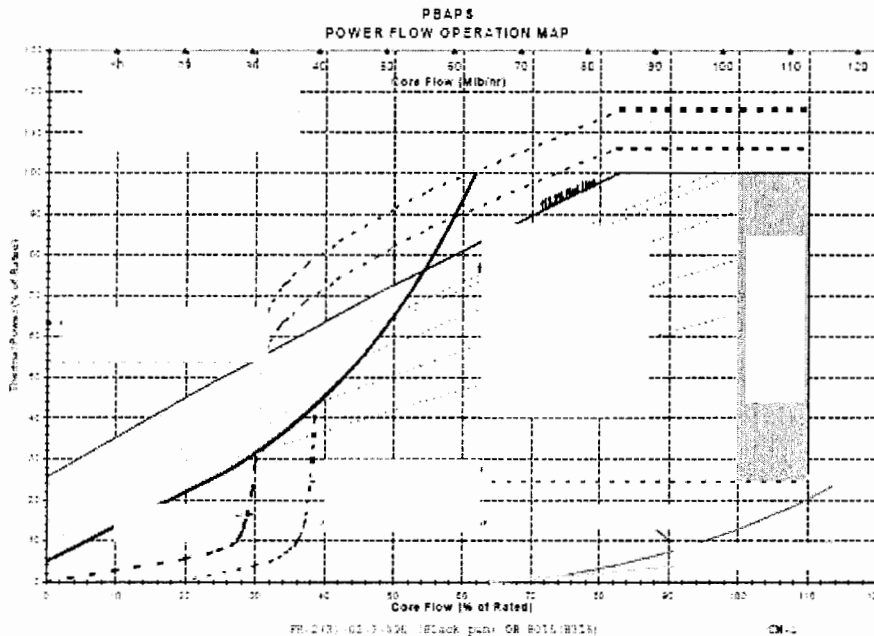
38

ID: 1103769

Points: 1.00

The following conditions exist:

- Due to an equipment malfunction the 2A Recirculation M/G set was "locked up" per SO 2D.7.B-2, "Recirculation MG Set Scoop Tube Lockup and Reset".
- A reactor scram has occurred
- Core flow is oscillating between 65% to 75%
- 2A Recirculation Pump M/G Set Drive Motor amps are oscillating between 250 to 300 amps
-



Based on the above conditions, what is the status of the 2A Recirculation Pump and what action is required per procedure SO 2D.7.B-2?

The "2A" Recirculation Pump (1) cavitating, and the operator shall (2) in accordance with SO 2D.7.B-2, "Recirculation MG Set Scoop Tube Lockup and Reset"

- A. (1) is
(2) trip the "2A" Recirc pump
- B. (1) is
(2) runback the "2A" Recirc pump locally
- C. (1) is not
(2) trip the "2A" Recirc pump
- D. (1) is not
(2) runback the "2A" Recirc pump locally

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Answer: A

Answer Explanation		
Choice	Basis or Justification	
Correct:	A	Core flow and M-G Set amperage oscillations are indications of cavitation. Plotting the position of the Power-to-Flow map would also put operation in the Recirc pump cavitation region. SO 2D.7.B-2 direct the operator to trip the Recirc pump following a scram.
Distractors:	B	Plausible if the candidate does not recall that SO 2D.7.B-2 directs that the operator trip the pump. There are steps in the procedure on when to locally reduce the speed of the M-G set but following a scram in not when that guidance would be used.
	C	Plausible if the candidate does not understand indications of cavitation or does not plot the operating point correctly on the Power-to-Flow map. Procedure SO 2D.7.B-2 requires that the locked up recirc pump be tripped following a reactor scram. Even of the Recirc pump is not cavitating the procedure requires that the pump must be tripped.
	D	Plausible if the candidate does not understand indications of cavitation or does not plot the operating point correctly on the Power-to-Flow map. Plausible if the candidate does not recall that SO 2D.7.B-2 directs that the operator trip the pump. There are steps in the procedure on when to locally reduce the speed of the M-G set but following a scram in not when that guidance would be used.

Question 38 Info																																			
Question Type:	Multiple Choice																																		
Status:	Active																																		
Always select on test?	No																																		
Authorized for practice?	No																																		
Points:	1.00																																		
Time to Complete:	0																																		
Difficulty:	1.00																																		
System ID:	1103769																																		
User-Defined ID:																																			
Cross Reference Number:	202001K5.01																																		
Topic:	ILT-5002-4a-001																																		
Num Field 1:	2015 NRC																																		
Num Field 2:																																			
Text Field:																																			
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Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																
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Source:	XNew Exam item	Previous NRC Exam																																	
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	ILT Exam Bank																																		
Reference(s):	SO 2D.7.B-2, GP-5																																		

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	Learning Objective:	PLOT-5002-4a	
	K/A System:	202001 Recirculation System	Importance: RO / SRO 2.7 / 2.8
	K/A Statement:	K5.01 - Knowledge of the operational implications of the following concepts as they apply to RECIRCULATION SYSTEM: Indication of pump cavitation	
	REQUIRED MATERIALS:	None	
	Notes and Comments:	None	

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

39

ID: 1140068

Points: 1.00

Unit 2 is operating normally at 100% power when:

- FEEDWATER FIELD INSTRUMENT TROUBLE (201 H-1) alarm is received
- "B" feed water flow transmitter FT-2-06-050B, as read on FR-2565 on Panel 20C05A, is noted to indicate downscale

2 minutes after the initial transient which of the following describes the response, if any, of the Digital Feedwater Control System (DFCS)?

DFCS will:

- A. shift to single element control and maintain normal RPV water level at the desired setpoint.
- B. shift to single element control and maintain RPV water level above the desired setpoint.
- C. remain in three element control and maintain normal RPV water level at the desired setpoint.
- D. remain in three element control and maintain RPV water level above the desired setpoint.

Answer: A

Answer Explanation

Choice		Basis or Justification
Correct:	A	As stated in Step 3.2 of OT-100, "If any feedwater flow indication is downscale or any steam line flow indication is downscale, then verify the Feedwater Level Control System is operating in single element control". Even with a small change in actual feed flow due to the B reactor feed pump minimum flow valve opening on a loss of flow signal, RPV level will lower approx. 1 inch and the DFCS will quickly recover and maintain RPV level in single element control at the original level setpoint.
Distracters:	B	Incorrect - Even with a small change in actual feed flow due to the B reactor feed pump minimum flow valve opening on a loss of flow signal, RPV level will lower approx. 1 inch and the DFCS will quickly recover and maintain RPV level in single element control at the original level setpoint.
	C	Incorrect - On a loss of 1 or 2 feed flow indications DFCS will automatically transfer to single element control.
	D	Incorrect - On a loss of 1 or 2 feed flow indications DFCS will automatically transfer to single element control. Even with a small change in actual feed flow due to the B reactor feed pump minimum flow valve opening on a loss of flow signal, RPV level will lower approx. 1 inch and the DFCS will quickly recover and maintain RPV level in single element control.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 39 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	2																																														
Difficulty:	3.50																																														
System ID:	1140068																																														
User-Defined ID:	ILT-5006-6I-003																																														
Cross Reference Number:	259001A2.07																																														
Topic:	ILT-5006-6I-002 Unit 2 is operating normally at 100% power when: *FEEDWATER FIELD INSTRUMENT TROU																																														
Num Field 1:	2015 NRC																																														
Num Field 2:	0.00																																														
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Psychometrics																																															
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
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Reference(s):	PLOT-5006 ARC 201 H-1																																														
Learning Objective:	PLOT-5006-7j																																														
K/A System:	259002 Reactor Water Level Control System	Importance: RO / SRO 3.6/ 3.7																																													
K/A Statement:	K1.05 Knowledge of the physical connection and/or cause-effect relationship between REACTOR WATER LEVEL CONTROL SYSTEM and the following: Reactor feedwater system																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

40

ID: 1139065

Points: 1.00

Unit 2 is operating at 100% power when a sustained loss of Reactor Building Closed Cooling Water occurs.

In accordance with ON-113, Loss of RBCCW, the recirculation pumps _____.

- A. must be tripped immediately
- B. must be tripped when seal temperature exceeds 180 degrees F
- C. may remain running provided CRD seal purge flow is maintained
- D. may remain running unless motor bearing temperature exceeds 194 degrees F

Answer: D

Answer Explanation		
Choice		Basis or Justification
Correct:	D	ON-113 allows the recirc pumps to remain in-service as long as temperatures are below 194 Degrees F for the Pump motor bearings.
Distractors:	A	There is no requirement to immediately trip the recirc pumps on a loss of RBCCW. Plausible if the candidate confusing the action to immediately trip the RWCU pumps with the Recirc pumps per ON-113.
	B	ON-113 directs that speed be lowered on the recirc pumps for high seal temperature. Since RBCCW is the cooling medium for the Recirc Pump seals, a loss or degradation of RBCCW will cause the temperature of the seals to rise. Exceeding the temperature limits will require Operator action to reduce seal temperature. Therefore, it is appropriate for the operator to monitor these parameters. If seal temperature exceeds 180 °F, then a reduction in pump speed is required to reduce and maintain seal temperature below 180 °F. Seal face degradation may occur if continually operated above 180 °F. The rate of speed reduction is dependent upon the rate of temperature rise and is at the discretion of Shift Management. If seal temperature exceeds 200 °F, a more aggressive approach is required to reduce and maintain seal temperature below 180 °F. Plausible if the candidate does not understand the ON-113 guidance for high seal temperatures.
	C	Plausible if the candidate confuses the note in ON-113 about maintaining CRD in service with a guidance that allows the Recirc pump to remain in-service as long as CRD is in service.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 40 Info																																							
Question Type:	Multiple Choice																																						
Status:	Active																																						
Always select on test?	No																																						
Authorized for practice?	No																																						
Points:	1.00																																						
Time to Complete:	2																																						
Difficulty:	1.00																																						
System ID:	1139065																																						
User-Defined ID:	ILT-1550-18B-001																																						
Cross Reference Number:	295018 AK1.01																																						
Topic:	ILT-1550-18b-004 ON-113 RCS action basis																																						
Num Field 1:	2015 NRC																																						
Num Field 2:	N/A																																						
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Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																				
MEMORY			10CRF55.41(b)(7)																																				
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Reference(s):	ON-113																																						
Learning Objective:	PLOT-1550-18b																																						
K/A System:	295018 Partial or Complete Loss of Component Cooling Water	Importance: RO / SRO 3.5/ 3.6																																					
K/A Statement:	AK1.01 - Knowledge of the operational implications of the following concepts as they apply to PARTIAL OR COMPLETE LOSS OF COMPONENT COOLING WATER: Effects on components/system operations																																						
REQUIRED MATERIALS:	None																																						
Notes and Comments:	None																																						

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

41

ID: 1103783

Points: 1.00

An ATWS has occurred on Unit 2. T-117 "Level/Power Control" is in progress with the following conditions:

- Reactor Power is 15%.
- Level has been lowered to -70 inches using T-240, "Terminate and Prevention of Injection Into the RPV".
- The CRS has redirected the PRO to lower level in accordance with T-240 Attachment 1 Figure 2 criteria (reproduced below).

T-240-2. Attachment 1, FIGURE 2

IF T-117 directed that RPV level be lowered to protect Primary Containment, THEN restore RPV injection in accordance with T-117 when ANY of the following conditions exist:

- RPV level reaches -172 inches
OR
- Reactor power drops below 4%
OR
- All SRVs remain closed and Drywell pressure drops below 2 psig

Per T-117 basis document, what is the reason for lowering Reactor level until Figure 2 criteria is met?

- A. Utilize steam cooling to assure adequate core cooling and prevent exceeding 1800 degrees F clad temperature.
- B. Improve Boron effectiveness in the core by lowering neutron flux into the lower core region.
- C. Lower driving head which reduces natural circulation and core flow to void the core and lower core power.
- D. To further reduce core inlet subcooling and thereby reduce the potential for Thermal Hydraulic Instability.

Answer: C

Answer Explanation		
Answer Key		
Choice		Basis or Justification
Correct:	C	Per T-117 Bases, the reason for lowering Reactor level until Figure 2 criteria is met is to lower driving head, which reduces natural circulation and core flow to void the core and lower core power.
Distractors:	A	Core submergence here ensures ACC. Steam Cooling later if level drops below -172 inches.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	B	Boron effectiveness is improved later in T-117 when level is restored after HSBW is injected. Not the reason to lower level here.
	D	With RPV level already less than -60 inches, the feedwater spargers are already uncovered. Per T-117 bases, lowering RPV level even more has no further effect on subcooling.

Question 41 Info																																	
Question Type:	Multiple Choice																																
Status:	Active																																
Always select on test?	No																																
Authorized for practice?	No																																
Points:	1.00																																
Time to Complete:	0																																
Difficulty:	0.00																																
System ID:	1103783																																
User-Defined ID:																																	
Cross Reference Number:	295031EK1.02																																
Topic:	ILT-2117-3-002																																
Num Field 1:	2015 NRC																																
Num Field 2:																																	
Text Field:																																	
Comments:	<table border="1"> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> <tr> <td>MEMORY</td> <td></td> <td></td> <td>10CFR55.41(b)(10)</td> </tr> </table> <table border="1"> <tr> <th colspan="2">Source Documentation</th> </tr> <tr> <td>Source:</td> <td> <input type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input checked="" type="checkbox"/> ILT Exam Bank </td> </tr> <tr> <td>Reference(s):</td> <td>T-117 and Bases; T-240 and Bases</td> </tr> <tr> <td>Learning Objective:</td> <td>PLOT-PBIG-2117-3</td> </tr> <tr> <td>K/A System:</td> <td> <table border="1"> <tr> <td>295031 – Reactor Low Water Level</td> <td>Importance: RO / SRO 3.8 / 4.1</td> </tr> </table> </td> </tr> <tr> <td colspan="2">K/A Statement: EK1.02 – Knowledge of the operational implications of the following concepts as they apply to REACTOR LOW WATER LEVEL: Natural circulation</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td>None</td> </tr> <tr> <td>Notes and Comments:</td> <td>None</td> </tr> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	MEMORY			10CFR55.41(b)(10)	Source Documentation		Source:	<input type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input checked="" type="checkbox"/> ILT Exam Bank	Reference(s):	T-117 and Bases; T-240 and Bases	Learning Objective:	PLOT-PBIG-2117-3	K/A System:	<table border="1"> <tr> <td>295031 – Reactor Low Water Level</td> <td>Importance: RO / SRO 3.8 / 4.1</td> </tr> </table>	295031 – Reactor Low Water Level	Importance: RO / SRO 3.8 / 4.1	K/A Statement: EK1.02 – Knowledge of the operational implications of the following concepts as they apply to REACTOR LOW WATER LEVEL: Natural circulation		REQUIRED MATERIALS:	None	Notes and Comments:	None
Psychometrics																																	
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																														
MEMORY			10CFR55.41(b)(10)																														
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Reference(s):	T-117 and Bases; T-240 and Bases																																
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REQUIRED MATERIALS:	None																																
Notes and Comments:	None																																

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

42

ID: 1118810

Points: 1.00

A Unit 2 Reactor Operator position turnover has been completed.

In accordance with OP-AA-112-101, "Shift Turnover and Relief", the on-coming Reactor Operator is required to announce shift turnover and relief to:

- A. Shift Manager
- B. Unit Supervisor
- C. The Plant Reactor Operator
- D. The entire shift crew

Answer: B

Answer Explanation		
Choice		Basis or Justification
Correct:	B	Per OP-AA-112-101 "Shift Turnover and Relief", section 4.8 "Reactor Operator Shift Turnover Responsibilities", after relief, the on-coming Reactor Operator should announce shift turnover and relief to the Unit Supervisor.
Distractors:	A	Incorrect - After relief, the on-coming Reactor Operator should announce shift turnover and relief to the Unit Supervisor
	C	Incorrect - After relief, the on-coming Reactro Operator should announce shift turnover and relief to the Unit Supervisor
	D	Incorrect - After relief, the on-coming Reactor Operator should announce shift turnover and relief to the Unit Supervisor

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 42 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	0.00																																														
System ID:	1118810																																														
User-Defined ID:	ILT-1529-1D-008																																														
Cross Reference Number:	2.1.3																																														
Topic:	ILT-1529-1d-008 Turnover																																														
Num Field 1:	2015 NRC																																														
Num Field 2:	N/A																																														
Text Field:	B																																														
Comments:	<table border="1"> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> <tr> <td>MEMORY</td> <td></td> <td></td> <td>10CRF55.41(b)(10)</td> </tr> <tr> <th colspan="4">Source Documentation</th> </tr> <tr> <td>Source:</td> <td colspan="2"> <input checked="" type="checkbox"/> New Exam item <input type="checkbox"/> Modified Bank <input type="checkbox"/> ILT Exam Bank </td> <td> <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank </td> </tr> <tr> <td>Reference(s):</td> <td colspan="3">OP-AA-112-101</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="3">PLOT-1529-1d</td> </tr> <tr> <td>K/A System:</td> <td colspan="2">2.1 Conduct of Operations</td> <td>Importance: RO / SRO 3.7/ 3.9</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="3">2.1.3 - Knowledge of shift or short-term relief turnover practice.</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="3">None</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="3">None</td> </tr> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	MEMORY			10CRF55.41(b)(10)	Source Documentation				Source:	<input checked="" type="checkbox"/> New Exam item <input type="checkbox"/> Modified Bank <input type="checkbox"/> ILT Exam Bank		<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank	Reference(s):	OP-AA-112-101			Learning Objective:	PLOT-1529-1d			K/A System:	2.1 Conduct of Operations		Importance: RO / SRO 3.7/ 3.9	K/A Statement:	2.1.3 - Knowledge of shift or short-term relief turnover practice.			REQUIRED MATERIALS:	None			Notes and Comments:	None		
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Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
MEMORY			10CRF55.41(b)(10)																																												
Source Documentation																																															
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REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

43

ID: 1103904

Points: 1.00

Unit 3 was operating at 35% Reactor power when a feedwater transient caused Reactor water level to rise to + 48 inches.

Which of the following describes the position of the Main Turbine Bleeder Trip valves and the impact of the transient on feedwater temperature?

The Bleeder Trip valves will be ____ (1) ____ and feedwater temperature will ____ (2) ____.

- A. (1) open
(2) lower
- B. (1) open
(2) remain the same
- C. (1) closed
(2) lower
- D. (1) closed
(2) remain the same

Answer: C

Answer Explanation		
Choice		Basis or Justification
Correct:	C	The turbine trip will cause the bleeder trip valves to close to isolate the steam left in the feedwater heaters for the turbine to prevent an overspeed trip of the turbine. The loss of feedwater heating will cause a drop in feedwater temperature.
Distractors:	A	Plausible if the the candidate does not recognize that a RPV level of 48 inches causes a turbine trip or if the candidate does not understand the purpose of the Bleeder Trip valves.
	B	Plausible if the the candidate does not recognize that a RPV level of 48 inches causes a turbine trip or if the candidate does not understand the purpose of the Bleeder Trip valves.
	D	Plausible if the the candidate does not recognize that a RPV level of 48 inches causes a turbine trip or if the candidate does not understand the purpose of the Bleeder Trip valves.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 43 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1103904																																														
User-Defined ID:																																															
Cross Reference Number:	295005AK2.02																																														
Topic:	ILT-5001B-6c-001																																														
Num Field 1:	2015 NRC																																														
Num Field 2:																																															
Text Field:																																															
Comments:	<table border="1"> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> <tr> <td>HIGH</td> <td></td> <td></td> <td>10CRF55.41(b)(5)</td> </tr> <tr> <th colspan="4">Source Documentation</th> </tr> <tr> <td>Source:</td> <td colspan="2"> New Exam item Modified Bank XILT Exam Bank </td> <td> Previous NRC Exam Other Exam Bank </td> </tr> <tr> <td>Reference(s):</td> <td colspan="3">PLOT-5001B, PLOT-5001E</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="3">PLOT-5001B-6c</td> </tr> <tr> <td>K/A System:</td> <td colspan="2">295005 Main Turbine Generator Trip</td> <td>Importance: RO / SRO 2.9/ 3.0</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="3">AK2.02 - Knowledge of the interrelations between MAIN TURBINE GENERATOR TRIP and the following: Feedwater temperature</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="3">None</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="3">None</td> </tr> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	HIGH			10CRF55.41(b)(5)	Source Documentation				Source:	New Exam item Modified Bank XILT Exam Bank		Previous NRC Exam Other Exam Bank	Reference(s):	PLOT-5001B, PLOT-5001E			Learning Objective:	PLOT-5001B-6c			K/A System:	295005 Main Turbine Generator Trip		Importance: RO / SRO 2.9/ 3.0	K/A Statement:	AK2.02 - Knowledge of the interrelations between MAIN TURBINE GENERATOR TRIP and the following: Feedwater temperature			REQUIRED MATERIALS:	None			Notes and Comments:	None		
Psychometrics																																															
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
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Learning Objective:	PLOT-5001B-6c																																														
K/A System:	295005 Main Turbine Generator Trip		Importance: RO / SRO 2.9/ 3.0																																												
K/A Statement:	AK2.02 - Knowledge of the interrelations between MAIN TURBINE GENERATOR TRIP and the following: Feedwater temperature																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

44

ID: 1118708

Points: 1.00

The following conditions exist on Unit 2:

- Torus level is 13 feet and lowering
- Drywell pressure is 4 psig and rising

For the above conditions, which of the following can be performed to raise Torus level or lower Drywell pressure?

- A. Raise Torus level using the Torus Water Filter pump IAW SO 14A.1.A-2, "Torus Water Cleanup and Level Control".
- B. Raise Torus level using the High Pressure Service Water system IAW T-231, "HPSW Injection into the Torus".
- C. Lower Drywell pressure using the 2 inch Drywell Vent IAW T-200B-2, "Primary Containment Venting Via the 2 in. Drywell Vent to SBTG".
- D. Lower Drywell pressure by starting the third Drywell Chiller IAW RRC 44A.1-2, "Maximizing Drywell Cooling".

Answer: B

Answer Explanation		
Choice		Basis or Justification
Correct:	B	With high Drywell pressure the other three choices are not available due to PCIS isolations. Using HPSW will allow for Torus makeup and can be performed irrespective of any PCIS isolation signal. Raising Torus level will provide additional cooling if the Torus water is needed to cool the core. Raising Torus level will also improve NPSH for RHR and Core Spray pumps if they are needed to provide water to the RPV or if RHR is needed for Containment Sprays.
Distractors:	A	Using the Torus Water Filter pump is a method to letdown water from the Torus. The direction to makeup and letdown Torus water is in the same procedure SO 14A.1.A-2, "TORUS WATER CLEANUP AND LEVEL CONTROL". Plausible if the candidate does not recall the the purpose of the Torus Water Filter pump or confuses the letdown and makeup section of the procedure.
	C	The 2 inch drywell vents would be used under normal conditions to lower Drywell pressure. The 2 inch vents will not be available due to the isolation signal. Plausible if the candidate does not recall the isolation signal or believes that bypassing the isolation signal is allowed with Drywell pressure at 4 psig. Drywell pressure must be 60 psig to align the vent flow path.
	D	Drywell ventilation will have tripped with the 2 psig signal. The candidate can start the third chiller but it will have no affect on Drywell pressure because all of the Drywell fans are tripped. Plausible if the candidate does not recall the Drywell fans trip at 2 psig Drywell pressure.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 44 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1118708																																														
User-Defined ID:																																															
Cross Reference Number:	295024EK2.09																																														
Topic:	ILT-5007-9k2-002																																														
Num Field 1:	2015 NRC																																														
Num Field 2:																																															
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K/A Statement:	EK2.09 - Knowledge of the interrelations between HIGH DRYWELL PRESSURE and the following: Suppression pool makeup																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

45

ID: 994506

Points: 1.00

Unit 2 is operating at 100% power.

Which one of the following identifies the Reactor Water Cleanup (RWCU) System and PCIS Isolation logic response to the loss of Panel 20Y33?

A PCIS ____ (1) ____ Group II Isolation will be received and a ____ (2) ____ RWCU isolation signal will be received.

