1 **ID: 993840** **Points: 1.00**

Given the following conditions:

- The Transfer/Isolation Switch for the 71K Safety Relief Valve (SRV) in the E-22 Bus Room has been placed in "Emergency".
- The red indicating light for that SRV on the HPCI Alternative Shutdown Panel is illuminated.

What does the red light for SRV 71K on the HPCI Alternative Shutdown Panel being lit indicate regarding the status of SRV 71K?

A. The SRV control switch is in OPEN.

B. The SRV tailpipe temperature is high.

C. The SRV has opened on an overpressure condition.

D. The SRV tailpipe acoustic monitor is picking up flow noises.

Answer: A

Answer Explanation

Choice		Basis or Justification
Correct:	A	When control of the SRV is transferred to the HPCI Alternative Shutdown Panel, the light indication for the SRV only indicates the position of the switch.
Distractors :	B	Plausible as a high SRV tailpipe temperature is used to verify an SRV is open. In the control room this would bring up an alarm along with an indication from the acoustic monitor on the control rooms indicating light.
	C	Plausible as if the SRV opened on overpressure, the indicating light in the control room would also light, even though the indicating light is based off of acoustic monitoring
	D	Plausible as the control room indicating light is based off of the acoustic monitoring device.

Question 1 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:	993840
User-Defined ID:	B NRC 2019
Cross Reference Number:	218000K1.05
Topic:	ILT-1555-001 SE-10 Operation of SRV with switch in Emergency
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory	2.75	4	10CRF55. 41(b)(7)

Source Documentation

Source:	☐ New Exam Item ☐ Previous NRC Exam: () ☐ Modified Bank Item ☐ Other Exam Bank: () ☒ ILT Exam Bank		
Reference(s):	SE-10 and Bases.		
Learning Objective:	PLOT-5001G-3		
K/A System:	218000 – Automatic Depressurization System	Importance: RO / SRO	3.9 / 3.9
K/A Statement: K1.05 – **Knowledge of the physical connections and/or cause effect relationships between AUTOMATIC DEPRESSURIZATION SYSTEM and the following:** Remote shutdown system:			
REQUIRED MATERIALS:	**NONE**		
Notes and Comments:			

2 **ID: 2062154** **Points: 1.00**

Unit 2 is in MODE 1 at 35% power

- The OPRM system is in service and operable.
- APRM 3 is inoperable and bypassed.
- APRM 2 develops a critical self test fault
- OPRM 4 spuriously trips.

What is the response of the RPS system, and the reason for this response?

	response of the RPS system	reason for this response
A.	No RPS activation	one vote exists for OPRM HI-HI AND one vote exists for APRM HI-HI / INOP
B.	No RPS activation	one vote exists for APRM self test fault AND one vote exists for APRM HI-HI / INOP
C.	1/2 Scram	one vote exists for OPRM HI-HI AND one vote exists for APRM HI-HI / INOP
D.	1/2 Scram	one vote exists for APRM self test fault AND one vote exists for APRM HI-HI / INOP

Answer: A

Answer Explanation

<<Choice		Basis or Justification
Correct:	A	APRM and OPRM are each providing one vote, however APRM and OPRM are separate voter inputs. There would be no RPS activation under these circumstances.
Distractors:	B	part 1 - correct part 2 - incorrect - APRM 3 is inop, however it is bypassed and therefore does not provide a vote. The APRM 2 self test fault brings in a vote for HI-HI / INOP. Plausible if candidate misunderstands the system
	C	part 1 - incorrect - The APRM and OPRM system do not provide half scrams. Plausible if candidate misunderstands the system part 2 - correct
	D	part 1 - incorrect - The APRM and OPRM system do not provide half scrams. Plausible if candidate misunderstands the system part 2 - incorrect - APRM 3 is inop, however it is bypassed and therefore does not provide a vote. The APRM 2 self test fault brings in a vote for HI-HI / INOP. Plausible if candidate misunderstands the system

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:	2062154
User-Defined ID:	B NRC 2019
Cross Reference Number:	215005K1.01
Topic:	ILT-5060-5a-001 OPRM relation with RPS
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

COPY of LORT Q# 2033788

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High			10CRF55.41(b)(6)

Source Documentation		
Source:	New Exam item Modified Bank ILT Exam Bank	Previous NRC Exam X Other Exam Bank (LORT Q# 2033788)
Reference(s):	M-1-S-34, ARC 211 A-3	
Learning Objective:	PLOT-5060-5	
K/A System:	215005 - Average Power Range Monitor / Local Power Range Monitor System	Importance: RO / SRO 3.1 / 3.1
K/A Statement:	K1.01 - **Knowledge of the physical connections and/or cause effect relationships between AVERAGE POWER RANGE MONITOR/LOCAL POWER RANGE MONITOR SYSTEM and the following:** RPS	
REQUIRED MATERIALS:	**None**	
Notes and Comments:	None	

NOTE:

3 **ID: 1149368** **Points: 1.00**

The following conditions exist during a LOOP:

- The E-1 and E-2 Emergency Diesel Generators (EDGs) failed to start
- No back-feed operations have been completed
- Unit 2 RPV level is -200 inches and lowering slowly
- A T-112 emergency blowdown is in progress

Based on these conditions, which Core Spray pump(s) will be available to line up and inject to the Unit 2 reactor vessel when the reactor is depressurized?

A. 2C ONLY

B. 2D ONLY

C. 2C and 2D ONLY

D. NONE

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	Only the "2D" pump in the "B" loop of Core Spray will be available because the "A" and "B" pumps have lost power, and the "A" loop inboard injection valve will be closed and de-energized due to loss of the E-12 bus.
Distracters:	A	Only the "2D" pump in the "B" loop of Core Spray will be available because the "A" and "B" pumps have lost power, and the "A" loop inboard injection valve will be closed and de-energized due to loss of the E-12 bus, leaving the "2C" pump without a flowpath to the reactor. Plausible as the candidate may believe the "B" loop inboard injection valve lost power vice the "A" loop.
	C	Only the "2D" pump in the "B" loop of Core Spray will be available because the "A" and "B" pumps have lost power, and the "A" loop inboard injection valve will be closed and de-energized due to loss of the E-12 bus, leaving the "2C" pump without a flowpath to the reactor. Plausible if candidate believes no injection valves lost power due to the loss of the diesels since both pumps 2C and 2D would have power.
	D	The candidate could select this if they incorrectly believe both injection paths are rendered unavailable due to power supplies.

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:	1149368
User-Defined ID:	B NRC 2019
Cross Reference Number:	209001 K2.02
Topic:	ILT-5014-2b-002
Num Field 1:	
Num Field 2:	A CERT
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
HIGH	2.75	4	10CRF55. 41(b)(8)

Source Documentation

Source:	☐ New Exam Item ☐ Previous NRC Exam: () ☒ Modified Bank Item (995180) ☐ Other Exam Bank: () ☐ ILT Exam Bank		
Reference(s):	SO 14.1.A-2 COL, (A) Item 162, (B) Item 181		
Learning Objective:	PLOT-5014-2b		
K/A System:	209001 – Low Pressure Core Spray System	Importance:	RO / SRO 2.5 / 2.7
K/A Statement: K2.02 – Knowledge of electrical power supplies to the following: Valve power.			
REQUIRED MATERIALS:	**NONE**		
Notes and Comments:			

1 ID: 995180 Points: 1.00

The following conditions exist during a LOOP:

- The E-1 and E-2 Emergency Diesel Generators (EDGs) started and loaded their busses normally.
- The E-3 and E-4 EDGs failed to start.
- No back-feed operations have been completed.
- Unit 2 RPV level is -200 inches and lowering slowly.
- A T-112 emergency blowdown is in progress.

Based on the above conditions, which Core Spray pump(s), if any, will be available to line up and inject to the Unit 2 Reactor Vessel when the reactor is depressurized?

A. 2A ONLY.

B. 2B ONLY

C. 2A and 2B

D. NONE

Answer: A

4 **ID: 2062309** **Points: 1.00**

Which one of the following is the power supply to the 2G WRNM detector?

A. The 2E 24/48 VDC Distribution Panel (2AD045)

B. The 2F 24/48 VDC Distribution Panel (2BD045)

C. RPS MG Set BUS A

D. RPS MG Set BUS B

Answer: A

Answer Explanation		
Correct:	A	The A, C, E, and G WRNM are powered from the 2AD045 24V panel
Distractors:	B	The B, D, F, and H WRNM are powered from the 2BD045 24V panel. This is plausible if the candidate does not know which WRNM is powered from which 24V bus.
	C	Plausible as additional Neutron Monitoring equipment is powered from the RPS MG Set Bus such as the PRNM. The WRNM would also cause a trip on RPS.
	D	Plausible as additional Neutron Monitoring equipment is powered from the RPS MG Set Bus such as the PRNM. The WRNM would also cause a trip on RPS.

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:	2062309
User-Defined ID:	B NRC 2019
Cross Reference Number:	215003K2.01
Topic:	ILT-5060C-2c-003
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b)(6)

Source Documentation

Source:	X New Exam item Modified Bank ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	E-24, M-1-S-70	
Learning Objective:	PLOT-5060C-2	
K/A System:	215003 Intermediate Range Monitor (IRM) System	Importance: RO / SRO 2.5/ 2.7
K/A Statement:	K2.01 - **Knowledge of electrical power supplies to the following: IRM channels/detectors**	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

5 **ID: 994487** **Points: 1.00**

Unit 2 is at 100% power

- The 2B RPS MG Set trips

Which of the following Radiation Monitoring Systems will give a false high radiation alarm as a result of this trip?

A. Main Steam Line Radiation Monitors

B. Main Stack Radiation Monitors

C. Vent Stack Radiation Monitors

D. Control Room Ventilation Radiation Monitors

Answer: A

Answer Explanation

Choice		Basis or Justification
Correct:	A	The B RPS MG Set provides power to the Main Steam Line Rad monitors. On a loss of power the monitors will give a false HI-HI radiation alarm.
Distractors:	B	Plausible as the Main Stack Radiation monitors alarm will also come in from a loss of power however RPS supplies no power to the main stack rad monitors
	C	Plausible as the Vent Stack Radiation monitors alarm will also come in from a loss of power however RPS supplies no power to the vent stack rad monitors
	D	Plausible as the Control Room Ventilation monitors alarm will also come in from a loss of power however RPS supplies no power to the control room vent rad monitors

Question 5 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:	994487
User-Defined ID:	B NRC 2019
Cross Reference Number:	212000K3.01
Topic:	ILT-5060F-3A-001 Power supply to Rad Monitors
Num Field 1:	
Num Field 2:	NA
Text Field:	NA

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CFR55.41(b)(8)

Source Documentation		
Source:	New Exam item Modified Bank **X** ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	M-1-S-70	
Learning Objective:	PLOT - 5060F - 3A	
K/A System:	212000 - Reactor Protection System	Importance; RO / SRO 3.0/ 3.2
K/A Statement:	K3.01- **Knowledge of the effect that a loss or malfunction of the REACTOR PROTECTION SYSTEM will have on following:** Process radiation monitoring	
REQUIRED MATERIALS:	**NONE**	
Notes and Comments:		

6 **ID: 993558** **Points: 1.00**

Unit 2 is at 100% power

- A complete loss of Instrument Air occurs
- The unit scrams
- The outboard MSIVs isolate
- No operator actions have been taken

Which of the following correctly describes the pneumatic supply to the Safety Relief Valves?

A. ADS accumulators ONLY

B. ADS accumulators and CAD tank

C. ADS accumulators, and Instrument Nitrogen system via the Instrument Nitrogen header

D. ADS accumulators, and Instrument Nitrogen by opening AO-2969A & B Instrument Nitrogen Supply to the Drywell Valves from the Control Room

Answer: A

Answer Explanation

Choice		Basis or Justification
Correct:	A	With no instrument air, the AO-2969 valves fail closed, which means no pneumatic supply to SRVs except ADS accumulators. The CAD tank supply has to be manually valved in.
Distractors:	B	Plausible as the CAD tank is a pneumatic supply to the SRVs, however it needs to be manually valved in.
	C	Plausible as these are the normal supplies to the SRVs, however, with no instrument air, the AO-2969 valves fail closed, which means no pneumatic supply to SRVs except ADS accumulators.
	D	Plausible as the AO's isolate on a scram as level lowers below 1 inch, however, with no instrument air, the AO-2969 valves fail closed, which means no pneumatic supply to SRVs except ADS accumulators. Plausible if candidate does not understand that instrument air is the pneumatic for AO-2969A and B and therefore cannot be bypassed

Question 6 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:	993558
User-Defined ID:	B NRC 2019
Cross Reference Number:	300000K3.01
Topic:	ILT-5036-3a-001 loss of IA effect on SRVs and Inst N2
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
HIGH			10CFR55.41(b)(8)

Source Documentation

Source:	New Exam item Modified Bank **X** ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	ON-119, T-101	
Learning Objective:	PLOT-5036-3a	
K/A System:	300000 - Instrument Air System	Importance; RO / SRO 2.7/ 2.9
K/A Statement:	K3.01- **Knowledge of the effect that a loss or malfunction of the INSTRUMENT AIR SYSTEM will have on the following:** Containment air system	
REQUIRED MATERIALS:	**NONE**	
Notes and Comments:		

7 **ID: 993073** **Points: 1.00**

Unit 2 is in a GP-2 startup

- RPV pressure is at 50 psig
- Drywell pressure rises to 3.2 psig

Which one of the following valves will receive an isolation signal?

A. RWCU Outlet Valve (MO-2-12-68).

B. HPCI Vacuum Breaker Isolation Valve (MO-2-23-4245).

C. Recirculation Sample Valves (AO-2-02-039 and AO-2-02-040).

D. Main Steam Isolation Valves (AO-2-01A-80 A-D and AO-2-01A-86 A-D).

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	HPCI Vacuum Breaker Isolation Valve MO-4245 is a Group IVb isolation and occurs with Drywell Pressure > 2 psig and Steam Pressure < 75 psig
Distractors:	A	Plausible as RWCU outlet valve has many isolation signals, however none are drywell pressure of 2 psig
	C	Plausible as the Recirculation Sample Valves have many isolation valve signals, however none are listed in the stem and this system could potentially be the source of Drywell Pressure Rise.
	D	Plausible as the Main Steam Isolation valves have many isolation valve signals, however none are listed in the stem and this system could potentially be the source of Drywell Pressure Rise.

Question 7 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:	993073
User-Defined ID:	B NRC 2019
Cross Reference Number:	223002 K1.04
Topic:	ILT-5007G-1d-001 HPCI Isolation Signal
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b)(7)

Source Documentation

Source:	New Exam item Modified Bank **X** ILT Exam Bank Previous NRC Exam Other Exam Bank	
Reference(s):	COL GP-8.F, COL GP-8.A, COL GP-8.B	
Learning Objective:	PLOT 5007G-1	
K/A System:	**223002 - Primary Containment Isolation System/Nuclear Steam Supply Shut-Off**	Importance: RO / SRO 3.5 / 3.8
K/A Statement:	K1.04 - **Knowledge of the physical connections and/or cause-effect relationships between PRIMARY CONTAINMENT ISOLATION SYSTEM/NUCLEAR STEAM SUPPLY SHUT-OFF and the following:** High pressure coolant injection: Plant-Specific	
REQUIRED MATERIALS:	**None**	
Notes and Comments:	None	

8 **ID: 2086373** **Points: 1.00**

Which one of the following describes the Manual Bus Transfer provided for the 2AD003 Battery Charger.

The Manual Bus Transfer switch can be used to provide an alternate source of power to the ___(1)___ battery when __(2)___ is in Mode 4 or 5

A. (1) Division I
(2) Unit 2

B. (1) Division I
(2) Unit 3

C. (1) Division II
(2) Unit 2

D. (1) Division II
(2) Unit 3

Answer: A

Answer Explanation

Choice		Basis or Justification
Correct:	A	Battery charger 2AD003 battery charger provides power to the division I battery as shown on E-26 sheet 1. Note 10 on E-26 sheet 1 also provides the information that the MBT can only be used when Unit 2 is in Mode 4 or 5. The plant design is that when in Modes 1,2 & 3 charger power must be from that unit that requirement is relaxed in Mode 4 or 5.
Distractors :	B	Plausible if the candidate does not understand that the unit must be in mode 4 or 5 to use the feed and believes that the unit supplying the power is the unit that must be shutdown.
	C	Plausible if the candidate does not know that battery charger 2AD003 is for the Division I battery and thinks it is for Division II
	D	Plausible if the candidate does not know that battery charger 2AD003 is for the Division I battery and thinks it is for Division II Plausible if the candidate does not understand that the unit must be in mode 4 or 5 to use the feed and believes that the unit supplying the power is the unit that must be shutdown.

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:	0.00
System ID:	2086373
User-Defined ID:	B NRC 2019
Cross Reference Number:	263000 K4.01
Topic:	ILT-5057-3a 001. Describe the DC Distribution System design feature(s) and/or interlock(s) and
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b) 7

Source Documentation		
Source:	**X** New Exam item NRC Exam Modified Bank Bank ILT Exam Bank	Previous Other Exam
Reference(s):	E-26 note 10	
Learning Objective:	PLOT-5057 3a	
K/A System:	263000 - DC Electrical Distribution	Importance; RO / SRO 3.1/3.4
K/A Statement:	K401 - Knowledge of DC Electrical Distribution design feature(s) and/or interlocks which provide for the following: Manual/automatic transfer of control	
REQUIRED MATERIALS:	None	
Notes and Comments:	This is a K/A match because knowing that the alternate feed can only be used when the unit is shutdown is a design feature.	

9 **ID: 2062670** **Points: 1.00**

Unit 2 is shutdown with Cooldown in progress

- 2A RHR pump is running in Shutdown Cooling in accordance with SO 10.1.B-2 "Residual Heat Removal System Shutdown Cooling Mode Manual Start"
- 2A RHR is at a flowrate of 4,000 gpm

Which one of the below listed methods should be utilized in order to reduce the cooldown rate?

A. Cycle the 2A HPSW pump off and on.

B. Throttle closed CV-2-10-2677A (2A RHR PUMP DISCH Valve).

C. Close MO-2-10-89A (2A HPSW HX OUTLET Valve) ONLY

D. Close MO-2-10-89A (2A HPSW HX OUTLET Valve) AND Open MO-2-10-89C (2C HPSW HX OUTLET Valve)

Answer: D

Answer Explanation

		Basis or Justification
Correct:	D	Dead heading flow through the Heat Exchanger in service and establishing HPSW flow through an alternate heat exchanger is an acceptable method to maintain cool down rate IAW SO 10.1.b
Distractors:	A	Is plausible because cycling the HPSW pump would slow the cooldown rate, however this would also cause the RHR HX ΔP to go negative and is not an acceptable method of controlling reactor temperature.
	B	Is plausible because throttling CV-2-10-2677A closed is an acceptable way to maintain reactor temperature, however CV-2-10-2677A at the current flow rate of 4,000 gpm would be at its min setting and RHR pump flow below 4,000 gpm is disallowed in SO 10.1.B-2 Precaution 3.5.
	C	Is plausible as dead heading flow through the in service Heat Exchanger is an acceptable method to maintain reactor temperature, but only if a flow path for HPSW is allowed through another Heat Exchanger. This is because there is no min flow protection for the HPSW pumps.

Question 9 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:	2062670
User-Defined ID:	B NRC 2019
Cross Reference Number:	205000K5.03
Topic:	ILT5010-4E-001 2019 NRC
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
HIGH			10CRF55.41(b)(7)

Source Documentation

Source:	**X**New Exam item Modified Bank ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	SO 10.1.B-2	
Learning Objective:	PLOT 5010 4e	
K/A System:	205000 Shutdown Cooling System (RHR Shutdown Cooling Mode)	Importance: RO / SRO 2.8/ 3.1
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:	None	
Notes and Comments:	None	

10 **ID: 1149373** **Points: 1.00**

The E-1 Diesel Generator (DG) full load surveillance test is in progress with the following conditions:

- E-1 is in test and loaded in parallel with the 2 start-up source.
- The test is complete and the PRO is unloading the DG.
- The DG is at 150 kilowatts when a governor problem causes the DG to reverse power.
- No operator action has been taken

Based on the above conditions, which of the following describes the response of the 4 KV distribution system?

The reverse power condition will cause a trip of the _____.

A. E-12 breaker, but the E-1 DG will continue to run

B. E-212 breaker, but the E-1 DG will continue to run

C. E-12 breaker and a trip/lockout of the E-1 DG

D. E-212 breaker and a trip/lockout of the E-1 DG

Answer: A

Answer Explanation		
Choice		Basis or Justification
Correct:	A	Anti-motoring is a Generator Fault, which trips the EDG Output breaker (Relay 132 – AG12) per ARC-001 (00C226A) C-2. While some Gen Faults will trip and lockout the DG, anti-motoring does NOT, so the EDG will continue to run.
Distracters:	B	Anti-motoring affects the EDG, so the EDG output breaker trips to provide protection. Off-site feed is unaffected. Plausible if the candidate believes off-site power will divorce itself from the EDG to protect the EDG.
	C	Anti-motoring is a Generator Fault, which trips the EDG Output breaker (Relay 132 – AG12) per ARC-001 (00C226A) C-2. While some Gen Faults will trip and lockout the DG, anti-motoring does NOT, so the EDG will continue to run. Plausible if the candidate believes ALL Generator Faults will trip and lockout the DG as well as the Output Breaker.
	D	Anti-motoring affects the EDG, so the EDG output breaker trips to provide protection. Off-site feed is unaffected. Anti-motoring is a Generator Fault, which trips the EDG Output breaker (Relay 132 – AG12) per ARC-001 (00C226A) C-2. While some Gen Faults will trip and lockout the DG, anti-motoring does NOT, so the EDG will continue to run. Plausible if the candidate believes ALL Generator Faults will trip and lockout the DG as well as the Output Breaker.

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:	1149373
User-Defined ID:	B NRC 2019
Cross Reference Number:	264000 K5.05
Topic:	ILT 5052-4e-004 A CERT
Num Field 1:	
Num Field 2:	A CERT
Text Field:	

Comments:

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
HIGH			10CRF55. 41(b)(8)

Source Documentation

Source:	☐ New Exam Item ☐ Previous NRC Exam: () ☐ Modified Bank Item ☐ Other Exam Bank: () ☒ ILT Exam Bank	
Referenc e(s):	ARC-001 C-2	
Learning Objective :	PLOT-5052-4e	
K/A System:	264000 – Emergency Generators (Diesel/Jet)	Importance: RO / SRO 3.4 / 3.4
K/A Statement: K5.05 – Knowledge of the operational implications of the following concepts as they apply to Emergency Generators (Diesel/Jet): Paralleling A.C. power sources.		
REQUIRED MATERIALS:	**NONE**	
Notes and Comments:		

11 **ID: 994085** **Points: 1.00**

Unit 3 is operating at 100% power when the 3A RPS Bus develops a fault.

Based on this event, what is the automatic response of Standby Gas Treatment (SGTS)?

SGTS ___(1)___ will START and the ___(2)___ Filter inlet / outlet dampers will OPEN.

A. (1) B Fan
(2) A Train

B. (1) C Fan
(2) B Train

C. (1) B Fan
(2) B Train

D. (1) C Fan
(2) A Train

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	This is the correct response for a loss of the 3A RPS Bus
Distracters:	A	Plausible because the proper train is selected, however the wrong fan is stated to start
	B	Plausible because the proper fan is selected, however the wrong train is stated to align
	C	Plausible as this is the proper response to a swap of the 3B RPS

Question 11 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	1.00
System ID:	994085
User-Defined ID:	B NRC 2019
Cross Reference Number:	261000K6.05
Topic:	ILT-5009A-7d-003 transfer 3A RPS to alternate
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55. 41(b)(7)

Source Documentation

Source:	☐ New Exam Item ☐ Previous NRC Exam: () ☐ Modified Bank Item ☐ Other Exam Bank: () ☒ ILT Exam Bank		
Referenc e(s):	GP-8.C		
Learning Objective :	PLOT-5009A-7d		
K/A System:	261000 - Standby Gas Treatment System	Importance:	RO / SRO 3.1 / 3.2

K/A Statement:
K6.05 – Knowledge of the effect that a loss or malfunction of the following will have on the Standby Gas Treatment System: Reactor protection system: Plant-Specific

REQUIRED MATERIALS:	**NONE**
Notes and Comments:	

12 **ID: 994248** **Points: 1.00**

- Unit 3 was operating at 100% power.
- Fuel Zone level transmitter LT-73C failed upscale.
- Actual reactor level subsequently lowered to -172 inches.

What would be the impact on RPV level indication and RHR initiations from RPV level?

As level lowers to -100 inches RPV level, LR-110A blue pen input would __(1)__ **AND** at -172 inches RHR initiations __(2)__ be impacted.

A. (1) swap (2) would

B. (1) swap (2) would NOT

C. (1) NOT swap (2) would

D. (1) NOT swap (2) would NOT

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	Blue pen input swaps from LT-72 to LT-73 when LT-72 senses -100 inches RPV level (indications would go high). ECCS -160 inches inputs continue to be taken from LT-72.
Distractors:	A	No impact to ECCS. Triple low level -160 inches inputs would continue to be taken from LT-72. Plausible if candidate misunderstands the indication swap does not affect the instruments that provide the initiation signal.
	C	Blue pen input swaps from LT-72 to LT-73 when LT-72 senses -100 inches RPV level. Plausible if candidate misunderstands how the swap at indications occurs. No impact to ECCS. Triple low level -160 inches inputs would continue to be taken from LT-72. Plausible if candidate misunderstands the indication swap does not affect the instruments that provide the initiation signal.
	D	Blue pen input swaps from LT-72 to LT-73 when LT-72 senses -100 inches RPV level. Plausible if candidate misunderstands how the swap at indications occurs.

Question 12 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	2.00
System ID:	994248
User-Defined ID:	B NRC 2019
Cross Reference Number:	203000 K6.09
Topic:	A-ILT-5002B-3D-002 Unit 2 was operating at 100% power. Fuel Zone level transmitter LT-73C failed up
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b)(7)

Source Documentation

Source:	New Exam item Modified Bank **X** ILT Exam Bank (994248)	Previous NRC Exam Other Exam Bank
Reference(s):	PLOT-5002B	
Learning Objective:	PLOT-5002B-3d	
K/A System:	203000 - RHR/LPCI Injection Mode (Plant Specific)	Importance: RO / SRO 3.4/ 3.4
K/A Statement:	**K6.09 - Knowledge of the effect that a loss or malfunction of the following will have on the RHR/LPCI: INJECTION MODE (PLANT SPECIFIC) :** Nuclear boiler instrumentation	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

13 **ID: 1588479** **Points: 1.00**

Unit 2 is operating at 100% power when the Reactor Water Cleanup system inadvertently isolates.

Which one of the following describes:

(1) the effect on Reactor Building Closed Cooling Water (RBCCW) temperature control
AND
(2) the automatic system response OR operator action needed to return temperature to the pre-transient value

A. (1) remain at approximately the pre-transient value
(2) Service Water flow through the heat exchanger is automatically adjusted

B. (1) remain at approximately the pre-transient value
(2) RBCCW flow through the heat exchanger is automatically adjusted

C. (1) lower
(2) RBCCW temperature is raised by manually adjusting Service Water flow through the heat exchangers

D. (1) lower
(2) RBCCW temperature is raised by manually adjusting RBCCW flow through the heat exchangers

Answer: C

Answer Explanation

Choice		Basis or Justification
Correct:	C	RBCCW temperature control is adjusted manually. With lower heat load due to isolation of RWCU, RBCCW temperature lowers. RBCCW temperature is raised by adjusting Service Water flow through the heat exchanger (throttled), not RBCCW flow (valves full open).
Distracters:	A	RBCCW temperature control is adjusted manually. Plausible because other plant systems such as ASD and Stator Water Cooling for example have automatic temperature control.
	B	RBCCW temperature control is adjusted manually. Plausible because other plant systems such as ASD and Stator Water Cooling for example have automatic temperature control.
	D	RBCCW temperature is raised by adjusting Service Water flow through the heat exchanger (throttled), not RBCCW flow (valves full open). Plausible because throttling RBCCW flow would also work, but is not in accordance with procedure.