- A. (1) Outboard
(2) Full
- B. (1) Inboard
(2) Half
- C. (1) Inboard
(2) Full
- D. (1) Outboard
(2) Half

Answer: C

Answer Explanation		
Choice	Basis or Justification	
Correct:	C	Although the loss of 20Y33 causes an INBOARD group II isolation, RWCU will receive a full isolation due to a logic power supply intertie.
Distractors:	A	Plausible if the candidate does not recall that Y 33 provides power to the Inboard logic not the outboard logic.
	B	Plausible if the candidate does not recall how a loss of Y-33 affects RWCU.
	D	Plausible if the candidate does not recall that Y-33 provides power to the Inboard logic not the outboard logic. Plausible if the candidate does not recall how a loss of Y-33 affects RWCU.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 45 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	994506																																														
User-Defined ID:	ILT-5007G-5A-003																																														
Cross Reference Number:	295003AK3.06																																														
Topic:	ILT-5007G-6a-003																																														
Num Field 1:	2015 NRC																																														
Num Field 2:	N/A																																														
Text Field:	A																																														
Comments:	<table border="1"> <thead> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> </thead> <tbody> <tr> <td>HIGH</td> <td></td> <td></td> <td>10CRF55.41(b)(7)</td> </tr> <tr> <th colspan="4">Source Documentation</th> </tr> <tr> <td>Source:</td> <td colspan="2">New Exam item Modified Bank XILT Exam Bank</td> <td>Previous NRC Exam Other Exam Bank</td> </tr> <tr> <td>Reference(s):</td> <td colspan="3">PLOT 5007G, GP-8C</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="3">PLOT-5007G-</td> </tr> <tr> <td>K/A System:</td> <td>295003 Partial of Complete Loss of A.C.Power</td> <td colspan="2">Importance: RO / SRO 3.7/ 3.7</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="3">AK3.06 - Knowledge of the reason for the following responses as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER: Containment isolation</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="3">None</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="3">None</td> </tr> </tbody> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	HIGH			10CRF55.41(b)(7)	Source Documentation				Source:	New Exam item Modified Bank XILT Exam Bank		Previous NRC Exam Other Exam Bank	Reference(s):	PLOT 5007G, GP-8C			Learning Objective:	PLOT-5007G-			K/A System:	295003 Partial of Complete Loss of A.C.Power	Importance: RO / SRO 3.7/ 3.7		K/A Statement:	AK3.06 - Knowledge of the reason for the following responses as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER: Containment isolation			REQUIRED MATERIALS:	None			Notes and Comments:	None		
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Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
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REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

46

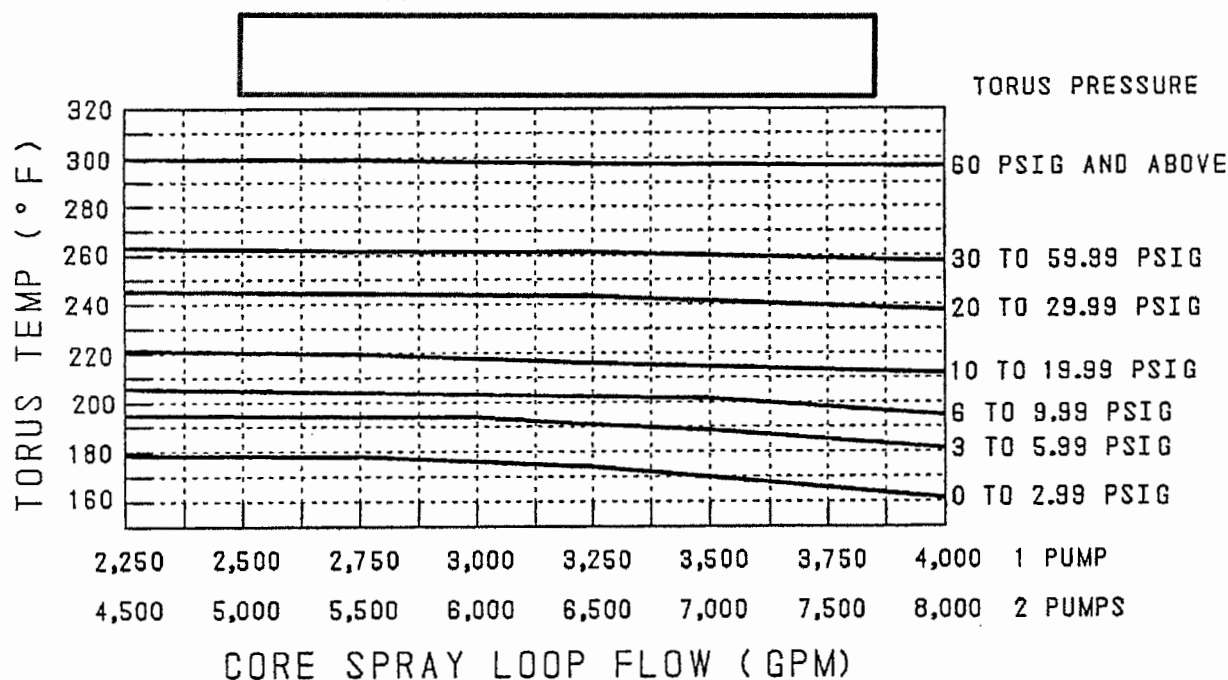
ID: 994371

Points: 1.00

Unit 3 was operating at 100% power when a plant transient resulted in the following conditions:

- The Reactor is scrammed; all rods are inserted
- Reactor pressure is 300 psig and lowering
- Torus temperature is 185°F
- Torus pressure is 2 psig
- Torus level is 11.5 feet
- The "A" Core Spray pump is the only pump available for injection
- Reactor water level -200 inches and lowering

The Core Spray System Pump NPSH curves are provided below for reference.



Based on the above conditions, the "A" Core Spray pump _____.

- A. CAN be used per T-111, "Level Restoration", the NPSH and Vortex Limits can be exceeded.
- B. CAN be used per T-111, "Level Restoration", the NPSH and Vortex Limits will NOT be exceeded.
- C. CANNOT be used per T-111, "Level Restoration", the Vortex Limit has been exceeded.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

D. CANNOT be used per T-111, "Level Restoration", the NPSH Limit has been exceeded.

Answer: A

Answer Explanation		
Choice	Basis or Justification	
Correct:	A	The given conditions result in entry into T-111, "Level Restoration". Step LR-7 of T-111 allows operation of Core Spray pump "A" even if the NPSH and/or Vortex limit(s) have been exceeded. The Core Spray pump would start to inject at an RPV pressure of ≤ 330 psig.
Distractors:	B	The NPSH limit will be exceeded. Plausible if the candidate does not plot the graph correctly.
	C	The Vortex limit (10.5 feet in the torus) has not been exceeded. Plausible if the candidate does not recall the vortex limit.
	D	Although the NPSH limit has been exceeded, the "A" Core Spray pump can be placed in service as directed by Step LR-7 of T-111. Plausible if the candidate does not recall the requirement to inject to maintain ACC.

Question 46 Info																											
Question Type:	Multiple Choice																										
Status:	Active																										
Always select on test?	No																										
Authorized for practice?	No																										
Points:	1.00																										
Time to Complete:	0																										
Difficulty:	1.00																										
System ID:	994371																										
User-Defined ID:	ILT-5014-6C-001																										
Cross Reference Number:	295030EK3.07																										
Topic:	ILT-5014-7c-001																										
Num Field 1:	2015 NRC																										
Num Field 2:	0.00																										
Text Field:	ILT05-1 NRC Exam #32																										
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Psychometrics																											
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																								
HIGH			10CRF55.41(b)(10)																								
Source Documentation																											
Source:	New Exam item Modified Bank XILT Exam Bank		Previous NRC Exam Other Exam Bank																								
Reference(s):	T-102, T-111																										

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	Learning Objective:	PLOT-5014-7c	
	K/A System:	295030 Low Suppression Pool Water Level	Importance: RO / SRO 3.5/ 3.8
	K/A Statement:	EK3.07 - Knowledge of the reason for the following responses as they apply to LOW SUPPRESSION POOL WATER LEVEL: NPSH considerations for ECCS pumps	
	REQUIRED MATERIALS:	None	
	Notes and Comments:	None	

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

47

ID: 1139095

Points: 1.00

- Both units are at 100% power with all systems in a normal full power lineup.
- A Loss of Off-site Power occurs on both units.

For the above conditions, which of the statements below describes the near-term response of the Instrument Air System?

- A. The A, B, and C Air Compressors will maintain Instrument Air Header pressure at a normal value during this event.
- B. The C Air Compressors will automatically supply the 'B' Instrument Air Headers.
- C. The 'A' Instrument Air Headers can be supplied by starting the Backup Instrument Air Compressors.
- D. The 'B' Instrument Air Headers can be supplied by starting the Backup Instrument Air Compressors.

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	A Loss of Off-site Power (LOOP) with loss of the 13 KV Auxiliary Busses will cause all three normal (A, B, C) air compressors to lose power. The Backup Air Compressor is supplied from emergency power and should supply the B Instrument Air header until it eventually trips due to lack of cooling after AO-8(9)0250D opens due to both A and B instrument Air receivers pressure lowering.
Distractors:	A	Incorrect. A Loss of Off-site Power (LOOP) with loss of the 13 KV Auxiliary Busses will cause all three normal (A, B, C) air compressors to lose power. Plausible if the candidate does not understand which compressors have a vital power source.
	B	Incorrect. While the 'C' compressor (service air compressor) receiver can supply the 'B' Instrument Air header through manual valving until it depressurizes, the 'C' compressor itself cannot supply the 'B' header since it has no power.
	C	Incorrect. The Backup Air Compressor only provides backup to the "B" header without manual valve actuation. Plausible if the candidate does not understand the valving arrangement of the instrument air headers.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 47 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	1
Difficulty:	2.00
System ID:	1139095
User-Defined ID:	ILT-5036-3A-004
Cross Reference Number:	300000K4.01
Topic:	ILT-5036-3a-004 LOOP effect on IA
Num Field 1:	2015 NRC
Num Field 2:	NA
Text Field:	A

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Comments:	Psychometrics		
	Level of Knowledge	Difficulty	Time Allowance (minutes)
	HIGH		
	Source Documentation		
	Source:	New Exam item Modified Bank XILT Exam Bank	
	Reference(s):	ON-119	
	Learning Objective:	PLOT-5036-5a	
	K/A System:	300000 Instrument Air	Importance: RO / SRO 3.5/ 3.4
	K/A Statement:	AK3.02 - Knowledge of the reasons for the following responses as they apply to PARTIAL OR COMPLETE LOSS OF INSTRUMENT AIR SYSTEM: Standby air compressor operation	
	REQUIRED MATERIALS:	None	
Notes and Comments:	None		

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

48

ID: 1139106

Points: 1.00

A DBA LOCA has occurred on Unit 2.

The following conditions exist:

- All RHR Pumps are injecting into the RPV
- Torus temperature is 120 degrees F and rising
- TRIPs direct that Torus Cooling be placed in service
- All four Emergency Diesel Generators (EDG) have started and are carrying their respective busses. EDG loading is as follows:
 - E-1 - 2900 KW
 - E-2 - 2000 KW
 - E-3 - 2300 KW
 - E-4 - 3000 KW

Based on the above conditions, in order to provide the most Torus Cooling possible without exceeding diesel loading on any Diesel Generator:

- A. Place the 'B' HPSW Pump/'B' RHR heat exchanger in service.
- B. Place the 'B' HPSW Pump/'B' RHR heat exchanger AND the 'C' HPSW Pump/'C' RHR heat exchanger in service.
- C. Place the 'A' HPSW Pump/'A' RHR heat exchanger, 'B' HPSW Pump/'B' RHR heat exchanger AND 'C' HPSW Pump/'C' RHR heat exchanger in service,
- D. Place the 'A' HPSW Pump/'A' RHR heat exchanger, 'B' HPSW Pump/'B' RHR heat exchanger, 'C' HPSW Pump/'C' RHR heat exchanger AND the 'D' HPSW Pump/'D' RHR heat exchanger in service.

Answer: B

Answer Explanation		
Choice		Basis or Justification
Correct:	B	The maximum allowed Emergency Diesel Generator (EDG) loading is 3100 KW. A HPSW Pump load is 750 KW. The loading on the E-2 and E-3 EDGs is low enough to apply HPSW to the RHR heat exchangers without adjusting EDG load. E-2 diesel loading will be 2750 KW which is below 3100 KW limit. E-3 D/G load will be 3050 KW which is below the 3100 KW limit.
Distractors:	A	The maximum allowed Emergency Diesel Generator (EDG) loading is 3100 KW. A HPSW Pump load is 750 KW. The loading on the E-2 <u>and</u> E-3 Emergency Diesel Generators (EDGs) is low enough to apply HPSW to the RHR heat exchangers without exceeding any D/G loading limit. It is an incorrect answer to say that starting only the "B" HPSW pump would provide the most cooling possible without overloading a D/G.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	C	Placing the "B" and "C" HPSW pumps in service will not exceed load, but placing the "A" HPSW pump in-service will produce a load of 3650 KW which is above the 3100 KW limit. Plausible if the candidate doesn't recall the loading requirements for a HPSW pump.
	D	Placing the "D" HPSW pump in-service will produce a load of 3750 KW which is above the 3100 KW limit. Plausible if the candidate doesn't recall the loading requirements for a HPSW pump.

Question 48 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	0.00																																														
System ID:	1139106																																														
User-Defined ID:																																															
Cross Reference Number:	295026 EA1.01																																														
Topic:	ILT-5010-5h-002																																														
Num Field 1:	2015 NRC																																														
Num Field 2:																																															
Text Field:																																															
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Psychometrics																																															
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
HIGH			10CRF55.41(b)(7)																																												
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K/A System:	259026 Suppression Pool High Water Temp		Importance: RO / SRO 4.1/ 4.1																																												
K/A Statement:	EA1.01 - Ability to operate and/or monitor the following as they apply to SUPPRESION POOL HIGH WATER TEMPERATURE: Suppression pool cooling																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

49

ID: 1139107

Points: 1.00

The following conditions exist:

- Unit 2 reactor has scrammed and T-102 "Primary Containment Control" has been entered
- Due to the inability to spray, T-112 "Emergency Blowdown" has been entered
- Only one SRV can be opened
- Torus level is 16 feet and rising
- Drywell pressure is 13 psig and rising
- The Control Room Supervisor has directed the use of HPCI in the CST to CST mode to depressurize the RPV

Designator	Procedure
1	RRC 23.1-2, "HPCI System Operation during a Plant Event, Section D, HPCI System Startup in CST to CST Mode "
2	T-226, "Defeating HPCI High Torus Level Suction Transfer"
3	T-250, "RPV Pressure Control using HPCI with Suction from the CST"

From the procedures above, select the choice that completes the statement , identifying all the procedures required to complete the evolution.

Based on the above conditions _____ is required to be performed to place HPCI in the CST to CST mode.

- A. 1
- B. 1 and 2
- C. 3
- D. 1 and 3

Answer: C

Answer Explanation		
Choice		Basis or Justification
Correct:	C	In order to use HPCI in the CST-CST mode with an initiation signal present, the initiation signal must be bypassed using T-250. T-250 also removes the Torus high level swap allowing CST-CST operation.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Distractors:	A	The RRC 23.1 will not work because DW press > 2 psig. Plausible if the candidate does not recall that HPCI can not be operated in the CST-CST mode above 2 psig. Plausible if the candidate does not recall the high Torus level swap condition for HPCI.
	B	The RRC 23.1 will not work because DW press > 2 psig. Plausible if the candidate does not recall that HPCI can not be operated in the CST-CST mode above 2 psig. Plausible if the candidate does not recall the high Torus level swap condition for HPCI. T-226 will not allow HPCI to be operated in the CST-CST mode it only will bypass a high torus level condition. Plausible if the candidate does not recall the high Torus level swap condition for HPCI.
	D	T-250 is the only procedure needed to perform this task. RRC 23.1 is not required and will not provide any additional guidance to complete the task.

Question 49 Info																																											
Question Type:	Multiple Choice																																										
Status:	Active																																										
Always select on test?	No																																										
Authorized for practice?	No																																										
Points:	1.00																																										
Time to Complete:	0																																										
Difficulty:	1.00																																										
System ID:	1139107																																										
User-Defined ID:	ILT-5023-1C-001																																										
Cross Reference Number:	206000K1.01																																										
Topic:	ILT-5023-5c-002																																										
Num Field 1:	2015 NRC																																										
Num Field 2:	NA																																										
Text Field:	B																																										
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Psychometrics																																											
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																								
HIGH			10CRF55.41(b)(7)																																								
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K/A System:	295025 High Reactor Pressure		Importance: RO / SRO 3.8/ 3/9																																								
K/A Statement:	EA1.04 - Ability to operate and/or monitor the following as they apply to HIGH REACTOR PRESSURE: HPCI																																										
REQUIRED MATERIALS:	None																																										

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	Notes and Comments:	None

50

ID: 1104045

Points: 1.00

- Unit 2 is at 100% power
- A small steam leak occurs in the Drywell
- The PRO transfers "House Loads" as directed by the Control Room Supervisor
- Drywell pressure suddenly rises to 3 psig
- RPV level lowers to -15 inches then recovers to +10 inches

Based on the above conditions, assuming no operator actions, the Reactor Recirculation Pumps will

- A. trip
- B. runback to 30% speed
- C. runback to 45% speed
- D. continue to operate at the same speed

Answer: B

Answer Explanation		
Choice		Basis or Justification
Correct:	B	Recirc runsback to 30% based when RPV level drops to 17 inches with the scram signal generated by the high Drywell pressure condition.
Distractors:	A	The Recirc pumps will not trip because house loads had been transferred before the scram and RPV level did not drop to -48 inches. Plausible if the candidate does not recall that transferring house loads prevents the Recirc pump trip on the turbine trip/fast transfer.
	C	Plausible if the candidate does not recall that the runback is to 30% not 45% on the scram.
	D	Plausible if the candidate does not recognize the 3 psig Drywell signal or the -15 inch RPV level conditions as scram signals.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 50 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1104045																																														
User-Defined ID:																																															
Cross Reference Number:	295006AA1.04																																														
Topic:	ILT-5002-3b-003																																														
Num Field 1:	2015 NRC																																														
Num Field 2:																																															
Text Field:																																															
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Psychometrics																																															
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
HIGH			10CRF55.41(b)(7)																																												
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Reference(s):	ARC-214 B-3																																														
Learning Objective:	PLOT-5002-3b																																														
K/A System:	295006 SCRAM	Importance: RO / SRO 3.1/ 3.2																																													
K/A Statement:	AA1.04 - Ability to operate and/or monitor the following as they apply to SCRAM: Recirculation system																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

51

ID: 1139626

Points: 1.00

- Unit 2 is in a normal full power alignment.
- A power supply is lost, resulting in multiple alarms and changed indications.
- Two of the three HPCI components listed below have neither red nor green lights lit on Panel 20C04B.
 - MO 2-23-15, HPCI Steam Supply Valve
 - MO 2-23-20, HPCI Injection Valve
 - HPCI Aux Oil Pump

These indications are consistent with a loss of power to _____.

- A. Division I Vital AC power
- B. Division II Vital AC power
- ~~C. Division I DC power~~
- D. Division II DC power

Answer: D

Answer Explanation		
Choice		Basis or Justification
Correct:	D	Division II DC power is the power supply to HPCI. The indicating light being out to MO-20 and the HPCI Aux oil pump indicate a loss of D.C. power.
Distractors:	A	Division II DC power is the power supply not Division I AC power. Division I AC power does provide power to MO-15, but that is only one component and the question states that the lights are out for two of three components so this is not the correct answer. Plausible if the candidate does not recall the power supply to HPCI.
	B	Division II DC power is the power supply not Division II AC power. Plausible if the candidate does not recall the power supply to HPCI.
	C	Division II DC power is the power supply not Division I DC power. Plausible if the candidate does not recall the power supply to HPCI.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 51 Info																															
Question Type:	Multiple Choice																														
Status:	Active																														
Always select on test?	No																														
Authorized for practice?	No																														
Points:	1.00																														
Time to Complete:	0																														
Difficulty:	1.00																														
System ID:	1139626																														
User-Defined ID:																															
Cross Reference Number:	295004 AA2.04																														
Topic:	ILT-5057-6c-005																														
Num Field 1:	2015 NRC																														
Num Field 2:																															
Text Field:																															
Comments:	<table border="1"> <thead> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> </thead> <tbody> <tr> <td>MEMORY</td> <td></td> <td></td> <td>10CRF55.41(b)(7)</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="2">Source Documentation</th> </tr> </thead> <tbody> <tr> <td>Source:</td> <td> <input checked="" type="checkbox"/> New Exam item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank </td> </tr> <tr> <td>Reference(s):</td> <td>E-26, PLOT 5057, PLOT 5023</td> </tr> <tr> <td>Learning Objective:</td> <td>PLOT-5057-6c</td> </tr> <tr> <td>K/A System:</td> <td> 295004 Partial or complete loss of D.C. Power Importance: RO / SRO 3.2/ 3.3 </td> </tr> <tr> <td>K/A Statement:</td> <td>AA2.04 Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF D.C. POWER: System lineups</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td>None</td> </tr> <tr> <td>Notes and Comments:</td> <td>None</td> </tr> </tbody> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	MEMORY			10CRF55.41(b)(7)	Source Documentation		Source:	<input checked="" type="checkbox"/> New Exam item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	Reference(s):	E-26, PLOT 5057, PLOT 5023	Learning Objective:	PLOT-5057-6c	K/A System:	295004 Partial or complete loss of D.C. Power Importance: RO / SRO 3.2/ 3.3	K/A Statement:	AA2.04 Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF D.C. POWER: System lineups	REQUIRED MATERIALS:	None	Notes and Comments:	None
Psychometrics																															
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																												
MEMORY			10CRF55.41(b)(7)																												
Source Documentation																															
Source:	<input checked="" type="checkbox"/> New Exam item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank																														
Reference(s):	E-26, PLOT 5057, PLOT 5023																														
Learning Objective:	PLOT-5057-6c																														
K/A System:	295004 Partial or complete loss of D.C. Power Importance: RO / SRO 3.2/ 3.3																														
K/A Statement:	AA2.04 Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF D.C. POWER: System lineups																														
REQUIRED MATERIALS:	None																														
Notes and Comments:	None																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

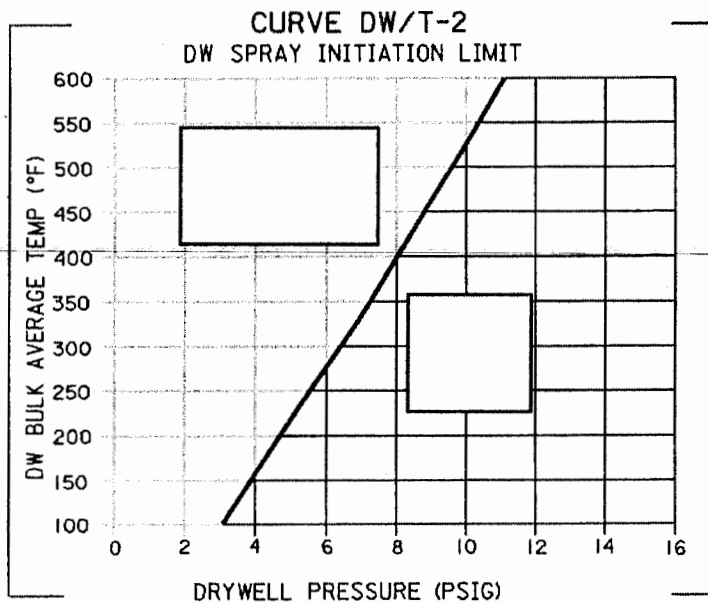
52

ID: 1104051

Points: 1.00

- Unit 2 is at 100% power when a loss of cooling has occurred to the Unit 2 Drywell
- Drywell temperature is currently 200 degrees F

For the above conditions, use the Drywell Spray Initiation Limit Curve below to select the correct statement with respect to Drywell pressure and the ability to spray.



Drywell pressure will be approximately ____ (1) ____ . Drywell sprays ____ (2) ____ permitted.