Question 13 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	3.00
System ID:	1588479
User-Defined ID:	B NRC 2019
Cross Reference Number:	400000 A1.01
Topic:	Temperature control on loss of RWCU
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

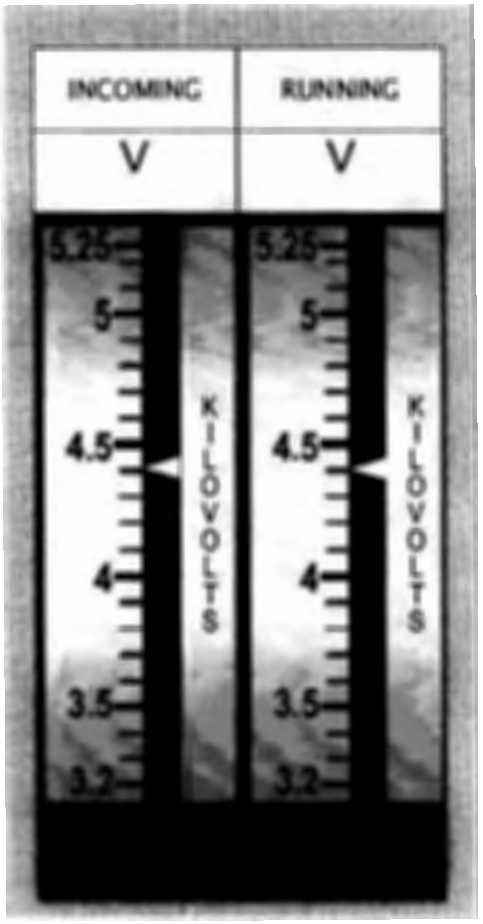
Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
HIGH			10CFR55.41(b)(4)

Source Documentation		
Source:	**X** New Exam item Modified Bank ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	M-316, SO 35.1.A-2	
Learning Objective:	PLOT-5035 5a	
K/A System:	400000 Component Cooling Water	Importance; RO 2.8
K/A Statement:	A1.01 - Ability to predict and / or monitor changes in parameters associated with operating the CCWS controls including: CCW flow rate	
REQUIRED MATERIALS:	**NONE**	
Notes and Comments:	none	

14 **ID: 2084391** **Points: 1.00**

The E-1 Diesel Generator is supplying the E-12 Bus. The PRO has been directed to parallel the E-12 bus with the #2 S/U Emergency Bus.

Given the below indication of Incoming and Running voltages the PRO must __(1)____ Running voltage using the __(2)__ control switch.



A. (1) lower
(2) Governor

B. (1) lower
(2) Auto Volt Reg

C. (1) raise
(2) Governor

D. (1) raise
(2) Auto Volt Reg

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	SO 52A.1.B provides the guidance to raise Diesel Generator running voltage 50 to 100 volts
Distractors:	A	Plausible if the candidate believes that incoming voltage should be higher than running. This is true when transferring load to the D/G from the Startup Emergency bus. Plausible because the Governor control switch is used to adjust speed for paralleling.
	B	Plausible if the candidate believes that incoming voltage should be higher than running. This is true when transferring load to the D/G from the Startup Emergency bus.
	C	Plausible because the Governor control switch is used to adjust speed for paralleling.

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:	2084391
User-Defined ID:	B NRC 2019
Cross Reference Number:	262001A103
Topic:	ILT - 5054 11- 001 . Given a set of conditions evaluate plant performance and make operational
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High			10CRF55.41(b) 7

Source Documentation			
Source:	X New Exam item Previous NRC Exam Modified Bank Exam Bank ILT Exam Bank		Other
Reference(s):	SO 52A.1.B		
Learning Objective:	PLOT - 5054 11		
K/A System:	262001 - AC Electrical Distribution	Importance; RO / SRO	2.9
K/A Statement:	A103 - Ability to predict and/or monitor changes in parameters associated with operating the AC Electrical Distribution controls including: Bus voltage		
REQUIRED MATERIALS:	None		
Notes and Comments:	None		

15 **ID: 2085328** **Points: 1.00**

Unit 2 has scrammed, the following conditions exist:

- The "C" RFP Discharge Bypass Valve (AO-8091) is controlling RPV level at +23 inches in automatic control.
- The air supply to AO-8091 is lost.

As a result of this condition, the Digital Feedwater Control signal to AO-8091 will __(1)___ and the operator will enter and execute ___(2)___

A. (1) rise (to open the valve)
(2) ON-119 "Loss of Instrument Air"

B. (1) rise (to open the valve)
(2) OT-100 "Low Reactor Water Level"

C. (1) lower (to close the valve)
(2) ON-119 "Loss of Instrument Air"

D. (1) lower (to close the valve)
(2) OT-110 "Reactor High Level"

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	Loss of instrument Air to AO-8091 causes the control valve to fail open. This would cause RPV level to rise. Entering OT-110 would be proper for these conditions.
Distractors:	A	Plausible if the candidate believes that AO-8091 fails closed. Plausible if the candidate believes since the malfunction is caused by a loss of instrument air, ON-119 should be entered. However ON-119 is a loss of all instrument air and not just to a component. It can however be used as guidance on how the loss of air will affect air operated valves
	B	Plausible if the candidate believes that AO-8091 fails closed. OT-100 is plausible because if the AO-8091 fails closed the level would be lowering.
	C	Plausible if the candidate believes since the malfunction is caused by a loss of instrument air, ON-119 should be entered. However ON-119 is a loss of all instrument air and not just to a component. It can however be used as guidance on how the loss of air will affect air operated valves.

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:	2085328
User-Defined ID:	B NRC 2019
Cross Reference Number:	259002A2.05
Topic:	ILT - 5006 10e-001 Given a set of conditions (a) predict the impacts of the following on the Feed
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High			10CRF55.41(b) 7

Source Documentation

Source:	X New Exam item Previous NRC Exam Modified Bank Other Exam Bank ILT Exam Bank	
Reference(s):	ON-119	
Learning Objective:	PLOT - 5006 10e	
K/A System:	259002 - Reactor Water Level Control	Importance; RO / SRO 3.2
K/A Statement:	A2.05 - Ability to (a) predict the impacts of the following on the REACTOR WATER CONTROL SYSTEM; and (b) based on those predictions, use procedures to correct, control or mitigate the consequences of those abnormal conditions or operations: Loss of applicable plant air systems	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

16 **ID: 994780** **Points: 1.00**

An ATWS has occurred on Unit 2

The Unit Reactor Operator initiated the 'B' Standby Liquid Control (SBLC) System using RRC 11.1-2 "SBLC System Initiation During a Plant Event".

The following conditions exist:

- RPV pressure is 1020 psig
- SBLC discharge pressure is 1400 psig

Which statement below correctly states the status of SBLC and the required action, if any?

A. SBLC is injecting at full flow

B. SBLC is injecting at reduced flow; initiate System 'A' from the Control Room

C. SBLC is NOT injecting; initiate System 'A' from the Control Room

D. SBLC is NOT injecting; direct an Equipment Operator to locally start the 'A' SBLC pump

Answer: C

Answer Explanation		
Correct:	C	Based on the given conditions (1400 psig pump discharge pressure), SBLC is not injecting as the squib injection valves have failed to fire. Per RRC 11.1-2 and the supporting system operating procedure (SO 11.1.B-2), the operator is directed to verify SBLC is injecting and, if not, to start the other SBLC pump.
Distractors:	A	SBLC is not injecting. Plausible if applicant does not recognize 1400 psig pump discharge pressure as abnormal.
	B	SBLC is not injecting. Plausible if applicant recognizes 1400 psig pump discharge pressure as abnormal, but does not understand SBLC system design and believes the system is injecting at reduced flow.
	D	SBLC is not injecting but the 'A' SBLC system should be started to comply with the procedure. Plausible if applicant misunderstands that a local start will start the 'A' SBLC pump, but will not fire the squib valves that have failed to fire given the conditions.

Question 16 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:	994780
User-Defined ID:	B NRC 2019
Cross Reference Number:	211000 A2.04
Topic:	ILT-5011-9J-001 During an ATWS condition, the URO initiated the "B" Standby Liquid Control (SBLC)
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

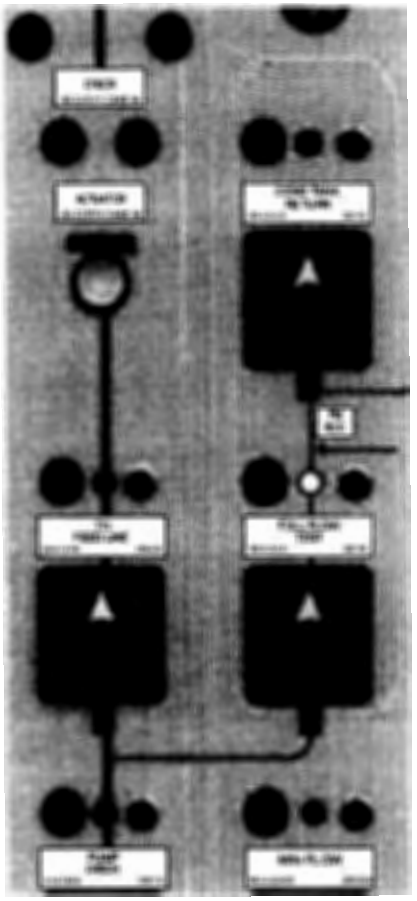
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
HIGH			10CRF55.41(b) (7)

Source Documentation

Source:	New Exam item Modified Bank **X** ILT Exam Bank (994780)	Previous NRC Exam Other Exam Bank
Reference(s):	RRC 11.1-2; SO 11.1.B-2	
Learning Objective:	PLOT-5011-10d	
K/A System:	211000 Standby Liquid Control System	Importance; RO / SRO 3.1/ 3.4
K/A Statement:	**A2.04 - Ability to (a) predict the impacts of the following on the STANDBY LIQUID CONTROL SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations:** Inadequate system flow	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

17 **ID: 2062762** **Points: 1.00**

Unit 2 HPCI is in service with the following lineup...



- REACTOR WATER LEVEL LOW LOW (ARC 221 E-5) is received

30 seconds later, without operator action;

What are the indicated positions of AO-2-23-018 (CHECK) and MO-2-23-024 (COND TANK RETURN)?

AO-2-23-018 (CHECK) indicates ___(1)___
and
MO-2-23-024 (COND TANK RETURN) indicates ___(2)___

A. 1) OPEN
   2) OPEN

B. 1) OPEN
   2) CLOSED

C. 1) CLOSED
   2) OPEN

D. 1) CLOSED
   2) CLOSED

Answer: B

Answer Explanation		
Choice		Basis or Justification
Correct:	B	HPCI is shown lined up for CST-CST Mode from injection mode out of the RRC 23.1-2 Section C. Reactor Water Level Low Low alarm is indicative of -48 inches in the reactor vessel. This is an initiation signal for HPCI. IAW SO 23.7.A upon receipt of -48 inches, HPCI will lineup automatically for injection. This involves closing the Condensate return valve MO-2-23-024, The check valve AO-2-23-018 will also indicate open as HPCI begins to inject into the vessel.
Distractors:	A	Plausible as Split flow mode is a configuration that is used during HPCI operations, however with an initiation signal present, MO-2-23-024 would go closed
	C	Plausible as this is the lineup currently shown for HPCI. The candidate might not recognize the alarm as an initiation signal, or misunderstand the automatic actions that occur for an automatic initiation.
	D	Plausible if candidate misinterprets alarm as an isolation signal and not an initiation signal.

Question 17 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:	2062762
User-Defined ID:	B NRC 2019
Cross Reference Number:	206000 A3.07
Topic:	ILT 5023-9k8-002 2019 NRC
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
HIGH			10CRF55.41(b) (7)

Source Documentation

Source:	X New Exam item Exam Modified Bank Bank ILT Exam Bank ()	Previous NRC Other Exam
Reference(s):	ARC 221 E-5, SO 23.7.A	
Learning Objective:	PLOT-5023-9k	
K/A System:	206000 - High Pressure Coolant Injection System	Importance; RO / SRO 3.9/ 3.8
K/A Statement:	**A3.07 - Ability to monitor automatic operations of the HIGH PRESSURE COOLANT INJECTION SYSTEM including:** Lights and alarms:	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

18 **ID: 2078178** **Points: 1.00**

An "Emergency Blowdown" per T-112 is in progress on Unit 2, with 5 Safety Relief Valve control switches in OPEN. The following conditions exist:

- Torus pressure: 20 psig
- Drywell pressure: 22 psig
- Reactor pressure: 135 psig and lowering

Considering the above conditions which one of the following would describe the expected control room position indication and actual SRV position?

	Indicating position	Actual position
A.	OPEN	OPEN
B.	OPEN	CLOSED
C.	CLOSED	OPEN
D.	CLOSED	CLOSED

Answer: C

Answer Explanation

Choice		Basis or Justification
Correct:	C	IAW T-112 bases the SRV's would remain open if the switches are in "OPEN" and RPV to Torus differential pressure is > 50 psid. 135 - 20 = 115psid. The SRV's would be open. However the acoustic position below 150 psid would indicate closed.
Distractors:	A	Plausible if candidate misunderstands that control room indication comes from acoustic monitoring and not control switches such as using SRV's at the alternative shutdown panel
	B	Plausible if candidate misunderstands that control room indication comes from acoustic monitoring and not control switches such as using SRV's at the alternative shutdown panel. Also if candidate misapplies the differential pressure they may consider that the SRV is closed
	D	Plausible if candidate misapplies the differential pressure they may consider that the SRV indicates closed, and therefore is closed.

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:	2078178
User-Defined ID:	B NRC 2019
Cross Reference Number:	239002 A3.04
Topic:	ILT-PBIG-2112-5a-004 2019 NRC
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
HIGH			10CRF55.41(b)(7)

Source Documentation		
Source:	New Exam item **X** Modified Bank (994222) ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	T-112 Bases	
Learning Objective:	ILT-PBIG-2112-5a	
K/A System:	239002 - Relief/Safety Valves	Importance; RO / SRO 3.6/ 3.7
K/A Statement:	**A3.04 - Ability to monitor automatic operations of the RELIEF/SAFETY VALVES including:** Acoustical monitor noise	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

An "Emergency Blowdown" is in progress on Unit 2 per T-112 with 5 Safety Relief Valve control switches in OPEN. The following conditions exist:

- Torus pressure: 20 psig
- Drywell pressure: 22 psig
- Torus level: 14 feet
- Reactor pressure: 35 psig and steady

Considering the above conditions which one of the following would describe the expected control room position indication and actual SRV position?

A. Indicating open and actually closed.

B. Indicating closed and actually closed.

C. Indicating closed and actually open.

D. Indicating open and actually open.

Answer: B

19 **ID: 1600733** **Points: 1.00**

Unit 2 is operating at 100% power with the following:

- A momentary loss of output from the Static Inverter to Panel 20Y050 causes the static switch to bypass the inverter.
- Annunciator 220 F-5, INVERTER TROUBLE, alarms.

Then, normal power output from the Static Inverter is restored.

Which one of the following describes describes the effect of this transient on Panel 20Y050
AND
the "C" Feedwater heater string?

Panel 20Y050...

A. must be manually transferred back to the Static Inverter.
The "C" Feedwater heater string will automatically return to service.

B. must be manually transferred back to the Static Inverter.
The "C" Feedwater heater string must be manually returned to service.

C. automatically transfers back to the Static Inverter.
The "C" Feedwater heater string will automatically return to service.

D. automatically transfers back to the Static Inverter.
The "C" Feedwater heater string must be manually returned to service.

Answer: C

Answer Explanation

Choice		Basis or Justification
Correct:	C	The static switch is normal seeking. It will automatically transfer power back to the Static Inverter 30 seconds after the Static Inverter output is restored. An 11 seconds time delay is installed on the stop and drain valves which prevents an isolation during a fast transfer. The feedwater heaters will be returned to service without any operator actions.
Distracters:	A	The static switch is normal seeking. It will automatically transfer power back to the Static Inverter 30 seconds after the Static Inverter output is restored. Plausible that the design of the static switch would require manual action to return to the initially degraded power source to prevent damage.
	B	The static switch is normal seeking. It will automatically transfer power back to the Static Inverter 30 seconds after the Static Inverter output is restored. Plausible that the design of the static switch would require manual action to return to the initially degraded power source to prevent damage. No actions are required to restore the heater string. Plausible if the candidate does not recall the purpose of the 11 second time delay.
	D	The Control Room alarm will automatically reset when the transfer occurs. Plausible because this requires local alarm reset on some plants. No actions are required to restore the heater string. Plausible if the candidate does not recall the purpose of the 11 second time delay.

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:	1600733
User-Defined ID:	B NRC 2019
Cross Reference Number:	262002 A4.01
Topic:	Return to normal power
Num Field 1:	
Num Field 2:	A NRC
Text Field:	

Comments:

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
MEMORY			10CFR55.41(b) (7)

Source Documentation

Source:	New Exam item **(2017 NRC exam)** / Modified Bank / Bank / ILT Exam Bank	**X** Previous NRC Exam / Other Exam
Reference(s):	ARC-220 F-5, SO 58B.7.B-2 P-S-45	
Learning Objective:	PLOT-5058 7c	
K/A System:	262002 - UPS (AC/DC)	Importance; RO 2.8
K/A Statement:	A4.01 - Ability to manually operate and/or monitor in the control room: Transfer from alternative source to preferred source	
REQUIRED MATERIALS:	**NONE**	
Notes and Comments:		

20 **ID: 2078414** **Points: 1.00**

Unit 2 has been shutdown due to a transient

RCIC is in CST-CST for pressure control in accordance with RRC 13.1-1 "RCIC System Operation During a Plant Event". System status is as follows:

- Flow: 600 gpm
- Discharge pressure: 900 psig
- Turbine speed: 2100 rpm

Which of the following would be used to raise RCIC turbine speed to 3000 rpm, while remaining in CST-CST?

A. Adjust RCIC Flow controller in the clockwise direction

B. Adjust RCIC Flow controller in the counter-clockwise direction

C. Throttle Close MO-2-13-030 "Full Flow Test"

D. Throttle Open MO-2-13-030 "Full Flow Test"

Answer: C

Answer Explanation

Choice		Basis or Justification
Correct:	C	Throttling close MO-30 while in CST-CST will cause the RCIC Turbine to raise pressure to push 600 gpm through that valve. Therefore the RCIC Turbine will work harder and raise RCIC Turbine speed.
Distracters:	A	Plausible because turning the flow controller in the clockwise direction will raise RCIC flow rate and will cause the RCIC Turbine to work harder and raise RCIC Turbine speed, however 600 gpm is the max flow that RCIC is allowed.
	B	Plausible because raising RCIC flow rate and will cause the RCIC Turbine to work harder and raise RCIC Turbine speed. However turning the flow control in the counter-clockwise direction will lower speed. Plausible if candidate misunderstands RCIC flow controller.
	D	Plausible if candidate misapplies pump laws and believes that opening the valve will cause the pump to work harder to move more flow.

Question 20 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:	2078414
User-Defined ID:	B NRC 2019
Cross Reference Number:	217000 A4.01
Topic:	ILT-5013-9k5-001 2019 NRC
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
HIGH			10CFR55.41(b) (7)

Source Documentation		
Source:	X New Exam item Previous NRC Exam Modified Bank Bank ILT Exam Bank	Other Exam
Reference(s):	RRC 13.1	
Learning Objective:	PLOT-5013 9k5	
K/A System:	217000 RCIC	Importance; RO / SRO 3.7 / 3.7
K/A Statement:	A4.01 - **Ability to manually operate and/or monitor in the control room:** RCIC turbine speed	
REQUIRED MATERIALS:	**NONE**	
Notes and Comments:		

21 **ID: 993829** **Points: 1.00**

A total loss of off-site power has occurred. The crew is performing SE-11 "Loss of Off-Site Power" with the following conditions:

- Attachment A, "Diesel Generator Lockout from the Main Control Room" has been performed on the E1 and E3 Diesel Generators.
- "E2 Diesel Gen Differential and Ground" (002 G1) alarm is in.
- E4 Diesel Generator will NOT start.
- E-32 and E-33 breakers are inoperable and CANNOT be closed.

According to SE-11 "Loss of Off-Site Power", how many Diesel Generators are available for determination of the diesel strategy?

A. 0

B. 1

C. 2

D. 3

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	Using step LP-7 of SE-11 sheet 1, we find that E1 is the only available diesel. E-2 has differential current and is unavailable. E-4 will not start and E-3 cannot supply power to either of its busses.
Distracters:	A	Plausible if candidate does not understand that E-1 has been locked out due to no cooling water. This diesel can still be considered operable IAW step LP-7 of SE-11
	C	Plausible if candidate believes E-3 Diesel is also available along with E-1 because it was shutdown for lack of cooling. However E-3 cannot supply power to any 4kv busses because E-32 and E-33 breakers are inoperable.
	D	Plausible if candidate believes E-1 and E-3 are available for the above reasons and does not understand that receiving the "E2 Diesel Gen Differential and Ground" causes the diesel to trip and lockout therefore making the E-2 unavailable.

Question 21 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	4
Difficulty:	2.00
System ID:	993829
User-Defined ID:	B NRC 2019
Cross Reference Number:	262001 G2.1.20
Topic:	ILT-1555-002 SE-11 How many EDG available
Num Field 1:	3472
Num Field 2:	N/A
Text Field:	A
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
HIGH			10CFR55.41(b) (10)

Source Documentation

Source:	New Exam item NRC Exam Modified Bank Bank **X** ILT Exam Bank (993829)	Previous Other Exam
Reference(s):	SE-11 Sheet 1	
Learning Objective:	PLOT-1555-12	
K/A System:	262001 - A.C. Electrical Distribution	Importance; RO / SRO 4.6 / 4.6
K/A Statement:	G 2.1.20 - Ability to interpret and execute procedure steps	
REQUIRED MATERIALS:	**NONE**	
Notes and Comments:		

22 **ID: 2086415** **Points: 1.00**

Digital Feedwater Control System uses an input from ___(1)___ to determine the Control Mode (Low or High) **AND** the High Power mode uses inputs from ___(2)___ to control RPV level.

A. (1) feed flow
(2) RPV level only

B. (1) feed flow
(2) steam flow/feed flow and RPV level

C. (1) steam flow
(2) RPV level only

D. (1) steam flow
(2) steam flow/feed flow and RPV level

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	IAW SO 6C.1.D-3 in a note at step 4.8, the Digital Feedwater system will automatically select High or Low power mode. Low Power if < 20% total Feedwater Flow and High Power if > 20% total Feedwater Flow. Since total Feedwater Flow is 30% the Digital Feedwater system would have automatically selected High Power Mode. The High Power mode uses inputs from steam flow and feed flow along with RPV level to better anticipate changes in level and minimize the level transients
Distractors:	A	Plausible if the candidate does not understand the High Power mode uses multiple inputs also that low power mode does only use RPV level input to control RPV because at low power the signals from steam flow and feed flow are not accurate enough to provide reliable inputs.
	C	Plausible if the candidate believes that the input for control is steam flow. Steam flow is used in other systems like the RWM for turn on/off points. Plausible if the candidate does not understand the High Power mode uses multiple inputs also that low power mode does only use RPV level input to control RPV because at low power the signals from steam flow and feed flow are not accurate enough to provide reliable inputs.
	D	Plausible if the candidate believes that the input for control is steam flow. Steam flow is used in other systems like the RWM for turn on/off points. .

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:	0.00
System ID:	2086415
User-Defined ID:	B NRC 2019
Cross Reference Number:	259002 G2.1.28
Topic:	ILT-5006-3p-002 three element control
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b)(7)

Source Documentation

Source:	**X** New Exam item Modified Bank ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	SO 6C.1.D-3	
Learning Objective:	PLOT - 5006-3p	
K/A System:	259002 Reactor Water level Control System	Importance: RO / SRO 4.1/ 4.1
K/A Statement:	G2.1.28 - Knowledge of the purpose and function of major system components and controls	
REQUIRED MATERIALS:	None	
Notes and Comments:	In order to make the distractor of RPV level plausible, the information about why adding steam flow and feed flow signals inputs is important could not be added. The candidate should use that information when making their selection if they understand how the system works to accurately control RPV level at power. This meets the K/A of "Knowledge of the purpose and function of major system components and controls" because the question requires knowledge of the selection of Low and High power modes. It also requires the knowledge of what inputs are needed for level control in High power mode	

23 **ID: 2078515** **Points: 1.00**

ST-O-011-301-2 "Standby Liquid Control Pump A Functional Test for IST" was just performed,

AND

The following vibration data was recorded for the "A" SBLC pump.

INBOARD
- X1 - 0.706 IN/SEC PK
- Y1 - 0.550 IN/SEC PK

OUTBOARD
- X1 - 0.680 IN/SEC PK
- Y1 - 0.525 IN/SEC PK

Using a copy of ST-O-011-301-2 "Standby Liquid Control Pump A Functional Test for IST", what is the status of the 'A' SBLC pump?

A. Pump is OPERABLE. Initiate an Issue to place pump on increased test frequency.

B. Pump is INOPERABLE. Initiate an Issue to place pump on increased test frequency.

C. Pump is OPERABLE. Refer to Tech Specs for any other actions.

D. Pump is INOPERABLE. Refer to Tech Specs for any other actions.

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	The INBOARD Y1 bearing is in the Action Range. IAW the ST, step 4.3.1 when a test results in the Action Range the pump shall be immediately declared inoperable and Tech Spec LCO's should be referenced for Required Actions.
Distractors:	A	Plausible as the OUTBOARD Y1 bearing is in the Alert range. IAW the ST, step 4.3.2 if the test results in the Alert range then initiate an issue to place pump on increased test frequency. The pump is still operable. The Candidate would choose this if they misinterpret the indication that was in the Action Range.
	B	Plausible as the OUTBOARD Y1 bearing is in the Alert range. IAW the ST, step 4.3.2 if the test results in the Alert range then initiate an issue to place pump on increased test frequency. The Candidate would choose this if they believed being in the Alert range also made the pump inoperable.
	C	Plausible if the candidate misinterprets step 4.3.1 and believes that the pump would be considered operable if Tech Spec actions are taken.

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:	2078515
User-Defined ID:	B NRC 2019
Cross Reference Number:	211000 G2.2.12
Topic:	ILT-5011-9f-001 2019 NRC
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
HIGH			10CRF55.41(b)(10)

Source Documentation

Source:	**X** New Exam item Modified Bank ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	ST-O-011-301-2	
Learning Objective:	PLOT - 5011-9f	
K/A System:	211000 - Standby Liquid Control System	Importance: RO / SRO 3.7 / 4.1
K/A Statement:	G2.2.12 - Knowledge of surveillance procedures	
REQUIRED MATERIALS:	**Copy of ST-O-011-301-2 "Standby Liquid Control Pump A Functional Test for IST"**	
Notes and Comments:	None	

24 **ID: 994765** **Points: 1.00**

The following conditions exist on Unit 2:

- An ATWS is in progress
- SBLC has NOT been initiated
- Reactor pressure is being controlled with RWCU in the Recirc Mode
- T-227-2 "Defeating RWCU Isolation Interlocks" has been completed
- A pipe break occurs in the suction line of the operating RWCU pump, causing RPV level to lower

Based on these conditions, the RWCU System will _____.

A. isolate on low RPV level

B. isolate on high system flow

C. remain in service unless SBLC is initiated

D. remain in service until T-227 is returned to normal

Answer: B

Answer Explanation		
Correct:	B	T-227-2 ONLY defeats RPV low level and SBLC initiation isolation. All other RWCU isolations, such as high flow, are still in effect. The pipe break on the RWCU suction line will cause a high flow isolation signal.
Distractors:	A	T-227-2 defeats RPV low level isolation. Plausible if candidate does not recall what isolations are defeated in T-227
	C	T-227-2 ONLY defeats RPV low level and SBLC initiation isolation. All other RWCU isolations, such as high flow, are still in effect. Plausible if candidate does not recall what isolations are defeated in T-227
	D	T-227-2 ONLY defeats RPV low level and SBLC initiation isolation. All other RWCU isolations, such as high flow, are still in effect. Plausible if candidate believes T-227 defeats all isolations.

Question 24 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:	994765
User-Defined ID:	B NRC 2019
Cross Reference Number:	223002 K4.08
Topic:	ILT5012-3D-011 THe following conditions exist on Unit 2: *An ATWS is in progress *SLC has NOT be
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
HIGH			10CRF55.41(b)(7)

Source Documentation

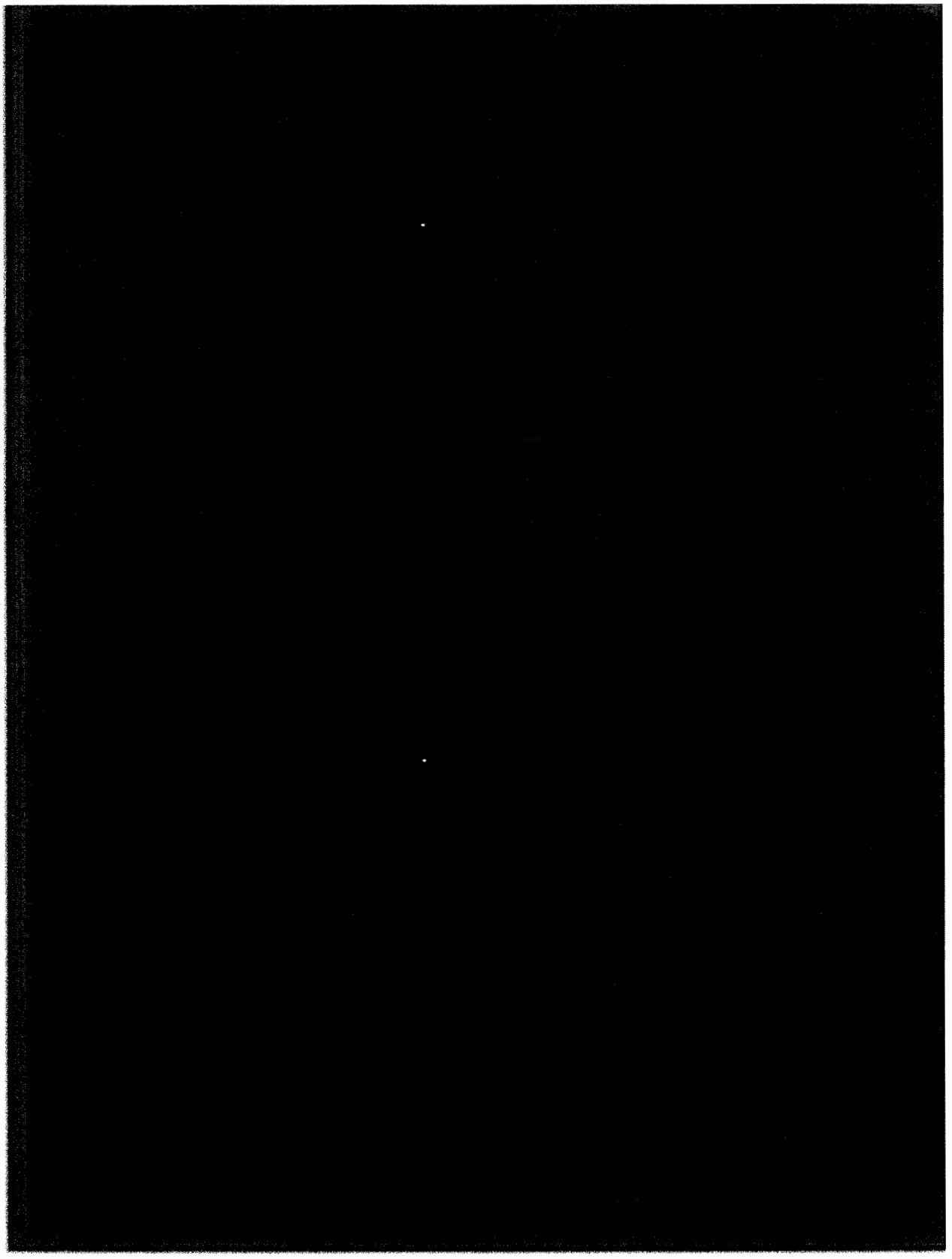
Source:	New Exam item Modified Bank **X** ILT Exam Bank (994765) Previous NRC Exam Other Exam Bank	
Reference(s):	T-227-2	
Learning Objective:	PLOT-5012-3D	
K/A System:	223002 - Primary Containment Isolation System / Nuclear Steam Supply Shut-off	Importance: RO / SRO 3.3 / 3.7
K/A Statement:	K4.08 - **Knowledge of PRIMARY CONTAINMENT ISOLATION SYSTEM/NUCLEAR STEAM SUPPLY SHUT-OFF design feature(s) and/or interlocks which provide for the following:** Manual defeating of selected isolations during specified emergency conditions	
REQUIRED MATERIALS:	**None**	
Notes and Comments:	None	

25 **ID: 994380** **Points: 1.00**

The Instrument Air System is in a normal lineup when the following occur:

- INSTRUMENT AIR DRYER TROUBLE (216 C-4) goes into alarm.
- B INSTRUMENT AIR HEADER LO PRESS (216 D-4) goes into alarm.
- "B" Instrument Air Header Pressure (PI-2425B) on Panel 20C012 is lowering
- "B" Instrument Air Receiver Pressure (PI-2429B) on Panel 20C012 is steady at 110 psig.
- The TBEO reports there is a valve malfunction on the "B" Instrument Air Dryer and that neither the "C" nor the "D" drying tower is in service.

Using the Instrument Air Op-Aid on the following page:



Which one of the following describes:

(1) the on-going effect on "B" Instrument Air header pressure, assuming no operator action is taken, AND
(2) what action(s) will mitigate this event?

A. (1) Pressure will continue to lower.
(2) Cross-tie "A" and "B" Instrument Air headers.

B. (1) Pressure will continue to lower.
(2) Cross-tie Unit 2 and Unit 3 "B" Instrument Air headers.

C. (1) Pressure will recover when Service Air Isolation PCV-2428 is fully closed.
(2) Isolate the "B" Instrument Air Dryer.

D. (1) Pressure will recover when Service Air Isolation PCV-2428 is fully closed.
(2) Bypass the "B" Instrument Air Dryer.

Answer: B

Answer Explanation		
Correct:	B	The given conditions indicate both towers for the "B" Air Dryer are isolated, which means there is no flow to the "B" instrument air header from the "B" air compressor/receiver... "B" instrument air header pressure will continue to lower. The correct action to take for this, as directed in ON-119, is to cross-tie the Unit 2 and Unit 3 "B" instrument air headers.
Distractors:	A	Cross-tying the "A" and "B" instrument air headers will not be effective in restoring "B" instrument air header pressure since the "A" supply must pass through the "B" Air Dryer in order to supply the "B" header. This is plausible since the "A" and "B" instrument air headers can be crosstied.
	C	"B" instrument air header pressure will not recover when PCV-2428 closes since the supply from the "C" compressor/receiver must pass through the "B" Air Dryer in order to supply the "B" header. Plausible as the "C" air compressor is the normal backup to the "B" header.
	D	"B" instrument air header pressure will not recover when PCV-2428 closes since the supply from the "C" compressor/receiver must pass through the "B" Air Dryer in order to supply the "B" header. The candidate may also misinterpret the OP-AID and believe that the "B" Air Dryer can be bypassed. It cannot. Plausible as the "C" air compressor is the normal backup to the "B" header.

Question 25 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	3.00
System ID:	994380
User-Defined ID:	B NRC 2019
Cross Reference Number:	300000A2.01
Topic:	ILT-5036-7b-001 The Instrument Air System is in a normal lineup when the following occur: *INSTRU
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	

Psychometrics

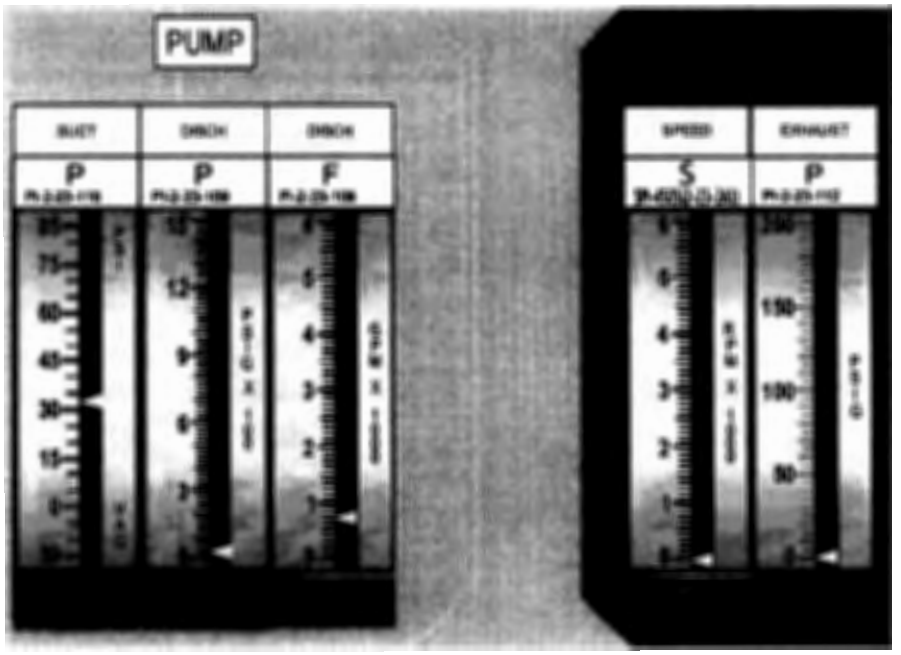
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
HIGH			10CRF55.41(b)(7)

Source Documentation

Source:	New Exam item Modified Bank **X** ILT Exam Bank (994380) Previous NRC Exam Other Exam Bank	
Reference(s):	ON-119, M-320	
Learning Objective:	PLOT-5036-7b	
K/A System:	300000 - Instrument Air System (IAS)	Importance: RO / SRO 2.9 / 2.8
K/A Statement:	A2.01 - **Ability to (a) predict the impacts of the following on the INSTRUMENT AIR SYSTEM and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation:** Air dryer and filter malfunctions	
REQUIRED MATERIALS:	**None**	
Notes and Comments:	None	

26 **ID: 2084632** **Points: 1.00**

Unit 2 HPCI is aligned per SO 23.1.A-2, "High Pressure Coolant Injection System Setup for Automatic or Manual Operation" when the following indications are observed:



Based on these indications, choose the correct statement.

A. CST level will drop, close MO-2-23-15, "Steam Isolation".

B. CST level will drop, close MO-2-23-17, "Cond Tank Suction"

C. Torus level will drop, close MO-2-23-15, "Steam Isolation".

D. Torus level will drop, close MO-2-23-57, "Torus Suction Outboard".

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	With a normal valve lineup, MO-17 the CST suction valve will be open. The indications present indicate a leak in the pump discharge line. This will cause CST level to drop. Closing MO-17 will isolate the leak.
Distractors :	A	Plausible if the candidate misdiagnosis the issue and believes that steam is leaking by the supply valve causing the HPCI system to inject water as indicated by the discharge flow. This is however false as there is no discharge pressure, nor speed on the pump indicating it as a discharge pipe leak.
	C	Plausible if the candidate does not understand the normal HPCI line up is to the CST not the Torus. Plausible if the candidate misdiagnosis the issue and believes that steam is leaking by the supply valve causing the HPCI system to inject water as indicated by the discharge flow. This is however false as there is no discharge pressure, nor speed on the pump indicating it as a discharge pipe leak.
	D	Plausible if the candidate does not understand the normal HPCI line up is to the CST not the Torus.

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:	1.00
System ID:	2084632
User-Defined ID:	B NRC 2019
Cross Reference Number:	206000 A4.07
Topic:	ILT - 5023 5e 002 Describe the relationships between the High Pressure Coolant Injecti
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High			10CRF55.41(b) 7

Source Documentation		
Source:	X New Exam item NRC Exam Modified Bank Bank ILT Exam Bank	Previous Other Exam
Reference(s):	M-365	
Learning Objective:	PLOT - 5023 5e	
K/A System:	206000 - High Pressure Coolant Injection System	Importance; RO / SRO 3.5
K/A Statement:	A4.07 - Ability to manually operate and/or monitor in the control room ; Condensate storage tank level	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

27 **ID: 2078555** **Points: 1.00**

Unit 2 is at 100% power with 2A CRD pump in service

- "A CRD WATER PUMP TRIP" (ARC 211 F-1) alarms

The trip of the 2A CRD pump will:

A. cause Drywell pressure to rise

B. cause Recirculation pump seal temperatures to rise

C. raise the probability of internal contamination of the Recirculation pump motor

D. cause level instrumentation to experience "notching" during normal power operations

Answer: B

Answer Explanation		
Correct:	B	A trip of the running CRD pump will cause the control room to enter ON-107 "Loss of CRD Regulating Function" This would cause the operator to monitor Recirc Pump seal temperatures as they would rise with the loss of the CRD seal purge.
Distractors:	A	Plausible as CRD provides cooling to components in the Drywell, however a Drywell pressure rise would be caused by a loss of Drywell cooling.
	C	The Recirc motor is not a wet motor and would not be contaminated with the loss of CRD purge flow. Plausible if candidate confuses the Recirc motor with the RWCU motor. The RWCU motor also receives a purge flow from CRD, however in this case it prevents the wet RWCU motor from being contaminated with Reactor water.
	D	Plausible as the loss of CRD would cause notching in level instrumentation due to the loss of the Backfill system. However this notching would only occur during a depress below 450 psig.

Question 27 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	1.00
System ID:	2078555
User-Defined ID:	B NRC 2019
Cross Reference Number:	201001 K1.03
Topic:	ILT-5003A-5c CRD connection to Recirc pump seal purge
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b)(3)

Source Documentation

Source:	X New Exam item Modified Bank ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	ON-107	
Learning Objective:	PLOT-5003A-5c	
K/A System:	201001 - Control Rod Drive Hydraulic System	Importance: RO / SRO 3.1 / 3.1
K/A Statement:	K1.03 - **Knowledge of the physical connections and/or cause effect relationships between CONTROL ROD DRIVE HYDRAULIC SYSTEM and the following:** Recirculation pumps (seal purge):	
REQUIRED MATERIALS:	**None**	
Notes and Comments:	None	

28 **ID: 2086254** **Points: 1.00**

Both units are operating at 100% power

- the 4 Aux Bus de-energizes due to a sustained electrical fault

Which one of the following identifies (1) the unit affected **AND**
(2) operator response?

A. (1) Unit 2
(2) Enter OT-112 "Unexpected / Unexplained Change in Core Flow"

B. (1) Unit 3
(2) Enter OT-112 "Unexpected / Unexplained Change in Core Flow"

C. (1) Unit 2
(2) Scram the plant and enter T-101 "RPV control"

D. (1) Unit 3
(2) Scram the plant and enter T-101 "RPV control"

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	The 3B and 3C Condensate pumps trip because they normally receive power from 4 Aux Bus. Since Unit 3 is operating at 100% power, reactor level will quickly lower to the scram setpoint of 1 inch. Operators are expected to scram the plant and enter T-101 "RPV level control"
Distracters:	A	Plausible as this is the response if the #1 Aux bus had tripped. The Recirc pumps are supplied by AUX busses for both units, however U/2 recirc pumps are supplied by the 1 and 2 Aux bus and U/3 recirc pumps are supplied by the 3 and 4 Aux bus. The candidate may misunderstand the 13Kv lineup and believe only one condensate pump tripped and one recirc pump. At which time they could survive a loss of the 1 Aux bus.
	B	Plausible as this is the response if the #3 Aux bus had tripped. The Recirc pumps are supplied by AUX busses for both units, however U/2 recirc pumps are supplied by the 1 and 2 Aux bus and U/3 recirc pumps are supplied by the 3 and 4 Aux bus. The candidate may misunderstand the 13Kv lineup and believe only one condensate pump tripped and one recirc pump. At which time they could survive a loss of the 3 Aux bus.
	C	Plausible as this is the response if the #2 Aux bus had tripped. The 2B and 2C Condensate pumps trip because they normally receive power from 2 Aux Bus. Since Unit 2 is operating at 100% power, reactor level will quickly lower to the scram setpoint of 1 inch. Operators are expected to scram the plant and enter T-101 "RPV level control" The candidate may misunderstand the 13Kv lineup and believe only one condensate pump tripped and one recirc pump. At which time they could survive a loss of the 1 Aux bus.

Question 28 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	1.00
System ID:	2086254
User-Defined ID:	B NRC 2019
Cross Reference Number:	256000 K2.01
Topic:	ILT-5005-2a Loss of 4 Aux Bus
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
HIGH			10CFR55.41(b)(4)

Source Documentation		
Source:	X New Exam item Modified Bank ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	ARC-319 B-2, T-101	
Learning Objective:	PLOT-5005 2a	
K/A System:	256000 Reactor Condensate	Importance; RO 2.7
K/A Statement:	K2.01 - Knowledge of electrical power supplies to the following: System pumps	
REQUIRED MATERIALS:	**NONE**	
Notes and Comments:		

29 **ID: 2086269** **Points: 1.00**

Both Units are at 100% power

- A fire is reported in the Cable Spreading Room
- It has been determined that the fire jeopardizes safe shutdown
- The Cardox System has failed to initiate

When control is established outside of the control room _____.

A. **ONLY** SE-1 "Plant Shutdown from the Remote Shutdown Panel" must be entered

B. **ONLY** SE-10 "Plant Shutdown from the Alternative Shutdown Panel" must be entered

C. SE-1 "Plant Shutdown from the Remote Shutdown Panel" **AND** T-101 "RPV Control" must be performed concurrently

D. SE-10 "Plant Shutdown from the Alternative Shutdown Panel" **AND** T-101 "RPV Control" must be performed concurrently

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	SE-10 is directed out of T-325 which is performed for a fire in the cable spreading room. SE-10 is directed when it is determined that the fire jeopardizes safe shutdown. With the cardox system failed, there is no quick way to extinguish the fire and the Main Control Room would require evacuation. IAW SE-10 Bases "With the exception of T-100, execution of the TRIP procedures should be suspended at entry into SE-10. The TRIP procedures will not be available outside the Control Room and the symptomatic response of the TRIP procedures may not be appropriate considering the event specific design of the ASD equipment." Therefore SE-10 is the only procedure entered
Distracters:	A	Plausible as SE-1 is used when evacuating the Main Control Room, however the Entry condition is that MCR evacuation required AND SE-10 has not been entered. SE-10 is required out of ON-114 because a fire in the cable spreading room has jeopardized safe shutdown, therefore you would not enter SE-1.
	C	Plausible as SE-1 is used when evacuating the Main Control Room, however the Entry condition is that MCR evacuation required AND SE-10 has not been entered. SE-10 is required out of ON-114 because a fire in the cable spreading room has jeopardized safe shutdown, therefore you would not enter SE-1. T-101 entry is also plausible as SE-1 can be used concurrently with the TRIP procedures
	D	Plausible since SE-10 is entered and part of the steps in SE-10 is to scram the plant, which at 100% power would lead to a T-101 entry. However within the SE-10 bases, execution of the TRIP procedures would be suspended upon entry into SE-10.

Question 29 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:	2086269
User-Defined ID:	B NRC 2019
Cross Reference Number:	286000 K3.03
Topic:	ILT-1555-1-017 SE-10, Level control with fire
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
MEMORY			10CFR55.41(b) (10)

Source Documentation

Source:	X New Exam item Modified Bank ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	SE-10 and Bases, ON-114, SE-1,SE-2	
Learning Objective:	PLOT-1555-1	
K/A System:	286000 - Fire Protection System	Importance; RO / SRO 3.6 / 3.8
K/A Statement:	K3.03 - **Knowledge of the effect that a loss or malfunction of the FIRE PROTECTION SYSTEM will have on following:** Plant protection	
REQUIRED MATERIALS:	**NONE**	
Notes and Comments:		

30 **ID: 994105** **Points: 1.00**

Unit 2 is operating at normal full power. Outage Services is performing a move of an old jet pump within the Spent Fuel Pool when the Aux Hoist fails and the jet pump falls onto irradiated fuel.

The following indications are observed:

- REFUELING FLOOR VENT EXHAUST HI RADIATION alarm (218 A-1)
- REAC BLDG OR REFUELING FLOOR VENT HI RAD TRIP alarm (218 D-4)

Refuel Floor Exh Rad Trip Units read:
Channel A: 28 mr/hr
Channel B: 32 mr/hr
Channel C: 3 mr/hr
Channel D: 5 mr/hr

Based on the above radiation monitor conditions, which one of the following is the correct automatic response of the Refuel Floor Ventilation and Standby Gas Treatment (SBGT)?

A. Refuel Floor Ventilation Isolates.
SBGT initiates and aligns.

B. Refuel Floor Ventilation continues to operate.
SBGT initiates and aligns.

C. Refuel Floor Ventilation Isolates.
SBGT does NOT initiate.

D. Refuel Floor Ventilation continues to operate.
SBGT does NOT initiate.

Answer: A

Answer Explanation

Choice		Basis or Justification
Correct:	A	Refuel Floor and Reactor Building ventilation will isolate on a High Rad signal on channels A or C and B or D. Since channels A and B are high (>10 mr/hr) the Refuel Floor Ventilation would isolate. On the same signals SBGT would align and initiate.
Distracters:	B	Refuel Floor and Reactor Building ventilation will isolate on a High Rad signal on channels A or C and B or D. Since channels A and B are high (>10 mr/hr) the Refuel Floor Ventilation would isolate. Plausible if candidate does not recall isolation signals or confuses Refuel Floor Ventilation isolation signals with Control room ventilation which works on a C or D isolation logic.
	C	Channels A and B are high (>10 mr/hr). These are initiation signals for SBGT and it would align and initiate. Plausible if candidate does not recall SBGT initiation signals or confuses it with CREV initiation signals which work on a C or D logic.
	D	Refuel Floor and Reactor Building ventilation will isolate on a High Rad signal on channels A or C and B or D. Since channels A and B are high (>10 mr/hr) the Refuel Floor Ventilation would isolate. On the same signals SBGT would align and initiate. This is plausible if candidate does not recall proper isolation and initiation logic, or confuses the systems with the CREV system that works on a C or D logic.

Question 30 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	1.00
System ID:	994105
User-Defined ID:	B NRC 2019
Cross Reference Number:	288000K4.01
Topic:	ILT-5040B-4b-006 hi rad on refuel floor
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
HIGH			10CFR55.41(b)(7)

Source Documentation		
Source:	New Exam item Modified Bank Bank X ILT Exam Bank (994105)	Previous NRC Exam Other Exam
Reference(s):	ARC-214 D-1, E-1 and ARC-218 A-1, D-4	
Learning Objective:	PLOT-5040B-4b	
K/A System:	288000 - Plant Ventilation Systems	Importance; RO / SRO 3.7 / 3.9
K/A Statement:	K4.01 - **Knowledge of PLANT VENTILATION SYSTEMS design feature(s) and/or interlocks which provide for the following:** Automatic initiation of standby gas treatment system	
REQUIRED MATERIALS:	**NONE**	
Notes and Comments:		

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.

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:	B NRC 2019
Cross Reference Number:	268000K5.01
Topic:	ILT-5020-4a-002 2015 NRC
Num Field 1:	2015 NRC
Num Field 2:	
Text Field:	

Comments:

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
MEMORY			10CRF55.41(b)(13)

Source Documentation

Source:	New Exam item Modified Bank **X** ILT Exam Bank	Previous NRC Exam (2015 NRC) Other 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	

32 **ID: 2086274** **Points: 1.00**

Unit 2 is operating at 70% power.

No rod block or half-scram signals are present.

- The reference Simulated Thermal Power signal from APRM 2 to the Rod Block Monitor system fails upscale

How does the Rod Block Monitor system respond to this event if a rod is subsequently selected?

A. The 'A' Rod Block Monitor channel receives an INOP trip signal.

B. The 'A' Rod Block Monitor channel adjusts its trip setpoint to the High Power setpoint.

C. The 'B' Rod Block Monitor channel receives an INOP trip signal.

D. The 'B' Rod Block Monitor channel adjusts its trip setpoint to the High Power setpoint.

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	APRM 2 and 4 signals go to the 'B' RBM. The setpoint goes to High Trip setpoint when APRM power goes above 83.1%.
Distractors:	A	Plausible as APRM signals also go to the 'A' RBM, however APRM 1 and 3 signals go to the 'A' RBM. Plausible if candidate misunderstands that a failed APRM signal does not cause the RBM to go INOP and would only cause a change in the trip setpoint. Inop only occurs with mode switch out of operate, critical self test fault, low LPRM count, or failure to null.
	B	Plausible as APRM signals also go to the 'A' RBM, however APRM 1 and 3 signals go to the 'A' RBM.
	C	Plausible if candidate misunderstands that a failed APRM signal does not cause the RBM to go INOP and would only cause a change in the trip setpoint. Inop only occurs with mode switch out of operate, critical self test fault, low LPRM count, or failure to null.

Question 32 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:	2086274
User-Defined ID:	B NRC 2019
Cross Reference Number:	215002 K 6.04
Topic:	ILT-5060-6c-003 APRM ref. Signal to RBM fails upscale
Num Field 1:	
Num Field 2:	
Text Field:	A
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b)(7)

Source Documentation

Source:	New Exam item **X** Modified Bank (993029) ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	ARC-211 C-3	
Learning Objective:	PLOT-5060-6c	
K/A System:	215002 - Rod Block Monitor System	Importance: RO / SRO 2.8/ 3.0
K/A Statement:	K6.04 - **Knowledge of the effect that a loss or malfunction of the following will have on the ROD BLOCK MONITOR SYSTEM :** APRM reference channel	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

1 **ID: 993029** **Points: 1.00**

Unit 2 is operating at 70% power.

No rod block or half-scram signals are present.

- The reference APRM signal to the 'B' Rod Block Monitor channel fails upscale

How does the Rod Block Monitor(s) respond to this event if a rod is subsequently selected?

A. The 'B' Rod Block Monitor channel receives an INOP trip signal.

B. The 'B' Rod Block Monitor channel adjusts its trip setpoint to the High Power setpoint.

C. Both 'A' and 'B' Rod Block Monitor channels adjust their trip setpoint to the High Power setpoint.

D. The 'B' Rod Block Monitor channel automatically switches to the backup APRM and goes through a null sequence.

Answer: B

33 **ID: 1097709** **Points: 1.00**

Unit 2 was operating at 100% power when the "A" Recirc Pump trips.

The URO should expect oscillations of RPV level indication on __(1)__

due to turbulence near the ___(2)___.

A. (1) LI-2-2-3-85A
(2) variable leg tap

B. (1) LI-2-2-3-85A
(2) reference leg tap

C. (1) LI-2-2-3-85B
(2) variable leg tap

D. (1) LI-2-2-3-85B
(2) reference leg tap

Answer: C

Answer Explanation

Choice		Basis or Justification
Correct:	C	OT-112 bases states; When only one Recirculation Pump is operating, the indication associated with one Wide Range RPV level variable leg may oscillate. These oscillations are caused by turbulent reverse flow through the idle Jet Pumps near their variable leg tap. If the "A" Recirculation Pump is tripped, then the 2B Wide Range instruments will oscillate. Therefore for a trip of the "A" Recirc pump, the LI-2-2-3-85B would be affected.
Distractors:	A	Plausible if the candidate does not recall that the variable leg tap for the LI-85A is near the jet pumps supplied by the "B" Recirc pump.
	B	Plausible if the candidate does not recall that the variable leg tap for the LI-85A is near the jet pumps supplied by the "B" Recirc pump. Plausible if the candidate does not understand that it is the variable leg that is near the jet pump suction and not the reference leg.
	D	Plausible if the candidate does not understand that it is the variable leg that is near the jet pump suction and not the reference leg.

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:	0.00
System ID:	1097709
User-Defined ID:	B NRC 2019
Cross Reference Number:	216000A1.01
Topic:	ILT - 1540-4-021 OT-112
Num Field 1:	C CERT
Num Field 2:	
Text Field:	

Comments:

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CFR55.41(b)7

Source Documentation

Source:	New Exam item Modified Bank X ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	OT-112	
Learning Objective:	PLOT - 1540 4	
K/A System:	216000 - Nuclear Boiler Instrumentation	Importance: RO / SRO 3.4/3.3
K/A Statement:	A 1.01 - Ability to predict and/or monitor changes in parameters associated with operating the Nuclear Boiler Instrumentation controls including: Recorders and meters	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

34 **ID: 2083806** **Points: 1.00**

Given the following:

- Unit 3 is operating at 100% power
- A feedwater heater isolation occurs
- The crew enters OT-104 "Positive Reactivity Insertion"

To comply with OT-104 "Positive Reactivity Insertion" the operator must first ____(1)____ to a power level no greater than ____(2)____.