- A. (1) 2 psig
(2) are
- B. (1) 2 psig
(2) are NOT
- C. (1) 6 psig
(2) are
- D. (1) 6 psig
(2) are NOT

Answer: B

Answer Explanation	
Choice	Basis or Justification

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Correct:	B	Without a steam leak Drywell pressure rise will be based solely on the heat up of the Drywell air space. Simulator data shows that when drywell temperature reaches 200 degrees F Drywell pressure will be approximately 2 psig. Plotting 2 psig and 200 degrees F is on the UNSAFE side of the Drywell spray curve (left side). The right side of the curve is the SAFE side.
Distractors:	A	Plausible if the candidate does not understand the safe side of the Drywell spray curve.
	C	Plausible if the candidate does not understand the Pressure temperature relationship of the containment. Plausible if the candidate does not understand the safe side of the Drywell spray curve.
	D	Plausible if the candidate does not understand the Pressure temperature relationship of the containment. Plausible if the candidate does not understand the safe side of the Drywell spray curve.

Question 52 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	0			
Difficulty:	1.00			
System ID:	1104051			
User-Defined ID:				
Cross Reference Number:	295028EA2.04			
Topic:	ILT-2102-5-003			
Num Field 1:	2015 NRC			
Num Field 2:				
Text Field:				
Comments:	Psychometrics			
	Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
	HIGH			10CRF55.41(b)(3)
	Source Documentation			
	Source:	XNew Exam item Modified Bank ILT Exam Bank		Previous NRC Exam Other Exam Bank
	Reference(s):	SE-11, simulator modeling		
	Learning Objective:	PLOT-2102-5		
	K/A System:	295028 High Drywell Temperature		Importance: RO / SRO 4.1/ 4.2
	K/A Statement:	EA2.04 - Ability to determine and/or interpret the following as they apply to HIGH DRYWELL TEMPERATURE: Drywell pressure		

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	REQUIRED MATERIALS:	None
	Notes and Comments:	None

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

53

ID: 1104052

Points: 1.00

A transient has occurred on Unit 3 that results in fuel cladding damage. The following conditions exist:

- The reactor is shut down and all URO and PRO scram actions are complete
- RPV level lowered to -15 inches on the manual scram
- MSL radiation levels are 5000 mrem/hr and steady
- 10 minutes after the scram
 - Vent Stack radiation levels are rising
 - Main Stack radiation levels are rising

Based on the above information, Vent Stack radiation levels are rising due to a steam leak in the ____ (1) ____ and Main Stack radiation levels are rising due to a release from the ____ (2) ____.

- A. (1) Reactor Building
(2) Steam Packing Exhauster
- B. (1) Reactor Building
(2) Off Gas System
- C. (1) Turbine Building
(2) Steam Packing Exhauster
- D. (1) Turbine Building
(2) Off Gas System

Answer: C

Answer Explanation		
Choice		Basis or Justification
Correct:	C	Turbine Building ventilation is always directed to the Vent Stack. A steam leak in the Turbine Building would show on the vent stack. The SPE is always directed to the Main Stack without any hold up time. The radioactive steam for the seals would be exhausted to the Main Stack.
Distractors:	A	A steam leak in the Reactor Building would be directed to the Main Stack via SGBT following the scram. Plausible if the candidate does not recognize the signal to initiate SGBT and isolate Reactor Building ventilation.
	B	A steam leak in the Reactor Building would be directed to the Main Stack via SGBT following the scram. Plausible if the candidate does not recognize the signal to initiate SGBT and isolate Reactor Building ventilation. There is a 90 hour holdup time on the Off gas system. Radiation levels indicating on the Main Stack would not rise in 10 minutes following the event from the Off gas system. Plausible if the candidate does not recall the function of the off gas system.
	D	There is a 90 hour holdup time on the Off gas system. Radiation levels indicating on the Main Stack would not rise in 10 minutes following the event from the Off gas system. Plausible if the candidate does not recall the function of the off gas system.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 53 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1104052																																														
User-Defined ID:																																															
Cross Reference Number:	295038EA2.04																																														
Topic:	ILT-2104-5-006																																														
Num Field 1:	2015 NRC																																														
Num Field 2:																																															
Text Field:																																															
Comments:	<table border="1"> <thead> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> </thead> <tbody> <tr> <td>HIGH</td> <td></td> <td></td> <td>10CRF55.41(b)(5)</td> </tr> <tr> <th colspan="4">Source Documentation</th> </tr> <tr> <td>Source:</td> <td colspan="2"> <input checked="" type="checkbox"/> New Exam item <input type="checkbox"/> Modified Bank <input type="checkbox"/> ILT Exam Bank </td> <td> <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank </td> </tr> <tr> <td>Reference(s):</td> <td colspan="3">ON-104, T-104</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="3">PLOT 2104-5</td> </tr> <tr> <td>K/A System:</td> <td colspan="2">295038 High Off-Site Release Rate</td> <td>Importance: RO / SRO 4.1/ 4.5</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="3">EA2.04 Ability to determine and/or interpret the following as they apply to HIGH OFF-SITE RELEASE RATE: Source of off-site release</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="3">None</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="3">None</td> </tr> </tbody> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	HIGH			10CRF55.41(b)(5)	Source Documentation				Source:	<input checked="" type="checkbox"/> New Exam item <input type="checkbox"/> Modified Bank <input type="checkbox"/> ILT Exam Bank		<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank	Reference(s):	ON-104, T-104			Learning Objective:	PLOT 2104-5			K/A System:	295038 High Off-Site Release Rate		Importance: RO / SRO 4.1/ 4.5	K/A Statement:	EA2.04 Ability to determine and/or interpret the following as they apply to HIGH OFF-SITE RELEASE RATE: Source of off-site release			REQUIRED MATERIALS:	None			Notes and Comments:	None		
Psychometrics																																															
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
HIGH			10CRF55.41(b)(5)																																												
Source Documentation																																															
Source:	<input checked="" type="checkbox"/> New Exam item <input type="checkbox"/> Modified Bank <input type="checkbox"/> ILT Exam Bank		<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank																																												
Reference(s):	ON-104, T-104																																														
Learning Objective:	PLOT 2104-5																																														
K/A System:	295038 High Off-Site Release Rate		Importance: RO / SRO 4.1/ 4.5																																												
K/A Statement:	EA2.04 Ability to determine and/or interpret the following as they apply to HIGH OFF-SITE RELEASE RATE: Source of off-site release																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

54

ID: 1140420

Points: 1.00

Unit 2 has just entered Mode 4 in preparation for a refueling outage.

A failure of MO-2-10-018 "Shutdown Cooling Inboard Isolation" results in a loss of Shutdown Cooling and necessitates establishing Alternate Shutdown Cooling using SRV's and Torus Cooling, per AO 10.12-2 "Alternate Shutdown Cooling."

Conditions have been established as follows:

- Torus Cooling is in service using the '2A' RHR pump
- The '2E' and '2H' SRV control switches are in the OPEN position
- Injection to the RPV has been established with the '2D' RHR pump
- RPV level is 150 inches and steady on Refuel Range (LI-86)
- RPV pressure is 30 psig and steady
- Torus pressure is 0 psig and steady

Which one of the following describes the action required in order to establish Alternate Decay Heat removal?

____(1)____ RPV injection until RPV ____ (2) ____.

- A. (1) Lower
(2) level is < 100 inches
- B. (1) Raise
(2) level is > 200 inches
- C. (1) Lower
(2) pressure is < 25 psig
- D. (1) Raise
(2) pressure is > 50 psig

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	A 50 psig D/P is required across the SRV's in order for them to open and establish alternate heat removal.
Distractors:	A	While 108 inches is an important milestone in OT-110, Reactor High Level, when trying to prevent filling the Main Steam lines, filling them is required for this procedure in order to establish flow through the SRV(s).
	B	B RPV level at 150 inches is high enough to fill the Main Steam lines. At 30 psig RPV pressure, LI-86 is reasonably accurate.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	C	In order to establish alternate heat removal the SRV's must open, which requires a 50 psig D/P between the RPV and Torus. The given conditions require raising reactor pressure, not lowering.
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Question 54 Info																															
Question Type:	Multiple Choice																														
Status:	Active																														
Always select on test?	No																														
Authorized for practice?	No																														
Points:	1.00																														
Time to Complete:	0																														
Difficulty:	1.00																														
System ID:	1140420																														
User-Defined ID:																															
Cross Reference Number:	295021 2.1.20																														
Topic:	ILT-1550-28b-002																														
Num Field 1:	2015 NRC																														
Num Field 2:																															
Text Field:	2009 NRC exam question 49																														
Comments:	<table border="1"> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> <tr> <td>HIGH</td> <td></td> <td></td> <td>10CRF55.41(b) (10)</td> </tr> </table> <table border="1"> <tr> <th colspan="2">Source Documentation</th> </tr> <tr> <td>Source:</td> <td> <div> <div>New Exam item</div> <div>Modified Bank</div> <div>Bank</div> <div>X ILT Exam Bank</div> </div> <div>Previous NRC Exam</div> <div>Other Exam</div> </td> </tr> <tr> <td>Reference(s):</td> <td>AO 10.12</td> </tr> <tr> <td>Learning Objective:</td> <td>PLOT - 5001A-5f, PLOT - 5007-1f</td> </tr> <tr> <td>K/A System:</td> <td> <div>295021 - Loss of Shutdown Cooling</div> <div>Importance; RO / SRO</div> <div>4.6 / 4.6</div> </td> </tr> <tr> <td>K/A Statement:</td> <td>2.1.20 - Ability to interpret and execute procedure steps</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td>None</td> </tr> <tr> <td>Notes and Comments:</td> <td>None</td> </tr> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	HIGH			10CRF55.41(b) (10)	Source Documentation		Source:	<div> <div>New Exam item</div> <div>Modified Bank</div> <div>Bank</div> <div>X ILT Exam Bank</div> </div> <div>Previous NRC Exam</div> <div>Other Exam</div>	Reference(s):	AO 10.12	Learning Objective:	PLOT - 5001A-5f, PLOT - 5007-1f	K/A System:	<div>295021 - Loss of Shutdown Cooling</div> <div>Importance; RO / SRO</div> <div>4.6 / 4.6</div>	K/A Statement:	2.1.20 - Ability to interpret and execute procedure steps	REQUIRED MATERIALS:	None	Notes and Comments:	None
Psychometrics																															
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																												
HIGH			10CRF55.41(b) (10)																												
Source Documentation																															
Source:	<div> <div>New Exam item</div> <div>Modified Bank</div> <div>Bank</div> <div>X ILT Exam Bank</div> </div> <div>Previous NRC Exam</div> <div>Other Exam</div>																														
Reference(s):	AO 10.12																														
Learning Objective:	PLOT - 5001A-5f, PLOT - 5007-1f																														
K/A System:	<div>295021 - Loss of Shutdown Cooling</div> <div>Importance; RO / SRO</div> <div>4.6 / 4.6</div>																														
K/A Statement:	2.1.20 - Ability to interpret and execute procedure steps																														
REQUIRED MATERIALS:	None																														
Notes and Comments:	None																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

55

ID: 1139628

Points: 1.00

A fire exists in the Turbine Building.

The Crew enters ON-114, "Actual Fire Reported in the Power Block, Diesel Generator Building, Emergency Pump, Inner Screen or Emergency Cooling Tower Structures".

The fire causes RPV level to become unknown.

The Crew shall _____.

- A. enter T-100, "Scram" and exit ON-114
- B. enter T-100, "Scram" and execute it concurrently with ON-114
- C. enter T-101, "RPV Control" and exit ON-114
- D. enter T-101, "RPV Control" and execute it concurrently with ON-114

Answer: D

Answer Explanation		
Choice		Basis or Justification
Correct:	D	ON-114 states that IF a scram occurs, THEN ENTER T-100, "Scram" or T-101, "RPV Control" as appropriate AND EXECUTE concurrently with this procedure. T-100 or T-101 provide direction for controlling RPV parameters following a scram. T-101 is entered if any of its entry conditions were met. A T-101 entry condition is satisfied due to RPV level becoming unknown due to the fire.
Distractors:	A	Incorrect. ON-114 states that IF a scram occurs, THEN ENTER T-100, "Scram" or T-101, "RPV Control" as appropriate AND EXECUTE concurrently with this procedure. A T-101 entry condition is satisfied due to RPV level becoming unknown due to the fire.
	B	Incorrect. ON-114 states that IF a scram occurs, THEN ENTER T-100, "Scram" or T-101, "RPV Control" as appropriate AND EXECUTE concurrently with this procedure.
	C	Incorrect. ON-114 states that IF a scram occurs, THEN ENTER T-100, "Scram" or T-101, "RPV Control" as appropriate AND EXECUTE concurrently with this procedure. Exiting ON-114 is not appropriate nor is it procedurally driven.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 55 Info																																							
Question Type:	Multiple Choice																																						
Status:	Active																																						
Always select on test?	No																																						
Authorized for practice?	No																																						
Points:	1.00																																						
Time to Complete:	0																																						
Difficulty:	1.00																																						
System ID:	1139628																																						
User-Defined ID:																																							
Cross Reference Number:	600000 2.4.8																																						
Topic:	ILT 2100-4-006																																						
Num Field 1:	2015 NRC																																						
Num Field 2:																																							
Text Field:																																							
Comments:	<table border="1"> <thead> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> </thead> <tbody> <tr> <td>MEMORY</td> <td></td> <td></td> <td>10CRF55.41(b)(10)</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="3">Source Documentation</th> </tr> </thead> <tbody> <tr> <td>Source:</td> <td colspan="2"> <input checked="" type="checkbox"/> New Exam item <input type="checkbox"/> NRC Exam <input type="checkbox"/> Modified Bank <input type="checkbox"/> Bank <input type="checkbox"/> ILT Exam Bank </td> </tr> <tr> <td>Reference(s):</td> <td colspan="2">ON-114, T-100, T-101</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="2">PLOT - 1550.1</td> </tr> <tr> <td>K/A System:</td> <td>600000 - Plant Fire on Site</td> <td>Importance; RO / SRO 3.8 / 4.5</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="2">2.4.8 - Knowledge of how abnormal operating procedures are used in conjunction with EOPs</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="2">None</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="2">None</td> </tr> </tbody> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	MEMORY			10CRF55.41(b)(10)	Source Documentation			Source:	<input checked="" type="checkbox"/> New Exam item <input type="checkbox"/> NRC Exam <input type="checkbox"/> Modified Bank <input type="checkbox"/> Bank <input type="checkbox"/> ILT Exam Bank		Reference(s):	ON-114, T-100, T-101		Learning Objective:	PLOT - 1550.1		K/A System:	600000 - Plant Fire on Site	Importance; RO / SRO 3.8 / 4.5	K/A Statement:	2.4.8 - Knowledge of how abnormal operating procedures are used in conjunction with EOPs		REQUIRED MATERIALS:	None		Notes and Comments:	None	
Psychometrics																																							
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																				
MEMORY			10CRF55.41(b)(10)																																				
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Reference(s):	ON-114, T-100, T-101																																						
Learning Objective:	PLOT - 1550.1																																						
K/A System:	600000 - Plant Fire on Site	Importance; RO / SRO 3.8 / 4.5																																					
K/A Statement:	2.4.8 - Knowledge of how abnormal operating procedures are used in conjunction with EOPs																																						
REQUIRED MATERIALS:	None																																						
Notes and Comments:	None																																						

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

56

ID: 1140465

Points: 1.00

- The Nuclear Duty Officer informs Peach Bottom that a Maximum Emergency Generation Alert has been declared.
- The Off-site electrical lineup is normal.
- The Transmission System Operator reports the following voltages:
 - Nottingham 220-08 Line 230 kV
 - Cooper 220-08 Line 230 kV
 - Newlinville 220-34 Line 220 kV
 - Peach Bottom # 1 Transformer 13.0 kV

In accordance with SE-16, "Grid Emergency", and the associated Table 1, which of the following describes the status of the Off-site sources and the required actions?.

TABLE 1

OFFSITE SOURCE	MINIMUM VOLTAGE
Nottingham 220-08 Line (23U)	≥ 225.0 kV
Cooper 220-08 Line (23U)	≥ 225.0 kV
Newlinville 220-34 Line (343SU)	≥ 225.0 kV
Peach Bottom #1 Transformer (3SU)	≥ 13.50 kV (13 kV side)

- A. All Off-site sources are operable. Continue to monitor Table 1 voltages.
- B. One required off-site source is inoperable. Perform Offsite Breaker Alignment check within 1 hour.
- C. Two required off-site sources are inoperable. Perform Offsite Breaker Alignment check within 1 hour and DO NOT transfer 4 kv buses to the diesel generators
- D. Two required off-site sources are inoperable. Perform Offsite Breaker Alignment check within 1 hour and transfer the 4kv buses to the diesel generators.

Answer: B

Answer Explanation

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Choice		Basis or Justification
Correct:	B	Voltage on the 220-34 line is below the acceptable value, per SE-16 this makes the circuit INOP. Tech Spec requires that for an INOP offsite circuit that ST-O-054-950, "Offsite and Onsite Electrical Power Breaker Alignment and Power Availability Check" be performed within 1 hour.
Distractors:	A	The 220-34 line is below the minimum value. Plausible if the candidate does not know how to interpret the table or does not recall that a voltage below the minimum makes the circuit INOP.
	C	The # 1 Transformer voltage is low but that source is not being used to supply power to the 4KV buses so it is not considered when considering operable circuits. Plausible if the candidate does not understand what the normal electrical line is and which sources are providing power to the 4 Kv buses.
	D	The # 1 Transformer voltage is low but that source is not being used to supply power to the 4KV buses so it is not considered when considering operable circuits. Plausible if the candidate does not understand what the normal electrical line up is and which sources are providing power to the 4 Kv buses. SE-16 does not provide any guidance to transfer 4 kv buses to the diesel generators. The candidate may consider this plausible without considering the potential risk it could put on the overall plant. SE-16 does not direct the operator to any other procedure to complete this task.

Question 56 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	0			
Difficulty:	1.00			
System ID:	1140465			
User-Defined ID:				
Cross Reference Number:	700000 2.2.42			
Topic:	ILT-1555-3-025-SE-16			
Num Field 1:	2015 NRC			
Num Field 2:				
Text Field:				
Comments:	Psychometrics			
	Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
	HIGH			10CRF55.41(b)(10)
	Source Documentation			
	Source:	XNew Exam item	Previous NRC Exam	
		Modified Bank	Other Exam Bank	
	ILT Exam Bank			
Reference(s):	SE-16, Tech Spec 3.8.1, 3.8.2			

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	Learning Objective:	PLOT-155-3	
	K/A System:	700000 Generator Voltage and Electric Grid Disturbances	Importance: RO / SRO 3.9/ 4.6
	K/A Statement:	2.2.42 - Ability to recognize system parameters that are entry-level conditions for Technical Specifications.	
	REQUIRED MATERIALS:	None	
	Notes and Comments:	None	

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

57

ID: 1104525

Points: 1.00

- Unit 2 is in Mode 5 with refueling activities in progress
- An irradiated fuel bundle is dropped
- Reactor Building and Refuel Floor Exhaust Rad monitors indicate as follows:

Reactor Bldg Exhaust

Ch. A 10 mR/hr
Ch. B 18 mR/hr
Ch. C 8 mR/hr
Ch. D 22 mR/hr

Refuel Floor Exhaust

Ch. A 20 mR/hr
Ch. B 10 mR/hr
Ch. C 18 mR/hr
Ch. D 8 mR/hr

Based on the above indications, how will Reactor Building Ventilation and SBTG respond?

- Reactor Building AND Refuel Floor Ventilation continue to operate.
SBGT does NOT initiate.
- Reactor Building Ventilation isolates.
SBGT initiates and aligns to the Reactor Building ONLY.
- Refuel Floor Ventilation isolates.
SBGT initiates and aligns to the Refuel Floor ONLY.
- Reactor Building AND Refuel Floor Ventilation isolate.
SBGT initiates and aligns to the Reactor Building AND Refuel Floor.

Answer: A

Answer Explanation		
Choice		Basis or Justification
Correct:	A	GR III isolation has NOT occurred. PCIS logic is A or C AND B or D; setpoint is 16 mR/hr (12 mR/hr per ARC). Either RB or RF logic channels will isolate RB AND RF ventilation. In the given conditions, a half-isolation is present from EACH ventilation system, but the isolation signal is NOT complete. SBTG will initiate if RPV level is 1 in or DW pressure is 2 psig or the correct combination of RB and/or Refuel floor ventilation radiation levels above 16 mR/hr.
Distractors:	B	GR III isolation has not occurred. Plausible if candidate does not understand logic and function of Group III isolation or the setpoint for the trip. This is plausible if the candidate believes the logic is A or B and C or D or if the candidate believes that the setpoint is 10 mR/hr.
	C	GR III isolation has not occurred. Plausible if candidate does not understand logic and function of Group III isolation. This is plausible if the candidate believes the logic is A or B and C or D or if the candidate believes that the setpoint is 10 mR/hr.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	D	GR III isolation has not occurred. Plausible if candidate does not understand logic and function of Group III isolation. This is plausible if the candidate believes the logic is A or B and C or D or if the candidate believes that the setpoint is 10 mr/hr.
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Question 57 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1104525																																														
User-Defined ID:	13 CERT																																														
Cross Reference Number:	261000A3.03																																														
Topic:	ILT-1550-27b-001																																														
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Comments:	<table border="1"> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> <tr> <td>HIGH</td> <td></td> <td></td> <td>10CRF55.41(b)(13)</td> </tr> <tr> <th colspan="4">Source Documentation</th> </tr> <tr> <td>Source:</td> <td colspan="2">New Exam item Modified Bank XILT Exam Bank</td> <td>Previous NRC Exam Other Exam Bank</td> </tr> <tr> <td>Reference(s):</td> <td colspan="3">GP-8.B; GP-8.B COL</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="3">PLOT-1550 27b</td> </tr> <tr> <td>K/A System:</td> <td>295023 Refueling Accident</td> <td colspan="2">Importance: RO / SRO 3.3/ 3.5</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="3">AA1.01 - Ability to operate and/or monitor the following as they apply to REFUELING ACCIDENTS: Secondary containment ventilation</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="3">None</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="3">None</td> </tr> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	HIGH			10CRF55.41(b)(13)	Source Documentation				Source:	New Exam item Modified Bank XILT Exam Bank		Previous NRC Exam Other Exam Bank	Reference(s):	GP-8.B; GP-8.B COL			Learning Objective:	PLOT-1550 27b			K/A System:	295023 Refueling Accident	Importance: RO / SRO 3.3/ 3.5		K/A Statement:	AA1.01 - Ability to operate and/or monitor the following as they apply to REFUELING ACCIDENTS: Secondary containment ventilation			REQUIRED MATERIALS:	None			Notes and Comments:	None		
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REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

58

ID: 994686

Points: 1.00

- The atmosphere in the Main Control Room (MCR) has become contaminated by smoke via an external source.
- Control Room staff have donned SCBAs.
- The smoke is NOT limiting vision.

Based on the above conditions, which one of the following is required by SE-17, "MCR Atmosphere Non-Radioactive Contamination"?

- A. Enter and execute SE-10, Alternative Plant Shutdown.
- B. Enter and execute SE-1, Plant Shutdown from the Remote Shutdown Panel.
- C. Secure all MCR ventilation. Enter and execute ON-115, Loss of Normal MCR Ventilation.
- D. Place MCR ventilation in the purge mode per SO 40D.5.A, Control Room Ventilation Purge Air System.