A. (1) insert control rods
(2) 100% power

B. (1) insert control rods
(2) 90% power

C. (1) reduce Recirc flow
(2) 100% power

D. (1) reduce Recirc flow
(2) 90% power

Answer: C

Answer Explanation		
Correct:	C	Per OT-104 "Positive Reactivity Insertion" Step 2.1, if a loss of feedwater heating has occurred, then reduce power via recirc flow to less than or equal to the pre-transient level.
Distractors:	A	Incorrect first action – This is plausible because later in the procedure the operator will insert control rods in order to exit the MELLLA+ region. The plant is in the MELLLA+ region down to 67.3% power for Unit 3 Correct power level
	B	Incorrect first action – This is plausible because later in the procedure the operator will insert control rods in order to exit the MELLLA+ region. The plant is in the MELLLA+ region down to 67.3% power for Unit 3. Incorrect power level - plausible because the 10% lower then pre-transient level is used when the cause of the positive reactivity insertion cannot be determined. It was caused by the loss of feedwater heating as stated in the stem.
	D	Correct first action Incorrect power level - plausible because the 10% lower then pre-transient level is used when the cause of the positive reactivity insertion cannot be determined. It was caused by the loss of feedwater heating as stated in the stem.

Question 34 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:	2083806
User-Defined ID:	B NRC 2019
Cross Reference Number:	259001 A2.02
Topic:	ILT-1540-3-024 Given the following: *Unit 3 is operating at 100% power. *A loss of feedwater heating
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High			10CRF55.41(b)(10)

Source Documentation

Source:	X New Exam item Modified Bank ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	OT-104 and Bases	
Learning Objective:	PLOT-1540-3	
K/A System:	259001 - Reactor Feedwater System	Importance: RO / SRO 3.1/ 3.3
K/A Statement:	A2.02 - **Ability to (a) predict the impacts of the following on the REACTOR FEEDWATER SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations:** Feedwater heater isolation	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

35 **ID: 2084425** **Points: 1.00**

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

- a grid disturbance causes a 10% load reduction on the grid
- conditions stabilize with grid frequency at 62 Hz

When the Main Turbine conditions stabilize

Main Turbine Speed will be __(1)___ 1800 rpm
AND
Reactor pressure will __(2)____ the pre-transient level.

A. (1) above
(2) be above

B. (1) above
(2) return to

C. (1) below
(2) be above

D. (1) below
(2) return to

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	A load reject will cause Main turbine speed to rise. The rising speed will cause the control valves to begin to close to stop the rise in main turbine speed. As the control valves close, pressure set will cause the bypass valves to open to maintain Reactor pressure. When steady state conditions re reached, Main Turbine speed will be above 1800 rpm but pressure set will have returned RPV pressure to the pre-transient value.
Distractors :	A	Plausible if the candidate does not understand how the different control sections of EHC logic work to maintain conditions and does not take into account how the pressure control section works to maintain RPV pressure and Therefore Reactor power.
	C	Plausible if the candidate does not understand that a load reject will make turbine speed rise. Plausible if the candidate does not understand how the different control sections of EHC logic work to maintain conditions and does not take into account how the pressure control section works to maintain RPV pressure and Therefore Reactor power.
	D	Plausible if the candidate does not understand that a load reject will make turbine speed rise.

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:	1.00
System ID:	2084425
User-Defined ID:	B NRC 2019
Cross Reference Number:	241000A301
Topic:	ILT - 5001DL 3c-002. Describe the EHC Logic System design feature(s) and/or interlock(s)
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High			10CRF55.41(b) 7

Source Documentation

Source:	**X** New Exam item Modified Bank ILT Exam Bank	Previous NRC Exam Other Exam Bank	
Reference(s):	PLOT - 5001DL		
Learning Objective:	PLOT - 5001DL 3c		
K/A System:	241000 - Reactor/Turbine Pressure Regulator	Importance;	RO / SRO 2.8
K/A Statement:	A301 - Ability to monitor automatic operations of the Reactor/Turbine Pressure Regulator including: Turbine speed control		
REQUIRED MATERIALS:	None		
Notes and Comments:	None		

36 **ID: 2083811** **Points: 1.00**

The following conditions exist on Unit 3:

- Unit was shutdown for refueling outage on January 5th at 03:00.
- 320 Fuel Assemblies from the core have been offloaded (fuel placed in Fuel Pool).
- Prior to the shutdown, Fuel Pool heat load was negligible.
- At 03:00 on January 23rd of the same year, the Fuel Pool temperature is 100°F.

If a complete loss of cooling to the Fuel Pool occurs on January 23rd at 03:00, then determine the approximate amount of time it will take for the Fuel Pool water temperature to rise to 150 degrees (assuming cooling to the Fuel Pool is NOT restored).

A. 3 hours

B. 7 hours

C. 11 hours

D. 15 hours

Answer: B

Answer Explanation

Correct:	B	Per AO 19.3-3 for a 320 bundle offload at 18 days after S/D (initial 100 deg.)
Distractors:	A	Represents the time to 150 degrees from a complete core offload. Plausible if candidate misinterprets a 320 bundle offload as a complete core offload and chooses the wrong chart
	C	Represents the time to 150 degrees from a 320 bundle offload (initial 70 degrees). Plausible if candidate assumes highest curve on chart is the 100 degree curve.
	D	Represents the time to boil from a 320 bundle core offload. Plausible if candidate plots on the time to boil chart and not the 150 degree chart

Question 36 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	5
Difficulty:	2.00
System ID:	2083811
User-Defined ID:	B NRC 2019
Cross Reference Number:	233000 A4.05
Topic:	ILT-5019-3a-002 Loss of FPC - time to 150F
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High			10CRF55.41(b)(5)

Source Documentation

Source:	New Exam item Modified Bank ILT Exam Bank	Previous NRC Exam X Other Exam Bank (LORT 2034940)
Reference(s):	AO 19.3-3	
Learning Objective:	PLOT-5019-3a	
K/A System:	233000 - Fuel Pool Cooling and Clean-up	Importance: RO / SRO 2.7/ 3.1
K/A Statement:	A4.05 - **Ability to manually operate and/or monitor in the control room:** Pool temperature	
REQUIRED MATERIALS:	**candidates must be given a copy of AO 19.3-3**	
Notes and Comments:	None	

37 **ID: 993898** **Points: 1.00**

A LOCA occurred on Unit 2

RHR was placed in Drywell Sprays, with the following conditions noted:

- Drywell Pressure: 15 psig
- RPV Level: -50 inches
- RPV Pressure: 600 psig

10 Minutes later, the following conditions exist:

- Drywell Pressure: 10 psig
- RPV Level: -180 inches
- RPV Pressure: 400 psig

Which one of the following statements correctly describes the expected response of RHR?

A. Drywell Sprays will automatically secure.
RHR will NOT automatically lineup to inject.

B. Drywell Sprays will automatically secure.
RHR will automatically lineup to inject.

C. The PRO must manually secure Drywell Sprays.
RHR will NOT automatically lineup to inject.

D. The PRO must manually secure Drywell Sprays.
RHR will automatically lineup to inject.

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	T-204 directs the spray valves be closed upon receipt of a LOCA signal because the spray valves do not receive an automatic closed signal under these conditions.
Distractors :	A	Plausible if the candidate does not understand that the spray valves will not close because the containment spray override key has been used. Plausible if the candidate does not believe the initiation signal will open the injection valve because the containment spray override key has been used.
	B	Plausible if the candidate does not understand that the spray valves will not close because the containment spray override key has been used.
	C	Plausible if the candidate does not believe the initiation signal will open the injection valve because the containment spray override key has been used.

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:	993898
User-Defined ID:	B NRC 2019
Cross Reference Number:	226001 2.4.49
Topic:	ILT-5010-5d-002 Drywell Spray Valve Status post LOCA
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High			10CRF55.41(b) 10

Source Documentation

Source:	New Exam item Modified Bank **X** ILT Exam Bank		Previous NRC Exam Other Exam Bank
Reference(s):	T-204 notes, M-1-S-65		
Learning Objective:	ILT-5010-5d		
K/A System:	226001 - RHR/LPCI: CTMT Spray Mode	Importance;	RO / SRO 4.6 / 4.4
K/A Statement:	2.4.49 - Ability to perform without reference to procedures those actions that require immediate operation of system components and controls		
REQUIRED MATERIALS:	None		
Notes and Comments:	None		

38 **ID: 995365** **Points: 1.00**

A Laundry Drain Tank radwaste release was started earlier in the shift in accordance with SO 20B.7.A "Laundry Drain Tank B Release to Conowingo Pond" and ST-C-095-805-2, "Liquid Radwaste Discharge".

You receive the following indications:

- RADWASTE DISCHARGE RAD MONITOR DOWNSCALE (218 B-3) is in alarm
- RIS-0-17-350 "Radwaste Rad Monitor" DOWNSCALE light is lit
- RIS-0-17-350 "Radwaste Rad Monitor" INOP light is lit

Which one of the following correctly completes the statement below?

AO-0-20-308 "Radwaste Discharge to Canal" valve will _____.

A. REMAIN OPEN; the radwaste release may continue provided Chemistry performs periodic grab samples

B. REMAIN OPEN; the radwaste release must be terminated and Chemistry contacted to verify that the ODCM limits were NOT exceeded

C. AUTO CLOSE; the radwaste release may be restarted provided Chemistry performs periodic grab samples

D. AUTO CLOSE; the radwaste release must remain terminated and Chemistry contacted to verify that ODCM limits were NOT exceeded

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	An INOP condition is an automatic isolation. The radwaste release is automatically terminated per ARC, ST and ODCM.
Distractors:	A	Plausible as a high rad alarm will not auto isolate the discharge. Plausible as releases with an INOP rad monitor may be performed, but only IAW ODCM and required compensatory measures, including analyzing two independent samples and performing Independent Verification of calcs and valve lineup.
	B	Plausible as a high rad alarm will not auto isolate the discharge. Downscale/Inop will auto close valve and terminate release.
	C	Plausible as releases with an INOP rad monitor may be performed, but only IAW ODCM and required compensatory measures, including analyzing two independent samples and performing Independent Verification of calcs and valve lineup. ODCM and ST must be checked to ensure all conditions are satisfied prior to restarting the release. Simply notifying Chemistry is not sufficient. In addition, per ARC-218 B-3, the downscale condition must be clear before the radiation monitor can be reset.

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:	995365
User-Defined ID:	B NRC 2019
Cross Reference Number:	272000 K4.03
Topic:	ILT 5020-3a-002 A & C CERT
Num Field 1:	C CERT
Num Field 2:	A CERT
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
HIGH	3.5	3	10CRF55.41(b)(11)

Source Documentation

Source:	☐ New Exam Item ☐ Modified Bank Item ☒ ILT Exam Bank	☐ Previous NRC Exam: ☐ Other Exam Bank:
Reference(s):	ST-C-095-805-2; ODCM; ARC-218 B-3	
Learning Objective:	PLOT-5020-3a	
K/A System:	272000 – Radiation Monitoring System	Importance: RO / SRO 3.6 / 3.9
K/A Statement: K4.03 – Knowledge of Radiation Monitoring System design feature(s) and/or interlocks which provide for the following: Fail safe tripping of process radiation monitoring logic during conditions of instrument failure.		
REQUIRED MATERIALS:	**NONE**	
Notes and Comments:		

39 **ID: 2084455** **Points: 1.00**

A transient has occurred on Unit 2.

The following conditions exist:

- Condenser Vacuum 4 inches Hg
- Reactor Power 0%
- Reactor Pressure 1050 psig and rising slowly
- Reactor Level -10 inches and dropping slowly

Based on the above conditions use __(1)____ for RPV level control AND ___(2)___ for RPV pressure control.

A. (1) RCIC
(2) HPCI

B. (1) RCIC
(2) Bypass valves

C. (1) Feed water
(2) HPCI

D. (1) Feed water
(2) Bypass valves

Answer: A

Answer Explanation

Choice		Basis or Justification
Correct:	A	OP-PB-101-111-1001 directs the use of RCIC for RPV level control and HPCI for pressure control with a group I isolation. The conditions presented above will require the crew to close the MSIVs.
Distractors:	B	Plausible if the candidate doesn't recall that the bypass valves will not be available below 7 inches.
	C	Plausible if the candidate believes that the feedpumps can be used at low vacuum since the low vacuum trip has been removed. They should have been manually tripped IAW arc actions.
	D	Plausible if the candidate believes that the feedpumps can be used at low vacuum since the low vacuum trip has been removed. Plausible if the candidate doesn't recall that the bypass valves will not be available below 7 inches.

Question 39 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:	2084455
User-Defined ID:	B NRC 2019
Cross Reference Number:	295006K101
Topic:	ILT- 2100 3-013 Describe the symptom-based TRIP mitigation strategies.
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High			10CRF55.41(b) 10

Source Documentation			
Source:	**X** New Exam item Previous NRC Exam Modified Bank Other Exam Bank ILT Exam Bank		
Reference(s):	OP-PB-101-111-1001		
Learning Objective:	PLOT - 2100-3		
K/A System:	295006 - SCRAM	Importance;	RO / SRO 3.7
K/A Statement:	K101 - Knowledge of the operational implications of the following concepts as they apply to SCRAM: Decay heat generation and removal		
REQUIRED MATERIALS:	None		
Notes and Comments:	This matches the K/A as knowledge that the loss of the condenser must be used to conclude that only HPCI and RCIC can be used for decay heat removal. The 10CFR reference (10CRF55.41(b) 10) is correct because there is an administrative procedure (OP-PB-101-111-1001) that discusses lineups for different plant conditions.		

40 **ID: 2084067** **Points: 1.00**

PBAPS Unit 3 plant conditions are as follows:

- Mode 5.
- Core Shuffle II is in progress, loading fuel into the core.

Which one of the following statements would be considered inadvertent criticality and require entry into ON-124 "Fuel Floor and Fuel Handling Problems?

While loading the 1st fuel assembly ___(1)___ to a WRNM, the WRNM count rate ___(2)___ between CCTAS steps.

A. (1) adjacent
(2) doubles

B. (1) NOT adjacent
(2) doubles

C. (1) adjacent
(2) doubles two times

D. (1) NOT adjacent
(2) doubles two times

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	ON-124 has a note stating that step 1.1 is NOT applicable when loading the 1st, 2nd, 3rd, or 4th fuel assembly ADJACENT to a WRNM. step 1.1 is an entry for ON-124 when WRNM count rate doubles two times between CCTAS steps. Since this assembly is NOT adjacent to a WRNM, step 1.1 applies and ON-124 should be entered
Distractors:	A	Plausible if candidate misapplies the note in ON-124 and believes step 1.1 applies when fuel assembly is adjacent to WRNM. Also candidate may misapply step 1.1.
	B	Plausible if candidate misapplies step 1.1 and believes only doubling WRNM count rate will require entry into ON-124
	C	Plausible if candidate misapplies the note in ON-124 and believes step 1.1 applies when fuel assembly is adjacent to WRNM.

Question 40 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	1
Difficulty:	1.00
System ID:	2084067
User-Defined ID:	B NRC 2019
Cross Reference Number:	295023 AK1.03
Topic:	ILT 5018-4-002 Indications of Criticality
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory	2	3	10CRF55.41(b)(1)

Source Documentation

Source:	☐ New Exam Item ☐ Modified Bank Item ☒ ILT Exam Bank	☐ Previous NRC Exam: ☐ Other Exam Bank:
Reference(s):	ON-124	
Learning Objective:	PLOT-5018-4	
K/A System:	295023 - Refueling Accidents	Importance: RO / SRO 3.7 / 4.0

K/A Statement:
AK1.03 - Knowledge of the operational implications of the following concepts as they apply to REFUELING ACCIDENTS : Inadvertent criticality

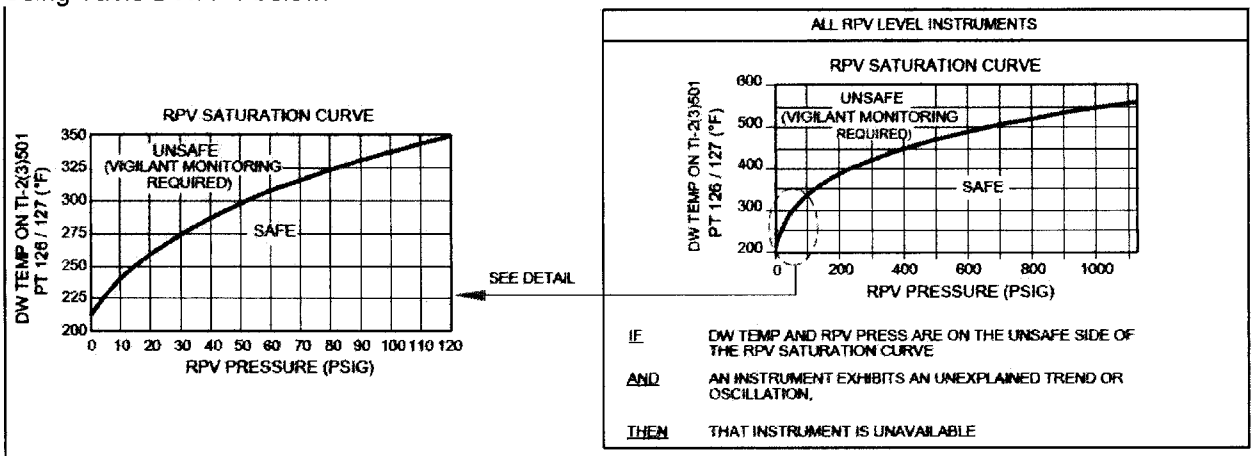
REQUIRED MATERIALS:	**NONE**
Notes and Comments:	

41 **ID: 993747** **Points: 1.00**

During a transient on Unit 2, the following plant conditions exist:

- All control rods fully inserted.
- RPV pressure 900 psig and stable.
- Drywell Air Temperature TI-2501 PT 126 indicates 510 °F.
- Drywell Air Temperature TI-2501 PT 127 indicates 510 °F.
- Narrow Range RPV level indicates +8 inches.
- Wide Range RPV level (LI-2-02-3-085A) indicates -125 inches.
- Wide Range RPV level (LI-2-02-3-085B) indicates -115 inches.
- Refuel Range RPV level (LI-2-2-3-086) indicates +60 inches.

Using Table DW/T-1 below:



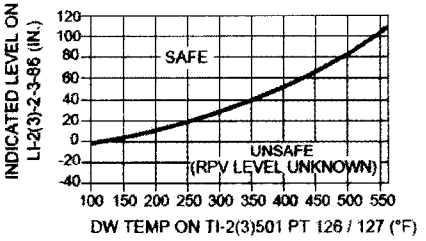
WIDE AND NARROW RANGE INSTS ONLY

FOR EACH OF THE INSTRUMENTS IN THE TABLE, THE INSTRUMENT READS ABOVE THE MIN INDICATED LEVEL OR THE TEMP NEAR THE DW REFERENCE LEG VERTICAL RUNS (TI-2(3)501 PT 126 / 127) ARE BELOW THE MAX RUN TEMP.

INSTRUMENT	MIN INDICATED LEVEL IS ABOVE	OR	MAX RUN TEMP IS BELOW
NARROW RANGE	10 IN.	OR	450°F
WIDE RANGE	-120 IN.	OR	500°F

SHUTDOWN RANGE INST LI-2(3)-2-3-86 ONLY

LI-2(3)-2-3-86 READS ON THE SAFE SIDE OF THE CURVE



Which of the RPV level indicator(s) listed below is (are) available to trend RPV level per the TRIPs?

A. Narrow Range only.

B. Wide Range RPV level (LI-2-02-3-085B) only.

C. Narrow Range and Wide Range RPV level (LI-2-02-3-085B) only.

D. Wide Range RPV level (LI-2-02-3-085A) and Refuel Range RPV level (LI-2-2-3-086) only.

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	Wide range RPV level LI-2-02-3-085B has its Min indicated level above -120 inches and could therefore be used as a valid indication even though Max run temperature is above 500°F.
Distractors:	A	Narrow range indication is below its Min indicating level at 8 inches, and since it is also above the Max run temperature of 450°F Plausible if candidate misapplies Table DW/T-1
	C	Narrow range indication is below its Min indicating level at 8 inches, and since it is also above the Max run temperature of 450°F Plausible if candidate misapplies Table DW/T-1
	D	Wide range RPV level LI-2-02-3-085A is below its Min Indicating level at -125 inches and is also above Max run temperature of 500°F therefore it cannot be used. Plausible if candidate misapplies Table DW/T-1

Question 41 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	2.00
System ID:	993747
User-Defined ID:	B NRC 2019
Cross Reference Number:	295028 EK1.01
Topic:	ILT-PBIG2102-002 Valid Level Instruments
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High	2	3	10CRF55.41(b)(10)

Source Documentation

Source:	☐ New Exam Item ☐ Modified Bank Item ☒ ILT Exam Bank	☐ Previous NRC Exam: ☐ Other Exam Bank:
Reference(s):	T-102, T-103 and BASES	
Learning Objective:	PBIG2102-002	
K/A System:	295028 - High Drywell Temperature	Importance: RO / SRO 3.5 / 3.7

K/A Statement:
EK1.01 - Knowledge of the operational implications of the following concepts as they apply to HIGH DRYWELL TEMPERATURE : Reactor water level measurement

REQUIRED MATERIALS:	**NONE**
Notes and Comments:	

42 **ID: 2084225** **Points: 1.00**

Unit 2 is at 100% power

- Loss of off-site power occurs
- A hydraulic ATWS occurs

30 seconds later

- 2 SRVs indicate open
- RPV Pressure is steady

Reactor power is currently approximately ___(1)___ and the __(2)_____ system is capable of maintaining RPV level above top of active fuel.

A. (1) 3%
(2) HPCI or RCIC

B. (1) 6%
(2) HPCI or RCIC

C. (1) 3%
(2) HPCI only

D. (1) 6%
(2) HPCI only

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	Due to a Loss of off-site power a group I isolation has occurred. This regulates pressure control to the SRVs which will open on pressure setpoint. 2 SRVs open indicate that power is above decay heat generation and power is > 5% power. This is beyond the capacity of RCIC to make up so HPCI must be used to maintain reactor level.
Distractors:	A	This is plausible if the candidate confuses the related power level to SRVs with Bypass valves which pass approximately 2.5% power per bypass valve. Plausible as RCIC is designed to maintain Reactor Power level during a group I isolation event alone. However a normal group I isolation event with no other problems would produce only Decay Heat generation and only 1 SRV would open. 2 SRVs being open indicate that there is more power being generated than simply Decay Heat and RCIC cannot maintain level
	B	This is the correct power level Plausible as RCIC is designed to maintain Reactor Power level during a group I isolation event alone. However a normal group I isolation event with no other problems would produce only Decay Heat generation and only 1 SRV would open. 2 SRVs being open indicate that there is more power being generated than simply Decay Heat and RCIC cannot maintain level
	C	This is plausible if the candidate confuses the related power level to SRVs with Bypass valves which pass approximately 2.5% power per bypass valve. HPCI is the correct system and would be able to handle this power level.

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:	2084225
User-Defined ID:	B NRC 2019
Cross Reference Number:	295025 K2.09
Topic:	ILT-5001A-5n relationship # SRV's to power
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High	2	3	10CRF55.41(b)(5)

Source Documentation

Source:	☒ New Exam Item ☐ Modified Bank Item ☐ ILT Exam Bank	☐ Previous NRC Exam: ☐ Other Exam Bank:
Reference(s):	UFSAR 4.4, 4.7, 6.3	
Learning Objective:	PLOT-5001A-5	
K/A System:	295025 - High Reactor Pressure	Importance: RO / SRO 3.9 / 3.9
K/A Statement: **EK2.09 - Knowledge of the interrelations between HIGH REACTOR PRESSURE and the following:** Reactor power		
REQUIRED MATERIALS:	**NONE**	
Notes and Comments:		

43 **ID: 994386** **Points: 1.00**

Unit 2 is operating at 85% power with the following conditions:

- Battery charger 2BD003-1 is supplying the Division II 250 VDC bus

A design basis LOCA occurs.

- The output breaker on battery charger 2BD003-1 trips open at the time of the LOCA

Assuming no operator action, how will the plant respond to this event during the first hour?

The Division II 250 VDC bus will:

A. remain powered at rated voltage supplied by battery charger 2BD003-2.

B. remain powered at rated voltage supplied by the 2B station battery ONLY.

C. immediately de-energize until battery charger 2BD003-2 is placed in service.

D. remain powered at rated voltage supplied by the 2B station battery AND the in-service 2D charger.

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	Correct - when the output breaker for charger 2BD003-1 trips, the charger no longer supplies power to the Division II 250 VDC bus. The bus loads would then be supplied by the 2B and 2D batteries. The batteries are designed to supply loads during a DBA for 2 hours.
Distractors:	A	Incorrect - charger 2BD003-2 must be manually placed in service...only one charger can be in service at a time. The question stem states "assuming no operator actions."
	B	Incorrect - when the output breaker for charger 2BD003-1 trips, the charger no longer supplies power to the Division II 250 VDC bus. The bus loads would then be supplied by BOTH the 2B and 2D batteries.
	C	Incorrect - the battery will fully support all loads for approximately 2 hours with no battery charger; the bus will remain energized.

Question 43 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	3.00
System ID:	994386
User-Defined ID:	B NRC 2019
Cross Reference Number:	295004 AK2.01
Topic:	ILT-5057-3C-002 Effect of a charger malfunction on DC battery
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High	2	3	10CRF55.41(b)(8)

Source Documentation

Source:	☐ New Exam Item ☐ Modified Bank Item ☒ ILT Exam Bank	☐ Previous NRC Exam: ☐ Other Exam Bank:
Reference(s):	SE-11 BASES, UFSAR 8.7	
Learning Objective:	PLOT-5057-3	
K/A System:	295004 - Partial or Complete Loss of D.C. Power	Importance: RO / SRO 3.1 / 3.1
K/A Statement: **AK2.01 - Knowledge of the interrelations between PARTIAL OR COMPLETE LOSS OF D.C. POWER and the following:** Battery charger		
REQUIRED MATERIALS:	**NONE**	
Notes and Comments:		

44 **ID: 2084249** **Points: 1.00**

Unit 2 is at 100% power

- The #1 breaker is closed on the #1 Aux Bus
- The #22 breaker is closed on the #2 Aux Bus

- Main Generator voltage begins to lower

Choose the expected response of the following condensate pump ammeters.

'A' condensate pump ammeter will ___(1)___
'B' condensate pump ammeter will ___(2)___

A. (1) Rise
(2) Remain the same

B. (1) Rise
(2) Rise

C. (1) Remain the same
(2) Remain the same

D. (1) Remain the same
(2) Rise

Answer: A

Answer Explanation

Choice		Basis or Justification
Correct:	A	The 'A' condensate pump is currently powered from the generator as the #1 breaker is closed powering the #1 Aux bus. As voltage lowers the 'A' condensate will draw more amperage to maintain pump speed. Since the 'B' pump is powered from offsite as indicated by the #22 breaker being closed, it's voltage and therefore amperage will remain the same.
Distractors:	B	Plausible if candidate does not recall that the A and B condensate pumps are powered off of the 2 different aux busses.
	C	Plausible if candidate does not understand the effects of a lowering voltage on a motor.
	D	Plausible if candidate confuses which condensate pump is powered from which aux bus.

Question 44 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:	2084249
User-Defined ID:	B NRC 2019
Cross Reference Number:	700000 AK2.01
Topic:	ILT-5053-7 voltage effects on motors
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
HIGH			10CRF55.41(b)(4)

Source Documentation		
Source:	**X**New Exam item Modified Bank ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	PLOT-5053	
Learning Objective:	PLOT-5053-7	
K/A System:	700000 Generator Voltage and Electric Grid Disturbances	Importance: RO / SRO 3.1/ 3.2
K/A Statement:	AK2.01 - **Knowledge of the interrelations between GENERATOR VOLTAGE AND ELECTRIC GRID DISTURBANCES and the following:** Motors	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

45 **ID: 2084285** **Points: 1.00**

Unit 2 is at 100% power

- #2 Aux bus de-energizes

As a result of #2 bus deenergizing, Drywell Cooling is automatically maximized by isolation of cooling to:

A. Recirc Pump Seals

B. Recirc Pump Motor

C. Drywell Equipment sump

D. RWCU Non-Regen Heat Exchanger

Answer: D

Answer Explanation		
Choice		Basis or Justification
Correct:	D	Due to a loss of the #2 aux bus, 2 DWCW load centers will de-energize. This causes RBCCW to back up DWCW. During this swap over RBCCW will isolate RWCU non-regen HX in order to maximize DWCW.
Distractors:	A	Plausible as this is a load cooled by RBCCW, however it does not isolate when RBCCW backs up DWCW
	B	Plausible as this is a load cooled by DWCW, however it is not isolated when RBCCW backs up DWCW
	C	Plausible as this is a load cooled by DWCW, however it is not isolated when RBCCW backs up DWCW

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:	0.00
System ID:	2084285
User-Defined ID:	B NRC 2019
Cross Reference Number:	295018 AK3.01
Topic:	ILT-5035-3c reason RBCCW backs up DWCW
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b)(5)

Source Documentation		
Source:	**X**New Exam item Modified Bank ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	M-316 sht1, M-327 sht2	
Learning Objective:	PLOT-5035-3	
K/A System:	295018 - Partial or Complete Loss of Component Cooling water	Importance: RO / SRO 2.9/ 3.2
K/A Statement:	**AK3.01 - Knowledge of the reasons for the following responses as they apply to PARTIAL OR COMPLETE LOSS OF COMPONENT COOLING WATER :** Isolation of non-essential heat loads	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

46 **ID: 994775** **Points: 1.00**

The following conditions exist on Unit 3:

- ATWS
- Group I isolation
- Reactor power is 40%
- Torus Cooling is NOT available

Which one of the following limits will be challenged first by these conditions?

A. Drywell Spray Initiation Limit

B. Heat Capacity Temperature Limit

C. Pressure Suppression Pressure Limit

D. Primary Containment Pressure Limit

Answer: B

Answer Explanation		
Correct:	B	The given conditions indicate SRV discharge into the Torus. Without torus cooling, HCTL will be challenged first.
Distractors:	A	Plausible if the candidate applies the requirements of DWSIL. There will be an entry condition into T-102, "Primary Containment Control" due to the SRV's discharging to the Torus without cooling, however DWSIL is not an initial concern because there are no given conditions of Primary Containment high pressure or temperature.
	B	Plausible as PSP would be a concern while in T-102, however the PSP is not an initial concern since there are no given conditions that indicate the Primary Containment is not functioning properly.
	D	Plausible as PCP would be a concern while in T-102, however the PCP limit is not an initial concern because there is no given condition of Primary Containment high pressure.

Question 46 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:	994775
User-Defined ID:	B NRC 2019
Cross Reference Number:	295026 EK3.02
Topic:	ILT-2102-7A-026 The following conditions exist on Unit 3: *ATWS *Group I Isolation *Reactor power
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High			10CRF55.41(b)(5)

Source Documentation		
Source:	New Exam item Modified Bank **X** ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	T-102 and Bases	
Learning Objective:	PBIG-2102-7	
K/A System:	295026 - Suppression Pool High Water Temperature	Importance: RO / SRO 3.9/ 4.0
K/A Statement:	**EK3.02 - Knowledge of the reasons for the following responses as they apply to SUPPRESSION POOL HIGH WATER TEMPERATURE:** Suppression pool cooling	
REQUIRED MATERIALS:	None	
Notes and Comments:	This question meets the K/A because T-102 directs placing torus cooling in service to mitigate the consequences of rising suppression pool temperature due to SRVs open in an ATWS. This Question tests the understanding of the relationship between suppression pool temp and cooling by establishing a situation where the loss of SP cooling and resulting rise in SP Temp results in a challenge to HTCL	

47 **ID: 2084302** **Points: 1.00**

Unit 2 is experiencing an ATWS:

- ARI was attempted unsuccessfully
- Reactor Power is currently 15% power

Which of the following is performed first by the Unit Reactor Operator in accordance with T-101 "RPV Control", and what is the reason?

A. Inject SBLC before torus temp reaches 110°F to limit the Torus temperature rise

B. Inhibit ADS to prevent injection of large volumes of relatively cold, unborated water

C. Drive rods with T-220 "Driving Control Rods During Failure to Scram" to exit ATWS

D. Trip Recirc pumps at least 10 seconds apart to effect a prompt reduction in core circulation and reactor power

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	Tripping the recirc pumps 10 seconds apart is one of the first steps when responding to an ATWS above 4% power IAW T-101.
Distractors:	A	Plausible as injecting SBLC before torus temp reaches 110°F is an ATWS strategy, but since power is greater than 4% tripping the recirc pumps would be performed first IAW T-101.
	B	Plausible as inhibiting ADS is part of the ATWS strategy, but since power is greater than 4% tripping the recirc pumps would be performed first IAW T-101.
	C	Plausible as driving rods is part of the ATWS strategy, but since power is greater than 4% tripping the recirc pumps would be performed first IAW T-101.

Question 47 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:	2084302
User-Defined ID:	B NRC 2019
Cross Reference Number:	295037 EK3.01
Topic:	ILT-PBIG2101-006 Reason to trip recirc pumps during ATWS
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b)(10)

Source Documentation

Source:	**X**New Exam item Modified Bank ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	T-101 and Bases	
Learning Objective:	PBIG2101-5	
K/A System:	295037 - **SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown**	Importance: RO / SRO 4.1/ 4.2
K/A Statement:	**EK3.01 - Knowledge of the reasons for the following responses as they apply to SCRAM CONDITION PRESENT AND REACTOR POWER ABOVE APRM DOWNSCALE OR UNKNOWN :** Recirculation pump trip/runback	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

48 **ID: 2084800** **Points: 1.00**

The following plant conditions exist on Unit 2:

- Reactor is shutdown with all rods inserted
- RPV level -159 inches and slowly lowering
- RPV pressure 105 psig and lowering
- Condensate pump "A" is injecting
- RHR A and B loop injection valves will not open locally or remotely
- CS Loop "A" was blocked for maintenance. CS "B & D" pumps tripped on overcurrent
- HPCI is tripped due to a lube oil problem
- RCIC is tripped on overspeed and cannot be reset

Which one of the following Alternate Subsystems meets the criteria to successfully inject into the RPV under these conditions?

A. HPSW via RHR per T-245-2, "HPSW Injection into the RPV".

B. Fire System via RHR per T-243-2, "Fire System Injection into the RPV".

C. Refuel Water Transfer via Condensate per T-242-2, "Alternate Injection using the Refuel Water Transfer System".

D. Condensate Transfer via CS loop "B" per T-241-2, "Alternate Injection using the Condensate Transfer System".

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	Under the stated conditions the only alternate subsystem available to inject would be Condensate transfer per T-241-2
Distractors:	A	RHR Injection valves are required in order to use this path. Plausible if candidate misinterprets conditions as this is a valid subsystem. However both RHR A and B loop injection valves will not open as stated in stem.
	B	RHR Injection valves are required in order to use this path. Plausible if candidate misinterprets conditions as this is a valid subsystem. However both RHR A and B loop injection valves will not open as stated in stem.
	C	T-242-2 pre-req requires condensate pumps be shutdown. Plausible if candidate misinterprets conditions as this is a valid subsystem. However a condensate pump is currently running and injecting as stated in the stem.

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:	2084800
User-Defined ID:	B NRC 2019
Cross Reference Number:	295031EA1.08
Topic:	ILT-2101-3-003 Alternate subsystem use
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High			10CRF55.41(b)(8)

Source Documentation

Source:	New Exam item Modified Bank ILT Exam Bank	Previous NRC Exam X Other Exam Bank (LORT 991823)
Reference(s):	T-101, T-245, T-243, T-242, T-241	
Learning Objective:	ILT-2101-3	
K/A System:	295031 - Reactor Low Water Level	Importance: RO / SRO 3.8 / 3.9
K/A Statement:	**EA1.08 - Ability to operate and/or monitor the following as they apply to REACTOR LOW WATER LEVEL: Alternate injection system**	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

49 **ID: 993425** **Points: 1.00**

Unit 2 is operating at full power with all Instrument Air and Instrument Nitrogen systems aligned normally when it experiences the following:

- Annunciator NITROGEN COMPRESSOR A OR B TROUBLE (228 E-2) alarms.

After investigation, the EO reports:

- The 'A' and 'B' Instrument Nitrogen Compressors are tripped.
- The 'A' and 'B' Instrument Nitrogen Receiver pressures are at 80 psig.

With no operator action, with the 'A' and 'B' Instrument Nitrogen Receiver pressures at 80 psig, pressure will AUTOMATICALLY be maintained to the 'A' and 'B' Instrument Nitrogen Headers by the:

A. Nitrogen Bottles aligned by the auto opening of SV-8130 A/B, "A/B Supply."

B. Containment Atmosphere Dilution System aligned by the auto opening of PCV-7651 A/B, "SGIG Pressure Control Valve."

C. Truck Connection aligned by the auto opening of PCV-8917 A/B, "A/B Nitrogen Pressure Control Valve for Backup Supply."

D. Instrument Air System aligned by the auto opening of AO-4230 A/B, "A/B Instrument Air Backup to Instrument Nitrogen."

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	Instrument air will automatically backup the Instrument Nitrogen System when Instrument Nitrogen Receiver pressure drops below 85 psig.
Distractors:	A	SV-8130 valves have an open/auto position, they are normally in the closed position. If left in auto/open, the valves would be open unless they were isolated. Pressure' would only be aligned to the ADS valves.
	B	Alignment of the CAD system through SGIG system to supply the Instrument Nitrogen system requires manual valve alignments.
	C	The truck connection is available to be used, but is not aligned for automatic operation. Pressure would only be supplied to the ADS valves.

Question 49 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:	993425
User-Defined ID:	B NRC 2019
Cross Reference Number:	295019 AA1.02
Topic:	ILT-5016-4-001 Relationship between Inst N2 and Inst Air
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High			10CRF55.41(b)(10)

Source Documentation

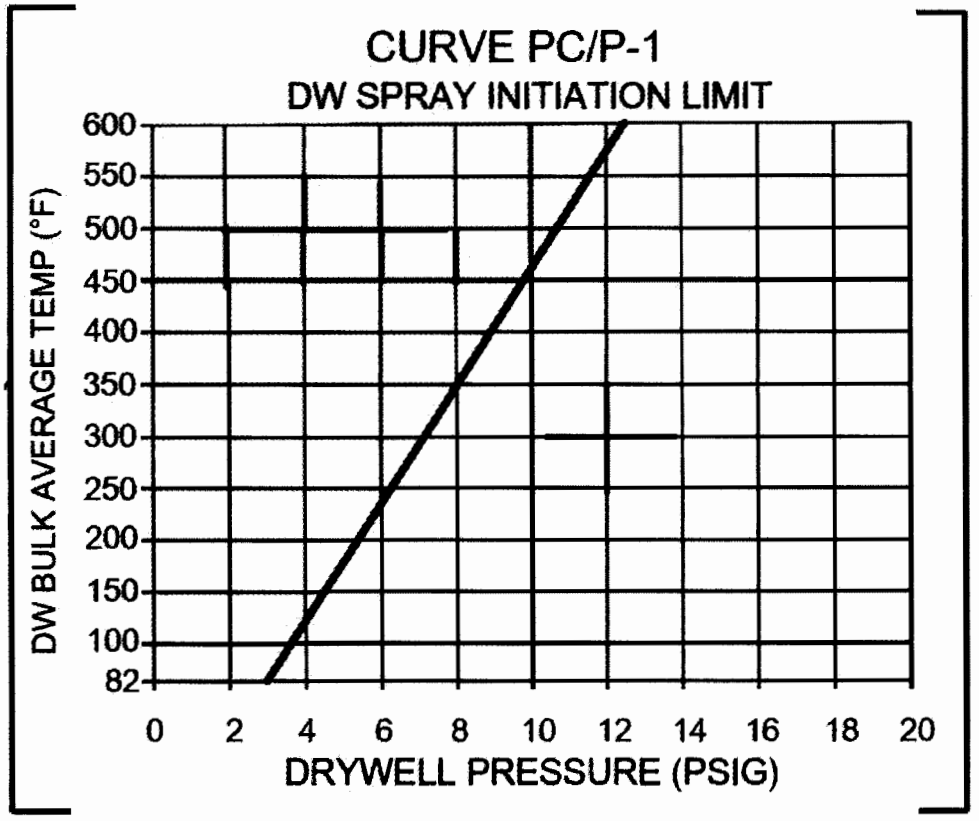
Source:	New Exam item Modified Bank X ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	PLOT 5016; ARC 228 E-2	
Learning Objective:	PLOT-5016-4	
K/A System:	295019 - Partial or Complete Loss of Instrument Air	Importance: RO / SRO 3.3 / 3.1
K/A Statement:	**AA1.02 - Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF INSTRUMENT AIR :** Instrument air system valves	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

50 **ID: 2084346** **Points: 1.00**

Unit 3 has entered T-102, "Primary Containment Control" due to a LOCA. The following conditions exist:

- 'A' RHR pump is in Torus and Drywell sprays per T-204 "Initiation of Containment Sprays using RHR".
- Drywell Temperature is currently reading 300°F
- Drywell Pressure is currently reading 6 psig

Using PC/P-1 (Below)



In accordance with T-102,

A. drywell sprays will remain in service and shall be secured before dropping below 2 psig in the drywell.

B. drywell spray flow rate will be raised to restore temperature and pressure to the SAFE side of the DWSIL curve.

C. drywell sprays will be immediately secured to prevent an evaporative cooling pressure drop greater than the capacity of the Reactor Building to Torus vacuum breakers.

D. drywell sprays will be immediately secured to prevent an evaporative cooling pressure drop to below the high drywell pressure scram setpoint.

Answer: A

Answer Explanation

Choice		Basis or Justification
Correct:	A	DW temp/press on the unsafe side of the DWSIL curve is only concern for initiation of sprays, not securing
Distractors:	B	raising spray flow rate will move the point left and down further into unsafe side and not directed by TRIPs. Plausible if candidate misunderstands purpose of PC/P-1 curve.
	C	Plausible as this is the concern for initiation of DW sprays using PC/P-1
	D	Plausible as this is the concern for initiation, but wrong reason.

Question 50 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	2.00
System ID:	2084346
User-Defined ID:	B NRC 2019
Cross Reference Number:	295024 EA1.11
Topic:	ILT-PBIG-2102-018 DWSIL Curve Plot modified
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High			10CRF55.41(b)(10)

Source Documentation		
Source:	New Exam item Modified Bank X ILT Exam Bank (994151)	Previous NRC Exam Other Exam Bank
Reference(s):	T-102 and Bases	
Learning Objective:	PBIG-2102-1	
K/A System:	295024 - High Drywell Pressure	Importance: RO / SRO 4.2 / 4.2
K/A Statement:	**EA1.11 - Ability to operate and/or monitor the following as they apply to HIGH DRYWELL PRESSURE:** Drywell spray: Mark-I&II	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

51 **ID: 994302** **Points: 1.00**

Unit 2 is operating at 95% power.

- A recirculation flow reduction event results in entry into Region 2 of the Power to Flow Map.

Which of the following instrumentation responses is used to determine if the reactor core is experiencing thermal hydraulic instability?

A. Peak-to-peak oscillations on RBM are 10% and growing larger.

B. Peak-to-peak oscillations on APRMs are 10% and growing larger.

C. Peak-to-peak oscillations on WRNMs are 10% and growing larger.

D. WRNM short period alarms are received on a 10 second frequency.

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	Core Thermal Hydraulic Instability (THI) may be occurring if any of the following conditions exist: *Steadily increasing confirmation counts on OPRM display with few to no resets. * Any APRM flux noise signal grows by 2 or more times its initial level, * APRM flux oscillations rise greater than or equal to 10% (peak to peak).
Distractors:	A	Plausible as the RBM is used for neutron monitoring, however RBM not referenced as a nuclear monitoring instrument for THI.
	C	Plausible as the WRNM system is used for neutron monitoring, however the WRNM system not referenced as a nuclear monitoring instrument for THI.
	D	Plausible as period is an important factor in nuclear generation, however there is no reference to period indication as a nuclear monitoring instrument for THI.

Question 51 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	2.50
System ID:	994302
User-Defined ID:	B NRC 2019
Cross Reference Number:	295001.AA2.02
Topic:	ILT-1540-3-014 flow reduction event THI
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b)(10)

Source Documentation

Source:	New Exam item Modified Bank X ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	OT-112	
Learning Objective:	PLOT-1540-3	
K/A System:	295001 - Partial of Complete Loss of Forced Core Flow Circulation	Importance: RO / SRO 3.1 / 3.2
K/A Statement:	**AA2.01 - Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF FORCED CORE FLOW CIRCULATION:** Neutron monitoring	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

52 **ID: 2084405** **Points: 1.00**

Unit 2 is at 100% power

- ARC-007 D-2b "2 Reactor Bldg. Oper'G/Drywell Area Smoke Detectors A76, Elev. 165'-0"" is received

The crew enters FF-01 and the PRO initially dispatches the ___(1)___

- The report back is that the E-224 Bus is on fire

The PRO trips the E-224 breaker and starts the ___(2)___

A. (1) Entire Fire Brigade
(2) Motor Driven Fire Pump

B. (1) Entire Fire Brigade
(2) Diesel Driven Fire Pump

C. (1) Incident Commander and Ops HP
(2) Motor Driven Fire Pump

D. (1) Incident Commander and Ops HP
(2) Diesel Driven Fire Pump

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	In accordance with FF-01 step 6.2.1, the entire fire brigade is dispatched for a fire alarm in the Reactor building. Step 6.2.4 has the PRO start a fire pump in the event of an actual fire reported. E-224 is the power supply to the Motor Driven fire pump, therefore when it was tripped by the PRO the only available pump to be started is the Diesel Driven Fire Pump
Distractors:	A	Plausible if candidate does not recall the power supply to the Motor Driven Fire pump.
	C	Plausible as step 6.2.2 says that the Incident Commander and Ops HP should be dispatched for a fire alarm received in the control room from a detection system. Plausible if candidate misapplies step 6.2.1 that the entire fire brigade shall be dispatched for a fire alarm in the reactor building. Also the Motor driven fire pumps power supply is de-energized.
	D	Plausible as step 6.2.2 says that the Incident Commander and Ops HP should be dispatched for a fire alarm received in the control room from a detection system. Plausible if candidate misapplies step 6.2.1 that the entire fire brigade shall be dispatched for a fire alarm in the reactor building.

Question 52 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:	2084405
User-Defined ID:	B NRC 2019
Cross Reference Number:	600000 AA2.03
Topic:	ILT-5037-9f FF-01 usage
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High			10CRF55.41(b)(10)

Source Documentation

Source:	**X** New Exam item Modified Bank ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	FF-01	
Learning Objective:	PLOT-5037-9f	
K/A System:	600000 - Plant Fire On Site	Importance: RO / SRO 2.8 / 3.2
K/A Statement:	**AA2.03 - Ability to determine and interpret the following as they apply to PLANT FIRE ON SITE:** Fire alarm	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

53 **ID: 994313** **Points: 1.00**

In accordance with SE-1, "Plant Shutdown from the Remote Shutdown Panel", why is the reactor SCRAMMED prior to evacuating the Main Control Room?

A. This action ensures that inventory makeup requirements will be within Condensate capability.

B. This action ensures that inventory makeup requirements will be within HPCI capability.

C. This action ensures that inventory makeup requirements will be within RCIC capability.

D. This action ensures that inventory makeup requirements will be within CRD capability.

Answer: C

Answer Explanation

Choice		Basis or Justification
Correct:	C	In accordance with SE-1 bases, scramming the unit assures that makeup to the reactor will be based on decay heat which can be adequately handled by the RCIC System.
Distractors:	A	Plausible as makeup is maintained within condensate capability, condensate is not controlled from the Remote shutdown and this is not the reason the reactor is scrammed prior to evacuating the MCR.
	B	Plausible as SE-10 is also a procedure used when abandoning control room and candidate might confuse the two. HPCI is used only in SE-10 at the Alternate Shutdown Panel and not applicable for this condition.
	D	Plausible as the CRD pumps can be controlled from the remote shutdown panel IAW SE-1, however scramming the plant does not maintain the plant within makeup capability of CRD

Question 53 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	3.00
System ID:	994313
User-Defined ID:	B NRC 2019
Cross Reference Number:	295016 AA2.01
Topic:	ILT-1555-1-014 Which one of the following is the reason why the reactor is SCRAMMED prior to evac
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

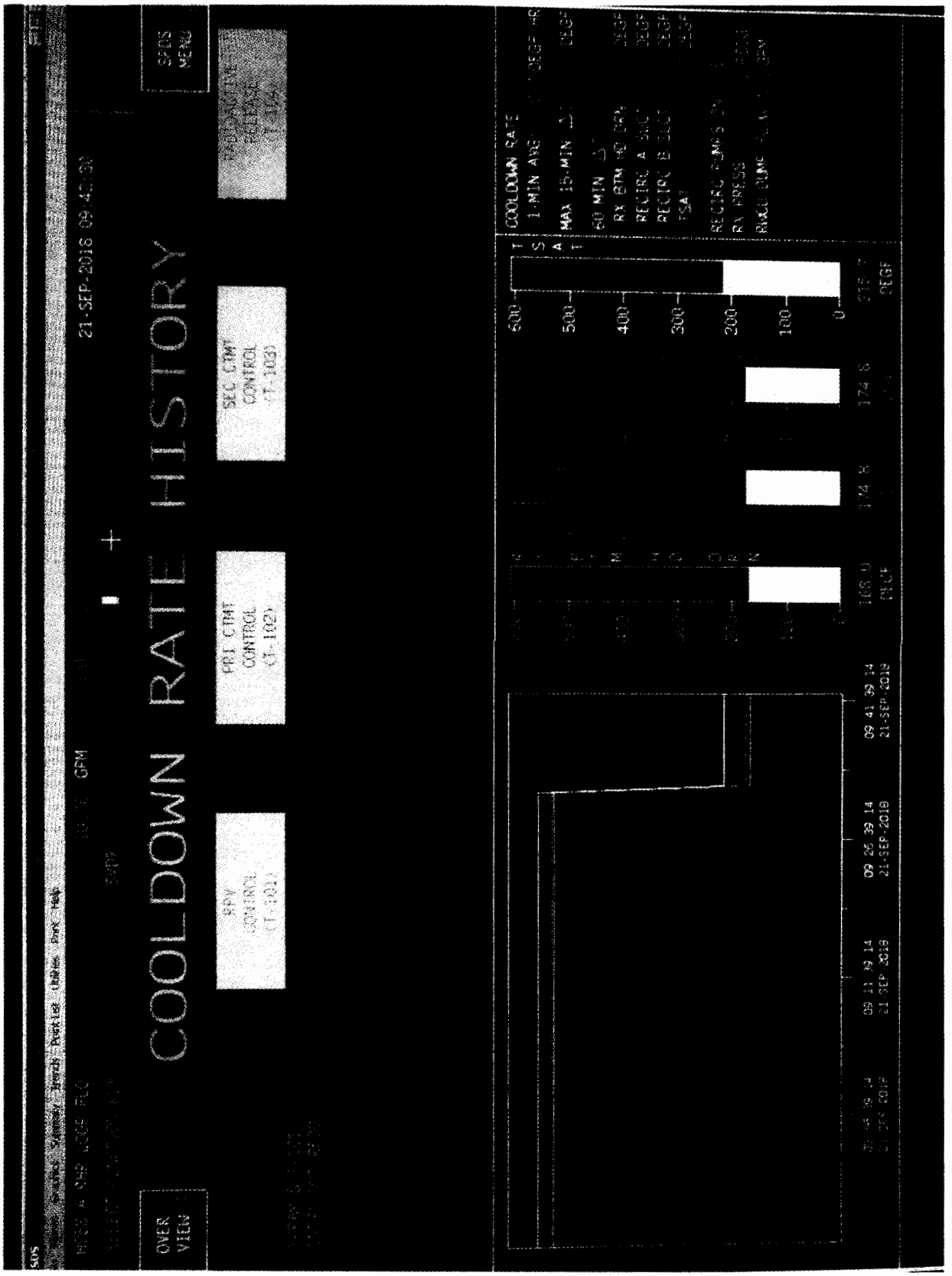
Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b)(10)

Source Documentation		
Source:	New Exam item Modified Bank **X** ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	SE-1 bases	
Learning Objective:	PLOT-1555-1	
K/A System:	**295016 - Control Room Abandonment**	Importance: RO / SRO 4.1 / 4.1
K/A Statement:	**AA2.01 - Ability to determine and/or interpret the following as they apply to CONTROL ROOM ABANDONMENT :** Reactor power	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

54 **ID: 1104444** **Points: 1.00**

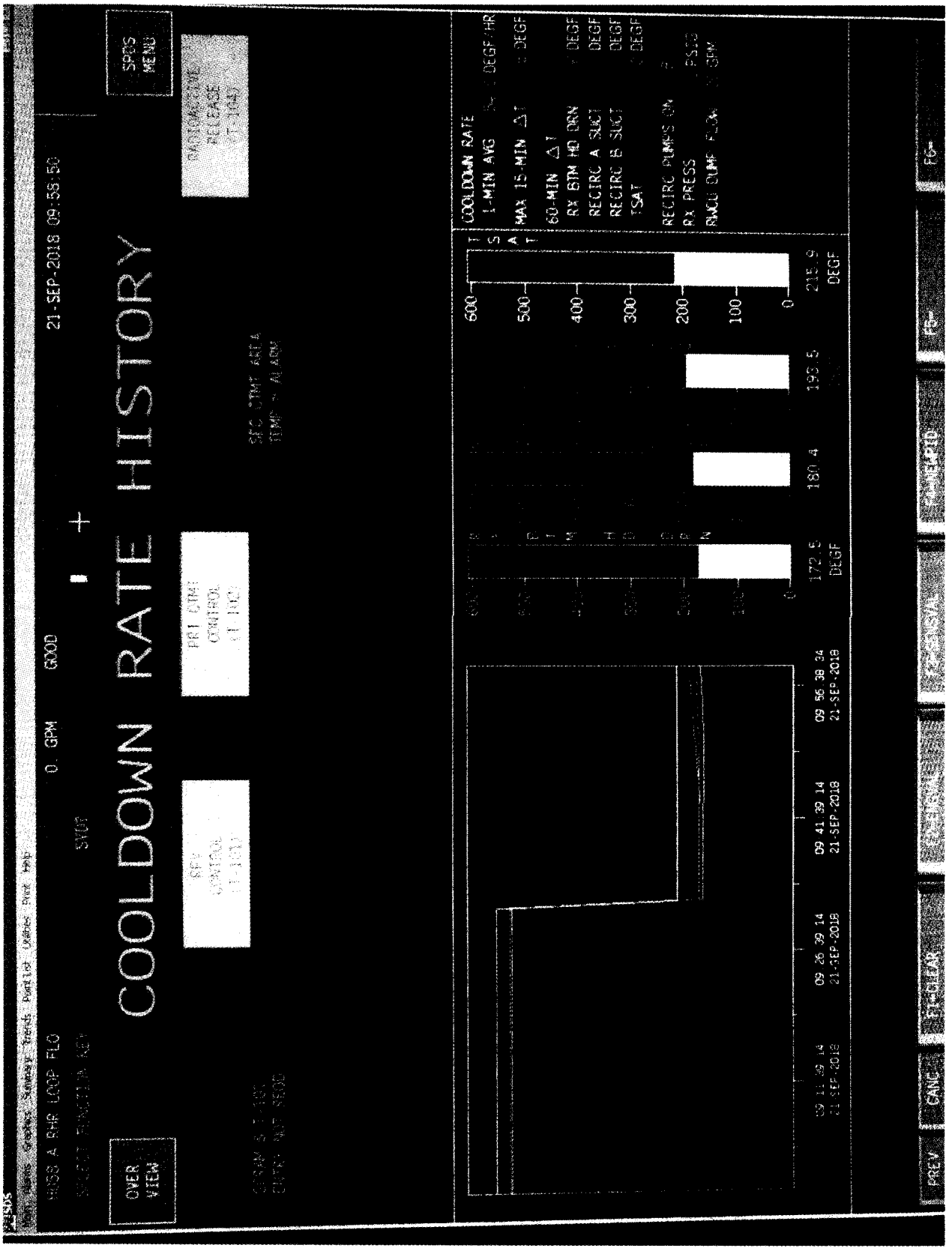
Unit 2 is in Shutdown Cooling with the "A" RHR pump and "A" HPSW pump running with the MO-2-10-89A "A HPSW HX OUT" OPEN. The following information is available from the process computer:

(NEXT PAGE)


COOLDOWN RATE HISTORY
21-SEP-2018 09:42:30
OVER VIEW
SFDS MENU
RCP CONTROL (T-101)
PRI CMT CONTROL (T-102)
SEC CMT CONTROL (T-103)
GPM
COOLDOWN RATE
1-MIN AVG
MAX 15-MIN
60 MIN
RX BTM HD TEMP
RECIRC A SUCT
RECIRC B SUCT
PSAT
RECIRC PUMP A
RX PRESS
RCS PUMP
DEGF
500
400
300
200
100
0
09 11 39 14
21-SEP-2018
09 26 39 14
21-SEP-2018
09 41 39 14
21-SEP-2018
165.0
174.8
174.8

15 minutes later, with no operator action, the process computer provides the following information:

(NEXT PAGE)


COOLDOWN RATE HISTORY
OVER VIEW
SPDS MENU
21-SEP-2018 09:59:50
0. GPM
GOOD
SHUT
RADIATION RELEASE (T.104)
RPV CTMT AREA
COOLDOWN RATE
1-MIN AVG
MAX 15-MIN ΔT
60-MIN ΔT
RX BTM HD DWN
RECIRC A SUCT
RECIRC B SUCT
TSAT
RECIRC PUMPS ON
RX PRESS
RWCU DUMP FLOW
600
500
400
300
200
100
0
172.5
180.4
193.5
215.9
DEGF
09 11 39 14
21-SEP-2018
09 26 39 14
09 41 39 14
09 56 38 34
PREV
CANC
F6-

Compare the above information, then choose the correct statement.