Answer: C

Answer Explanation		
Choice		Basis or Justification
Correct:	C	Correct. SE-17, MCR Atmosphere Non-Radioactive Contamination, is entered based on determination that safe operations are jeopardized. For the described conditions SE-17 directs securing MCR ventilation and ON-115 entry.
Distractors:	A	Incorrect - Presence of an irritant does NOT require immediate MCR evacuation. Conditions at the Remote Shutdown Panel or Alternate Shutdown Panels may not be any different as all plant ventilation draws from the East side of the plant. Evacuation of the MCR is performed ONLY after an assessment of atmospheric conditions at those operating areas and Shift Management determination that the plant cannot be safely operated from the MCR. Plausible if the candidate does not recall the purpose of SE-17 and does not remember the purpose of SE-10.
	B	Incorrect - Presence of an irritant does NOT require immediate MCR evacuation. Conditions at the Remote Shutdown Panel or Alternate Shutdown Panels may not be any different as all plant ventilation draws from the East side of the plant. Evacuation of the MCR is performed ONLY after an assessment of atmospheric conditions at those operating areas and Shift Management determination that the plant cannot be safely operated from the MCR. Plausible if the candidate does not recall the purpose of SE-17 and does not remember the purpose of SE-1.
	D	Incorrect - Purge mode will NOT stop intake of contaminated air. Plausible if the candidate does not understand the operation of the purge mode of control room ventilation.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 58 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	0.00																																														
System ID:	994686																																														
User-Defined ID:	ILT5040D5A004																																														
Cross Reference Number:	295016AK2.03																																														
Topic:	ILT-5040D-4a-004																																														
Num Field 1:	2015 NRC																																														
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REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

59

ID: 1140343

Points: 1.00

Unit 3 is operating at 100% power when the following conditions occur:

- HIGH AREA TEMP (310 J-3) goes into alarm.
- Point #2 on TRS-3-13-139 (RCIC room) is 120 degrees F and rising.
- ALL other points on TRS-3-13-139 are below the alarm level.
- T-103 "Secondary Containment Control" has been entered.
- A steam leak in the RCIC room has been confirmed.

What are the operational implications if RCIC room temperature reaches 135 degrees F?

Refer to T-103 Table SC/T-3 below.

1. RCIC will automatically isolate.
2. RCIC will be required to be manually isolated.
3. A reactor scram will be required if RCIC CANNOT be isolated.
4. An emergency blowdown will be required if RCIC CANNOT be isolated.

TABLE SC/T-3
TEMPERATURE - ALARM AND ACTION LEVELS

AREA	ALARM LEVEL (°F)	ACTION LEVEL (°F)	INSTRUMENT	STATUS
			TRS-2(3)-13-139 PT # (UNLESS SPECIFIED OTHERWISE)	
TORUS ROOM	115	135	PT 9, 9, 14, 15, 20, OR 24	
RCIC ROOM OR HPCI ROOM	110	125	PT 2	
	110	150	PT 3	
A RHR ROOM OR C RHR ROOM	110	125	PT 17	
	110	135	PT 29	
B RHR ROOM OR D RHR ROOM	110	135	PT 23	
	110	135	PT 6	
A CS ROOM OR C CS ROOM	110	135	TI-2(3)/501 PT 151	
	110	135	TI-2(3)/501 PT 152	
B CS ROOM OR D CS ROOM	110	135	TI-2(3)/501 PT 153	
	110	135	TI-2(3)/501 PT 154	

- A. 2 and 3
- B. 2 and 4
- C. 1 and 3

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

D. 1 and 4

Answer: A

Answer Explanation		
Choice		Basis or Justification
Correct:	A	Both #2 and #3 are correct. T-103, step SC/T-4 will direct isolating RCIC (isolate all systems discharging into the area...). T-103, step SCC-8 will direct a reactor scram if a primary system is discharging into the Reactor Building and any parameter exceeds an action level.
Distractors:	B	# 4 is incorrect. T-112 "Emergency Blowdown" is not required until the same parameter exceeds an action level in more than one area (and if the "primary system breach" has not been isolated). Plausible if the candidate does not recall that two areas must be at the action level not just one area.
	C	#1 is incorrect. RCIC will not automatically isolate until RCIC area temperatures (RCIC room, pipe chase) reach 200 degrees F (Tech Spec value). Plausible if the candidate does not recall the isolation setpoint for RCIC. The candidate may also confuse the table header "Action Level" as the point that the isolation should have occurred.
	D	#1 is incorrect. RCIC will not automatically isolate until RCIC area temperatures (RCIC room, pipe chase) reach 200 degrees F (Tech Spec value). Plausible if the candidate does not recall the isolation setpoint for RCIC. The candidate may also confuse the table header "Action Level" as the point that the isolation should have occurred. # 4 is incorrect. T-112 "Emergency Blowdown" is not required until the same parameter exceeds an action level in more than one area (and if the "primary system breach" has not been isolated). Plausible if the candidate does not recall that two areas must be at the action level not just one area.

Question 59 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	0
Difficulty:	0.00
System ID:	1140343
User-Defined ID:	
Cross Reference Number:	295032EK1.03
Topic:	ILT-2103-5-001
Num Field 1:	2015 NRC
Num Field 2:	
Text Field:	2008 NRC exam question 63
Comments:	Psychometrics

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
	HIGH			10CRF55.41 (b)(10)
	Source Documentation			
	Source:	<input type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam: <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank: <input checked="" type="checkbox"/> ILT Exam Bank		
	Reference (s):	T-103		
	Learning Objective:	PLOT 2103-5-001		
	K/A System:	295032 – High Secondary Containment Area Temperature	Importance: RO / SRO 3.5 / 3.9	
	K/A Statement: EK1.03 – Knowledge of the operational implications of the following concepts as they apply to HIGH SECONDARY CONTAINMENT AREA TEMPERATURE: Secondary containment leak detection			
	REQUIRED MATERIALS:	None		
	Notes and Comments:	None		

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

60

ID: 1140332

Points: 1.00

- Unit 2 was being shutdown per GP-3-2, "Normal Plant Shutdown".
- During the shutdown a loss of feedwater resulted in RPV level lowering to -5 inches.
- Following the scram 17 control rods remained at position "02".

RPV level has returned to the normal level.

Which of the following methods will be used to insert control rods under these conditions?

- A. Perform T-220, "Driving Control Rods During Failure to Scram".
- B. Perform T-246, "Maximize CRD Flow to the Reactor Vessel".
- C. Reset RPS and ARI and THEN manually insert control rods using normal rod insertion with CRD.
- D. Reset RPS, bypass the RWM and THEN manually insert control rods using normal rod insertion with CRD.

Answer: D

Answer Explanation		
Choice		Basis or Justification
Correct:	D	17 rods at position 02 is not an ATWS. Without an ATWS, direction for rod insertion must come from GP-3. Step 6.84 of GP-3 directs the actions needed to drive the control rods. They include resetting RPS, resetting ARI (if required), and bypassing the RWM (if required) before driving control rods with CRD.
Distractors:	A	Since 17 rods at position 02 does not meet the definition of an ATWS the EOPs cannot be used to insert control rods. Plausible because if these conditions met the definition of an ATWS T-220 would be the method to insert control rods.
	B	Since 17 rods at position 02 does not meet the definition of an ATWS the EOPs cannot be used to insert control rods. Plausible because if these conditions met the definition of an ATWS T-246 would be the method to insert control rods.
	C	The RWM must be bypassed in order to allow CRD to insert the control rods. without taking both of these additional actions the rods will not insert. Plausible if the candidate does not understand the requirements to select and drive a control rod with CRD. ARI does not need to be reset because RPV level didn't drop to the -48 inch ARI initiation setpoint.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 60 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1140332																																														
User-Defined ID:	ILT-2101-7-001																																														
Cross Reference Number:	295015A1.03																																														
Topic:	ILT-2101-5h-004																																														
Num Field 1:	2015 NRC																																														
Num Field 2:	N/A																																														
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REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

61

ID: 1104593

Points: 1.00

The following conditions currently exist following a small steam leak in the Drywell:

- Drywell pressure is 2.5 psig
- Torus pressure is 1.8 psig
- Drywell Bulk Average Temperature is 140 degrees
- Drywell Chilled Water Return Header pressure is 26 psig.

Based on the above conditions, what action is required in response to the high Drywell temperature?

- A. Maximize Drywell Cooling using RRC 44A.1 "Maximize Drywell Cooling" to control Drywell temperature.
- B. Maximize Drywell Cooling using T-223, "Drywell Cooler Fan Bypass" to control Drywell temperature.
- C. Spray the Torus using T-204, "Initiation of Containment Sprays Using RHR" to control containment pressure.
- D. Vent the Drywell using SO 7B.3.A-2(3), "Containment Atmosphere Pressure Control and Nitrogen Makeup".

Answer: B

Answer Explanation		
Choice		Basis or Justification
Correct:	B	Conditions are on the safe side of the curve to place ventilation in service using T-223. This will provide cooling and help control drywell temperature. This question asks the candidate to determine how Drywell cooling can be placed in-service (increased) with a High Drywell Temperature condition. The candidate must evaluate the operating position on both the Drywell Spray initiation curve and the DW Chilled water saturation curve. The candidate must understand (show knowledge of) what options are available to increase Drywell cooling based on containment conditions.
Distractors:	A	Drywell pressure is above 2 psig. RRC-44A.1 can not be used because of the trip signal. Plausible if the candidate does not understand that the DW fans trip above 2 psig.
	C	Torus pressure is below the 2 psig pressure to spray the Torus. Plausible if the candidate does not recall the procedural requirement of > 2 psig to spray the Torus.
	D	Drywell pressure is above 2 psig. Venting the Drywell using SO 7B.3.A-2 (3), "Containment Atmosphere Pressure Control and Nitrogen Makeup" is not possible due to primary containment isolations.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 61 Info																																			
Question Type:	Multiple Choice																																		
Status:	Active																																		
Always select on test?	No																																		
Authorized for practice?	No																																		
Points:	1.00																																		
Time to Complete:	0																																		
Difficulty:	1.00																																		
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Cross Reference Number:	295012AK3.01																																		
Topic:	ILT-2102-7g-003																																		
Num Field 1:	2015 NRC																																		
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REQUIRED MATERIALS:	None																																		
Notes and Comments:	None																																		

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

62

ID: 1140357

Points: 1.00

- Unit 2 was initially operating at 20% power.
- An "A" SJAE malfunction results in lowering main condenser vacuum.
- Main condenser vacuum is 24.8 inches Hg and lowering slowly.

In accordance with OT-106, "Condenser Low Vacuum", which one of the following actions must be taken by the Crew for the above conditions?

- A. Reduce power until vacuum stops lowering while placing the "B" SJAE in service.
- B. Immediately trip the main turbine.
- C. Scram the Reactor THEN trip the main turbine.
- D. Hold Reactor power steady and monitor vacuum while placing the "B" SJAE in service.

Answer: B

Answer Explanation		
Choice		Basis or Justification
Correct:	B	Conditions exist to trip the main turbine Main Condenser vacuum is below 24 inches and load on the turbine is below 300 MWe. The Turbine must be tripped to prevent damage due to overheating do to insufficient steam flow through the LP turbine.
Distractors:	A	Power reduction will only make the heating condition on the low pressure turbine worse. Plausible if the candidate believes that lowering power will improve conditions.
	C	Operation is within bypass valve capability, scrambling the Reactor would be an unnecessary action and be unsafe. Plausible if the candidate does not recognize that operation is within the capacity of the bypass valves.
	D	Vacuum is not below the automatic trip setpoint. Since vacuum is not below the automatic trip setpoint it is plausible to believe that an operator may determine that a trip is not needed until condition worsen. This would give time to attempt to recover vacuum.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 62 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	0.00																																														
System ID:	1140357																																														
User-Defined ID:																																															
Cross Reference Number:	295002EA1.05																																														
Topic:	ILT-1540-2-003-OT-106																																														
Num Field 1:	2015 NRC																																														
Num Field 2:																																															
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K/A System:	295002 Loss of Main Condenser Vacuum		Importance: RO / SRO 3.2/ 3.2																																												
K/A Statement:	AA1.05 - Ability to operate and/or monitor the following as they apply to LOSS OF MAIN CONDENSER VACUUM: Main Turbine																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

63

ID: 1140422

Points: 1.00

Unit 2 is at 99.5% power and Feedwater temperature into the RPV is 380°F when the "C" Reactor Feedpump minimum flow valve fails open.

Assuming NO Operator actions, AFTER RPV level stabilizes, Reactor power will be (1), and Feedwater temperature into the RPV will be (2)?

- A. (1) 99%
(2) 378°F
- B. (1) 99%
(2) 382°F
- C. (1) 100%
(2) 378°F
- D. (1) 100%
(2) 382°F

Answer: C

Answer Explanation		
Choice		Basis or Justification
Correct:	C	When the min flow valve fails open it causes feedwater flow to rise to maintain RPV level. This means that feedwater spends less time in the feedwater heaters and feedwater temperature lowers. Colder feedwater into the reactor causes reactor power to rise.
Distractors:	A	Plausible if the candidate does not understand the relationship between Feedwater temperature and Reactor power.
	B	Plausible if the candidate does not understand that the rise in feedwater flow causes feedwater temperature to lower. If the candidate does not recall that the heat source is finite and a rise in flow would make temperature lower.
	D	Plausible if the candidate does not understand that the rise in feedwater flow causes feedwater temperature to lower. If the candidate does not recall that the heat source is finite and a rise in flow would make temperature lower.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 63 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1140422																																														
User-Defined ID:																																															
Cross Reference Number:	295034 AA2.01																																														
Topic:	ILT-1620-2-003																																														
Num Field 1:	2015 NRC																																														
Num Field 2:																																															
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Reference(s):	OT-104, GP-5																																														
Learning Objective:	PLOT-1620-2																																														
K/A System:	295014 Inadvertent Reactivity Addition	Importance: RO / SRO 4.1/ 4.2																																													
K/A Statement:	AA2.01 - Ability to determine and/or interpret the following as they apply to INADVERTENT REACTIVITY ADDITION: Reactor power																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

64

ID: 993739

Points: 1.00

Alarm 226 A-4 "TORUS WATER LEVEL OUT OF NORMAL RANGE" is received.

A leak into Primary Containment has caused Torus level to rise to 17.2 feet.

The Crew has entered procedure T-102, "Primary Containment Control".

Per the bases for the curves in T-102, "Primary Containment Control", why is continued Reactor operation NOT allowed with Torus level above 17.1 feet? Operation with torus level at 17.2 feet _____

- A. may result in the pressure suppression capability of the containment being insufficient to accommodate an RPV breach by core debris.
- B. may cause primary containment failure during an accident due to covering the 18 inch Torus Vent line
- C. may cause primary containment failure during a blowdown due to the torus to drywell vacuum breakers being submerged.
- D. may cause primary containment failure during an accident due to covering the Reactor Building to Torus Vacuum Breakers.

Answer: A

Answer Explanation		
Choice		Basis or Justification
Correct:	A	Receipt of the Torus high level alarm requires the crew to monitor Torus level and if it is determined to out of band enter TRIP procedure T-102 "Primary Containment Control" if required. Per the TRIP/SAMP Curves, Tables, & Limits - Bases; Torus water level of 17.1 feet is the Maximum Pressure Suppression Primary Containment Water Level (MPSPCWL). Operation with water level above the vent header is not permitted.
Distractors:	B	Plausible since the 18 inch Torus Vent piping will be covered when Torus water reaches a height of 29.5 feet.
	C	Plausible since the Torus to Drywell vacuum breakers will become submerged once Torus water level reaches a height of 18 feet.
	D	Plausible since the 18 inch Torus Vent piping will be covered when Torus water reaches a height of 29.5 feet.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 64 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	0.00																																														
System ID:	993739																																														
User-Defined ID:	ILT-2102-7A-007																																														
Cross Reference Number:	295029 2.4.31																																														
Topic:	ILT-2102-7a-007 SRV Tailpipe Limit																																														
Num Field 1:	2015 NRC																																														
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Learning Objective:	PLOT-2102-7a																																														
K/A System:	295029 High Suppression Pool Water Level		Importance: RO / SRO 4.2/ 4.1																																												
K/A Statement:	2.4.31 - Knowledge of annunciator alarms, indications, or response procedures																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

65

ID: 994762

Points: 1.00

- Unit 2 is operating at 100% power
- The 'A' RPS bus was transferred to its alternate power supply
- Reactor Building Ventilation is being restored in accordance with SO 40B.1.A-2 "Reactor Building Ventilation System Startup and Normal Operation"
- After placing all system fans in their normal lineup, Reactor Building and Refuel Floor differential pressures on Panel 20C012 indicate +0.1 inches H₂O

Based on the above conditions, which one of the following actions is correct in accordance with SO 40B.1.A-2?

- A. remove one Refuel Floor Supply Fan from service
- B. remove one Reactor Building Exhaust Fan from service
- C. place one additional Reactor Building Supply Fan in service
- D. place one additional Equipment Cell Exhaust Fan in service

Answer: A

Answer Explanation		
Correct:	A	Per SO 40B.1.A-2, the normal ventilation system lineup is 1 Equipment Cell exhaust fan, 2 RB supply fans, 2 RB exhaust fans, 2 RF supply fans and 2 RF exhaust fans. Per the SO, if the normal ventilation system lineup does not establish normal differential pressure (-0.1 to -0.4 inches H ₂ O), the procedure directs removing one RF supply OR exhaust fan from service. In this case, a RF supply fan must be removed from service to establish the proper negative d/p. The question asks the candidate to evaluate the Secondary Containment d/p, determine that the value given is too high for continued operation then determine how to use the secondary containment ventilation system to return building d/p to an acceptable value.
Distractors:	B	Since normal differential pressure is -0.1 to -0.4 inches H ₂ O, removing one RB exhaust fan from service would cause differential pressures to become more positive. Plausible if applicant does not know required d/p range and/or does not understand ventilation system design.
	C	Since normal differential pressure is -0.1 to -0.4 inches H ₂ O, placing one additional RB supply fan in service would cause differential pressures to become more positive. In addition, SO 40B.1.A-2 gives direction to avoid running 3 RB supply or exhaust fans at the same time. Plausible if applicant does not know required d/p range and/or does not understand ventilation system design.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	D	This would make d/p negative, but SO 40B.1.A-2, Caution 4.5.1-1, prohibits running both Equipment Cell exhaust fans. Plausible if applicant does not recall SO 40B.1.A-2 cautions and limitations.
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Question 65 Info																																																							
Question Type:	Multiple Choice																																																						
Status:	Active																																																						
Always select on test?	No																																																						
Authorized for practice?	No																																																						
Points:	1.00																																																						
Time to Complete:	0																																																						
Difficulty:	0.00																																																						
System ID:	994762																																																						
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Cross Reference Number:	295035EK3.02																																																						
Topic:	ILT-5040B-4b-001																																																						
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REQUIRED MATERIALS:	None																																																						
Notes and Comments:	None																																																						

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

66

ID: 994721

Points: 1.00

Which one of the following correctly describes control panel walk-down requirements per OP-AA-103-102, Watchstanding Practices?

- A. Must be performed as directed and may not be deferred by any individual.
- B. Shift Manager or higher approval is required to defer under any conditions.
- C. The Unit Supervisor can give permission to defer when plant conditions and/or critical evolutions would be adversely impacted by their performance.
- D. The Unit RO is authorized to decide when to defer if plant conditions and/or critical evolutions would be adversely impacted by their performance.

Answer: C

Answer Explanation		
Choice	Basis or Justification	
Correct:	C	OP-AA-103-102 step 4.4.3 allows the Unit supervisor to defer the panel walkdowns.
Distractors:	A	Plausible if the candidate is not familiar with the OP procedure requirements.
	B	Plausible if the candidate is not familiar with the OP procedure requirements.
	D	Plausible if the candidate is not familiar with the OP procedure requirements.

Question 66 Info																
Question Type:	Multiple Choice															
Status:	Active															
Always select on test?	No															
Authorized for practice?	No															
Points:	1.00															
Time to Complete:	0															
Difficulty:	0.00															
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User-Defined ID:	SROILT15291D005WATCH															
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Topic:	ILT-1529-1d-005 Watchstanding															
Num Field 1:	2015 NRC															
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Level of Knowledge					Difficulty	Time Allowance (minutes)	RO									
MEMORY			10CRF55.41(b)(10)													

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Source Documentation		
Source:	New Exam Modified Bank XILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	OP-AA-103-102 step 4.4.3	
Learning Objective:	1529-1d	
K/A System:	2.1 Conduct of Operations	Importance: RO / SRO 4.1/ 4.4
K/A Statement:	2.1.2 - Knowledge of operator responsibilities during all modes of plant operation.	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

67

ID: 994114

Points: 1.00

Select the situation describing the proper use of an Alternate Verification Technique to minimize radiation exposure during the performance of a valve lineup, in accordance with HU-AA-101, Human Performance Tools and Verification Practices.

- A. A qualified maintenance technician is used to verify the position of the valve.
- B. A qualified operator uses the system discharge flow indication to verify the position of the valve.
- C. A second qualified operator, who has not witnessed the activity, verifies the stem position of the valve.
- D. Two qualified operators verify the correct component identification and then check the valve handwheel in the CLOSED position.

Answer: B

Answer Explanation

Choice	Basis or Justification
Correct: B	HU-AA-101 permits alternate verification techniques such as flow indication in various situations such as those with ALARA concerns.
Distractors: A	Incorrect. this is a worker verification
C	Incorrect. this is an independent verification
D	Incorrect. this is concurrent verification

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 67 Info																															
Question Type:	Multiple Choice																														
Status:	Active																														
Always select on test?	No																														
Authorized for practice?	No																														
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Time to Complete:	2																														
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Num Field 2:	NA																														
Text Field:	2005 NRC exam question68																														
Comments:	<table border="1"> <thead> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> </thead> <tbody> <tr> <td>MEMORY</td> <td></td> <td></td> <td>10CRF55.41(b)(10)</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="2">Source Documentation</th> </tr> </thead> <tbody> <tr> <td>Source:</td> <td> <div> <div>New Exam item</div> <div>Previous</div> </div> <div> <div>NRC Exam</div> <div>Other Exam</div> </div> <div> <div>Modified Bank</div> <div></div> </div> <div> <div>Bank</div> <div></div> </div> <div> <div><input checked="" type="checkbox"/> ILT Exam Bank</div> <div></div> </div> </td> </tr> <tr> <td>Reference(s):</td> <td>HU-AA-101 section 4.3</td> </tr> <tr> <td>Learning Objective:</td> <td>PLOT 1527-22</td> </tr> <tr> <td>K/A System:</td> <td> <div>2.1 - Conduct of Operations</div> <div>Importance; RO / SRO</div> <div>4.1 / 4.0</div> </td> </tr> <tr> <td>K/A Statement:</td> <td>2.1.29 - Knowledge of how to conduct system lineups, such as valves, breakers, switches, etc.</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td>None</td> </tr> <tr> <td>Notes and Comments:</td> <td>None</td> </tr> </tbody> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	MEMORY			10CRF55.41(b)(10)	Source Documentation		Source:	<div> <div>New Exam item</div> <div>Previous</div> </div> <div> <div>NRC Exam</div> <div>Other Exam</div> </div> <div> <div>Modified Bank</div> <div></div> </div> <div> <div>Bank</div> <div></div> </div> <div> <div><input checked="" type="checkbox"/> ILT Exam Bank</div> <div></div> </div>	Reference(s):	HU-AA-101 section 4.3	Learning Objective:	PLOT 1527-22	K/A System:	<div>2.1 - Conduct of Operations</div> <div>Importance; RO / SRO</div> <div>4.1 / 4.0</div>	K/A Statement:	2.1.29 - Knowledge of how to conduct system lineups, such as valves, breakers, switches, etc.	REQUIRED MATERIALS:	None	Notes and Comments:	None
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MEMORY			10CRF55.41(b)(10)																												
Source Documentation																															
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Learning Objective:	PLOT 1527-22																														
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K/A Statement:	2.1.29 - Knowledge of how to conduct system lineups, such as valves, breakers, switches, etc.																														
REQUIRED MATERIALS:	None																														
Notes and Comments:	None																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

68

ID: 1140387

Points: 1.00

Which of the following conditions is a violation of a Unit 2 safety limit?

- A. Reactor Coolant pressure reaches 1400 psig during a hydro.
- B. RPV level drops to -165 inches during an ATWS.
- C. Reactor power is 20% with rated core flow at 9%.
- D. MCPR is 1.12 at 100% power and 1000 psig Reactor pressure.

Answer: A

Answer Explanation		
Choice		Basis or Justification
Correct:	A	All of the choices are safety limits with values below the safety limit violation except for choice "C". The Safety Limit is reactor steam dome pressure shall be ≤ 1325 psig. With a pressure of 1400 psig the safety limit for RPV pressure is violated. Since all of the choices are actual parameters that challenge the safety limits all of the distractors are plausible.
Distractors:	B	The RPV level safety limit is; Reactor vessel water level shall be greater than top of active fuel. The value of -165 inches has not exceeded this limit.
	C	The low RPV pressure or low flow safety requires that Reactor power be below 23%. While flow is below the 10% limit, Reactor power is still below the 23% limit. Reactor power has not exceeded the limit
	D	The high RPV pressure and core flow safety limit requires MCPR be ≥ 1.10 . Conditions are given for high flow and normal RPV pressure and the MCPR value is equal to the limit.

Question 68 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	0
Difficulty:	1.00
System ID:	1140387
User-Defined ID:	
Cross Reference Number:	G2.2.22
Topic:	ILT 1800-8-006
Num Field 1:	2015 NRC
Num Field 2:	
Text Field:	
Comments:	Psychometrics

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
	MEMORY			10CRF55.41(b)(5)
	Source Documentation			
	Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam: <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank: <input type="checkbox"/> ILT Exam Bank		
	Reference(s):	Tech Specs, Section 2.0		
	Learning Objective:	PLOT-1800-8		
	K/A System:	G2.2 – Equipment Control	Importance: RO / SRO 4.0 / 4.7	
	K/A Statement: 2.2.22 – Knowledge of limiting conditions for operations and safety limits.			
	REQUIRED MATERIALS:		NONE	
	Notes and Comments:			

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

69

ID: 1140407

Points: 1.00

A Reactor startup is planned for Unit 2. Per AO 62A.1-2, "Rod Worth Minimizer System Manual Bypass and Activation/Deactivation of Rod by Rod, Rod Sequence Control, RWM Enforcement Above the LPSP, and BPWS Enforcement", when the RWM is manually bypassed, then _____ shall verify the correct control rod is selected IAW the startup sequence instruction.

- A. a second licensed operator
- B. the Reactivity Supervisor
- C. the Control Room Supervisor
- D. a reactor engineer

Answer: A

Answer Explanation

Choice		Basis or Justification
Correct:	A	Procedure AO 62A.1-2 requires a second licensed operator be present with the responsibilities to verify rod movement. Since all of the listed personnel are required to be present during startup the candidate must recall from the AO procedure which person has the responsibility to verify rod selection.
Distractors:	B	Plausible because this person is required to be present for the startup but does not have this specific responsibility.
	C	Plausible because this person is required to be present for the startup but does not have this specific responsibility.
	D	Plausible because this person is required to be present for the startup but does not have this specific responsibility.

Question 69 Info				
Question Type:	Multiple Choice			
Status:	Active			
Always select on test?	No			
Authorized for practice?	No			
Points:	1.00			
Time to Complete:	0			
Difficulty:	0.00			
System ID:	1140407			
User-Defined ID:				
Cross Reference Number:	G 2.2.1			
Topic:	ILT-5062A-9e-001			
Num Field 1:	2015 NRC			
Num Field 2:				
Text Field:				
Comments:	Psychometrics			
	Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
	MEMORY			10CRF55.41(b)(10)

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Source Documentation		
Source:	X New Exam item NRC Exam Modified Bank Bank ILT Exam Bank	Previous Other Exam
Reference(s):	AO 62A.1-2	
Learning Objective:	PLOT 5062A.9e	
K/A System:	2.2 - Equipment Control	Importance; RO / SRO 4.5 / 4.4
K/A Statement:	2.2.1 - Ability to perform pre-startup procedures for the facility, including operating those controls associated with plant equipment that could affect reactivity.	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

70

ID: 993139

Points: 1.00

The Unit 2 Transverse In-core Probe (TIP) Room Area Radiation Monitor (ARM) is indicating 0 mr/hr due to a defective detector.

This condition will cause which one of the below sets of indications?

- A. An alarm will sound in the Main Control Room AND the amber trip light on the local Auxiliary Unit (local to the TIP Room) will illuminate.
- B. The white downscale light will be illuminated on the Main Control Room ARM Indicator and Trip Unit AND the local klaxon alarm will sound.
- C. The white downscale light will be illuminated on the Main Control Room ARM Indicator and Trip Unit AND sound an alarm in the Main Control Room.
- D. The white downscale light will be illuminated on the Main Control Room ARM Indicator and Trip Unit AND the amber trip light on the local Auxiliary Unit (local to the TIP Room) will illuminate.

Answer: C

Answer Explanation		
Choice		Basis or Justification
Correct:	C	ARC-003 B-5 list the indications that will occur for the given condition, which include MCR alarm 003 B-5 and a white downscale light on actuation device (ARM trip unit) at Panels 20C011 OR 00C014.
Distractors:	A	The local amber trip light will not be lit. The amber light is for a high or upscale condition, not a downscale condition. Plausible if the candidate is not familiar with the indications available for the downscale condition.
	B	The local klaxon alarm will only sound for a high or upscale condition. Plausible if the candidate is not familiar with the indications available for the downscale condition.
	D	The local amber trip light will not be lit. The amber light is for a high or upscale condition, not a downscale condition. Plausible if the candidate is not familiar with the indications available for the downscale condition.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 70 Info																															
Question Type:	Multiple Choice																														
Status:	Active																														
Always select on test?	No																														
Authorized for practice?	No																														
Points:	1.00																														
Time to Complete:	0																														
Difficulty:	0.00																														
System ID:	993139																														
User-Defined ID:	ILT-5063C-1A-001																														
Cross Reference Number:	272000 K1.12/2.3.5																														
Topic:	ILT-5063-3a-001																														
Num Field 1:	2015 NRC																														
Num Field 2:	N/A																														
Text Field:																															
Comments:	<table border="1"> <thead> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> </thead> <tbody> <tr> <td>MEMORY</td> <td></td> <td></td> <td>10CRF55.41(b)(11)</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="2">Source Documentation</th> </tr> </thead> <tbody> <tr> <td>Source:</td> <td> <div> New Exam item Modified Bank XILT Exam Bank </div> <div> Previous NRC Exam Other Exam Bank </div> </td> </tr> <tr> <td>Reference(s):</td> <td>PLOT5063; ARC-003 B-5</td> </tr> <tr> <td>Learning Objective:</td> <td>PLOT-5063C-3a</td> </tr> <tr> <td>K/A System:</td> <td> <div>2.3 Radiation Control</div> <div>Importance: RO / SRO 2.9/ 2.9</div> </td> </tr> <tr> <td>K/A Statement:</td> <td>2.3.5 - Ability to use radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td>None</td> </tr> <tr> <td>Notes and Comments:</td> <td>None</td> </tr> </tbody> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	MEMORY			10CRF55.41(b)(11)	Source Documentation		Source:	<div> New Exam item Modified Bank XILT Exam Bank </div> <div> Previous NRC Exam Other Exam Bank </div>	Reference(s):	PLOT5063; ARC-003 B-5	Learning Objective:	PLOT-5063C-3a	K/A System:	<div>2.3 Radiation Control</div> <div>Importance: RO / SRO 2.9/ 2.9</div>	K/A Statement:	2.3.5 - Ability to use radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.	REQUIRED MATERIALS:	None	Notes and Comments:	None
Psychometrics																															
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MEMORY			10CRF55.41(b)(11)																												
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Reference(s):	PLOT5063; ARC-003 B-5																														
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K/A Statement:	2.3.5 - Ability to use radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.																														
REQUIRED MATERIALS:	None																														
Notes and Comments:	None																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

71

ID: 994325

Points: 1.00

- The Work Execution Reactor Operator has been assigned to enter the Moisture Separator Area to investigate a steam leak
- The Reactor Operator has 3280 mR TEDE annual exposure to date
- Expected dose for investigation of the steam leak is 300 mR

In accordance with RP-AA-203, "Exposure Control and Authorization", which one of the following describes the action required, if any, to complete the steam leak investigation based on the above conditions?

- A. Planned Special Exposure must be obtained.
- B. Dose Control Level Extension must be obtained.
- C. Emergency Exposure Extension must be obtained.
- ~~D. No action required because limits will not be exceeded.~~

Answer: B

Answer Explanation		
Choice		Basis or Justification
Correct:	B	Per RP-AA-203 requires dose extension above 2000 mR TEDE. Dose extensions are granted in 500 mR increments. The current extension is good to 3500 mR. Another extension is required to get to 3580 mR expected exposure.
Distractors:	A	Incorrect - RP-AA-203 requires dose extension above 2000 mR TEDE. Dose extensions are granted in 500 mR increments. The current extension is good to 3500 mR. Another extension is required to get to 3580 mR expected exposure. This evolution does not qualify as a Planned Special Exposure or Emergency Exposure Extension. Plausible if the candidate is not familiar with the radiation exposure limits.
	C	Incorrect - RP-AA-203 requires dose extension above 2000 mR TEDE. Dose extensions are granted in 500 mR increments. The current extension is good to 3500 mR. Another extension is required to get to 3580 mR expected exposure. This evolution does not qualify as a Planned Special Exposure or Emergency Exposure Extension. Plausible if the candidate is not familiar with the radiation exposure limits.
	D	Incorrect - RP-AA-203 requires dose extension above 2000 mR TEDE. Dose extensions are granted in 500 mR increments. The current extension is good to 3500 mR. Another extension is required to get to 3580 mR expected exposure. This evolution does not qualify as a Planned Special Exposure or Emergency Exposure Extension. Plausible if the candidate is not familiar with the radiation exposure limits.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 71 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	0.00																																														
System ID:	994325																																														
User-Defined ID:	ILT-1730-4-002																																														
Cross Reference Number:	2.3.4																																														
Topic:	ILT-1730-4-002 Exposure control																																														
Num Field 1:																																															
Num Field 2:	0.00																																														
Text Field:	2007 NRC Exam #72																																														
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K/A Statement:	2.3.4 - Knowledge of radiation exposure limits under normal and emergency conditions.																																														
REQUIRED MATERIAL S:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

72

ID: 1140409

Points: 1.00

An Alert was declared on Unit 2 for a leak in the Reactor Coolant System.

As the Shift Communicator, which of the following is correct regarding notification of State and County Agencies, in accordance with EP-MA-114-100 "Mid-Atlantic State/Local Notification

- A. Place a NARS telephone call within 15 minutes.
- B. Place a NARS telephone call within 1 hour.
- C. Fax the Emergency Notification Worksheet within 15 minutes.
- D. Fax the Emergency Notification Worksheet within 1 hour.

Answer: A

Answer Explanation

Choice		Basis or Justification
Correct:	A	The state and county agencies are required to be called (initial Roll call) within 15 minutes using the NARS network.
Distractors:	B	The call is required within 15 minutes, not 1 hour. Plausible since the NRC notification is "as soon as possible but within one hour".
	C	The Emergency Notification Worksheet is faxed to the NRC, not the state and county agency.
	D	The Emergency Notification Worksheet is faxed to the NRC, not the state and county agency.

Question 72 Info				
Question Type:		Multiple Choice		
Status:		Active		
Always select on test?		No		
Authorized for practice?		No		
Points:		1.00		
Time to Complete:		0		
Difficulty:		0.00		
System ID:		1140409		
User-Defined ID:				
Cross Reference Number:		2.4.30		
Topic:		ILT-G5-4-006		
Num Field 1:		2015 NRC		
Num Field 2:				
Text Field:				
Comments:		Psychometrics		
		Level of Knowledge	Difficulty	Time Allowance (minutes)
		MEMORY		
		RO		
		10CRF55.41(b)(10)		
		Source Documentation		

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

	Source:	New Exam item NRC Exam Modified Bank Bank X ILT Exam Bank	Previous Other Exam
	Reference(s):	EP-MA-114-100 G5-7	
	Learning Objective:		
	K/A System:	2.4 - Emergency Procedures	Importance; RO / SRO 2.7 / 4.1
	K/A Statement:	2.4.30 - Knowledge of events related to system operation/status that must be reported to internal organizations or external agencies, such as the State, the NRC, or the transmission system operator.	
	REQUIRED MATERIALS:	None	
	Notes and Comments:	None	

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

73

ID: 1104651

Points: 1.00

- HPCI testing is in progress on Unit 2
- Unit 2 Torus temperature is 96 degrees F and rising

Based on the above information, choose the correct statement below.

T-102, "Primary Containment Control" shall _____.

- A. be entered. T-102 can be exited when it is determined that an emergency does not exist.
- B. be entered. T-102 can be exited only after Torus Temperature is less than the entry condition.
- C. NOT be entered. Per Technical Specifications, secure HPCI immediately.
- D. NOT be entered. Per Technical Specifications, secure HPCI when Torus temperature is 105 degrees F.

Answer: A

Answer Explanation		
Choice		Basis or Justification
Correct:	A	Per the TRIP T-BAS (Intro); "HPCI testing can result in the occurrence of a T-102 high Torus temperature entry condition. Once it is determined that the elevated temperature is due only to the test in progress, T-102 may be exited, even if the Torus temperature is still above the entry condition setting.
Distractors:	B	Plausible if the candidate is not familiar with the Trip implementation procedure and believes that Torus temperature must be returned below the entry condition before T-102 can be exited.
	C	Plausible if the candidate is not familiar with the Trip implementation procedure. The Tech Spec requirement to secure any system adding heat to the torus is 105 degrees F.
	D	Plausible if the candidate is not familiar with the Trip implementation procedure. The Tech Spec requirement to secure any system adding heat to the torus is 105 degrees F.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 73 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	0.00																																														
System ID:	1104651																																														
User-Defined ID:																																															
Cross Reference Number:	2.4.14																																														
Topic:	ILT-1560-6-001																																														
Num Field 1:	2015 NRC																																														
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REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

74

ID: 1104709

Points: 1.00

Prior to a startup on Unit 3 the following Wide Range Neutron Monitor (WRNM) readings are recorded in GP-2-3, "Normal Startup":

WRNM A 20 WRNM C 25 WRNM E 20 WRNM G 28
WRNM B 25 WRNM D 30 WRNM F 27 WRNM H 30

Per GP-2-3 guidance the operator should expect criticality between ____ (1) ____ cps and ____ (2) ____ cps.

- A. (1) 2,560
 (2) 10,240
- B. (1) 2,560
 (2) 15,360
- C. (1) 3,840
 (2) 10,240
- D. (1) 3,840
 (2) 15,360

Answer: B

Answer Explanation		
Choice		Basis or Justification
Correct:	B	Startup procedure GP-2 states that the reactor should go critical between 7 and 9 doublings of the lowest and highest count rates respectively.
Distractors:	A	Plausible if the the candidate does not recall that 7 to 9 doubling rule in GP-2 or doesn't remember that it is the lowest and highest count rates used to determine the values.
	C	Plausible if the the candidate does not recall that 7 to 9 doubling rule in GP-2 or doesn't remember that it is the lowest and highest count rates used to determine the values.
	D	Plausible if the the candidate does not recall that 7 to 9 doubling rule in GP-2 or doesn't remember that it is the lowest and highest count rates used to determine the values.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 74 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1104709																																														
User-Defined ID:																																															
Cross Reference Number:	2.2.1																																														
Topic:	ILT-1530-5-001																																														
Num Field 1:	2015 NRC																																														
Num Field 2:																																															
Text Field:																																															
Comments:	<table border="1"> <thead> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> </thead> <tbody> <tr> <td>HIGH</td> <td></td> <td></td> <td>10CRF55.41(b)(10)</td> </tr> <tr> <th colspan="4">Source Documentation</th> </tr> <tr> <td>Source:</td> <td colspan="2">XNew Exam item Modified Bank ILT Exam Bank</td> <td>Previous NRC Exam Other Exam Bank</td> </tr> <tr> <td>Reference(s):</td> <td colspan="3">GP-2</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="3">PLOT-1530-5</td> </tr> <tr> <td>K/A System:</td> <td colspan="2">2.2 Equipment Control</td> <td>Importance: RO / SRO 4.5/ 4.4</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="3">2.2.1 - Ability to perform pre-startup procedures for the facility, including operating those controls associated with plant equipment that could affect reactivity.</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="3">None</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="3">None</td> </tr> </tbody> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	HIGH			10CRF55.41(b)(10)	Source Documentation				Source:	XNew Exam item Modified Bank ILT Exam Bank		Previous NRC Exam Other Exam Bank	Reference(s):	GP-2			Learning Objective:	PLOT-1530-5			K/A System:	2.2 Equipment Control		Importance: RO / SRO 4.5/ 4.4	K/A Statement:	2.2.1 - Ability to perform pre-startup procedures for the facility, including operating those controls associated with plant equipment that could affect reactivity.			REQUIRED MATERIALS:	None			Notes and Comments:	None		
Psychometrics																																															
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
HIGH			10CRF55.41(b)(10)																																												
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K/A System:	2.2 Equipment Control		Importance: RO / SRO 4.5/ 4.4																																												
K/A Statement:	2.2.1 - Ability to perform pre-startup procedures for the facility, including operating those controls associated with plant equipment that could affect reactivity.																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

75

ID: 993788

Points: 1.00

- An ATWS is in progress with reactor power at 25%.
- Torus temperature is normal.
- T-117, "Level/Power Control", directs the operator to intentionally lower RPV water level to control reactor power.

Which one of the following statements best describes the purpose of intentionally lowering RPV Water level to below -60 inches per T-117 bases?

Lowering reactor level _____.

- A. raises fuel temperature which will add negative reactivity through the Doppler Coefficient.
- B. raise void fraction which will add negative reactivity through the Void Coefficient.
- C. places the feedwater spargers in the steam space, pre-heating feedwater to minimize the potential for THI
- D. ensures a high boron concentration in the water, which will allow the reactor to shutdown sooner.

Answer: C

Answer Explanation		
Choice		Basis or Justification
Correct:	C	T-117 bases states that placing the feedwater spargers in the steam space provides effective heating of relatively cold incoming feedwater to minimize the potential for thermal hydraulic instabilities.
Distractors:	A	Plausible if the candidate does not understand that lowering the level to -60 inches does not affect fuel temperature. If fuel temperature was affected then it would cause negative reactivity to be added to the core.
	B	raising void fraction is a by-product of lowering level however it is not the T-117 bases reason for lowering level to -60 inches. Plausible if the candidate does not recall the reason for lowering level to -60 inches and selects this answer because the affect of lowering level is correct. .
	D	Plausible if the candidate does not understand how boron is used to shutdown the core and where SLC injects into the core. Boron injects into the core at the lower head region. Lowering RPV level to -60 inches does not affect the concentration.

EXAMINATION ANSWER KEY

2015 NRC RO exam rev 1

Question 75 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	0.00																																														
System ID:	993788																																														
User-Defined ID:	ILT-PBIG2117-5A-002																																														
Cross Reference Number:	295037 EK 102																																														
Topic:	ILT-2117-5-002																																														
Num Field 1:	2015 NRC																																														
Num Field 2:	N/A																																														
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Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
MEMORY			10CRF55.41(b)(10)																																												
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REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

1

ID: 994708

Points: 1.00

- A fire in the Main Control Room on the Unit 2 side results in entry into SE-10 "Alternative Shutdown".
- Immediate operator actions are taken and control of both units is established at the Alternative Shutdown (ASD) Panels.
- When the operator responded to the ASD panel they noted that Unit 2 HPCI auto started on low Reactor Pressure Vessel (RPV) level.

Which one of the following describes the required procedural actions the crew should take to control RPV water level?

- A. Utilize SE-10 for directions to control RPV level.
Do NOT enter T-101 "RPV Control".
- B. Utilize SE-10 for directions to control RPV level.
Enter T-101 "RPV Control", RC/P only.
- C. Utilize SE-10 for directions to control RPV level.
Enter T-101 "RPV Control", RC/L only.
- D. Exit SE-10 for directions to control RPV level.
Enter T-101 "RPV Control", RC/L only.

Answer: A

Answer Explanation		
Choice		Basis or Justification
Correct:	A	In order to maintain configuration control and avoid conflicting guidance, the SE-10 Bases directs that the use of the TRIP procedures be suspended once SE-10 is entered. The SE-10 procedure is entered and controlled by the Control Room Supervisor (SRO), and the SRO will direct and oversee the performance of SE-10 by all crew members at the Alternative Shutdown Panel and at any other required plant locations. The SRO has to recognize that when SE-10 is utilized, T-101 shall not be entered.
Distractors:	B	Plausible if the candidate does not recall the requirement to execute SE-10 exclusively.
	C	Plausible if the candidate does not recall the requirement to execute SE-10 exclusively.
	D	Plausible if the candidate does not recall the requirement to execute SE-10 exclusively.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

Question 1 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	994708																																														
User-Defined ID:	ILT15557003SE10T101																																														
Cross Reference Number:	295016 2.2.14																																														
Topic:	ILT-1555-7-003-SRO-SE10																																														
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Psychometrics																																															
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
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Reference(s):	SE-10 Bases, T-101 Bases																																														
Learning Objective:	PLOT 1555-7																																														
K/A System:	295016 Control Room Abandonment		Importance: RO / SRO 4.3/ 4.4																																												
K/A Statement:	2.1.23 - Ability to perform specific system and integrated plant procedures during all mode of plant operation.																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

2

ID: 1109936

Points: 1.00

- Unit 2 is at 85% power with a reactor startup in-progress.
- AO-3-02-80A "Inboard MSIV" drifts closed.

Based on the above, the crew shall _____.

- A. maintain Reactor power until the MSIV can be re-opened using SO 1A.7.D-3 "Isolation of One Main Steam Line at Power".
- B. maintain Reactor power until the MSIV can be re-opened using SO 1A.7.B-3, "Main Steam Line Recovery"
- C. enter OT-102, "Reactor High Pressure" and reduce Reactor Power until Total Steam Flow to less than 10.8 Mlbs/hr.
- D. enter OT-102, "Reactor High Pressure" and reduce Reactor Power until Total Steam Flow to less than 12.2 Mlbs/hr.

Answer: C

Answer Explanation		
Choice		Basis or Justification
Correct:	C	Reactor power of 85% is higher than three main steam lines can pass and will result in RPV pressure rising. The rise in RPV pressure from 85% is enough for an operator to enter OT-102. The followup action in OT-102 is lower Reactor power low enough to re-establish the margin to the Main Steam Line high flow isolation. Reducing total steam flow to 10.8 Mlbs/hr ensures that each steam line flow is reduced back to maintaining the maximum individual value of 3.6 Mlbs/hr.
	A	Plausible since the SO SO 1A.7.D-3 for isolating a MSIV at power does contain a restoration section to reopen the MSIV, however the procedure prerequisites require reactor power to be less than or equal to 66.7% Rated Thermal Power (RTP). Reactor power must be lowered, not maintained.
	B	Plausible since the SO 1A.7.B-3 is the correct procedure for reopening the closed MSIV, however the candidate must understand that three Main Steam lines cannot support 85% reactor power without reactor pressure rising. Reactor power must be lowered, not maintained.
	D	Plausible if the candidate believes that the value was adjusted for EPU on Unit 2. EPU Implementation does not change the steam flow value listed in OT-102 for having only 3 main steam lines available because the safety analyses only supports Main Steam Line isolation at a power level of up to 75% of 3514 MWt (2635.5 MWt).

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

Question 2 Info			
Question Type:	Multiple Choice		
Status:	Active		
Always select on test?	No		
Authorized for practice?	No		
Points:	1.00		
Time to Complete:	0		
Difficulty:	1.00		
System ID:	1109936		
User-Defined ID:			
Cross Reference Number:	295020AA2.04		
Topic:	ILT-5007G-5g-001		
Num Field 1:	2015 NRC		
Num Field 2:			
Text Field:			
Comments:	Psychometrics		
	Level of Knowledge	Difficulty	Time Allowance (minutes)
	HIGH		
	Source Documentation		
	Source:	XNew Exam item Previous NRC Exam Modified Bank Other Exam Bank ILT Exam Bank	
	Reference(s):	OT-102	
	Learning Objective:	PLOT 5007G-5g-001	
	K/A System:	295020 Inadvertent Containment Isolation	Importance: RO / SRO 3.9 / 3.9
	K/A Statement:	AA2.04 - Ability to determine and/or interpret the following as they apply to INADVERTENT CONTAINMENT ISOLATION: Reactor pressure	
	REQUIRED MATERIALS:	None	
	Notes and Comments:	None	

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

3

ID: 994782

Points: 1.00

The following conditions exist on Unit 3:

- The crew is executing procedure T-111 "Level Restoration"
- An emergency depressurization is in progress with 5 SRVs open
- RPV level is -200 inches and slowly lowering
- RPV pressure is 550 psig and slowly lowering
- The 3A Core Spray pump is the only available source of injection

Based on these conditions, Adequate Core Cooling (ACC) is ____ (1) ____ maintained and the Control Room Supervisor shall ____ (2) ____.