A. Shutdown cooling is in-service, remove shutdown cooling from service to prevent exceeding the Cooldown rate.

B. Shutdown cooling is in-service, continue to monitor temperatures using ST-O-080-500-2, "Recording and Monitoring Reactor Vessel Temperatures".

C. Shutdown cooling is not in-service, enter ON-125, "Loss or Unavailability of Shutdown Cooling".

D. Shutdown cooling is not in-service, enter GP-12, "Core Cooling Procedure".

Answer: C

Answer Explanation

NEED DATA THAT HAS TEMPERATURE GOING UP FROM T=0 TO T=15 NEED DATA THAT INDICATES THAT THE RHR PUMP IS OFF

Choice		Basis or Justification
Correct:	C	Temperatures are rising indicating that Shutdown cooling is no longer in-service. Loss of Shutdown cooling is a symptom for entry into ON-125.
Distractors:	A	Shutdown not in-service. Plausible if the candidate does not interpret the data correctly and believes the cooldown rate has accelerated and would violate Administrative cooldown limits.
	B	Shutdown not in-service. Plausible if the candidate does not interpret the data correctly, and believes everything is in service properly and a good cooldown rate is achieved.
	D	GP-12 is used for a planned loss of Shutdown Cooling not for a unexpected loss of shutdown cooling. Plausible if the candidate does not understand when GP-12 is used.

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:	1104444
User-Defined ID:	B NRC 2019
Cross Reference Number:	295021 2.1.19
Topic:	ILT-1550-28a-003
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
HIGH			10CRF55.41(b) (10)

Source Documentation		
Source:	X New Exam item Exam Modified Bank Bank ILT Exam Bank	Previous NRC Other Exam
Reference(s):	ON-125	
Learning Objective:	PLOT	
K/A System:	295021 Loss of Shutdown Cooling	Importance; RO / SRO 3.9/ 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:	None	

55 **ID: 993763** **Points: 1.00**

The following step is from T-104, "RADIOACTIVITY RELEASE"

BEFORE THE RAD RELEASE REACHES THE ALERT LEVEL, PERFORM THE FOLLOWING ON THE OFFENDING UNIT:
1. MANUALLY SCRAM THE REACTOR USING GP-4 2. ENTER T-101 AND EXECUTE IT CONCURRENTLY WITH THIS PROCEDURE 3. UNLESS DIRECTED OTHERWISE, PERFORM RPV DEPRESSURIZATION PER T-101

What is the bases of performing this step?

A. To slow the rate of fuel damage occurring in the reactor core and thus reduce the rate of release outside of the containment.

B. To lower reactor pressure and allow low pressure systems to inject into the reactor, limiting the release to the environment.

C. To reduce the production of radioisotopes, thereby reducing the discharge to the environment.

D. To reduce the boil-off rate of inventory which raises reactor water level, thereby reducing the discharge to the environment.

Answer: C

Answer Explanation

Choice		Basis or Justification
Correct:	C	IAW T-104 bases this is the correct bases for the performance of this step
Distractors:	A	Plausible because scramming the reactor would slow the rate of fuel damage, however that is not the bases for this step
	B	Plausible because the step also has you lower reactor pressure, however the reason for that is to reduce the RPV energy driving the discharge, not to inject with low pressure systems.
	D	Plausible as a reduction in water level could cause further damage to the core.

Question 55 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:	993763
User-Defined ID:	B NRC 2019
Cross Reference Number:	295038 G 2.4.18
Topic:	ILT-PBIG2104-5-003 Basis for scram at ALERT
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b)(10)

Source Documentation

Source:	New Exam item Modified Bank **X** ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	T-104 and Bases.	
Learning Objective:	PBIG 2104-5	
K/A System:	**295038 - High Off-Site Release Rate**	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	

56 **ID: 2084439** **Points: 1.00**

Unit 2 is at 100% power

- "Generator Protection Circuit Energized" ARC 206 L-1 alarms
- "2 Gen Stator Coolant or H2 Seal Oil Trouble" ARC 220 A-5 alarms

If actions are performed within 1 minute of receipt of the alarms, T-101 will initially be entered on ___(1)___.

If actions are performed 3 minutes after receipt of the alarms, T-101 will initially be entered on ___(2)___.

A. (1) RPV level low
(2) RPV level low

B. (1) RPV level low
(2) RPV pressure high

C. (1) RPV pressure high
(2) RPV level low

D. (1) RPV pressure high
(2) RPV pressure high

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	With Reactor power at 100% and a validated loss of stator water cooling as indicated by the 2 listed alarms, the main turbine will trip in 2 minutes. Actions in OT-113 "Loss of Stator Cooling" require performing a GP-4 "Manual Reactor Scram". If this step is performed within 1 minute, the initial entry in T-101 will be for low reactor water level, which will occur as the GP-4 is performed. If the GP-4 is delayed beyond 2 minutes, the turbine will trip, causing a reactor scram and reactor pressure to rise beyond the 1085 psig entry point for T-101.
Distractors:	A	Plausible if candidate forgets timing of Turbine trip. In OT-113, if power is between 9000 and 26000 amps, the turbine will trip in 3.5 minutes. Power level is well above 26000 amps at 100% power.
	C	Plausible if candidate does not understand the effects of a loss of stator cooling
	D	Plausible if candidate does not understand the actions of OT-113 "Loss of Stator Cooling"

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:	0.00
System ID:	2084439
User-Defined ID:	B NRC 2019
Cross Reference Number:	295005 G2.4.1
Topic:	PLOT-1540-7-002 Trips entry on OT-113
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High			10CRF55.41(b)(10)

Source Documentation

Source:	**X** New Exam item Modified Bank ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	OT-113 and bases, T-101	
Learning Objective:	PLOT-1540	
K/A System:	**295005 - Main Turbine Trip**	Importance: RO / SRO 4.6 / 4.8
K/A Statement:	**2.4.1 - Knowledge of EOP entry conditions and immediate action steps.**	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

57 **ID: 2084460** **Points: 1.00**

The following conditions exist on Unit 2

- Torus temperature is 190°F and rising slowly
- Torus level is 13 ft and steady
- A and C RHR pump are in Torus Cooling in accordance with RRC 10.1-2 "RHR System Torus Cooling During a Plant Event"
- A and C RHR pump Amps are oscillating
- FI-139A "A RHR Loop Flow" is oscillating between 20,000 and 21,000 gpm

What is the proper response to these conditions regarding the RHR system?

A. Throttle OPEN MO-34A "Full Flow Test Valve"

B. Throttle OPEN CV-2677A and CV-2677C "LPCI A(C) Control Valve"

C. Throttle CLOSE MO-34A "Full Flow Test Valve"

D. Throttle CLOSE CV-2677A and CV-2677C "LPCI A(C) Control Valve"

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	There are indications of RHR pump cavitation given by the oscillating amps and flow. RRC 10.1-2 "RHR System Torus Cooling During a Plant Event" has you throttle CV-2677A, C as required to control flow. To reduce pump cavitation flow must be lowered by throttling closed CV-2677A and C.
Distractors:	A	Plausible as this is the full flow test valve and is able to be throttled. However RRC 10.1-2 does not call for the MO-34A to be throttled. Also opening the valve would cause more flow, and make cavitation worse. Candidate may also pick this as Torus temperature is rising and more flow would produce more cooling, however operability of the pump takes precedence.
	B	Plausible as RRC 10.1-2 allows CV -2677A and C to be throttled, however opening these valves would cause more flow, and make cavitation worse. Candidate may pick this as Torus temperature is rising and more flow would produce more cooling, however operability of the pumps takes precedence.
	C	Plausible as this is the full flow test valve and is able to be throttled. However RRC 10.1-2 does not call for the MO-34A to be throttled.

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:	0.00
System ID:	2084460
User-Defined ID:	B NRC 2019
Cross Reference Number:	295030 EA1.01
Topic:	ILT-2102-6-002 Response to Cavitating RHR pumps
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High			10CRF55.41(b)(10)

Source Documentation

Source:	**X** New Exam item Modified Bank ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	RRC 10.1-2, T-102 sht 1 and 3	
Learning Objective:	DBIG-2102	
K/A System:	**295030 - Low Suppression Pool Water Level**	Importance: RO / SRO 3.6 / 3.8
K/A Statement:	**EA1.01 - Ability to operate and/or monitor the following as they apply to LOW SUPPRESSION POOL WATER LEVEL:** ECCS systems (NPSH considerations): Plant-Specific	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

58 **ID: 994776** **Points: 1.00**

Given the following:

- A startup is in progress on Unit 3 with reactor power at 5%
- Panel 30Y033 is inadvertently de-energized, resulting in a loss of power to portions of PCIS logic

Which of the following RWCU System containment isolation valves close as a result of this event?

1. MO-3-12-15, Cleanup Inlet Isolation-Inboard
2. MO-3-12-18, Cleanup Inlet Isolation-Outboard
3. MO-3-12-68, Cleanup Outlet Isolation

A. 1 ONLY

B. 2 ONLY

C. 2 and 3 ONLY

D. 1, 2, and 3

Answer: D

Answer Explanation		
Correct:	D	A loss of Panel 30Y033 causes a loss of power to PCIS inboard isolation valve logic. This results in closure of associated inboard containment isolation valves, including RWCU valve MO-3-12-15. Loss of 30Y033 also results in closure of RWCU outboard containment isolation valves MO-3-12-18 and MO-3-12-68. This is due to loss of power to the NRHX high outlet temperature relay, which feeds both the inboard and outboard RWCU isolation valve logic. Note #2 in GP-8.C describes the RWCU response to a loss of 30Y033.
Distractors:	A	MO-3-12-18 and MO-3-12-68 also close on a loss of 30Y33. Plausible if candidate does not understand the further loss of power to the high outlet temperature relay
	B	MO-3-12-15 and MO-3-12-68 also close on a loss of 30Y33. Plausible if candidate believes the loss of 30Y33 only effects the outboard valve.
	C	MO-3-12-15 also closes on a loss of 30Y33. Plausible if candidate believes the loss of 30Y33 only effects the outboard and outlet valves as would be true on a loss of 30Y34

Question 58 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:	994776
User-Defined ID:	B NRC 2019
Cross Reference Number:	295003 AK3.06
Topic:	ITL-5012-7D-001 Given the following: *A startup is inprogress on Unit 3 with reactor power at 5%.
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b)(7)

Source Documentation

Source:	New Exam item Modified Bank **X** ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	GP-8.C; M-1-S-23; AO 58A.2-3	
Learning Objective:	ILT-5012-7D	
K/A System:	**295003 - Partial or Complete Loss of A.C. Power**	Importance: RO / SRO 3.7 / 3.7
K/A Statement:	**AK3.06 - Knowledge of the reasons for the following responses as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER :** Containment isolation	
REQUIRED MATERIALS:	None	
Notes and Comments:	This meets the K/A because the student must also know that a loss of 30Y033 also results in closure of RWCU outboard containment isolation valves MO-3-12-18 and MO-3-12-68. This is due to loss of power to the NRHX high outlet temperature relay, which feeds both the inboard and outboard RWCU isolation valve logic.	

59 **ID: 994072** **Points: 1.00**

A transient on Unit 3 has resulted in the following:

- Significant fuel damage has occurred.
- The Reactor Building has become a High Radiation Area (General Area dose rates of 120 mR/hr) and has no current valid Radiation Work Permit (RWP).
- Operations personnel must enter the Reactor Building for one hour to help mitigate the transient.
- No dose extensions are required.

Which one of the following describes the ***minimum*** requirement for an operator to enter this area in accordance with RP-AA-403, Administration of the Radiation Work Permit Program?

The ***minimum*** requirement for an operator to enter the area is that they must have...

A. permission from the Radiation Protection Manager.

B. coverage by a qualified Radiation Protection Technician.

C. permission from the Emergency Director after Emergency Plan activation.

D. an extra Electronic Dosimeter with a dose alarm setpoint less than 500 mRem.

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	RP-AA-403 section 4.9 provides guidance for entering an area without a valid RWP during emergency conditions. The procedure requires coverage by a qualified Radiation Protection Technician. **Note:** The question meets the K/A by presenting a radiation hazard that has arisen during emergency conditions (Reactor Building high radiation) and requiring knowledge of the requirement for entering the area with this radiation hazard still in place.
Distracters:	A	The procedure requires the RPT to notify RP Management as soon as possible, but their permission is not required prior to entry. Plausible because notifying RP supervision is required as soon as possible.
	C	The EDs permission is not required unless a dose extension is required for entry into the High Radiation Area. Plausible because ED permission would be required if an emergency dose extension were necessary.
	D	An electronic dosimeter is required, but not an additional one with a setpoint less than 500 mRem. Plausible because an additional electronic dosimeter does provide extra protection against malfunction, and a 500 mRem dose alarm setpoint is a threshold used in RP-AA-403 for extra risk management.

Question 59 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:	994072
User-Defined ID:	B NRC 2019
Cross Reference Number:	295033 EK1.02
Topic:	ILT-1760-4-002 entry into high rad area
Num Field 1:	
Num Field 2:	A NRC
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CFR55.41(b) (12)

Source Documentation		
Source:	New Exam item **X** Previous NRC Exam **(2017 NRC)** Modified Bank Other Exam Bank ILT Exam Bank	
Reference(s):	RP-AA-403, RP-AA-460	
Learning Objective:	PLOT-1760 4	
K/A System:	295033 - High Secondary Containment Area Radiation Levels	Importance; RO / SRO 3.9/ 4.2
K/A Statement:	**EK1.02 - Knowledge of the operational implications of the following concepts as they apply to HIGH SECONDARY CONTAINMENT AREA RADIATION LEVELS : Personnel protection**	
REQUIRED MATERIALS:	**NONE**	
Notes and Comments:		

60 **ID: 994764** **Points: 1.00**

An electric ATWS exists on Unit 2.

The Reactor Operator is directed to perform T-220-2 "Driving Control Rods During a Failure to Scram".

Prior to implementing this procedure, the Rod Worth Minimizer (RWM) loses power.

Which one of the following describes:

(1) the impact of this power loss on control rod insertion **AND**
(2) the action required by T-220-2 to insert control rods?

A. (1) Control rod insertion is prevented
(2) Bypass the RWM AND place the Rod Control switch (3A-S2) in the "IN" position

B. (1) Control rod insertion is prevented
(2) Bypass the RWM AND place the Emergency In / Notch Override switch (3A-S3) in the "EMERG ROD IN" position

C. (1) Control rod insertion is NOT prevented
(2) Place the Rod Control switch (3A-S2) in the "IN" position

D. (1) Control rod insertion is NOT prevented
(2) Place the Emergency In / Notch Override switch (3A-S3) in the "EMERG ROD IN" position

Answer: B

Answer Explanation		
Correct:	B	A loss of power to the RWM (i.e., hardware/software failure) will result in all rod blocks becoming active, unless the RWM is bypassed. T-220 directs bypassing the RWM (regardless of specific plant conditions) and inserting control rods using the "Emergency In/Notch Override" control switch.
Distractors:	A	T-220 directs inserting control rods using the "Emergency In/Notch Override" control switch.
	C	A loss of power to the RWM will result in all rod blocks becoming active, unless the RWM is bypassed. T-220 directs inserting control rods using the "Emergency In/Notch Override" control switch.
	D	A loss of power to the RWM will result in all rod blocks becoming active, unless the RWM is bypassed. T-220 directs bypassing the RWM (regardless of specific plant conditions).

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:	994764
User-Defined ID:	B NRC 2019
Cross Reference Number:	201006 A2.01 OR 295015K205
Topic:	ILT-5062A-10A-001 An electricl ATWS exists on Unit 2. The RO is directed to perform T-220-2, "Drivi
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Importance: RO: 2.5 / SRO: 2.8 -001

References:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High			10CRF55.41(b) 10

Source Documentation			
Source:	New Exam item Modified Bank **X** ILT Exam Bank	Previous NRC Exam Other Exam Bank	
Reference(s):	ARC-211 F-5, SO 62.7.A-2, T-220; M-1-S-20 Sheets 9, 12		
Learning Objective:	PLOT-5062A-10A		
K/A System:	201006 - Rod Worth Minimizer System 295015 - Incomplete SCRAM	Importance;	RO / SRO 2.6
K/A Statement:	A201 - Ability to (a) predict the impacts of the following on the ROD WORTH MINIMIZER (RWM); and (b) based on those predictions, use procedures to correct, control or mitigate the consequences of those abnormal conditions or operations: Power supply loss K205 - Knowledge of the interrelations between Incomplete SCRAM and the following : Rod worth minimizer		
REQUIRED MATERIALS:	None		
Notes and Comments:	None		

61 **ID: 994336** **Points: 1.00**

During a high reactor pressure transient on Unit 2, the Plant Reactor Operator notes the following Safety Relief Valve (SRV) indications:

- 11 SRV white lights are illuminated.
- The "C" and "D" SRV red lights are illuminated.
- All other SRV green lights are illuminated.
- No safety valve white lights are illuminated.

Based on the above indications, what was the minimum peak reactor pressure during this transient and what is the approximate current reactor pressure?

	Min. Peak Pressure	Current Pressure (Approximately)
A.	1135 psig	1100 psig.
B.	1155 psig	1135 psig.
C.	1260 psig	1135 psig.
D.	1325 psig	1155 psig.

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	SRV setpoints range from 1135 psig to 1155 psig. If all 11 white memory light are lit, then pressure reached 1155 psig. With only the "C" & "D" SRVs still open, pressure is at lowest range value of 1135 psig.
Distractors:	A	if 1135 psig was the peak pressure only 4 SRV's would have the white memory lights lit. Plausible if the candidate does not recall the SRV setpoints
	C	1260 psig is the setpoint for safety valve (not SRV) actuation. Plausible if the candidate does not recall the SRV or SV setpoints
	D	1325 psig is the reactor coolant system pressure safety limit. Plausible if the candidate does not recall the SRV or SV setpoints

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
System ID:	994336
User-Defined ID:	B NRC 2019
Cross Reference Number:	239002K5.01 OR 295007K304
Topic:	ILT-5001A-3D-003 During a high reactor pressure transient on Unit 2, the Plant Reactor Operator
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High			10CRF55.41(b) 8

Source Documentation

Source:	New Exam item Modified Bank X ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	Tech. Spec. 3.4.3	
Learning Objective:	PLOT-5001A-3D	
K/A System:	239002 - Relief/Safety Vales 295007 - High Reactor Pressure	Importance; RO / SRO 3.4 /4.0
K/A Statement:	K501 - Knowledge of the operational implications of the following concepts as they apply to RELIEF/SAFETY VALVES: Relief function of SRV operation K304 - Knowledge of the reason for the following responses as they apply to High Reactor Pressure: Safety/relief valve operation	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

62 **ID: 994070** **Points: 1.00**

The following alarms are received on Unit 2:

- 2 VENT STACK RAD MONITOR HI TROUBLE A (218 B-5)
- 2 VENT STACK RAD MONITOR HI TROUBLE B (218 C-5)

In accordance with ON-104, 'Vent Stack High Radiation', which radiation monitor must be checked to help determine the source of the high radiation?

A. PERL Building

B. Radwaste Building

C. Steam Packing Exhauster

D. Offgas Recombiner Room

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	IAW ON-104, if the Unit 2 Vent Stack Radiation is high, the Radwaste Building exhaust radiation monitor should be checked.
Distractors:	A	The PERL Building exhausts to the Unit 3 Vent Stack. Plausible if the candidate does not understand the alignment of the stations ventilation system.
	C	The Steam Packing Exhauster exhausts to the Main Stack. Plausible if the candidate does not understand the alignment of the stations ventilation system.
	D	Offgas Recombiner Room exhausts to the Unit 3 Vent Stack. Plausible if the candidate does not understand the alignment of the stations ventilation system.

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:	994070
User-Defined ID:	B NRC 2019
Cross Reference Number:	295017AK2.04 OR 295017A101
Topic:	ILT-1550-1-002 ON-104 execution
Num Field 1:	
Num Field 2:	NA
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b) 10

Source Documentation		
Source:	New Exam item Modified Bank Bank **X** ILT Exam Bank	Previous NRC Exam Other Exam
Reference(s):	ON-104	
Learning Objective:	PLOT -1550-1	
K/A System:	295017 - High Off-site Release Rate	Importance; RO / SRO 3.1 2.7
K/A Statement:	K204 - Knowledge of the interrelations between High Off-Site Release Rate and the following: Plant ventilation system A101 - Ability to operate and or monitor the following as they apply to High Off-site Release Rate: Radwaste	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

63 **ID: 2084252** **Points: 1.00**

The order ADS valves are manually opened is __(1)___? This is done to __(2)__.

A. (1) A, B, C, G, K
(2) evenly distribute heat into the Torus

B. (1) A, B, C, G, K
(2) prevent opening Torus to Drywell vacuum breakers

C. (1) A, B, K, C, G
(2) evenly distribute heat into the Torus

D. (1) A, B, K, C, G
(2) prevent opening Torus to Drywell vacuum breakers

Answer: C

Answer Explanation

Choice		Basis or Justification
Correct:	C	RRC 1G.2 directs the operator to "When opening multiple relief valves, consideration should be given to even heat distribution in the Torus." Above the ADS valves is a tag the directs the opening sequence.
Distractors:	A	Plausible if the candidate does not remember the opening sequence. ABCGK is the order given in the memory aid used to remember which SRVs are ADS valves. Correct reason is given.
	B	Plausible if the candidate does not remember the opening sequence. ABCGK is the order given in the memory aid used to remember which SRVs are ADS valves. Plausible if the candidate believes that opening a Vacuum breaker is an issue. An open vacuum breaker is only an issue if the valve does not reset.
	D	Opening sequence is correct. Plausible if the candidate believes that opening a Vacuum breaker is an issue. An open vacuum breaker is only an issue if the valve does not reset.

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:	0.00
System ID:	2084252
User-Defined ID:	B NRC 2019
Cross Reference Number:	295013 A2.02
Topic:	ILT - 5001A-9c. For identified procedures associated with the Main Steam and Pressure Relief
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b) 10

Source Documentation		
Source:	**X** New Exam item NRC Exam Modified Bank Bank ILT Exam Bank	Previous Other Exam
Reference(s):	RRC 1G.2	
Learning Objective:	PLOT - 5001A-9c	
K/A System:	295013 - High Suppression Pool Temperature	Importance; RO / SRO 3.2
K/A Statement:	A2.02 - Ability to determine and/or interpret the following as they apply to High Suppression Pool Temperature: Localized heating /stratification	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

64 **ID: 994790** **Points: 1.00**

Unit 2 is operating at 100% power when Drywell pressure began to rise. The crew entered OT-101 "High Drywell Pressure".

At 1.2 psig Drywell pressure the crew performed a GP-4 "Manual Reactor Scram".

The following conditions currently exist:

- RPV level lowered to -15 inches and is now 20 inches and steady
- Drywell pressure is 1.5 psig and slowly rising
- All PRO and URO scram actions have been completed
- No other actions have been performed

Which one of the following is the pneumatic supply to the ADS valves under these conditions?

A. Backup Instrument Air Supply

B. Backup Instrument Nitrogen bottles

C. Backup Instrument Nitrogen from CAD

D. Instrument Nitrogen Compressors "A" and/or "B"

Answer: A

Answer Explanation		
Correct:	A	Based on the given conditions, a Group II/III isolation signal occurred due to low RPV level (-1 inch). This results in an isolation of the N2 compressor suction valves and the N2 receiver supply to the A and B drywell headers. Since all PRO scram actions are complete, the A and B drywell header isolation valves have been bypassed and reopened per RRC 94.2-2, aligning the N2 receivers to drywell loads. As N2 receiver pressure lowers to 85 psig, the Backup Instrument Air isolation valves will automatically open to re-pressurize the receivers and supply drywell pneumatic loads.
Distractors:	B	Plausible as the Backup Instrument Nitrogen from N2 bottles to ADS SRVs is permitted from T-101 "RPV Control" however, only if specifically directed to be aligned (not part of the URO or PRO scram actions).
	C	Plausible as Backup Instrument Nitrogen from CAD is permitted in T-101 "RPV Control". However this takes manual action from both the control room and outside the control room.
	D	Plausible as N2 compressors are the normal source to the ADS valves, however N2 compressors A and B tripped due to the loss of suction generated by the Group III isolation signal (-1 inch).

Question 64 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:	994790
User-Defined ID:	B NRC 2019
Cross Reference Number:	295010 AK2.04
Topic:	ILT-5016-3A-003 Unit 2 was operatinga t 100% power when Dyrwell pressure began to rise. The crew
Num Field 1:	
Num Field 2:	
Text Field:	NRC-09-1
Comments:	

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High			10CRF55.41(b) 10

Source Documentation		
Source:	New Exam item Modified Bank X ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	T-100; GP-8.B; GP-8.E; RRC 94.2.2	
Learning Objective:	PLOT - 5016-3a	
K/A System:	295010 - High Drywell Pressure	Importance; RO / SRO 2.6
K/A Statement:	K2.04 - Knowledge of the interrelations between High Drywell Pressure and the following Nitrogen makeup system	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

65 **ID: 2083986** **Points: 1.00**

Unit 2 is operating at full power when the following transient occurs:

- 'B' Reactor Feedwater Pump trips.
- RPV level is +15 inches and dropping slowly.
- Reactor Power is 100% and steady.

Based on these plant conditions, the Reactor Operator must immediately:

A. place the Reactor Mode Switch in SHUTDOWN using GP-4, Manual Reactor Scram.

B. lower reactor power until water level is stabilized using GP-5, Power Operations.

C. verify or run both Recirculation Pumps back to 30% speed.

D. verify or run both Recirculation Pumps back to 45% speed.

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	ARC-210 H-2 says that a 45% runback should have occurred for these conditions. The operators must verify expected automatic actions.
Distractors:	A	There are several actions to take before a Scram would be required. Plausible because OT-100 does address scram conditions.
	B	Lowering power is a required immediate operator action, however, GP-9 is the required procedure not GP-5. GP-9 is used for a Fast power reduction, GP-5 is used for normal power operations. Plausible if the candidate doesn't recall the correct procedure to lower power and GP-5 is a procedure that will lower power.
	C	Plausible if the candidate believes that a 30% runback should have occurred. A 30% runback occurs for several reasons, however this situation is not one of them.

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:	1.00
System ID:	2083986
User-Defined ID:	B NRC 2019
Cross Reference Number:	295009 2.1.7
Topic:	ILT-1540-3-012 OT-100
Num Field 1:	
Num Field 2:	NA
Text Field:	B

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
High			10CRF55.41(b) 10

Source Documentation		
Source:	New Exam item Modified Bank Bank **X** ILT Exam Bank	Previous NRC Exam Other Exam
Reference(s):	OT-100, ARC-210 H-2	
Learning Objective:	PLOT - 1540-2	
K/A System:	295009 - Low Reactor Water Level	Importance; RO / SRO 4.4
K/A Statement:	2.1.07 - Ability to evaluated plant performance and make operational judgement based on operating characteristics, reactor behavior and instrument interpretation.	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

66 **ID: 993705** **Points: 1.00**

Which one of the following identifies the basis for ensuring HPCI discharge pressure is approximately 100 psi greater than reactor pressure when injecting into the vessel per SO 23.1.B-2, HPCI System Manual Operation?

This action minimizes.....