- A. (1) being
(2) continue to execute T-111, "Level Restoration"
- B. (1) being
(2) exit T-111, "Level Restoration" and enter and execute T-101, "RPV Control"
- C. (1) NOT being
(2) continue efforts to restore ACC via submergence using T-111, "Level Restoration"
- D. (1) NOT being
(2) exit T-111, "Level Restoration" and enter and execute the SAMPs

Answer: A

Answer Explanation		
Correct:	A	When RPV water level cannot be maintained above the top of active fuel TAF (-172 inches), adequate steam flow (cooling) is established by either maintaining RPV water level above the Minimum Steam Cooling RPV Water Level (-195 inches), or maintaining RPV pressure above the Minimum Steam Cooling Pressure (270 psig with 5 SRVs open). Operation should continue until RPV level is recovered or until a decision is made that ACC is no longer assured then the evaluation to go to SAMPs would be made.
Distractors:	B	ACC is being maintained but since RPV level is not recovered above TAF, T-101 is not entered. Plausible if the candidate does not understand the requirement to stay in T-111 until RPV level is recovered above TAF.
	C	ACC is being maintained. The candidate must understand, based on the question stem what constitutes ACC.
	D	ACC is being maintained. The candidate must understand, based on the question stem what constitutes ACC. Plausible if the candidate believes that ACC is not met and that the entry into SAMPs is required.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

Question 3 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	994782																																														
User-Defined ID:	ILT-2111-4-002																																														
Cross Reference Number:	295031 EA2.04																																														
Topic:	ILT-2111-4-003																																														
Num Field 1:	2015 NRC																																														
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Psychometrics																																															
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
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Reference(s):	T-BAS (Intro); TRIP/SAMP Curves, Tables & Limits Bases; T-111 and Bases																																														
Learning Objective:	PLOT-2111-4																																														
K/A System:	295031 Reactor Low Water Level	Importance: RO / SRO 4.6/ 4.8																																													
K/A Statement:	EA2.04 - Ability to determine and/or interpret the following as they apply to REACTOR LOW WATER LEVEL: Adequate core cooling																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

4

ID: 1110315

Points: 1.00

Unit 2 is in a refueling outage. The following conditions exist:

- The reactor is in Mode 4
- The "B" loop of RHR is blocked for maintenance
- The "B" loop of Core Spray is blocked for Maintenance
- The Condensate and Feedwater systems are drained for feedwater heater replacement
- CST is not available as a Suction for Core Spray
- The "A" RHR pump is in service for Shutdown Cooling
- The "A" Core Spray loop is available for injection
- Maintenance has a Work Order activity to lower Torus level to 10 feet.

Maintenance ____ (1) ____ proceed with the activity.

The "A" loop of Core Spray ____ (2) ____ "Protected Equipment" per OP-AA-108-117, "Protected Equipment Program".

- A. (1) can
(2) is
- B. (1) can
(2) is not
- C. (1) can not
(2) is
- D. (1) can not
(2) is not

Answer: C

Answer Explanation		
Choice	Basis or Justification	
Correct:	C	Lowering Torus level to 10 feet will INOP Core Spray and RHR. Core Spray and RHR are the Tech Spec required injection system in Mode 4. For this reason maintenance can not continue with their activity. Per OP-AA-108-117 section 4.2 Core Spray would be protected equipment.
Distractors:	A	Plausible if the candidate does not understand that lowering Torus level to 10 feet will INOP ECCS due to exceeding the vortex limit.
	B	Plausible if the candidate does not understand that lowering Torus level to 10 feet will INOP ECCS due to exceeding the vortex limit. Plausible if the candidate does not understand the requirements to protect SSC equipment.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

	D	Plausible if the candidate does not understand the requirements to protect SSC equipment.
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Question 4 Info			
Question Type:	Multiple Choice		
Status:	Active		
Always select on test?	No		
Authorized for practice?	No		
Points:	1.00		
Time to Complete:	0		
Difficulty:	1.00		
System ID:	1110315		
User-Defined ID:			
Cross Reference Number:	295030 2.2.18		
Topic:	ILT-1529-1r-001-SRO		
Num Field 1:			
Num Field 2:			
Text Field:			
Comments:	Psychometrics		
	Level of Knowledge	Difficulty	Time Allowance (minutes)
	HIGH		
			RO
			10CRF55.43(b)(2)
	Source Documentation		
	Source:	XNew Exam item Previous NRC Exam Modified Bank Other Exam Bank ILT Exam Bank	
	Reference(s):	OP-AA-108-117, Tech Specs	
	Learning Objective:	PLOT-1529-1r	
	K/A System:	295030 Low Suppression Pool Water Level	Importance: RO / SRO 4.0/ 4.7
	K/A Statement:	2.2.22 - Knowledge of limiting conditions for operations and safety limits.	
	REQUIRED MATERIALS:	None	
	Notes and Comments:	None	

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

5

ID: 1140658

Points: 1.00

- Unit 3 is at 25% power
- An explosion ruptures several Instrument Air lines in the turbine building
- All available air compressors are running
- "A" and "B" Instrument Air pressures are 90 psig and lowering slowly.
- Scram Air header pressure is 70 psig and lowering slowly

Per ON-119, "Loss of Instrument Air", the Reactor must be scrammed if "_____"

- A. BOTH instrument air header pressures lower to less than or equal to 75 psig.
- B. scram air header pressure lowers to less than or equal to 65 psig.
- C. more than one Control rod begins to drift in.
- D. any main steam line isolation valve fully closes,

Answer: A

Answer Explanation		
Choice		Basis or Justification
Correct:	A	This is the step directly out of ON-119.
Distractors:	B	The direction to scram is based on Instrument Air header pressures not Scram Air Header pressure. Plausible if the candidate confuses the two headers. Additionally the Scram air header will be depressurizing with the loss of Instrument Air.
	C	More than one rod begins to drift into the core is a correct step from ON-121 NOT in ON-119. This is a plausible distractor because the operator could confuse the procedural direction and rods will drift into the core on a loss of Instrument Air header pressure.
	D	The MSIVs will close based on the loss of Instrument Air but a MSIV going fully closed is not the direction to scram given in ON-119.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

Question 5 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1140658																																														
User-Defined ID:																																															
Cross Reference Number:	295019 2.1.20																																														
Topic:	ILT-1550-22C-003-SRO																																														
Num Field 1:	2015 NRC																																														
Num Field 2:	0.00																																														
Text Field:																																															
Comments:	<table border="1"> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> <tr> <td>HIGH</td> <td></td> <td></td> <td>10CRF55.43(b)(5)</td> </tr> <tr> <th colspan="4">Source Documentation</th> </tr> <tr> <td>Source:</td> <td colspan="2"> <input type="checkbox"/> New Exam item <input type="checkbox"/> Modified Bank <input checked="" type="checkbox"/> XILT Exam Bank </td> <td> <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank </td> </tr> <tr> <td>Reference(s):</td> <td colspan="3">ON-119, T-100, T-101</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="3">PLOT-1550-22c</td> </tr> <tr> <td>K/A System:</td> <td colspan="2">295019 Partial or Complete Loss of Instrument Air</td> <td>Importance: RO / SRO 4.6/ 4.6</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="3">2.1.20 - Ability to interpret and execute procedure steps.</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="3">None</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="3">None</td> </tr> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	HIGH			10CRF55.43(b)(5)	Source Documentation				Source:	<input type="checkbox"/> New Exam item <input type="checkbox"/> Modified Bank <input checked="" type="checkbox"/> XILT Exam Bank		<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank	Reference(s):	ON-119, T-100, T-101			Learning Objective:	PLOT-1550-22c			K/A System:	295019 Partial or Complete Loss of Instrument Air		Importance: RO / SRO 4.6/ 4.6	K/A Statement:	2.1.20 - Ability to interpret and execute procedure steps.			REQUIRED MATERIALS:	None			Notes and Comments:	None		
Psychometrics																																															
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
HIGH			10CRF55.43(b)(5)																																												
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Reference(s):	ON-119, T-100, T-101																																														
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K/A System:	295019 Partial or Complete Loss of Instrument Air		Importance: RO / SRO 4.6/ 4.6																																												
K/A Statement:	2.1.20 - Ability to interpret and execute procedure steps.																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

6

ID: 1140429

Points: 1.00

Given the following:

- A loss of off-site power has occurred.
- The Crew is performing SE-11, "Loss of Off-Site Power".
- SE-11 Attachment A, "Diesel Generator Lockout from the Main Control Room" has been performed on the E-1, E-2 and E-3 Diesel Generators.
- The E-22, E-23 and E-33 breakers are inoperable and can not be closed.
- The E-4 Diesel Generator will not start.

Per SE-11, how many Diesel Generators, if any, are available for operation?

- A. 0
- B. 1
- C. 2
- D. 3

Answer: C

Answer Explanation

Choice		Basis or Justification
Correct:	C	Per SE-11, D/Gs that have been shutdown due to a lack of cooling (which is the purpose of SE-11 Attachment A), but are capable of back-feeding an operable ESW or ECW pump, should be counted as available. Therefore, the E-1 and E-3 D/Gs are available.
Distractors:	A	Because the E-1, E-2 and E-3 were shutdown. E-1 and E-3 D/Gs have operable output breakers they are available. Plausible if the candidate does not understand what makes an operable D/G and believes that if a D/G is shutdown is not available.
	B	E-1 and E-3 are available because they have operable output breakers. Plausible if the candidate believes that the E-3 D/G is not available because one of its output breakers is not available.
	D	Because of the INOP output breakers on E-2 Diesel generator only E-1 and E-3 D/G are available.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

Question 6 Info																													
Question Type:	Multiple Choice																												
Status:	Active																												
Always select on test?	No																												
Authorized for practice?	No																												
Points:	1.00																												
Time to Complete:	0																												
Difficulty:	1.00																												
System ID:	1140429																												
User-Defined ID:																													
Cross Reference Number:	295003 2.1.2																												
Topic:	ILT-1555-3-24-SRO-SE-11.																												
Num Field 1:	2015 NRC																												
Num Field 2:																													
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Psychometrics																													
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																										
HIGH			10CRF55.43(b)(2)																										
Source Documentation																													
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Reference(s):	SE-11 and bases																												
Learning Objective:	PLOT-1555-9, 11																												
K/A System:	<div> <div>295003 - Partial or Complete Loss of A.C. Power</div> <div>Importance; RO / SRO</div> <div>4.1 / 4.4</div> </div>																												
K/A Statement:	2.1.2 - Knowledge of operator responsibilities during all modes of plant operation																												
REQUIRED MATERIALS:	None																												

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

	<p>Notes and Comments:</p>	<p>This question is designated as SRO ONLY because:</p> <ul style="list-style-type: none">• It cannot be answered by knowing immediate operator actions of TRIP entry conditions (must know followup actions).• It requires recall of a strategy or action that is written into a plant procedure, including when the strategy or action is taken.• It is an SRO job function to determine the SE-11 requirements and conditions for D/G availability.
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EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

7

ID: 1006403

Points: 1.00

The following conditions exist on Unit 3:

- TBCCW pumps have been tripped due to a system leak
- Reactor power has been lowered to 58% using procedure GP-9-3 "Fast Reactor Power Reduction"
- The Condensate Pump related computer points are:
 - W318 indicates 193 degrees F
 - W319 indicates 176 degrees F
 - W322 indicates 183 degrees F
 - W323 indicates 190 degrees F
 - W326 indicates 191 degrees F
 - W327 indicates 182 degrees F

Portions of ON-118 "Loss of TBCCW" are PROVIDED BELOW:

2.8 IF any of the following conditions occur, THEN REDUCE reactor power in accordance with GP-9-2(3), "Fast Reactor Power Reduction", AND REMOVE the affected pump(s) from service.

2.8.1 Any Condensate Pump thrust bearing temperature at OR above 190 F.

2.8.2 Any Condensate Pump or motor bearing temperature at OR above 190 F.

2.8.3 Any Condensate Pump vibration exceeding the alarm setpoint.

TABLE 1

CONDENSATE PUMP/MOTOR THRUST BEARING TEMPERATURE POINTS

<u>COMPUTER POINT (°F)</u>	<u>POINT ID</u>	<u>ALARM</u>
"A" CONDENSATE PUMP MOTOR THRUST BRG.	W018 (W318)	175°F (175°F)
"A" CONDENSATE PUMP THRUST BRG.	W019 (W319)	200°F (200°F)
"B" CONDENSATE PUMP MOTOR THRUST BRG.	W022 (W322)	175°F (175°F)
"B" CONDENSATE PUMP THRUST BRG.	W023 (W323)	200°F (200°F)
"C" CONDENSATE PUMP MOTOR THRUST BRG.	W026 (W326)	175°F (175°F)
"C" CONDENSATE PUMP THRUST BRG.	W027 (W327)	200°F (200°F)

Based on the above conditions, per ON-118, which one of the following is the correct course of action for these conditions?

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

- A. Further reduce power per GP-9-3 "Fast Reactor Power Reduction" and remove the 3A and 3C Condensate Pumps from service ONLY.
- B. Further reduce power per GP-9-3 "Fast Reactor Power Reduction" and remove ALL Condensate pumps from service.
- C. Perform GP-4 "Manual Reactor Scram" and remove the 3A and 3C Condensate pumps from service ONLY.
- D. Perform GP-4 "Manual Reactor Scram" and remove ALL Condensate Pumps from service.

Answer: D

Answer Explanation		
Choice		Basis or Justification
Correct:	D	Computer points W318, W323 and W326 show that the 3A, 3B and 3C condensate pumps must be removed from service since all have motor or thrust bearing temperature that are "at or above 190 degrees F". Since further power reduction using GP-9-3 cannot reduce power enough to remove ALL condensate pumps from service, a GP-4 manual scram is required. This is based on the guidance of ON-118 step 2.1 that directs a GP-4 manual scram if the loss of any component makes a unit trip likely.
Distractors:	A	All 3 condensate pumps have exceeded the temperature limit for continued operation and must be removed from service. Further power reduction using GP-9-3 will not reduce power enough to remove all condensate pumps from service. Therefore, a GP-4 manual scram is required.
	B	Further power reduction using GP-9-3 will not reduce power enough to remove all condensate pumps from service. Therefore, a GP-4 manual scram is required.
	C	All 3 condensate pumps have exceeded the temperature limit for continued operation and must be removed from service.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

Question 7 Info			
Question Type:	Multiple Choice		
Status:	Active		
Always select on test?	No		
Authorized for practice?	No		
Points:	1.00		
Time to Complete:	0		
Difficulty:	1.00		
System ID:	1006403		
User-Defined ID:	13 CERT		
Cross Reference Number:	295018 2.1.19		
Topic:	ILT 1550-21a-001-SRO		
Num Field 1:	2015 NRC		
Num Field 2:			
Text Field:			
Comments:	Psychometrics		
	Level of Knowledge	Difficulty	Time Allowance (minutes)
	HIGH		
			SRO
			10CFR55.43(b)(5)
	Source Documentation		
	Source:	<input type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam: <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank: <input checked="" type="checkbox"/> ILT Exam Bank	
	Reference (s):	ON-118 and Bases	
	Learning Objective:	PLOT-PBIG-1550-21a	
	K/A System:	295018 – Partial or Total Loss of CCW	Importance: SRO 3.8
	K/A Statement: 2.1.19 – Ability to use plant computers to evaluate system or component status.		
	REQUIRED MATERIALS:	NONE	
	Notes and Comments:		

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

8

ID: 1120210

Points: 1.00

Unit 3 is operating at 100% power when the following occurs:

- An Equipment operator reports a steam leak in the Unit 3 Reactor Building
- Annunciator 317 K-5, "Reac Bldg. Hi-Lo Diff Pressure" alarms
- Annunciator 317 L-1 "Reac Bldg. Refueling Area Hi-Lo Diff Press" alarms
- Reactor Building and Refuel Floor vent exhaust radiation readings were 1 mr/hr prior to the Group III isolation.
- RPV level is -25 inches and steady
- Three control rods are at Position 12
- The Shift Manager has declared a Site Area Emergency (SAE) for an Unisolable Main Steam Line break.

Based on the above conditions, the Crew shall _____

- A. Reduce Secondary Containment temperature/pressure using SO 40B.1.A-2, "Reactor Building Ventilation System Startup and Normal Operation".
- B. Reduce Secondary Containment temperature/pressure using T-222, "Secondary Containment Ventilation Bypass per T-103, "Secondary Containment Control".
- C. Perform a normal depressurization per T-104, "Radioactivity Release".
- D. Perform a rapid depressurization IAW RC/P-12 of T-101, "RPV Control".

Answer: B

Answer Explanation		
Choice		Basis or Justification
Correct:	B	The Reactor Building will be positive with the report of a large steam break in the reactor building and the Hi-lo Differential pressure alarms. T-103 "Secondary Containment Control" must be entered out of the ARCs listed for the high Secondary Containment pressure condition. With low radiation levels, T-103 will drive performance of T-222 to restore RB ventilation and reduce RB temperature and pressure.
Distractors:	A	With RPV level at -25 inches a Group III isolation is present. Ventilation cannot be restored using the normal So procedure under these conditions. Plausible if the candidate does not understand that there is a Group III isolation present. The action of restoring ventilation is the correct action however it can not be performed with the normal procedure. The T-103 step directs performing T-222, if necessary. The SRO candidate must determine if ventilation can be restored without use of T-222. (Ventilation cannot be restored without using T-222.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

C	Plausible if the candidate confuses the T-104 entry based on a Radiation Release EAL and the declared EAL on a Main Steam Line Break. The action of performing a normal depressurization is an action if radiation levels are above the EAL Alert level. The Shift Manager has declared a SAE. If the candidate does not understand that the declaration must be on radiation release the action for T-104 is plausible.
D	Depressurization per T-101 is a correct action however with three rods at position 12 RC/P can not be used to perform the depressurization. Plausible is the candidate does not remember that three rods at position 12 is an ATWS or the RC/P-12 can not be used with an ATWS. The SRO candidate must determine based on the status of rods if a depressurization can be conducted and if a rapid depressurization can be conducted. The question asks if a rapid depressurization can be conducted, with the above conditions a rapid depress is not allowed but a normal depress would be allowed.

Question 8 Info																																			
Question Type:	Multiple Choice																																		
Status:	Active																																		
Always select on test?	No																																		
Authorized for practice?	No																																		
Points:	1.00																																		
Time to Complete:	0																																		
Difficulty:	1.00																																		
System ID:	1120210																																		
User-Defined ID:	ILT-2103-1-006																																		
Cross Reference Number:	295035EA2.01																																		
Topic:	ILT-2103-2-008-SRO																																		
Num Field 1:	2015 NRC																																		
Num Field 2:	N/A																																		
Text Field:	A																																		
Comments:	<table border="1"> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> <tr> <td>HIGH</td> <td></td> <td></td> <td>10CRF55.43(b)(5)</td> </tr> <tr> <th colspan="4">Source Documentation</th> </tr> <tr> <td>Source:</td> <td colspan="2">XNew Exam item Modified Bank ILT Exam Bank</td> <td>Previous NRC Exam Other Exam Bank</td> </tr> <tr> <td>Reference(s):</td> <td colspan="3">T-103, T-104, T-222</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="3">PLOT-5009-2b</td> </tr> <tr> <td>K/A System:</td> <td colspan="2">295035 Secondary Containment High Differential Pressure</td> <td>Importance: RO / SRO 3.8/ 3.9</td> </tr> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	HIGH			10CRF55.43(b)(5)	Source Documentation				Source:	XNew Exam item Modified Bank ILT Exam Bank		Previous NRC Exam Other Exam Bank	Reference(s):	T-103, T-104, T-222			Learning Objective:	PLOT-5009-2b			K/A System:	295035 Secondary Containment High Differential Pressure		Importance: RO / SRO 3.8/ 3.9
Psychometrics																																			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																
HIGH			10CRF55.43(b)(5)																																
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Source:	XNew Exam item Modified Bank ILT Exam Bank		Previous NRC Exam Other Exam Bank																																
Reference(s):	T-103, T-104, T-222																																		
Learning Objective:	PLOT-5009-2b																																		
K/A System:	295035 Secondary Containment High Differential Pressure		Importance: RO / SRO 3.8/ 3.9																																

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

	K/A Statement:	EA2.01 - Ability to determine and/or monitor the following as they apply to SECONDARY CONTAINMENT HIGH DIFFERENTIAL PRESSURE: Secondary containment pressure
	REQUIRED MATERIALS:	None
	Notes and Comments:	None

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

9

ID: 1109846

Points: 1.00

Unit 2 has been at 100% power for 2 days following a refueling outage. The following conditions exist:

- Fuel bundles are being moved in the Unit 2 fuel pool in preparation for loading of an ISFSI cask
- ST-O-09A-325-2, "Standby Gas Treatment (SBGT) Subsystem Operability Test" is in progress when the "A" SBGT Fan runs for 10 minutes and then trips on overcurrent

For the above conditions, (1) What is the Technical Specification required action?

Per the Technical Specification bases, the SBGT System is needed to mitigate the consequences
(2) _____.

- A. (1) Suspend movement of fuel bundles in the Fuel Pool.
(2) of a Fuel Handling Accident.
- B. (1) Place the "B" SBGT fan in service immediately.
(2) of a Fuel Handling Accident.
- C. (1) Place the "B" SBGT fan in service immediately.
(2) from a radiation release caused by a DBA LOCA.
- D. (1) Restore SBGT subsystem to operable in 7 days.
(2) from a radiation release caused by a DBA LOCA.

Answer: D

Answer Explanation		
Choice		Basis or Justification
Correct:	D	The "A" SBGT fan tripping in 10 minutes is a failed "black box" step on the ST. This means that one subsystem is inoperable. One inoperable subsystem requires that subsystem be returned to service within 7 days.
Distractors:	A	There is no recently irradiated fuel in the fuel pool because the unit has been on line for 2 days. Termination of fuel moves is not required. Plausible if the candidate does not recall the definition of "Recently Irradiated". Recently irradiated fuel as defined in Tech Specs is fuel that has occupied part of a critical reactor core within the previous 24 hours.
	B	There is no recently irradiated fuel in the fuel pool because the unit has been on line for 2 days. Placing SBGT in-service as an option to continue fuel moves is not required. Plausible if the candidate does not recall the definition of "Recently Irradiated".
	C	Placing the SBGT train in-service is only required after the 7 day window to return the system to service has expired. Plausible if the candidate does not understand the Tech Spec.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

Question 9 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1109846																																														
User-Defined ID:																																															
Cross Reference Number:	295017 2.2.12																																														
Topic:	ILT-5009A-14-001-SRO																																														
Num Field 1:	2015 NRC																																														
Num Field 2:																																															
Text Field:																																															
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K/A Statement:	2.2.12 - Knowledge of surveillance procedures.																																														
REQUIRED MATERIALS:	1. Tech Spec section 3.6.4.3 (SBGT System) 2. ST-O-09A-325-2, "SBGT Subsystem Operability Test" page 6																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

10

ID: 1110006

Points: 1.00

An automatic scram has occurred on Unit 3 due to a loss of Main Condenser vacuum. The following conditions exist:

- Reactor power is 3% and steady
- Fifty (50) control rods did not fully insert
- RPV level lowered to -35 inches and has recovered to -20 inches
- Main Condenser vacuum is 10 inches and getting worse
- Reactor Recirculation Pumps tripped on the Aux Bus fast transfer

Based on the above conditions there is an entry condition for procedure ____ (1) ____ and the Crew is required to ____ (2) ____.

- A. (1) T-100 "Scram"
(2) initiate Alternate Rod Insertion (ARI) using RRC 3B.1-3, "Alternate Rod Insertion During a Plant Event"
- B. (1) T-100 "Scram"
(2) minimize CRD flow using SO 3.2.A-3, "Control Rod Drive Hydraulic System Shutdown"
- C. (1) T-101 "RPV Control"
(2) initiate Alternate Rod Insertion (ARI) using RRC 3B.1-3, "Alternate Rod Insertion During a Plant Event"
- D. (1) T-101 "RPV Control"
(2) inject Standby Liquid Control (SLC) using RRC 11.1-3, "Standby Liquid System Initiation During a Plant Event"

Answer: A

Answer Explanation		
Choice		Basis or Justification
Correct:	A	No entry condition to T-101 "RPV Control" exists (Reactor power is less than 4% and RPV level did not go below - 48 inches). Entry into procedure T-100 "Scram" is required. Because there is an ATWS (not all rods inserted) T-100 directs Alternate Rod Insertion (ARI) be initiated. This is an SRO question because it requires the candidate to make several choices once they have entered T-100.
Distractors:	B	CRD is needed for rod insertion. Minimizing CRD flow is a correct answer for the recirc pumps being tripped and the reactor in natural circulation to minimize stratification IF an ATWS did not exist. The guidance not to perform this procedure is in the prerequisites of the SO procedure and requires that all control rods are inserted. Plausible if the candidate does not recognize that CRD is needed to attempt rod insertion.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

	C	No entry for T-101 exits. Plausible if the candidate does not recall the T-101 entry conditions. The action to initiate ARI is also a plausible action with an ATWS.
	D	No entry for T-101 exits. Plausible if the candidate does not recall the T-101 entry conditions. The action to inject SLC is also a plausible action with an ATWS.

Question 10 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1110006																																														
User-Defined ID:																																															
Cross Reference Number:	295015 2.1.23																																														
Topic:	ILT-2100-3-012-SRO																																														
Num Field 1:																																															
Num Field 2:																																															
Text Field:																																															
Comments:	<table border="1"> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> <tr> <td>HIGH</td> <td></td> <td></td> <td>10CRF55.43(b)(5)</td> </tr> <tr> <th colspan="4">Source Documentation</th> </tr> <tr> <td>Source:</td> <td colspan="2">XNew Exam item Modified Bank ILT Exam Bank</td> <td>Previous NRC Exam Other Exam Bank</td> </tr> <tr> <td>Reference(s):</td> <td colspan="3">T-100, T-101</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="3">PLOT-2100-3</td> </tr> <tr> <td>K/A System:</td> <td>295015 Incomplete SCRAM</td> <td colspan="2">Importance: RO / SRO 4.3/ 4.4</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="3">2.1.23 - Ability to perform specific system and integrated plant procedures during all modes of plant operation.</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="3">None</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="3">None</td> </tr> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	HIGH			10CRF55.43(b)(5)	Source Documentation				Source:	XNew Exam item Modified Bank ILT Exam Bank		Previous NRC Exam Other Exam Bank	Reference(s):	T-100, T-101			Learning Objective:	PLOT-2100-3			K/A System:	295015 Incomplete SCRAM	Importance: RO / SRO 4.3/ 4.4		K/A Statement:	2.1.23 - Ability to perform specific system and integrated plant procedures during all modes of plant operation.			REQUIRED MATERIALS:	None			Notes and Comments:	None		
Psychometrics																																															
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K/A System:	295015 Incomplete SCRAM	Importance: RO / SRO 4.3/ 4.4																																													
K/A Statement:	2.1.23 - Ability to perform specific system and integrated plant procedures during all modes of plant operation.																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

11

ID: 1109868

Points: 1.00

- Unit 2 is in MODE 2 with a reactor startup in progress
- The reactor is subcritical
- Control rod withdrawal has begun
- The 2B 24/48 VDC Distribution Panel (2BD045) is lost

The loss of power to 2BD045 causes a control rod block (1) from the Wide Range Neutron Monitoring (WRNM) System. The Crew shall (2).

- A. (1) and NO RPS Channel "B" Half Scram
(2) bypass the Rod Block signal using AO 60C.1-2 "Bypassing WRNM Control Rod Withdraw Block" and continue the startup
- B. (1) and NO RPS Channel "B" Half Scram
(2) suspend control rod withdrawal immediately per Technical Specifications
- C. (1) and RPS Channel 'B' Half Scram
(2) bypass the Rod Block signal using AO 60C.1-2 "Bypassing WRNM Control Rod Withdraw Block" and the Half Scram signal using GP-11.E "RPS Scram and ARI Reset" and continue the startup
- D. (1) and RPS Channel 'B' Half Scram
(2) suspend control rod withdrawal immediately per Technical Specifications

Answer: D

Answer Explanation		
Correct:	D	A loss of power to 2BD045 will result in a half scram and rod block due to a WRNM INOP condition caused by the loss of power to the 4 "B" channel WRNMs. With 4 WRNM channels INOP, Tech Specs required that control rod withdraw be suspended immediately.
Distractors:	A	Plausible if applicant does not understand the effects of a power loss on the WRNM system and believes the given conditions will only result in a rod block and does not understand that power has been lost to 3 required WRNMs. The startup can not continue until three of the four INOP WRNMs can be returned to service.
	B	Plausible if applicant does not understand the effects of a power loss on the WRNM system and believes the given conditions will only result in a rod block.
	D	Plausible if applicant does not understand the effects of a power loss on the WRNM system and does not understand that power has been lost to 3 required WRNMs. The startup can not continue until three of the four INOP WRNMs can be returned to service.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

Question 11 Info																																							
Question Type:	Multiple Choice																																						
Status:	Active																																						
Always select on test?	No																																						
Authorized for practice?	No																																						
Points:	1.00																																						
Time to Complete:	0																																						
Difficulty:	1.00																																						
System ID:	1109868																																						
User-Defined ID:	ILT-5060C-2C-001																																						
Cross Reference Number:	215004A2.01																																						
Topic:	ILT-5060C-2c-002-SRO																																						
Num Field 1:	2015 NRC																																						
Num Field 2:																																							
Text Field:	NRC-09-1																																						
Comments:	<table border="1"> <thead> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> </thead> <tbody> <tr> <td>HIGH</td> <td></td> <td></td> <td>10CRF55.43(b)(2)</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th colspan="3">Source Documentation</th> </tr> </thead> <tbody> <tr> <td>Source:</td> <td> <input type="checkbox"/> New Exam item <input type="checkbox"/> Modified Bank <input checked="" type="checkbox"/> ILT Exam Bank </td> <td> <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank </td> </tr> <tr> <td>Reference(s):</td> <td colspan="2">ARC-210 H-3, E-24,</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="2">PLOT-5060C-2</td> </tr> <tr> <td>K/A System:</td> <td>215004 Source Range Monitor (SRM) System</td> <td>Importance: RO / SRO 2.7/ 2.9</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="2">A2.01 - Ability to (a) predict the impacts of the following on the SOURCE RANGE MONITOR (SRM) SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Power supply degraded</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="2">None</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="2">None</td> </tr> </tbody> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	HIGH			10CRF55.43(b)(2)	Source Documentation			Source:	<input type="checkbox"/> New Exam item <input type="checkbox"/> Modified Bank <input checked="" type="checkbox"/> ILT Exam Bank	<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank	Reference(s):	ARC-210 H-3, E-24,		Learning Objective:	PLOT-5060C-2		K/A System:	215004 Source Range Monitor (SRM) System	Importance: RO / SRO 2.7/ 2.9	K/A Statement:	A2.01 - Ability to (a) predict the impacts of the following on the SOURCE RANGE MONITOR (SRM) SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Power supply degraded		REQUIRED MATERIALS:	None		Notes and Comments:	None	
Psychometrics																																							
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																				
HIGH			10CRF55.43(b)(2)																																				
Source Documentation																																							
Source:	<input type="checkbox"/> New Exam item <input type="checkbox"/> Modified Bank <input checked="" type="checkbox"/> ILT Exam Bank	<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank																																					
Reference(s):	ARC-210 H-3, E-24,																																						
Learning Objective:	PLOT-5060C-2																																						
K/A System:	215004 Source Range Monitor (SRM) System	Importance: RO / SRO 2.7/ 2.9																																					
K/A Statement:	A2.01 - Ability to (a) predict the impacts of the following on the SOURCE RANGE MONITOR (SRM) SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Power supply degraded																																						
REQUIRED MATERIALS:	None																																						
Notes and Comments:	None																																						

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

12

ID: 1118714

Points: 1.00

The following alarms are received:

- 220 F-5, "INVERTER TROUBLE"
- 220 G-5, "INVERTER DC SUPPLY UNDERVOLTAGE"
- An Equipment Operator reports there is an acrid order coming from the Static inverter.

Based on the above alarms, power will be (1) to Panel Y-50 "Uninterruptible 120 VAC Bus" and the CRS will (2).

- A. (1) momentarily lost
(2) enter ON-112, "Loss of Uninterruptible AC Power" and verify that RPV level is stable.
- B. (1) momentarily lost
(2) perform SO 58B.7.A-2, "Removing Unit 2 U.P.S. Static Inverter From Service" to provide power directly from the AC source until power to the static inverter is restored.
- C. (1) maintained
(2) enter ON-112, "Loss of Uninterruptible AC Power" and verify that RPV level is stable.
- D. (1) maintained
(2) perform SO 58B.7.A-2, "Removing Unit 2 U.P.S. Static Inverter From Service" to provide power directly from the AC source until power to the static inverter is restored.

Answer: D

Answer Explanation		
Choice		Basis or Justification
Correct:	D	The static switch is a "make before break" contact therefore power will be maintained to Y-50 when the normal supply is lost. ARC 220-F-5 and 220G-5 provides an option to perform SO 58B.7.A to remove the static inverter from service at the discretion of Shift Management.
Distractors:	A	Plausible if the candidate does not understand that the static switch will transfer on lowering DC voltage from the static inverter therefore maintaining power to Y-50. If the candidate believes that power will be lost to Y-50 then entry into ON-112 would be appropriate to stabilize RPV level.
	B	Plausible if the candidate does not understand that the static switch will transfer on lowering DC voltage from the static inverter therefore maintaining power to Y-50.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

	C	A symptom for entry into ON-112 is alarm 220 F-5. With the transfer of power to the AC supply for Y-50 executing ON-112 to stabilize RPV level is not correct. Plausible if the candidate does not understand that ON procedure entry and execution without an actual loss of power to y-50 is not correct.
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Question 12 Info			
Question Type:	Multiple Choice		
Status:	Active		
Always select on test?	No		
Authorized for practice?	No		
Points:	1.00		
Time to Complete:	0		
Difficulty:	1.00		
System ID:	1118714		
User-Defined ID:			
Cross Reference Number:	262002A2.01		
Topic:	ILT-1550-17b-003-SRO		
Num Field 1:	2015 NRC		
Num Field 2:			
Text Field:			
Comments:	Psychometrics		
	Level of Knowledge	Difficulty	Time Allowance (minutes)
	HIGH		
			RO
			10CRF55.43(b)(5)
	Source Documentation		
	Source:	XNew Exam item Previous NRC Exam Modified Bank Other Exam Bank ILT Exam Bank	
	Reference(s):	ARCs 220 F-5 & G-5, E-28, PLOT 5058	
	Learning Objective:	PLOT-1550-17b	
	K/A System:	262002 Uninterruptable Power Supply	Importance: RO / SRO 2.6/ 2.8
	K/A Statement:	A2.01 - Ability to (a) predict the impacts of the following on the UNINTERRUPTIBLE POWER SUPPLY (A.C./D.C.) and (b) based on those prediction, use produces to correct, control, or mitigate the consequences of those abnormal conditions or operations: Under voltage	
	REQUIRED MATERIALS:	None	
	Notes and Comments:	None	

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

13

ID: 1119457

Points: 1.00

Unit 2 was operating at 100% power. The following conditions exist:

- The "B" RHR loop is blocked and drained for repairs
- A loss of Off-Site power occurs
- The E-2 and E-3 Diesel Generators failed to start
- RPV level is 23 inches being maintained by RCIC
- RPV pressure is 900 psig being maintained by HPCI in the CST-CST mode
- Off-site power is not expected to be restored for several hours
- A small steam leak occurs on Unit 2 requiring the use of containment sprays

Select the correct statement with respect to the loss of Off-Site power.

- A. Backfeed is not required, spray Containment using T-204-2, "Initiation of Containment Sprays Using RHR".
- B. Backfeed is required using Attachment F, "Backfeeding Safe Shutdown Loads With the E1 & E4 Diesel Generators Available".
- C. Backfeed is required using Attachment P, "Generic Load Management Contingency During Loop Events".
- D. Secure D/Gs using Attachment A, "Diesel Generator Lockout From the Main Control Room" until backfeed is available to E-22 bus to provide D/G cooling.

Answer: B

Answer Explanation		
Choice		Basis or Justification
Correct:	B	Power is not available to perform Containment Sprays because the containment spray valves are powered from the E-3 Diesel and provide injection without performing a backfeed. Direction to implement the backfeed attachment is given by Shift Management.
Distractors:	A	Plausible if the candidate does not recognize the backfeed attachment needs to be performed because there is not sufficient power available to spray containment..
	C	Plausible if the candidate does not recognize that the normal back feed attachment is sufficient to restore power to containment spray valves. Attachment P is used when a normal back feed attachment will not work for current plant conditions or when the normal backfeed attachment does not return all the necessary equipment based on equipment issues.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

	D	Plausible if the candidate does not understand the power supplies to the ESW and ECW pumps. With power to the E1 and E4 D/Gs cooling water is available to the D/Gs.
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Question 13 Info			
Question Type:	Multiple Choice		
Status:	Active		
Always select on test?	No		
Authorized for practice?	No		
Points:	1.00		
Time to Complete:	0		
Difficulty:	1.00		
System ID:	1119457		
User-Defined ID:			
Cross Reference Number:	264000 2.4.11		
Topic:	ILT-1555-3-023-SRO		
Num Field 1:	2015 NRC		
Num Field 2:			
Text Field:			
Comments:	Psychometrics		
	Level of Knowledge	Difficulty	Time Allowance (minutes)
	HIGH		10CRF55.43(b)(5)
	Source Documentation		
	Source:	XNew Exam item Previous NRC Exam Modified Bank Other Exam Bank ILT Exam Bank	
	Reference(s):	SE-11	
	Learning Objective:	PLOT 1555-3	
	K/A System:	264000 Emergency Generators	Importance: RO / SRO 4.0/ 4.2
	K/A Statement:	2.4.11 Knowledge of abnormal condition procedures.	
	REQUIRED MATERIALS:	None	
	Notes and Comments:	None	

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

14

ID: 1110320

Points: 1.00

- Unit 3 is at 100% power
- The "C" Safety Relief Valve (SRV) fails full open.
- EHC load set is at 105%.

Based on the above conditions, Main Turbine control valves will (1).

Per the guidances of OT-114, "Inadvertent Opening of a Relief Valve" the operator is directed to remove the fuses for the "C" SRV and (2) cycle the SRV control switch.

- A. (1) close for 94% flow demand
(2) should
- B. (1) close for 94% flow demand
(2) should NOT
- C. (1) remain at 100% flow demand
(2) should
- D. (1) remain at 100% flow demand
(2) should NOT

Answer: A

Answer Explanation		
Choice		Basis or Justification
Correct:	A	Output of pressure regulator lowers sending a lower signal to control valve demand. As control valves close (~6%) reactor pressure will remain constant offsetting the SRV being open. Since the SRV has failed full open, the SRO should determine that the correct actions to take per OT-114 is to both cycle the control switch and pull the SRV fuses. There is a caution in OT-114 about cycling the control switch on a partially open SRV that opening the control switch could make the condition worse. Since the valve is fully open cycling the control switch is a correct action.
Distractors:	B	OT-114 allows the SRO to determine if pulling cycling the SRV control switch is the correct action. This decision is made on the status of the SRV. If the SRV has failed full open then the SRO should cycle the control switch because there is not a chance that conditions can get worse only better by cycling the switch and having the SRV go closed.
	C	Plausible if the candidate does not understand how the pressure set section of EHC functions to control RPV pressure and believes that RPV pressure will not lower.
	D	Plausible if the candidate does not understand how the pressure set section of EHC functions to control RPV pressure and believes that RPV pressure will not lower. OT-114 allows the SRO to determine if pulling cycling the SRV control switch is the correct action. This decision is made on the status of the SRV. If the SRV has failed full open then the SRO should cycle the control switch because there is not a chance that conditions can get worse only better by cycling the switch and having the SRV go closed.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

Question 14 Info																																							
Question Type:	Multiple Choice																																						
Status:	Active																																						
Always select on test?	No																																						
Authorized for practice?	No																																						
Points:	1.00																																						
Time to Complete:	0																																						
Difficulty:	1.00																																						
System ID:	1110320																																						
User-Defined ID:	ILT-5001DL-6E-001																																						
Cross Reference Number:	241000 2.1.7																																						
Topic:	ILT-5001DL-7e-002-SRO SRV Fails open / EHC response																																						
Num Field 1:	2015																																						
Num Field 2:	N/A																																						
Text Field:	A																																						
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Psychometrics																																							
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K/A Statement:	2.1.7 - Ability to evaluate plant performance and make operational judgements based on operating characteristics, reactor behavior, and instrument interpretation.																																						
REQUIRED MATERIALS:	None																																						
Notes and Comments:	None																																						

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

15

ID: 1140430

Points: 1.00

- Unit 2 is at 100% power
- RPV level is +23 inches and stable
- Digital Feedwater Control System (DFCS) is in three element control

Based on the above and following any automatic plant response, which of the following describes the operator response to a loss of all feedwater flow signals to the DFCS?

- A. Insert GP-9-2 rods to maintain RFP suction pressure above 340 psig per OT-100, "Reactor Low Level".
- B. Trip a RFP to maintain RPV level below the Main Steam Lines per OT-110.
- C. Insert control rods to exit Region 2 of the Power-Flow map per OT-112, "Unexpected Unexplained Change in Core Flow".
- D. Adjust recirculation flow to ensure loop jet pump flow mismatch is within Tech Spec limits per OT-112, "Unexpected Unexplained Change in Core Flow".

Answer: C

Answer Explanation		
Choice		Basis or Justification
Correct:	C	The loss of the Total Feedwater input will cause a 30% reactor recirculation system runback transient. OT-112 is required to be entered due to the recirc runback resulting in reduced reactor core flow. One of the followup actions of OT-112 is to insert rods to exit Region 2.
Distractors:	A	Maintaining Reactor Feed Pump (RFP) suction pressure above 340 psig by limiting Reactor power in accordance with GP-9-2 "Fast Reactor Power Reduction" is a follow-up action out of OT-100 for low RPV water level. At no time will RPV level go low during due to the 30% reactor recirculation runback. Plausible if the candidate does not understand how the feedwater input affects the feedwater control system.
	B	Tripping a RFP could be a follow-up action from procedure OT-110 "Reactor High Level". Reactor level will initially rise during the Reactor Recirculation Pump runback, but the RFPs will respond to maintain RPV level back to normal. If the candidate does not understand that level control automatic swaps to single element, then it is reasonable to assume that with a lower feed flow signal the feed pumps would speed up and RPV level would be above 23 inches.
	D	The loss of feedwater flow signal will cause both Recirc pumps to runback together. Verifying flow mismatch is a step in OT-112 but no adjustment will be needed since both pumps will 30%.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

Question 15 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1140430																																														
User-Defined ID:																																															
Cross Reference Number:	259002 A2.02																																														
Topic:	ILT 5006-6a-007-SRO																																														
Num Field 1:	2015 NRC																																														
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K/A System:	259002 - Reactor Water Level Control System		Importance: RO / SRO 3.3/ 3.4																																												
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REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

16

ID: 1109486

Points: 1.00

Unit 2 Traversing In-Core Probe (TIP) System operation is in progress for an LPRM calibration.

A subsequent Feedwater transient results in the following conditions:

- The Reactor was manually scrammed
- RPV level lowered to -10 inches and is now at +20 inches
- The in-service TIP detector is in the core.

Which of the following is correct for the above conditions?

- A. Continue the TIP trace IAW RE-35-2, "TIP System Operation".
- B. Close the Ball Valve IAW COL GP-8.b, "Groups II and III isolation".
- C. Manually withdraw the TIP detector and close the ball valve IAW SO 7F.7.A-2 "TIP System Isolation in Event of Containment Isolation."
- D. Manually fire the shear valve IAW SO 7F.7.A-2 "TIP System Isolation in Event of Containment Isolation."

Answer: C

Answer Explanation		
Choice	Basis or Justification	
Correct:	C	For a TIP failure to isolate, GP-8.B directs manual isolation IAW SO 7F.7.A-2, which directs manually withdrawing the TIP detector to shield and closing the ball valve. This is recent plant OE. There was a concern about what the correct action was. SO 7F.7.A-2 now clearly lists the order to take the actions attempt to withdraw before firing the shear valve.
Distractors:	A	The TIP detector should automatically withdraw to shield and the ball valve should automatically close at 1-inch RPV level. Plausible if the candidate does not recall the isolation signal or the expected response to an isolation signal. Continuing to insert a TIP with a failed isolation signal is not correct.
	B	GP-8.B will direct verifying the Ball Valve closed but with the detector in the core the Ball Valve cannot be closed. Plausible if the candidate does not understand How the system is configured and believes that the Ball Valve can still be closed.
	D	The shear valve is only fired if the detector can not be retracted and then only if directed by the Shift Manager. Plausible if the candidate does not understand the requirements following an isolation signal.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

Question 16 Info			
Question Type:	Multiple Choice		
Status:	Active		
Always select on test?	No		
Authorized for practice?	No		
Points:	1.00		
Time to Complete:	0		
Difficulty:	1.00		
System ID:	1109486		
User-Defined ID:			
Cross Reference Number:	215001A2.08		
Topic:	ILT-5007F-7d-002-SRO		
Num Field 1:	2015 NRC		
Num Field 2:			
Text Field:			
Comments:	Psychometrics		
	Level of Knowledge	Difficulty	Time Allowance (minutes)
	HIGH		
			RO
			10CRF55.43(b)(5)
	Source Documentation		
	Source:	New Exam item Modified Bank XILT Exam Bank	
	Reference(s):	GP-8.B, SO 7F.7.A-2	
	Learning Objective:	PLOT-5007F-7d	
	K/A System:	215001 Traversing In-Core Probe	Importance: RO / SRO 2.7/ 2.9
	K/A Statement:	A2.08 - Ability to (a) predict the impacts of the following on the TRAVERSING IN-CORE PROBE and (b) based on those prediction, use produces to correct, control, or mitigate the consequences of those abnormal conditions or operations: Failure to retract to shield	
	REQUIRED MATERIALS:	None	
	Notes and Comments:	None	

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

17

ID: 1110029

Points: 1.00

The following plant conditions exist on Unit 3:

- Reactor power is stable at 93% following a transient.
- A failure of the 'A' Reactor Recirculation Pump (RRP) controller resulted in the Unit RO manually locking up the scoop tube.
- 'A' Recirc pump speed is 65%.
- 'B' Recirc pump speed is 82%.
- 'A' jet pump loop flow is 37.80 Mlbm/hr.
- 'B' jet pump loop flow is 49.50 Mlbm/hr.

Based on the above conditions, describe the required Technical Specification actions, if any, and the Technical Specifications bases for those actions.

- A. No action is required at this time.
Core cooling is assured if a LOCA were to occur at these pump speeds.
- B. Immediately trip the 'A' RRP, enter "Single Loop" operations and apply thermal limit penalties within 12 hours.
Core cooling may not be met if a LOCA were to occur during the time when pump speeds are mismatched.
- C. Within 12 hours match loop flows within ≤ 10.25 Mlbm/hr.
This reduces the vibration on the jet pumps with the low flow condition.
- D. Within 24 hours match loop flows within ≤ 5.125 Mlbm/hr.
Core cooling may not be met if a LOCA were to occur during the time when pump speeds are mismatched.

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	Technical Specification (TS) 3.4.1 requires loop flows to match within ≤ 5.125 Mlbm/hr. within 24 hours since total core flow will be greater than 71.75 Mlbm/hr after lowering the B RRP flow to match the A RRP. Per TS bases core cooling may not be met if a LOCA were to occur during the time when pump speeds are mismatched.
Distractors:	A	Incorrect. Action is required by TS 3.4.1 since the RRP loop flows are not matched. Per TS bases core cooling may not be met if a LOCA were to occur during the time when pump speeds are mismatched.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

B	Incorrect. There is no procedural or TS guidance to trip the lower speed pump and intentionally enter single loop operation. Plausible if the Candidate misinterprets TS 3.4.1 guidance if the unit was already in single loop operation.
C	Incorrect. There is no guidance to raise the "A" RRP speed to match loop flows since this is the pump that is locked up and caused the loop flow mismatch in the first place. Also, getting the loop flows within ≤ 10.25 Mlbm/hr is the TS requirement if total core flow was < 71.75 Mlbm/hr. Not the case here. The 12 hour time frame is related to the TS 3.4.1 required limit modifications for single recirculation loop operation. It may be delayed for up to 12 hours after transition from two recirculation loop operation to single recirculation loop operation. Not the case here. Both loop of RRP stay in operation.