A. the amount of time that HPCI pump speed is less than 2200 RPM to prevent damage due to low oil flow.

B. cycling of the discharge check valve and resultant water hammer in the HPCI discharge piping.

C. the time that the HPCI minimum flow valve is open to prevent loss of CST inventory to the torus.

D. unwanted Aux oil pump starts due to low oil pressure.

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	AO-2-23-018 must be maintained open by ensuring HPCI pump discharge pressure is approximately 100 psi greater than Reactor pressure at all times during vessel injection. Otherwise, there is a potential for check valve cycling, flow oscillations and water hammer.
Distractors:	A	Plausible because there is a limit of 2200 rpm but it does not apply to maintaining 100 psid between Reactor pressure and pump discharge pressure.
	C	Plausible because there is a concern about pumping water to the Torus it does not apply to maintaining 100 psid between Reactor pressure and pump discharge pressure.
	D	Plausible because there is a concern about low oil pressure and starting the Aux oil pump but it does not apply to maintaining 100 psid between Reactor pressure and pump discharge pressure.

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
System ID:	993705
User-Defined ID:	B NRC 2019
Cross Reference Number:	2.1.32
Topic:	ILT-5023-4f-001 Split flow Water Hammer
Num Field 1:	N/A
Num Field 2:	N/A
Text Field:	B
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b) 10

Source Documentation

Source:	New Exam item Modified Bank X ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	SO 23.1.B-2(3	
Learning Objective:	PLOT - 5023-4f-001	
K/A System:		Importance; RO / SRO 3.8
K/A Statement:	2.1.32 - Ability to explain and apply system limits and precautions.	
REQUIRED MATERIALS:	None	
Notes and Comments:	Changed all three of the distractors to make them more plausible.	

67 **ID: 2084065** **Points: 1.00**

Unit 3 is in MODE 5 with refueling activities in progress.

Which one of the following conditions requires the suspension of core alterations, in accordance with FH-6C "Core Component Movement – Core Transfers"?

A. A FUEL POOL SERV WATER BOOSTER PUMP OVERCURRENT (216 C-5) alarm.

B. Shutdown Cooling (SDC) has been removed from service to complete a swap of SDC loops.

C. The as found orientation of the next bundle is 180 degrees different than listed in CCTAS.

D. The white rod withdraw permissive light on Panel 20C005 in the Main Control Room is extinguished when the Refuel Platform is over the core with fuel loaded on the main hoist.

Answer: C

Answer Explanation

Answer Explanation		
Correct:	C	FH-6C requires suspension of CORE ALTERATIONS if any deviation from the CCTAS exists (step 10.2.14).
Distracters:	A	Loss of a Fuel Pool Cooling Service Water pump does not require securing fuel handling. Plausible as this will affect Fuel Pool Cooling, however this alone will not require securing fuel handling.
	B	Plausible as Fuel Pool Cooling is verified in service before core alterations, however there is a note that it can be temporarily out of service to support a change in line-up. Therefore swapping SDC loops does not require securing fuel handling.
	D	Under the conditions described, the white light should be extinguished. (step 7.3.3) Plausible if the candidate misapplies the procedural step.

Question 67 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:	2084065
User-Defined ID:	B NRC 2019
Cross Reference Number:	2.1.40
Topic:	ILT-5018-8-002. Discuss operator actions and their bases.
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b) 10

Source Documentation			
Source:	New Exam item Modified Bank **X** ILT Exam Bank		Previous NRC Exam Other Exam Bank
Reference(s):	FH-6C		
Learning Objective:	PLOT-5018-8		
K/A System:		Importance;	RO / SRO 2.8
K/A Statement:	2.1.40 - Knowledge of refueling administrative requirements		
REQUIRED MATERIALS:	None		
Notes and Comments:	None		

68 **ID: 1649514** **Points: 1.00**

A Unit 2 startup is in progress in accordance with GP-2-2, Normal Plant Start-up. Control rods are being withdrawn to achieve criticality.

Which one of the following describes:

(1) the WRNM count rate at which continuous control rod withdrawal ***first*** becomes restricted,

AND

(2) the associated restriction, in accordance with GP-2-2?

Note: Assume NO other specific direction has been given by Reactor Engineering.

A. (1) Two doublings
(2) Notch withdrawal required at all positions from 00 to 48.

B. (1) Two doublings
(2) Notch withdrawal required only at positions from 04 to 36.

C. (1) Three doublings
(2) Notch withdrawal required from position 00 to position 48.

D. (1) Three doublings
(2) Notch withdrawal required only at positions from 04 to 36.

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	GP-2 cautions require, prior to criticality, when the count rate on WRNM exceeds three doublings, all rods be notch withdrawn from position 04 to 36. Continuous withdrawal is specifically allowed from 00 to 04 to allow double clutching. Continuous withdrawal is specifically allowed from 36 to 48 due to low rod worth.
Distracters:	A	GP-2 restricts continuous withdrawal after three doublings, not two. Plausible because two doublings is a significant rise in power and near the correct answer. GP-2 only restricts continuous withdrawal from positions 04 to 36. Plausible because most rod positions are restricted and high worth could be found in other regions.
	B	GP-2 restricts continuous withdrawal after three doublings, not two. Plausible because two doublings is a significant rise in power and near the correct answer.
	C	GP-2 only restricts continuous withdrawal from positions 04 to 36. Plausible because most rod positions are restricted and high worth could be found in other regions.

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:	0.00
System ID:	1649514
User-Defined ID:	B NRC 2019
Cross Reference Number:	2.2.1
Topic:	GP-2 restriction on continuous rod withdrawal
Num Field 1:	
Num Field 2:	A NRC
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CFR55.41(b) (10)

Source Documentation		
Source:	New Exam item **(2017 NRC)** Modified Bank Bank ILT Exam Bank	**X** Previous NRC Exam Other Exam
Reference(s):	GP-2	
Learning Objective:	PLOT-DBIG-1536 4	
K/A System:		Importance; RO 4.5
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:		

69 **ID: 993857** **Points: 1.00**

A startup is in progress on Unit 2:

- Reactor Power is 5%
- URO reports that Reactor Steam Dome Pressure has risen and is now 1065 psig and stable.

Which of the following describes the required minimum action based on the URO's report?

Reactor Steam Dome pressure must be reduced to less than ...

A. 1053 psig within the next 15 minutes.

B. 1053 psig within the next hour.

C. 1035 psig within the next 15 minutes.

D. 1035 psig within the next hour.

Answer: A

Answer Explanation

Choice		Basis or Justification
Correct:	A	This is the direction in Tech Spec section. Verify reactor steam dome pressure is <= 1053 psig and restore reactor steam dome pressure to within limit with a completion time of 15 minutes.
Distractors :	B	Plausible if the candidate does not recall the time and thinks that the action has an hour requirement. Plausible as there are many 1 hour Tech Spec requirements.
	C	There is a limit for values above 1035 but the time requirement is 2 hours this makes 1035 a plausible distractor. These numbers are based out of OT-102 "Reactor High Pressure"
	D	There is a limit for values above 1035 but the time requirement is 2 hours this makes 1035 a plausible distractor. These numbers are based out of OT-102 "Reactor High Pressure"

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:	993857
User-Defined ID:	B NRC 2019
Cross Reference Number:	2.2.39
Topic:	ILT-1540-3-007 OT-102 TS Required Action for High Pressure
Num Field 1:	
Num Field 2:	N/A
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b) 10

Source Documentation

Source:	New Exam item Modified Bank Bank **X** ILT Exam Bank	Previous NRC Exam Other Exam
Reference(s):	OT-102 and Bases. TS 3.4.10	
Learning Objective:	PLOT - 1540 -3	
K/A System:		Importance; RO / SRO 3.9
K/A Statement:	2.2.39 - Knowledge of less than or equal to one hour Technical Specification action statement for systems	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

70 **ID: 1149635** **Points: 1.00**

Unit 2 is operating at 100% power when a steam rupture occurs in the Reactor Building.

- The Reactor Building exhaust duct radiation monitors reach the PCIS Group III setpoint.
- All systems operate as expected EXCEPT that both SBGT filter inlet dampers fail to open.

Choose the correct statement with respect to this event. (Assume no operator action.)

A. No release will occur.

B. A release will occur through the Main Stack.

C. A release will occur through the Unit 2 Vent Stack.

D. An unfiltered ground-level radioactive release will occur.

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	The Group III PCIS isolation will trip and isolate Reactor Building ventilation. The failed filter inlet dampers will prevent SBGT from maintaining Reactor Building negative pressure. This will result in an unmonitored and unfiltered ground-level release.
Distracters:	A	Plausible if the candidate believes that the Reactor building will stay negative and does not understand the flow path through SBGT. With failed closed inlet dampers, SBGT would not be exhausting Reactor Building air to the Main Stack. With an isolation Reactor Building ventilation can not exhaust to the Vent Stack.
	B	Plausible if the candidate believes that the Reactor building will stay negative and does not understand the flow path through SBGT. With failed closed inlet dampers, SBGT would not be exhausting Reactor Building air to the Main Stack.
	C	Plausible if the candidate does not understand the flow path through SBGT. Reactor Building ventilation dampers close on a PCIS Group III isolation and isolate the Reactor Building from the Vent Stack.

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:	1.00
System ID:	1149635
User-Defined ID:	B NRC 2019
Cross Reference Number:	290001 K3.01 OR 2.3.14
Topic:	ILT 5009A-6b-001 A CERT
Num Field 1:	
Num Field 2:	A CERT
Text Field:	

Comments:

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
HIGH			10CRF55. 41(b)(11)

Source Documentation

Source:	☐ New Exam Item ☐ Previous NRC Exam: (PB 2008) ☐ Modified Bank Item ☐ Other Exam Bank: () ☒ ILT Exam Bank		
Referenc e(s):	T-103 Bases (step SCC-1)		
Learning Objective :	PLOT-5009A-6b		
K/A System:	290001 – Secondary Containment	Importance:	RO / SRO 4.0 / 4.4 3.4

K/A Statement:
K3.01 – Knowledge of the effect that a loss or malfunction of the Secondary Containment will have on following: Off-site radioactive release rates.
2.3.14 - Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities

REQUIRED MATERIALS:	None
Notes and Comments:	None

71 **ID: 994800** **Points: 1.00**

Both units are operating at 100% power with the following conditions present:

- RIS-0760D "Main Control Room Ventilation Radiation Monitor" is failed with a trip inserted per GP-25 Appendix 14 "MCR Ventilation Isolation, Division II"
- CONTROL ROOM RAD MONITOR DIV II INITIATED (003 A-3) is lit due to the GP-25 trip

One hour later, an annunciator is received and the PRO observes:

- CONTROL ROOM VENT SUPPLY FAN HI-LO (003 A-1) is in alarm
- CONTROL ROOM VENT SUPPLY LO FLOW CREV START (003 A-5) is in alarm
- CONTROL ROOM RAD MONITOR DIV I INITIATED (003 A-2) is in alarm
- Flow Recorder FR-0765 indicates 200 scfm and lowering
- RIS-0760C "Main Control Room Ventilation Radiation Monitor" is failed upscale

Based on these conditions, the Control Room Emergency Ventilation System has _____.

A. started due to the low flow condition

B. NOT started as indicated by the low flow condition

C. started because the Rad Monitor initiation logic is satisfied

D. NOT started because the Rad Monitor initiation logic is NOT satisfied

Answer: A

Answer Explanation		
Correct:	A	The CREV system is in service as indicated by 003 A-5, and was initiated by Low Flow. The Rad Monitor combination would NOT result in CREV initiation (Rad Monitor logic is "A or B **AND** C or D").
Distracters:	B	Plausible if the candidate misunderstands system alignment. The low flow signal is actually from normal Control Room Ventilation and is normal during a CREV initiation.
	C	Plausible because the alarms indicate Div I and Div II initiated, even though the logic for CREV initiation due to Rad Monitors is NOT satisfied (Rad Monitor logic is "A or B **AND** C or D").
	D	Plausible because CREV has NOT started due to Rad Monitor logic, it has started due to LOW FLOW condition.

Question 71 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	4
Difficulty:	2.00
System ID:	994800
User-Defined ID:	B NRC 2019
Cross Reference Number:	G.2.3 G.2.3.5
Topic:	ILT-5040D-5A-003 Both units are operating at 100% power with the following conditions present:
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
HIGH			10CRF55.41(b) 7

Source Documentation

Source:	New Exam item Exam Modified Bank Other Exam Bank **X** ILT Exam Bank	Previous NRC
Reference(s):	GP-25 Appendix 14; SO 40D.1.A; ARC-003 A-1; ARC-003 A-2; ARC-003 A-5	
Learning Objective:	PLOT - -5040D-5A	
K/A System:		Importance; RO / SRO 2.9
K/A Statement:	2.3.05 - 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:	This is a K/A match because it requires the candidate to undedrstand the status of the Control Room radidtion monitoring system based on intial conditions, then use those indications to determine the status of the system and the current lineup.	

72 **ID: 2086296** **Points: 1.00**

During an emergency condition at PBAPS, in accordance with station emergency plan procedures

which one of the following identifies

(1) the declaration level when accountability of station personnel within the Protected Area must be directed **AND**
(2) the time at which it must be completed?

A. (1) Site Area Emergency and above
(2) 15 minutes

B. (1) Site Area Emergency and above
(2) 30 minutes

C. (1) General Emergency ONLY
(2) 15 minutes

D. (1) General Emergency ONLY
(2) 30 minutes

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	EP-AA-113, directs accountability be conducted for SAE and GE. The time to complete this accountability is 30 minutes
Distractors :	A	Declaration is correct 15 minutes is Plausible as this is the time limit for both making the declaration and then reporting to state and local agencies.
	C	Plausible as a PAR is only determined at GE level, accountability is also performed at a Site Area Emergency. 15 minutes is Plausible as this is the time limit for both making the declaration and then reporting to state and local agencies.
	D	Plausible as a PAR is only determined at GE level, accountability is also performed at a Site Area Emergency. 30 minutes is the correct time to complete accountability

Question 72 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	1
Difficulty:	1.00
System ID:	2086296
User-Defined ID:	B NRC 2019
Cross Reference Number:	2.4.29
Topic:	ILT-G5-4-007 Accountability
Num Field 1:	
Num Field 2:	N/A
Text Field:	A
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b)10

Source Documentation

Source:	New Exam item Exam **X** Modified Bank Other Exam Bank ILT Exam Bank	Previous NRC
Reference(s):	EP-AA-113	
Learning Objective:	PLOT G5-4	
K/A System:		Importance; RO / SRO 3.1
K/A Statement:	2.4.29 - Knowledge of the emergency plan	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

1 ID: 994602 Points: 1.00

During an emergency condition at PBAPS, which one of the following identifies accountability of station personnel within the Protected Area would be directed by the station emergency plan procedures?

A. Any declaration level.

B. Any declaration of an Alert level or above.

C. Declaration of a Site Area Emergency or above.

D. Only at the General Emergency declaration level.

Answer: C

73 **ID: 2083538** **Points: 1.00**

An entry condition exists for SE-16, "Grid Emergency".

- Unit 2 Main Generator is limited to 100 MVARS because of a Main turbine vibration issue

The Generation Dispatch has requested that Unit 2 VARS be raised to 300 MVAR.

The Crew shall _____.

A. contact the Transmission System Operator (only) and limit Unit 2 MVARs to 100

B. contact the Transmission System Operator (only) and raise Unit 2 MVARS to 300

C. contact both Generator Dispatch and Transmission System Operator and limit Unit 2 MVARs to 100

D. contact both Generator Dispatch and Transmission System Operator and raise Unit 2 MVARS to 300

Answer: C

Answer Explanation

Choice		Basis or Justification
Correct :	C	SE-16 directs that both the TSO and Generation dispatch be notified if there are issues with MEGAWATTS or MEGAVARS. The note in SE-16 says, "PBAPS is required to comply with Generation Dispatch/TSO generation requests except when nuclear, equipment OR personnel safety is concerned."
Distractors:	A	Plausible if the candidate confuses this direction with the direction requiring contacting the TSO if a plant shutdown is required. Limit is correct
	B	Plausible if the candidate confuses this direction with the direction requiring contacting the TSO if a plant shutdown is required. Plausible if the candidate believes that since it is an emergency that the station must respond to all requests made by Generation dispatch or TSO and raise to 300 MVARS
	D	Plausible if the candidate believes that since it is an emergency that the station must respond to all requests made by Generation dispatch or TSO and raise to 300 MVARS

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:	2083538
User-Defined ID:	B NRC 2019
Cross Reference Number:	2.4.30
Topic:	ILT-1555-3-028 SE-16.
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b) 10

Source Documentation		
Source:	**X** New Exam item NRC Exam Modified Bank Bank ILT Exam Bank	Previous Other Exam
Reference(s):	SE-16	
Learning Objective:	PLOT 1555-3	
K/A System:		Importance; RO / SRO 2.7
K/A Statement:	2.4.30 - Knowledge of events related to system operations 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	

74 **ID: 2079067** **Points: 1.00**

Unit 2 is at 100% power:

- 1010....Unit 2 Turbine Building 116' Elevation fire alarm is received.
- 1012....Incident Commander (IC) responds to the scene with Member #1.
- 1015....IC reports that an actual fire exists on Turbine Building 116'.
- 1020....IC reports that onsite Fire Brigade is fighting the fire.
- 1030....IC reports that the fire is not yet under control and fire fighting is still in progress.

In accordance with FF-01 "Fire Brigade" and ON-114 "Actual Fire Reported in the Power Block, Diesel Generator Building, Emergency Pump, Inner Screen or Emergency Cooling Tower Structures"

The Control Room is required to notify the Incident Commander of time that has expired to call off-site assistance at ___(1)___ unless Incident Commander provides additional information to mitigate the need for off-site assistance

When off-site assistance is called the control room will perform ___(2)___.

A. (1) 1030
(2) GP-4 "Manual Reactor Scram"

B. (1) 1035
(2) GP-4 "Manual Reactor Scram"

C. (1) 1030
(2) GP-3-2 "Normal Plant Shutdown"

D. (1) 1035
(2) GP-3-2 "Normal Plant Shutdown"

Answer: C

Answer Explanation

Choice		Basis or Justification
Correct:	C	FF-01 states that if the Incident Commander does not report that the fire is out or under control within 20 minutes of the receipt of the fire alarm, then the control room shall notify the Incident Commander of the amount of time that has expired and the off-site fire department will be called. In ON-114 it states that if the fire brigade cannot extinguish the fire and offsite assistance is required, then commence a controlled plant shutdown using GP-3-2 "Normal Plant Shutdown" on the affected unit.
Distractors:	A	Time is correct Direction is plausible because as a fire progresses it may damage ECCS systems or affect safe shutdown, at which time performing GP-4 would be a correct action. At this time there is nothing to indicate these systems are being affected.
	B	Time is plausible if candidate misapplies the 20 minute time limit to when the fire was visually confirmed and not when fire alarm came in. Direction is plausible because as a fire progresses it may damage ECCS systems or affect safe shutdown, at which time performing GP-4 would be a correct action. At this time there is nothing to indicate these systems are being affected.
	D	Time is plausible if candidate misapplies the 20 minute time limit to when the fire was visually confirmed and not when fire alarm came in. The direction to perform GP-3-2 is correct

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:	2079067
User-Defined ID:	B NRC 2019
Cross Reference Number:	2.4.25
Topic:	ILT 2100-1-009
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
MEMORY			10CRF55.41(b)(10)

Source Documentation		
Source:	New Exam item Previous NRC Exam Modified Bank Other Exam Bank **X** ILT Exam Bank (994153)	
Reference(s):	ON-114, FF-01	
Learning Objective:	PLOT - 2100-1	
K/A System:		Importance; RO / SRO 3.3
K/A Statement:	2.4.25 - Knowledge of fire protection procedures.	
REQUIRED MATERIALS:	None	
Notes and Comments:		

75 **ID: 992820** **Points: 1.00**

Unit 2 conditions are as follows

- Operating near End-Of-Cycle with core flow at 100%
- RO is performing 'Daily Surveillance Log'

Which one of the following describes how Narrow Range RPV level indication compares to Wide Range RPV level indication?

A. Wide Range indicates lower than Narrow Range, due to high flow near the Wide Range variable leg tap.

B. Wide Range indicates higher than Narrow Range, due to high flow near the Wide Range variable leg tap.

C. Narrow Range indicates lower than Wide Range, due to high flow near the Narrow Range variable leg tap.

D. Narrow Range indicates higher than Wide Range, due to high flow near the Narrow Range variable leg tap.

Answer: A

Answer Explanation

Choice		Basis or Justification
Correct:	A	High flow near WR variable leg tap reduces pressure due to venturi effect causing lower indication.
Distractors:	B	Plausible if the candidate does not recall the effect of high flow has on the WR variable leg tap
	C	Plausible if the candidate does not recall the effect of high flow is on the WR variable leg tap
	D	Plausible if the candidate does not recall the effect of high flow is on the WR variable leg tap

Question 75 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	1
Difficulty:	1.00
System ID:	992820
User-Defined ID:	B NRC 2019
Cross Reference Number:	216000 K5.09 OR 2.1.45
Topic:	ILT-5002B-5g-001 Recirc flow effect on WR
Num Field 1:	
Num Field 2:	N/A
Text Field:	
Comments:	:

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	RO
Memory			10CRF55.41(b)5

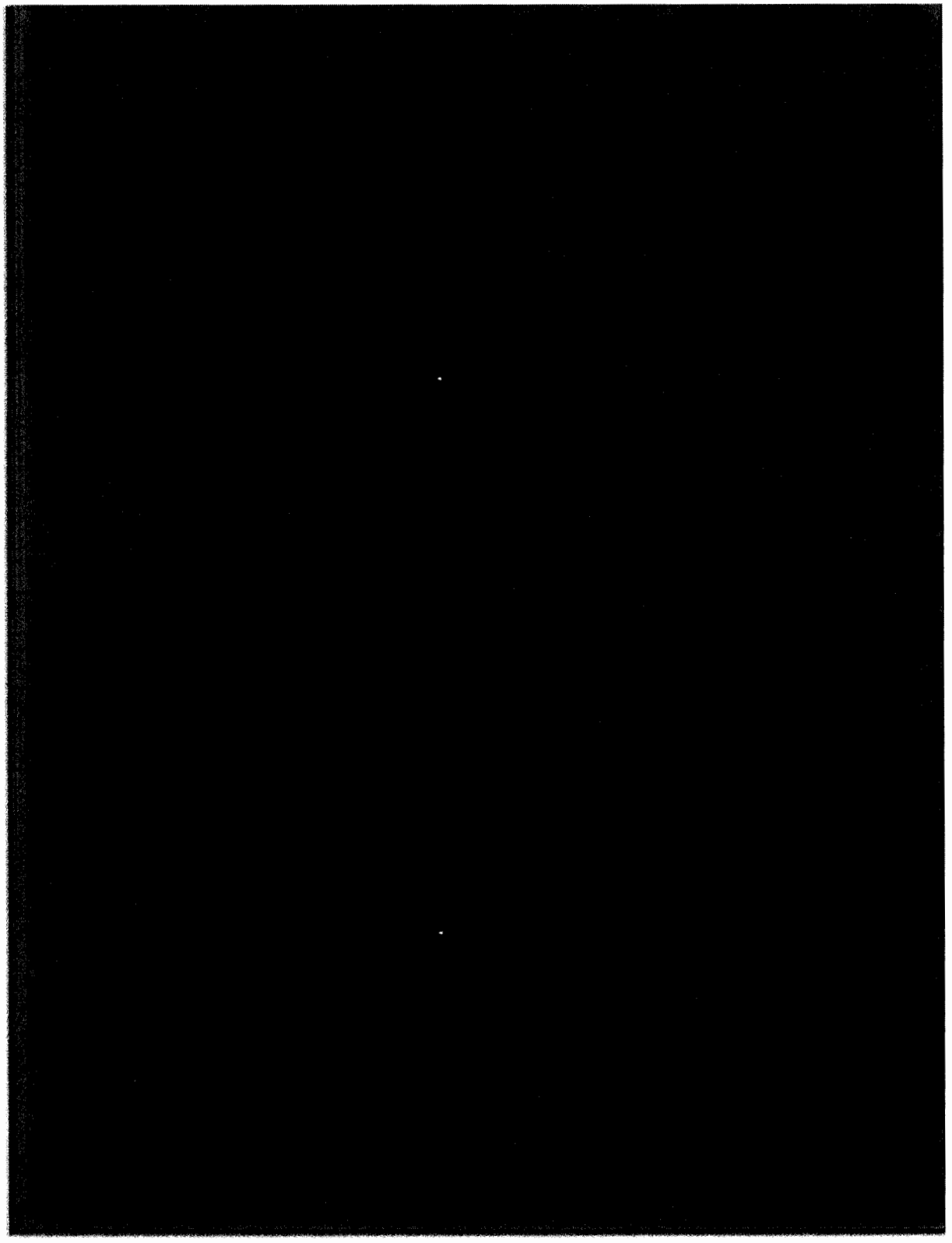
Source Documentation

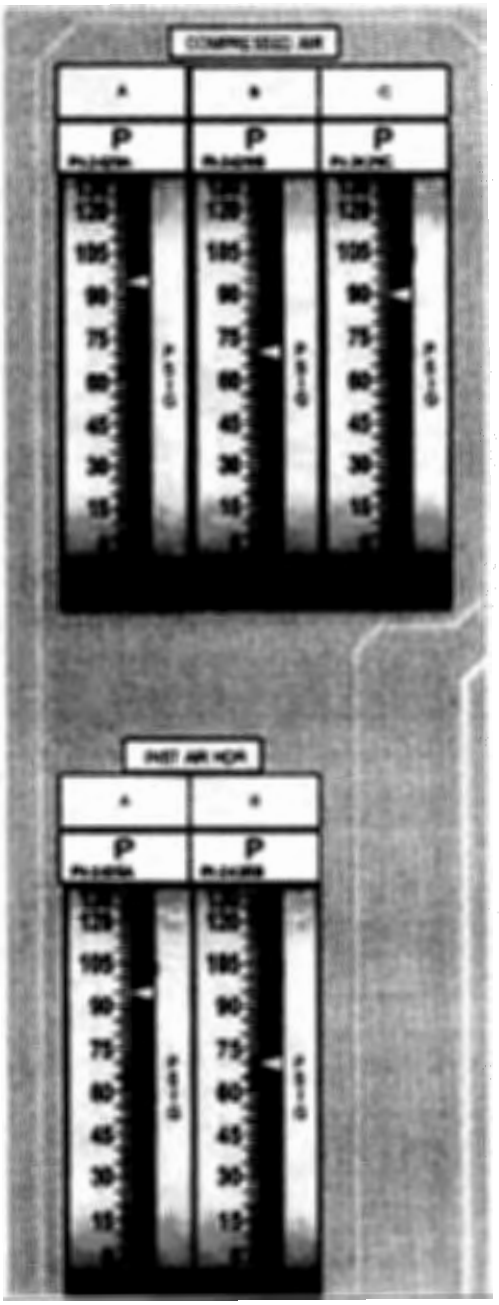
Source:	New Exam item Modified Bank Bank **X** ILT Exam Bank	Previous NRC Exam Other Exam
Reference(s):	PLOT-5002B, ST-O-098-01D-2	
Learning Objective:	PLOT-5002B-5g	
K/A System:		Importance; RO / SRO 4.3
K/A Statement:	2.1.45 - Ability to identify and interpret diverse indications to validate the response of another indicator.	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

EXAMINATION ANSWER KEY

2019 NRC SRO Exam Rev0

1 **ID: 2078415** **Points: 1.00**





Given the above indications, The CRS shall, per ON-119, "Loss of Instrument Air" direct a Reactor Operator to:

A. Verify that the Backup Air compressor has started and the AO 80250D, "Backup Air Receiver Discharge Valve" is OPEN.

B. Start the Backup Air compressor and OPEN AO 80250D, "Backup Air Receiver Discharge Valve".

C. Perform a GP-4, Manual Reactor Scram" and control RPV level using AO-8091, "Startup Bypass Valve Controller".

D. Perform a GP-4, Manual Reactor Scram" and control RPV level using AO-8090, "Startup Bypass Valve Motor Operated Valve".

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	ON-119 will direct starting the Backup Air compressor and opening AO 80250D if the "B" header is affected
Distractors:	A	Plausible if the candidate does not know the automatic setpoint for the auto start and automatic opening of AO 80250D is less than 90 psig on both the "A" and "B" headers
	C	A GP-4 shutdown is required when both headers are below 75 psig. Plausible if the candidate does not recall that the requirement is both headers below 75 psig.
	D	A GP-4 shutdown is required when both headers are below 75 psig. Plausible if the candidate does not recall that the requirement is both headers below 75 psig. Additionally using MO-8090 is a correct action from ON-119 if a scram is required.