Question 17 Info																																											
Question Type:	Multiple Choice																																										
Status:	Active																																										
Always select on test?	No																																										
Authorized for practice?	No																																										
Points:	1.00																																										
Time to Complete:	0																																										
Difficulty:	1.00																																										
System ID:	1110029																																										
User-Defined ID:	A-ILT-5002-8-003																																										
Cross Reference Number:	202002 G2.2.40																																										
Topic:	ILT-5002-14-007-SRO																																										
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K/A Statement:	2.2.40 Ability to apply Technical Specification for a system.																																										
REQUIRED MATERIALS:	Tech.Spec. Section 3.4																																										

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

	Notes and Comments:	None

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

18

ID: 1110187

Points: 1.00

- A fuel bundle is being moved in the Unit 2 fuel pool.
- It is currently on the fuel hoist and moving to a new location in the pool.
- During the move Fuel Pool level lowers to 232 feet and is continuing to lower.

Complete the statements below with respect to a fuel handling accident, and the required action for the lowering Fuel Pool level.

The USFAR ____ (1) ____ release limit may not be maintained for a Fuel Handling Accident.

Based on the above conditions, Technical Specifications requires ____ (2) ____.

- A. (1) iodine
(2) immediately stop moving the fuel bundle, leave the fuel bundle on the hoist until Fuel Pool level is recovered.
- B. (1) iodine
(2) completing the fuel move and suspending all subsequent moves until Fuel Pool level is recovered.
- C. (1) noble gas
(2) immediately stop moving the fuel bundle, leave the fuel bundle on the hoist until Fuel Pool level is recovered.
- D. (1) noble gas
(2) completing the fuel move and suspending all subsequent moves until Fuel Pool level is recovered.

Answer: B

Answer Explanation		
Choice		Basis or Justification
Correct:	B	When Fuel Pool level drops below 232 feet 3 inches Technical Specifications requires "Suspend movement of fuel assemblies in the spent fuel storage pool immediately. The bases goes on to explain that in this case the bundle movement shall continue to a safe position/location.
Distractors:	A	Plausible if the candidate does understand that leaving the bundle suspended is not in a safe location and that the bases requires that the move be completed to put the bundle in a safe location.
	C	Plausible if the candidate is not familiar with the bases for the water in the fuel pool providing a Iodine decontamination factor. Noble gases are not water soluble. Plausible if the candidate does understand that leaving the bundle suspended is not in a safe location and that the bases requires that the move be completed to put the bundle in a safe location.
	D	Plausible if the candidate is not familiar with the bases for the water in the fuel pool providing a Iodine decontamination factor. Noble gases are not water soluble.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

Question 18 Info			
Question Type:	Multiple Choice		
Status:	Active		
Always select on test?	No		
Authorized for practice?	No		
Points:	1.00		
Time to Complete:	0		
Difficulty:	1.00		
System ID:	1110187		
User-Defined ID:			
Cross Reference Number:	233000 2.2.22		
Topic:	ILT-5019-14-001-SRO		
Num Field 1:	2015 NRC		
Num Field 2:			
Text Field:			
Comments:	Psychometrics		
	Level of Knowledge	Difficulty	Time Allowance (minutes)
	HIGH		
			RO
			10CRF55.43(b)(2)
	Source Documentation		
	Source:	<input checked="" type="checkbox"/> New Exam item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
	Reference(s):	Tech Spec 3.7.7 and Bases	
	Learning Objective:	PLOT-5019-14	
	K/A System:	233000 Fuel Pool Cooling and Cleanup	Importance: RO / SRO 4.0/ 4.7
	K/A Statement:	2.2.22 Knowledge of limiting conditions for operations and safety limits.	
	REQUIRED MATERIALS:	Technical Specification section 3.7.7	
	Notes and Comments:	None	

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

19

ID: 1120466

Points: 1.00

A Refuel Outage is in progress on Unit 2. The following conditions exist:

- The 50th fuel bundle from the Core Component Transfer Authorization Sheet (CCTAS) is being lowered into the core.
- All WRNM detectors have at least five (5) fuel bundles adjacent to the detectors.
- WRNM count rate doubles two times as the bundle is lowered into the core.

With respect to the above conditions what action is required per FH-6C, "Core Component Movement - Core Transfers"?

- A. Complete lowering the bundle into the core then continue with the next schedule bundle move.
- B. Complete lowering the fuel bundle into the core, then suspend fuel movements.
- C. Raise the bundle from the core so that it clears the upper grid.
- D. Immediately stop all bundle movement and clear the bridge.

Answer: C

Answer Explanation		
Choice		Basis or Justification
Correct:	C	Procedure FH-6C and ON-124 directs that if count rate doubles two times that the bundle shall be raised above the upper grid.
Distractors:	A	Plausible if the candidate is not familiar with the requirements of FH-6C. If count rate had only doubled one time then placing the bundle would be the correct answer.
	B	Plausible if the candidate is not familiar with the requirements of FH-6C. If count rate had only doubled one time then placing the bundle would be the correct answer.
	D	Plausible if the candidate is not familiar with the requirements of FH-6C or wrongly believes that the conditions on the bridge are unsafe .

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

Question 19 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
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Difficulty:	0.00																																														
System ID:	1120466																																														
User-Defined ID:	NLSRO-0763-3-002																																														
Cross Reference Number:	234000 K3.03/2.1.41																																														
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K/A System:	2.1 Conduct of Operations		Importance: RO / SRO 2.8/ 3.7																																												
K/A Statement:	2.1.41 - Knowledge of the refueling process.																																														
REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

20

ID: 1109527

Points: 1.00

Unit 3 is operating at 100% when a break occurs in the instrument air supply line to AO-9120A (a valve associated with the A4 feedwater heater).

Using P&ID M-304 sheet 2, determine what action is required.

- A. Return Reactor power to the pre-transient level per OT-104, "Positive Reactivity Insertion".
- B. Reduce Reactor power 10% below the pre-transient level per OT-104, "Positive Reactivity insertion".
- C. Place the Backup Air compressor in-service per ON-119, "Loss of Instrument Air".
- D. Cross tie the Unit 2 and Unit 3 air headers per ON-119, "Loss of Instrument Air".

Answer: A

Answer Explanation		
Choice		Basis or Justification
Correct:	A	The loss of air causes the AO-9120A to fail closed as determined on print M-304 Sheet 2. The closed valve will isolate extraction steam to the A4 feedwater heater thereby lowering feedwater temperature and raising reactor power. OT-104 "Positive Reactivity Insertion" must be entered. OT-104 states : IF only one feedwater heater is out of service/isolated after the transient AND all 5th stage feedwater heaters are in service, THEN INSERT control rods as necessary to maintain APRM indicated power within the analyzed region of the Power Flow Map AND less than or equal to the pre-transient power level.
Distractors:	B	Incorrect. OT-104 states to MAINTAIN power at least 10% below the initial level IF the cause of the positive reactivity insertion CANNOT be determined. Not the case here.
	C	ON-119 "Loss of Instrument Air" would only be entered if the unit instrument air pressure/supply were threatened (low system pressure). A single instrument air line break is not beyond the capacity of the system and is not enough to effect the overall instrument air system pressure and therefore entry into ON-119 is not required here.
	D	ON-119 "Loss of Instrument Air" would only be entered if the unit instrument air pressure/supply were threatened (low system pressure). A single instrument air line break is not beyond the capacity of the system and is not enough to effect the overall instrument air system pressure and therefore entry into ON-119 is not required here.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

Question 20 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	1109527																																														
User-Defined ID:																																															
Cross Reference Number:	2.2.15																																														
Topic:	ILT1540-7-001-SRO-OT-104																																														
Num Field 1:	2015 NRC																																														
Num Field 2:																																															
Text Field:																																															
Comments:	<table border="1"> <thead> <tr> <th colspan="4">Psychometrics</th> </tr> <tr> <th>Level of Knowledge</th> <th>Difficulty</th> <th>Time Allowance (minutes)</th> <th>RO</th> </tr> </thead> <tbody> <tr> <td>HIGH</td> <td></td> <td></td> <td>10CRF55.43(b)(5)</td> </tr> <tr> <th colspan="4">Source Documentation</th> </tr> <tr> <td>Source:</td> <td colspan="3"> <input checked="" type="checkbox"/> New Exam item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank </td> </tr> <tr> <td>Reference(s):</td> <td colspan="3">OT-104</td> </tr> <tr> <td>Learning Objective:</td> <td colspan="3">PLOT-1540-7</td> </tr> <tr> <td>K/A System:</td> <td>2.2 Equipment Control</td> <td colspan="2">Importance: RO / SRO 3.9/ 4.3</td> </tr> <tr> <td>K/A Statement:</td> <td colspan="3">2.2.15 - Ability to determine the expected plant configuration using design and configuration control documentation, such as drawings, line-ups, tag-outs, etc.</td> </tr> <tr> <td>REQUIRED MATERIALS:</td> <td colspan="3">M-304 Sheet 2</td> </tr> <tr> <td>Notes and Comments:</td> <td colspan="3">None</td> </tr> </tbody> </table>			Psychometrics				Level of Knowledge	Difficulty	Time Allowance (minutes)	RO	HIGH			10CRF55.43(b)(5)	Source Documentation				Source:	<input checked="" type="checkbox"/> New Exam item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank			Reference(s):	OT-104			Learning Objective:	PLOT-1540-7			K/A System:	2.2 Equipment Control	Importance: RO / SRO 3.9/ 4.3		K/A Statement:	2.2.15 - Ability to determine the expected plant configuration using design and configuration control documentation, such as drawings, line-ups, tag-outs, etc.			REQUIRED MATERIALS:	M-304 Sheet 2			Notes and Comments:	None		
Psychometrics																																															
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO																																												
HIGH			10CRF55.43(b)(5)																																												
Source Documentation																																															
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Reference(s):	OT-104																																														
Learning Objective:	PLOT-1540-7																																														
K/A System:	2.2 Equipment Control	Importance: RO / SRO 3.9/ 4.3																																													
K/A Statement:	2.2.15 - Ability to determine the expected plant configuration using design and configuration control documentation, such as drawings, line-ups, tag-outs, etc.																																														
REQUIRED MATERIALS:	M-304 Sheet 2																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

21

ID: 1140432

Points: 1.00

The following accident conditions exist on Unit 3:

- Drywell oxygen is 6.0%
- Drywell hydrogen is 7.2%
- Torus oxygen is 1.1%
- Torus hydrogen is 0.2%
- Adequate core cooling is assured

TABLE PC/G-1
DW COMBUSTIBLE GAS CONTROL

		DRYWELL OXYGEN LEVEL			
		BELOW 5%	AT LEAST 5% OR UNKNOWN		
			TORUS HYDROGEN LEVEL		
			BELOW 0.5%	0.5% TO 5.99%	AT LEAST 6% OR UNKNOWN
DRYWELL HYDROGEN LEVEL	BELOW 0.5%	NO ACTION REQUIRED	NO ACTION REQUIRED	DW/G-2	DW/G-3
	0.5% to 5.99%	DW/G-1	DW/G-2	DW/G-2	DW/G-3
	AT LEAST 6% OR UNKNOWN	DW/G-1	DW/G-3	DW/G-3	DW/G-3

Which one of the following describes the requirements for venting the drywell under these conditions?

- Do NOT vent the drywell.
- Vent until offsite release rates reach the ODCM limits.
- Vent until offsite release rates reach the GE limits.
- Vent exceeding offsite release rate limits, if necessary.

Answer: D

Answer Explanation		
Correct:	D	Since the deflagration limit of containment has been exceeded the correct action is to vent regardless of limits to protect containment. DW/G-3 is the correct strategy to employ.
Distractors:	A	When conditions are plotted on the Combustible Gas Control table, the candidate should select DW/G-3. If they plot incorrectly or do not understand strategy DW/G-3 then they could determine that venting is not allowed.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

	B	When conditions are plotted on the Combustible Gas Control table, the candidate should select DW/G-3. If they plot incorrectly or do not understand strategy DW/G-3 then they could determine that venting is allowed until the ODCM limit is reached.
	C	When conditions are plotted on the Combustible Gas Control table, the candidate should select DW/G-3. If they plot incorrectly or do not understand strategy DW/G-3 then they could determine that venting is allowed until the GE limit is reached.

Question 21 Info																																																							
Question Type:	Multiple Choice																																																						
Status:	Active																																																						
Always select on test?	No																																																						
Authorized for practice?	No																																																						
Points:	1.00																																																						
Time to Complete:	3																																																						
Difficulty:	2.00																																																						
System ID:	1140432																																																						
User-Defined ID:	ILT-2102-7B-004																																																						
Cross Reference Number:	G.2.3 G.2.3.11																																																						
Topic:	ILT-2102-7B-005																																																						
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Text Field:	NRC-09-1																																																						
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Learning Objective:	PLOT-2102-7b																																																						
K/A System:	2.3 Radiation Control		Importance: RO / SRO 3.8/ 4.3																																																				
K/A Statement:	2.3.11 - Ability to control radiation releases																																																						
REQUIRED MATERIALS:	None																																																						
Notes and Comments:	None																																																						

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

22

ID: 1109652

Points: 1.00

A high power ATWS has occurred on Unit 2. The following conditions exist:

- MSIVs are closed
- The "C" SRV is CYCLING
- RPV pressure is rapidly fluctuating between 1130 and 1140 psig
- Reactor power is fluctuating between 55% and 65%
- Instrument nitrogen has not been restored

Based on the above conditions, which of the below statements is the highest priority action?

- A. Stabilize RPV pressure at 1050 psig to minimize Torus heatup using procedure RRC 1G.2-2 "Relief Valve Manual Operation During a Plant Event".
- B. Reduce RPV pressure below 925 psig to prevent SRV tailpipe failure using procedure RRC 1G.2-2 "Relief Valve Manual Operation During a Plant Event".
- C. Restore Instrument Nitrogen using RRC 16.1-2 "Bypass and Restore Instrument Nitrogen Supply to the Drywell", then stabilize RPV pressure at 1050 psig to minimize Torus heatup.
- D. Restore Instrument Nitrogen using RRC 16.1-2 "Bypass and Restore Instrument Nitrogen Supply to the Drywell", then reduce RPV pressure below 950 psig to prevent SRV tailpipe failure.

Answer: B

Answer Explanation		
Choice		Basis or Justification
Correct:	B	The information given in the stem of the question indicates that the "C" SRV is cycling. T-101 bases states; "Cycling SRVs pose several potential challenges to plant operation for the following reasons. One is the significant dynamic load imposed on the RPV, SRV tailpipes and supporting structures, and the Primary Containment". T-101 directs that if there is a cycling SRV to reduce RPV pressure to 950 psig regardless of the Status on Instrument Nitrogen.
Distractors:	A	Minimizing Torus heatup in not a bases step for stabilizing RPV pressure. If a SRV is not cycling then Instrument Nitrogen is restored before pressure control is established. Plausible if the candidate does not diagnosis the cycling SRV and implements the standard pressure control step to stabilize pressure below 1050 psig.
	C	Minimizing Torus heatup in not a bases step for stabilizing RPV pressure. Plausible if the candidate does not diagnosis the cycling SRV and implements the standard pressure control step os stabilize pressure below 1050 psig.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

	D	Plausible if the candidate does not recall that establishing pressure control when an SRV is cycling has priority over restoring Instrument Nitrogen.
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Question 22 Info			
Question Type:	Multiple Choice		
Status:	Active		
Always select on test?	No		
Authorized for practice?	No		
Points:	1.00		
Time to Complete:	0		
Difficulty:	1.00		
System ID:	1109652		
User-Defined ID:			
Cross Reference Number:	2.4.18		
Topic:	ILT-2101-6-004-SRO		
Num Field 1:	2015 NRC		
Num Field 2:			
Text Field:			
Comments:	Psychometrics		
	Level of Knowledge	Difficulty	Time Allowance (minutes)
	HIGH		
			RO
			10CRF55.43(b)(5)
	Source Documentation		
	Source:	XNew Exam item Previous NRC Exam Modified Bank Other Exam Bank ILT Exam Bank	
	Reference(s):	T-101 BASES	
	Learning Objective:	PLOT-2101-6	
	K/A System:	2.4 Emergency Procedures / Plan	Importance: RO / SRO 3.3/ 4.0
	K/A Statement:	2.4.18 Knowledge of the specific bases for EOPs	
	REQUIRED MATERIALS:	None	
	Notes and Comments:	None	

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

23

ID: 1140447

Points: 1.00

Given the following:

- A Site Area Emergency has been declared at Peach Bottom
- The Technical Support Center (TSC) and Emergency Operations Facility (EOF) are activated with command and control functions transferred accordingly
- An emergency exposure of greater than 5 Rem TEDE is required to terminate a radioactive release

According to EP-AA-113 "Personnel Protective Actions", who must authorize the emergency exposure?

- A. The Shift Manager in the Control Room
- B. The Station Emergency Director in the TSC
- C. Radiation Protection Manager (RPM) in the TSC
- D. The Corporate Emergency Director in the EOF

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	Per EP-AA-1007 (among others), emergency exposure controls are nondelegable responsibilities that remain with the Station Emergency Director. Since the TSC is activated, the Shift Manager (Shift Emergency Director) has transferred this responsibility to the Station Emergency Director. Per EP-AA-113, the Station Emergency Director (TSC) authorizes emergency exposures greater than 5 Rem TEDE.
Distractors:	A	Since the TSC is activated, the Shift Manager (Shift Emergency Director) has transferred this responsibility to the Station Emergency Director.
	C	The RPM has input into the radiation exposure controls post accident, the Station Emergency Director will maintain the responsibility to approve the emergency exposure.
	D	Per EP-AA-1007 (among others), emergency exposure controls are nondelegable responsibilities that remain with the Station Emergency Director.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

Question 23 Info																															
Question Type:	Multiple Choice																														
Status:	Active																														
Always select on test?	No																														
Authorized for practice?	No																														
Points:	1.00																														
Time to Complete:	0																														
Difficulty:	0.00																														
System ID:	1140447																														
User-Defined ID:																															
Cross Reference Number:	2.3.13																														
Topic:	ILT-G5-2-003																														
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REQUIRED MATERIALS:	None																														
Notes and Comments:	None																														

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

24

ID: 994196

Points: 1.00

A plant start-up and heat-up is in progress on Unit 3 with both recirc pumps in service. Reactor power is 5%. The following data has been collected:

	RPV DRAIN TEMP	"A" RECIRC LOOP TEMP	"B" RECIRC LOOP TEMP
0915	221 degrees	250 degrees	252 degrees
0930	250 degrees	275 degrees	278 degrees
0945	275 degrees	305 degrees	308 degrees
1000	310 degrees	335 degrees	337 degrees
1015	319 degrees	349 degrees	364 degrees

Based on the above data, which one of the following describes the required actions?

- A. Additional control rods may be withdrawn in accordance with the NF-AB-720 approved sequence. Rods must be moved by single notch withdrawal.
- B. Insert control rods in the reverse order of the NF-AB-720 approved sequence and take Technical Specification actions.
- C. Additional control rods may be withdrawn in accordance with the NF-AB-720 approved sequence. Rods can be withdrawn using continuous withdraw.
- D. Insert control rods in accordance with GP-9-3, "Fast Reactor Power Reduction".

Answer: B

Answer Explanation		
Choice	Basis or Justification	
Correct:	B	Heatup rate is in excess of the 100°F/hour TS limit (B Recirc loop delta temperature from 09:15 to 10:15 = 112 F) GP-2 requires the operator to insert control rods in reverse order of the NF-AB-720 approved sequence.
Distractors:	A	It is NOT within the TS limit, and is outside of the administrative heat up rate defined in GP-2. (90°F). Plausible if the candidate does not calculate the values correctly or does not understand the requirements of exceeding the heatup rate.
	C	Heatup rate is not within admin limit. Plausible if the candidate does not calculate the values correctly or does not understand the requirements of exceeding the heatup rate.
	D	While heatup rate is outside the 90°F/hr limit, rods would not be driven in via GP-9-3. Plausible if the candidate does not calculate the values correctly or does not understand the requirements of exceeding the heatup rate.

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

Question 24 Info																																															
Question Type:	Multiple Choice																																														
Status:	Active																																														
Always select on test?	No																																														
Authorized for practice?	No																																														
Points:	1.00																																														
Time to Complete:	0																																														
Difficulty:	1.00																																														
System ID:	994196																																														
User-Defined ID:	A-ILT-1530-4-001																																														
Cross Reference Number:	290002 G 2.1.7/2.1.25																																														
Topic:	ILT-1530-4-002-SRO A plant start-up and heat-up is in progress on Unit 3 with both recirc pumps in																																														
Num Field 1:	2015 NRC																																														
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REQUIRED MATERIALS:	None																																														
Notes and Comments:	None																																														

EXAMINATION ANSWER KEY

2015 NRC SRO rev 1

25

ID: 1140449

Points: 1.00

T-116, "RPV Flooding" Sheet 1 (non-ATWS) was entered due to a transient in Unit 2.

The following conditions exist:

- All RHR pumps are injecting into the RPV
- RPV pressure is currently 90 psig and rising slowly
- Four SRVs indicate open
- Open SRV tailpipe temperatures are 335 degrees F and rising slowly
- Torus level is 14.5 feet and lowering slowly

For these conditions, (1) what is the status of the Main Steam Lines and (2) what action is required?

The Main Steam Lines are __ (1) __. The required action is to __ (2) __.

- A. (1) flooded
(2) close MSIVs and MSL drain valves
- B. (1) flooded
(2) pursue alternate depressurization
- C. (1) NOT flooded
(2) continue injecting with RHR; DO NOT add additional injection sources
- D. (1) NOT flooded
(2) continue injecting with RHR; add additional injection sources

Answer: D

Answer Explanation		
Choice		Basis or Justification
Correct:	D	Per T-116 Sheet 1 Note 41, a combination of indications must be used to determine if the main steam lines are flooded. In this case, there is only one indication that the main steam lines may be flooded (RPV pressure rise). All other indications indicate the main steam lines are not flooded (tail pipes are not subcooled, Torus level is still dropping). Since the Main steam lines are not flooded T-116 directs maximizing injection.
Distractors:	A	Plausible if the candidate fails to recognize that the main steam lines are not flooded based on their evaluation of the conditions. If flooded to the main steam lines one of the actions is to close the MSIVs and MSL drains.
	B	Plausible if the candidate fails to recognize that the main steam lines are not flooded based on their evaluation of the conditions. T-116 has direction to use alternate depressurization if at least 2 SRVs are not open. Plausible if the candidate does not recall the number of SRVs needed before using alternate depressurization .

EXAMINATION ANSWER KEY

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	C	Since the RPV is not flooded to the steam lines more injection is needed it would be wrong to just continue injecting with only RHR when not flooded to the main steam lines yet. Plausible if the candidate does not recall the action to continue injecting with other sources and believes that 40,000 gpm from RHR is enough.
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Question 25 Info			
Question Type:	Multiple Choice		
Status:	Active		
Always select on test?	No		
Authorized for practice?	No		
Points:	1.00		
Time to Complete:	0		
Difficulty:	1.00		
System ID:	1140449		
User-Defined ID:			
Cross Reference Number:	2.4.50		
Topic:	ILT2116-5-001-SRO		
Num Field 1:	2015 NRC		
Num Field 2:			
Text Field:	2009 NRC exam		
Comments:	Psychometrics		
	Level of Knowledge	Difficulty	Time Allowance (minutes)
	HIGH		10CRF55.43(b)(5)
	Source Documentation		
	Source:	New Exam item	Previous NRC Exam
		Modified Bank	Other Exam Bank
		<input checked="" type="checkbox"/> ILT Exam Bank	
	Reference(s):	T-116	
	Learning Objective:	PLOT-1560-11	
	K/A System:	2.4 Emergency Procedures / Plan	Importance: RO / SRO 3.8/ 4.3
	K/A Statement:	2.4.50 Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.	
	REQUIRED MATERIALS:	None	
	Notes and Comments:	None	