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:	2078415
User-Defined ID:	B NRC 2019
Cross Reference Number:	295019 A2 01
Topic:	ILT-1550-22C-004-SRO
Num Field 1:	
Num Field 2:	
Text Field:	

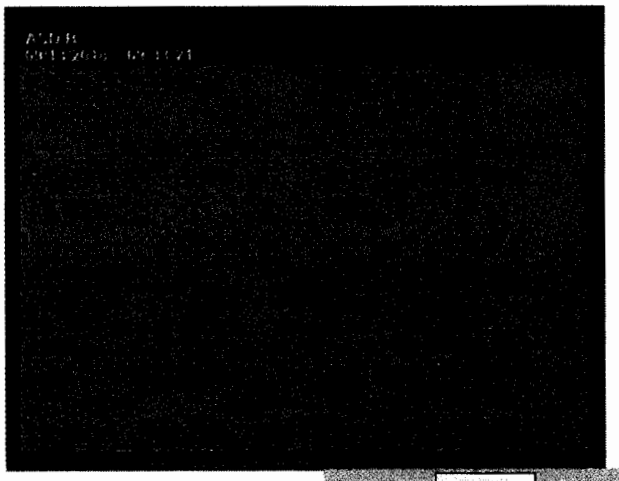
Comments:

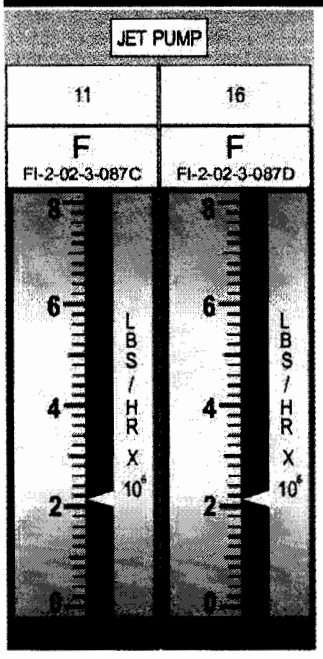
Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
HIGH			10CRF55.43(b) 5

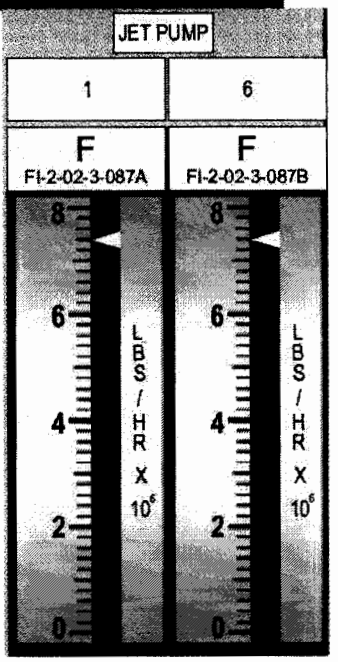
Source Documentation			
Source:	**X** New Exam item Previous NRC Exam Modified Bank Exam Bank ILT Exam Bank		Other
Reference(s):	ON-119		
Learning Objective:	PLOT-1550-22C		
K/A System:	295019 Partial or Complete Loss of Instrument Air	Importance; 3.6	RO / SRO
K/A Statement:	A2-01 - Ability to determine and/or interpret the following as they apply to Partial of Total Loss of Inst. Air: Instrument air system pressure		
REQUIRED MATERIALS:	None		
Notes and Comments:	None		

2 **ID: 2085514** **Points: 1.00**

A Recirculation System transient has occurred. Below is the result of the transient. Complete the statement below based on this information.







Flow through jet pump 16 is ___(1)_____. Perform AO 2A.1-2, "Recirculation System Single Loop Operation" within _(2)_ hour(s).

A. (1) Forward
(2) one (1)

B. (1) Forward
(2) twelve (12)

C. (1) Reverse
(2) one (1)

D. (1) Reverse
(2) twelve (12)

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	Flow is reverse through Jet pump 16 because speed on the operating Recirc pump is greater than 650 RPM. OT-112 directs that single loop procedures must be implemented in 12 hours.
Distractors:	A	The flow is not forward because Recirc pump speed is greater than 650 RPM. Direction to implement the single loop procedure is also not correct. Plausible is the candidate does not recall the point at which flow is reverse through the inactive jet pump. Plausible if the candidate confuses the time to implement single loop with the time to reduce the loop flow mismatch witch is one hour.
	B	The flow is not forward because Recirc pump speed is greater than 650 RPM. Plausible if the candidate does not recall that if pump speed is less than 650 RPM flow changes from reverse to forward.
	C	The flow is reverse because "B" pump RPM is greater than 650 rpm. Direction to implement the single loop procedure is not correct. Plausible if the candidate confuses the time to implement single loop with the time to reduce the loop flow mismatch witch is one hour.

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:	2085514
User-Defined ID:	B NRC 2019
Cross Reference Number:	295001 A2.04
Topic:	ILT-1540-2-006-SRO
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
HIGH			10CRF55.43(b) 5

Source Documentation		
Source:	**X** New Exam item Previous NRC Exam Modified Bank Exam Bank ILT Exam Bank	Other
Reference(s):	OT-112 GP-5 Exh 1	
Learning Objective:	PLOT-1540-2	
K/A System:	295001 Partial or Complete Loss of Forced Circulation	Importance; RO / SRO 3.1
K/A Statement:	A2.04 Ability to determine and/or interpret the following as they apply to Partial or Complete Loss of Forced Core Flow Circulation: Individual jet pump flows	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

3 **ID: 994435** **Points: 1.00**

The following conditions exist on Unit 2 following a small LOCA:

- All control rods are fully inserted.
- RPV Level is -120 inches and lowering at 2 inches per minute.
- RPV Pressure is 960 psig and steady.
- Drywell Pressure is 4 psig.
- Torus Pressure is 3 psig.
- MSIVs are closed.
- HPCI and RCIC are both unavailable for injection.

Which of the following actions are required?

A. Lineup and start HPSW pumps to inject per T-245, "HPSW Injection into the RPV".

B. Rapidly depressurize the RPV with BPVs per step T-101 RC/P-12.

C. Lower RPV pressure to inject with Core Spray without exceeding the Technical Specification Cooldown limits per T-101, "RPV Control".

D. Lower RPV pressure to inject with Condensate without exceeding the Technical Specification Cooldown limits per T-101, "RPV Control".

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	T-101 steps RC/P-17 directs beginning an RPV depressurization maintaining cool down rate below 100° F/hr. RC/P-16 along with RC/L-4 allows for using Condensate system to restore RPV level.
Distractors:	A	Per T-245, "HPSW Injection into the RPV" placing the HPSW pumps in service and the majority of valve manipulations are not completed until RPV pressure is below 400 psig. plausible if the candidate does not recall that HPSW does not have min flow protection and cannot be placed in-service until RPV pressure is below pump shutoff head.
	B	For the conditions given, the plant is not approaching a limit that requires an Emergency Blowdown (T-112) in T-102, T-103, T-104. RC/P-12, rapidly depressurize with BPVs, is not used. In addition, the MSIVs are closed which eliminates use of BPVs. Plausible if the candidate does not understand initial plant conditions and does not understand the EOP guideline about maintaining inventory.
	C	The Core Spray system will not inject into the RPV until RPV pressure is lower than 330 psig. Lowering pressure to below 330 psig will be a violation of the Tech Spec 100oF/hr cooldown rate. Plausible if the candidate does not understand that other systems are available that will not violate cooldown rate.

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:	994435
User-Defined ID:	B NRC 2019
Cross Reference Number:	295031 EA2.03
Topic:	ILT-2101-6-005 SRO
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
HIGH			10CRF55.43(b) 5

Source Documentation

Source:	New Exam item Modified Bank Bank **X** ILT Exam Bank	Previous NRC Exam Other Exam
Reference(s):	T-101 and Bases, T-112 and Bases, T-102 and Bases.	
Learning Objective:	PLOT-2101-1	
K/A System:	295031 Reactor Low Water Level	Importance; RO / SRO 4.2
K/A Statement:	Ability to determine and/or interpret the following as they apply to Reactor Low Water Level : Reactor pressure	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

4 **ID: 2078554** **Points: 1.00**

Unit 2 is in a refueling outage when a fuel assembly is dropped and damaged. All of the Refueling Floor Area Radiation Monitors (ARMs) alarm and a PCIS Group III isolation occur. Ten minutes later, the following radiation readings are observed:

- All Refueling Floor ARMs: Above alarm setpoints
- Main Stack radiation on RI-0-17-50A(B): 1.8 E^{0} mCi/CC
- Vent Stack radiation on RI-2979 A(B): 2.0E^{-7} mCi/CC
- Refueling Floor radiation on RIS-2-17-458 A-D: 3 mrem/hr
- Refueling Floor radiation on RR-2-17-456 red pen: 3 mrem/hr
- Refueling Floor radiation on RR-2-17-456 black pen: 3 mrem/hr

Which one of the following statements regarding the accuracy of the Refuel Floor Ventilation system radiation monitor readings AND the required actions.

A. (1) Refuel Floor Ventilation system radiation monitor readings are accurate
(2) Restore Reactor and Refuel Ventilation using T-222, "Secondary Containment Ventilation Bypass"

B. (1) Refuel Floor Ventilation system radiation monitor readings are accurate
(2) Per T-103, "Secondary Containment Control", DO NOT restore Reactor and Refuel Ventilation

C. (1) Refuel Floor Ventilation system radiation monitor readings are NOT accurate
(2) Restore Reactor and Refuel Ventilation using T-222, "Secondary Containment Ventilation Bypass"

D. (1) Refuel Floor Ventilation system radiation monitor readings are NOT accurate
(2) Per T-103, "Secondary Containment Control", DO NOT restore Reactor and Refuel Ventilation

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	The Refueling Floor system radiation readings are not "accurate" per the GP-8B Section 5 Note. This is because there is no flow past the radiation monitors since the PCIS Group III isolation has tripped the Refuel Floor ventilation fans. The SRO candidate must use the facts to determine if restoring ventilation is appropriate. Even though the Refuel radiation monitors are now below the isolation setpoints. The Refuel Floor ventilation system should not be restarted since high radiation conditions continue to exist on the Refuel Floor. This is indicated by the alarming ARMs and the high Main Stack Radiation reading.
Distractors :	A	Plausible if the candidate does not understand that the indication is not valid because of no flow. Plausible if the candidate believes that ventilation can be restored because levels are below the isolation setpoint.
	B	Plausible if the candidate does not understand that the indication is not valid because of no flow.
	C	Plausible if the candidate believes that ventilation can be restored because levels are below the isolation setpoint.

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:	2078554
User-Defined ID:	B NRC 2019
Cross Reference Number:	295038 2.1.31
Topic:	ILT 2103-8-002 SRO
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
HIGH			10CRF55.43(b) 5

Source Documentation		
Source:	**X** New Exam item Previous NRC Exam Modified Bank Other Exam Bank ILT Exam Bank	
Reference(s):	GP-8B, M-334, ARC 218 A-1, ARC 003 D-1, ON-124, ARC 216 L-1, T-222	
Learning Objective:	PLOT 2103 8	
K/A System:	295038 High Off-site Release Rates	Importance; RO / SRO 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:	Justification: The SRO candidate must use the facts to determine if restoring ventilation is appropriate. Even though the Refuel radiation monitors are now below the isolation setpoints. The Refuel Floor ventilation system should not be restarted since high radiation conditions continue to exist on the Refuel Floor. This is indicated by the alarming ARMs and the high Main Stack Radiation reading.	

5 **ID: 2084602** **Points: 1.00**

Unit 2 is at 85% power during end of cycle coast down.

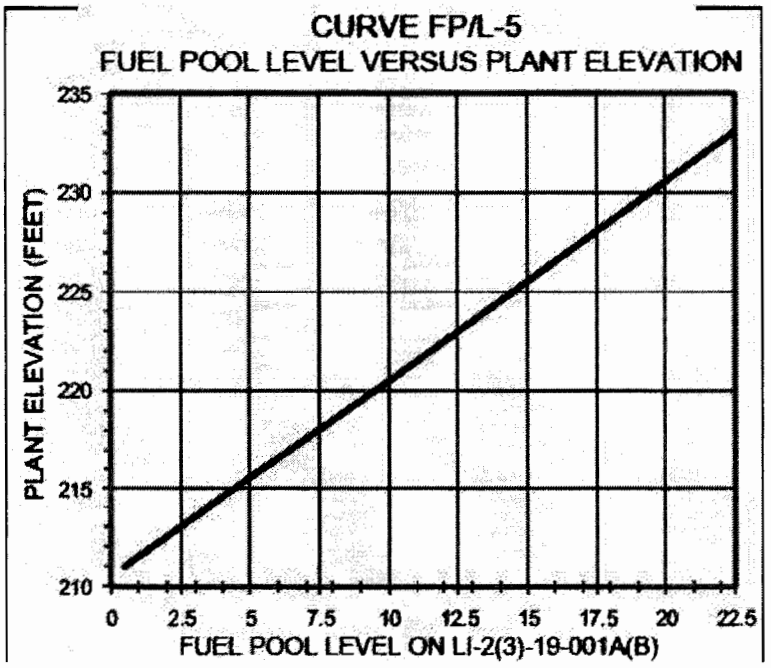
- New fuel is being moved in the fuel pool in preparations for the upcoming outage
- The Reactor Services Supervisor reports that Fuel pool level has unexpectedly lowered to 232 ft 2 in

The CRS must _____(1)_____.

10 minutes later

- Fuel pool level is .5 ft on LI-2-19-001A.

The CRS must ___(2)_____.



A. (1) enter ON-124 "Fuel Floor and Fuel Handling Problems" ONLY
(2) makeup to the fuel pool (only)

B. (1) enter ON-124 "Fuel Floor and Fuel Handling Problems" ONLY
(2) makeup to the fuel pool and spray the fuel pool

C. (1) enter ON-124 "Fuel Floor and Fuel Handling Problems" AND T-103 "Secondary Containment Control"
(2) makeup to the fuel pool (only)

D. (1) enter ON-124 "Fuel Floor and Fuel Handling Problems" AND T-103 "Secondary Containment Control"
(2) makeup to the fuel pool and spray the fuel pool

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	ON-124 is entered as the Fuel pool level has dropped unexpectedly. T-103 would be entered when the Fuel Pool Cooling Trouble alarm comes in on a low Fuel Pool level of 232 Ft 4 inches. Fuel Pool level at .5 ft as indicated on LI-2-19-001A is below the top of the fuel racks and requires the fuel pool to be sprayed.
Distractors:	A	Plausible if the candidate believes that conditions require entry into ON-124 only for the unexpected drop in fuel pool level, however T-103 would also be entered when the Fuel Pool Cooling Trouble alarm comes in on a low Fuel Pool level of 232 Ft 4 inches. Plausible if the candidate does not understand that the Fuel pool is below the top of the fuel racks and requires to be sprayed.
	B	Plausible if the candidate believes that conditions require entry into ON-124 only for the unexpected drop in fuel pool level, however T-103 would also be entered when the Fuel Pool Cooling Trouble alarm comes in on a low Fuel Pool level of 232 Ft 4 inches.
	C	Plausible if the candidate does not understand that the Fuel pool is below the top of the fuel racks and requires to be sprayed.

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:	2084602
User-Defined ID:	B NRC 2019
Cross Reference Number:	295023 2.4.8
Topic:	ILT- 2103 3 - 001 SRO Describe how event-based Emergency/Abnormal operating procedures are u
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
High			10CRF55.43(b) 5

Source Documentation		
Source:	**X** New Exam item Previous NRC Exam Modified Bank Exam Bank ILT Exam Bank	Other
Reference(s):	ON-124, T-103 and bases	
Learning Objective:	PLOT- 2103 3	
K/A System:	295023 - Refueling Accident	Importance; RO / SRO 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	

6 **ID: 2078594** **Points: 1.00**

A Unit 3 startup is in progress with the following plant conditions:

- Reactor power is 22%
- Generator output is 200 MWe
- Annunciator TURBINE STOP V. CLOSURE & CONTROL VLV FAST CLOSURE SCRAM BYPASS (310 A-2) is lit
- A failure causes the Power-to-Load Unbalance circuit to actuate
- The POWER LOAD UNBALANCE TRIP (306 B-1) annunciator alarms
- TCS_FASACTIVE is alarming on the DEHC HMI
- TCS_PLUSET is alarming on the DEHC HMI
- All other plant response is normal

Which one of the following describes (1) the automatic plant response and (2) the correct procedural direction for this event?

A. (1) Main Generator Lockout, Main Turbine Trip, and Reactor scram
(2) Implement T-101 "RPV Control"

B. (1) Main Generator Lockout, Main Turbine Trip, and Reactor scram
(2) Implement T-100 "Scram"

C. (1) Main Generator Lockout and Main Turbine Trip ONLY
(2) Halt GP-2 "Startup" until the Power to Load Unbalance circuit can be repaired.

D. (1) Main Generator Lockout and Main Turbine Trip ONLY
(2) Direct GP-3 "Shutdown"

Answer: C

Answer Explanation

Correct:	C	If the PLU circuit (part of DEHC logic) energizes, a generator lockout and turbine trip will occur. Since reactor power is < 26.3% RTP (turbine 1st stage pressure is < 111 psig), a reactor scram will not occur as a result of the TSV/TCV closure. The turbine bypass valves will rapidly open, preventing a scram from high reactor pressure/neutron flux. The end result will be the reactor operating at 25% power with the turbine-generator off-line. The SRO candidate must evaluate the situation and understand (Per the guidance in GP-2 "Normal Plant Startup" and Tech Specs) that the startup cannot continue above 55% power or until thermal limits are updated for the PLU unbalance circuit being out of service.
Distractors:	A	The PLU circuit will only produce a generator lockout and turbine trip; a Reactor scram will not occur based on power level; T-101 would be plausible if the individual believes a Reactor scram had occurred. The ARC lists both T-100 and T-101 as appropriate. Plausible if applicant does not understand PLU circuit function/design.
	B	The PLU circuit will only produce a generator lockout and turbine trip; a Reactor scram will not occur based on power level; T-100 would be plausible if the individual believes a Reactor scram had occurred. The ARC lists both T-100 and T-101 as appropriate. Plausible if applicant does not understand PLU circuit function/design.
	D	PLU circuit actuation causes a rapid closure of turbine control and intercept valves, which is functionally like a turbine trip. Turbine control valve closure results in a reactor scram if power is above 26.3%, as measured by turbine 1st stage pressure. In this case, the scram is bypassed as indicated by annunciator 310 A-2. GP-3 is plausible if individual believes the condition warrants shutting down the plant as a result of the equipment malfunction. While the decision may be made to conduct a shutdown, there is no direction to do so based on the conditions provided.

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:	2078594
User-Defined ID:	B NRC 2019
Cross Reference Number:	295005 2.4.45
Topic:	ILT-5001B-6B-002 SRO
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
HIGH			10CRF55.43(b) 5

Source Documentation		
Source:	New Exam item Modified Bank Exam Bank **X** ILT Exam Bank	Previous NRC Exam Other
Reference(s):	ARC-206 B-1; GP-2; Tech Spec 3.3.1.1 Bases	
Learning Objective:	PLOT-5001B-6B	
K/A System:	Main Turbine Generator Trip	Importance; RO / SRO 4.1
K/A Statement:	2.4.45 - Ability to prioritize and interpret the significance of each annunciator of alarm.	
REQUIRED MATERIALS:	None	
Notes and Comments:	Justification: The SRO candidate must evaluate the situation and understand (Per the guidance in GP-2 "Normal Plant Startup" and Tech Specs) that the startup cannot continue above 55% power or until thermal limits are updated for the PLU unbalance circuit being out of service.	

7 **ID: 993793** **Points: 1.00**

An ATWS is in progress on Unit 2 with the following conditions reported:

- Reactor Power 5%
- RPV Level -215 inches and steady
- RPV Pressure 750 psig
- Torus Temperature 90° F
- Torus Level 14 feet

T-240, "Termination and Prevention of Injection into the RPV" procedure has been completed to allow an emergency blowdown to be performed.

- Only 3 SRVs could be opened during the performance of T-112, "Emergency Blowdown".
- RPV Pressure is now 200 psig and dropping.

Which one of the following statements is correct regarding actions that should be taken?

A. Direct SRVs to be closed to raise RPV pressure above 460 psig.

B. Direct SRVs to be closed to raise RPV level above -195 inches.

C. Direct RPV injection rate to slowly raise RPV pressure above 460 psig.

D. Direct RPV injection to slowly raise RPV level above -195 inches.

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	Per T-117 once pressure falls below 460 psig per table LQ-1 re-injection is directed to restore level above -195"
Distractors:	A	SRV closure is not directed following a T-112 blowdown to control pressure. Plausible if the candidate believes that actions must be taken to stablize RPV pressure above 460 psig per table LQ-1
	B	SRV closure is not directed following a T-112 blowdown to control level. Closing SRVs will be a short term fix to stop the RPV level loss due to open SRVs but will not recover RPV level. Plausible if the candidate believes that short term recovery of RPV is the correct solution. Additionally if the candidate inappropriately tries to apply the ELAP strategy.
	C	Post Emergency Blowdown, T-116 directs this action with RPV level unknown not per T-117. Plausible if the candidates confuses the T-116 and T-117 directions.

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:	993793
User-Defined ID:	B NRC 2019
Cross Reference Number:	295037 A2 06
Topic:	SRO ILT-PBIG2117-5a-005 SRO When to reinject after B/D
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
HIGH			10CRF55.43(b) 5

Source Documentation		
Source:	New Exam item Modified Bank Exam Bank **X** ILT Exam Bank	Previous NRC Exam Other
Reference(s):	T-117 and bases, T-112 and Bases	
Learning Objective:	PLOT-2117-5	
K/A System:	295037 - SCRAM Condition Present and Reactor Power Above Downscales or Unknown	Importance; RO / SRO 4.1
K/A Statement:	A2 06 - Ability to determine and/or interpret the following as they apply to SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown: Reactor Pressure	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

8 **ID: 2078612** **Points: 1.00**

The following conditions exist on Unit 3:

- Torus level (LI-8123) 21 feet
- DW pressure (PR-5805) 58 psig and rising
- DW pressure (PR-3508) 30 psig and rising
- Torus pressure (PI-5953) 55 psig and rising
- Containment spray is in service using T-205, "Initiation of Containment Sprays using HPSW"
- Attempts to lower Torus level have been unsuccessful

TABLE T/L-2

CTMT DP

_____ PSIG DW PRESS ON PR-4(5)805 †
MINUS (-) _____ PSIG DW PRESS ON PR-2(3)508
EQUALS (=) _____ PSID CTMT DP

† IF DW PR-4(5)805 IS UPSCALE OR OUT OF SERVICE,
THEN USE TORUS PI-4(5)953 AS A SUBSTITUTE

INSTRUMENT USED	MAXIMUM CTMT DP (CTMT LEVEL AT UPPER DW VENT)
PR-4(5)805	27 PSID
PI-4(5)953	28 PSID

Containment Differential Pressure is __(1)___ per T-102, "Primary Containment Control", direct the PRO to __(2)___.

A. (1) 25 psid
(2) continue efforts to lower Torus level (only)

B. (1) 25 psid
(2) secure containment sprays

C. (1) 28 psid
(2) continue efforts to lower Torus level (only)

D. (1) 28 psid
(2) secure containment sprays

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct :	D	Step T/L 33 directs the SRO to determine Containment Differential pressure. Using PI-5805 (58 psig) minus PI-3508 (30 psig) = 28 psid. With the Containment Differential Pressure above 27 psid, T-102 step T/L-33 directs the SRO candidate to step T/L-35 requiring securing HPSW sprays.
Distractors:	A	Using PI-5953 instead of PI-5805 yields a Containment Differential Pressure of 25. The candidate must know that the range of PI-5805 is 0-70 psig. Plausible if the candidate believes that PI-5805 is at the top of the scale and chooses to use PI-5953. If 25 psid were the correct value then the action to continue to take actions to lower Tours level would be correct.
	B	Using PI-5953 instead of PI-5805 yields a Containment Differential Pressure of 25. The candidate must know that the range of PI-5805 is 0-70 psig. Plausible if the candidate believes that PI-5805 is at the top of the scale and chooses to use PI-5953.
	C	With the Containment Differential Pressure above 27 psid the Crew is required to secure HPSW sprays, continue to take actions to lower tours level is no longer the correct action. Plausible if the candidate confuses the step for Containment Sprays with the trip step for using HPSW for ACC. HPSW would not be secured if it were being used for ACC.

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:	2078612
User-Defined ID:	B NRC 2019
Cross Reference Number:	295029 A2.03
Topic:	ILT-2102-5-004 SRO
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
HIGH			10CRF55.41(b) 5

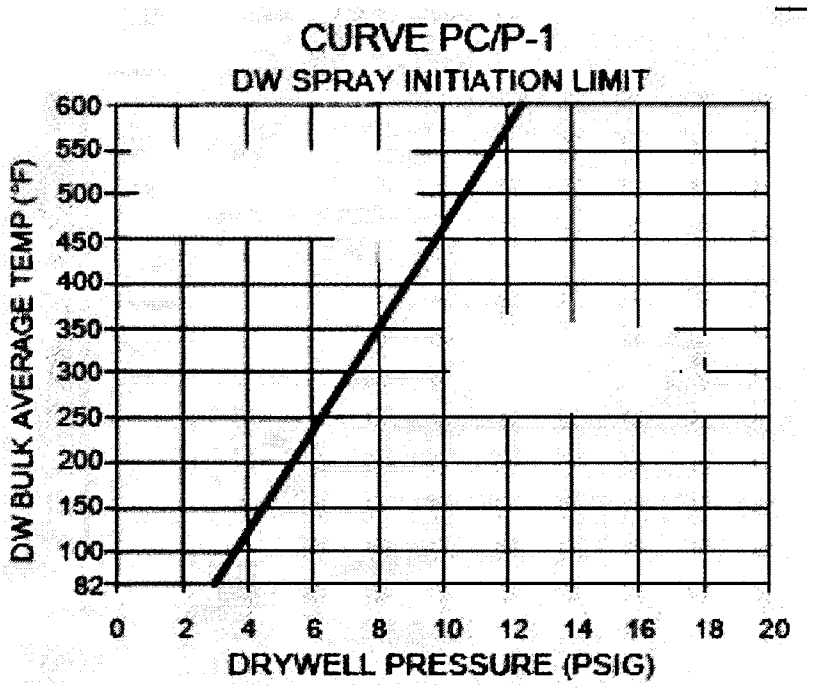
Source Documentation		
Source:	**X** New Exam item Previous NRC Exam Modified Bank Exam Bank ILT Exam Bank	Other
Reference(s):	T-102 and Bases	
Learning Objective:	PLOT - 2102-5	
K/A System:	295029 - High Suppression Pool Water Level	Importance; RO / SRO 3.5
K/A Statement:	A2.03 - Ability to determine and/or interpret the following as they apply to High Suppression Pool Water Level: Drywell/Containment water level	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

9 **ID: 994809** **Points: 1.00**

Unit 2 was operating at full power when a small break Loss of Coolant Accident (LOCA) occurred. The following conditions currently exist:

- Torus level is 17 feet and rising
- Drywell pressure is 9.8 psig and rising
- Drywell temperature indicated 165 degrees F before TI-80146 "Drywell Bulk Average Temperature Indicator" failed.
- Point 119 on TI-2501 145 degrees F
- Point 120 on TI-2501 150 degrees F
- Point 121 on TI-2501 146 degrees F
- Point 122 on TI-2501 150 degrees F
- Point 123 on TI-2501 144 degrees F
- Point 124 on TI-2501 151 degrees F
- Point 126 on TI-2501 149 degrees F
- Point 127 on TI-2501 162 degrees F
- Point 136 on TI-2501 163 degrees F
- Based on T-102 "Primary Containment Control" NOTE #27 below, the crew attempts to perform a manual calculation of Drywell Bulk Average Temperature using RT-O-40C-530-2 "Drywell Temperature Monitoring" but the calculation was invalid

(#27) IF TI-80146(90146) IS OUT OF SERVICE, THEN USE RT-O-40C-530 TO DETERMINE DW BULK AVG TEMP



Evaluate these conditions to determine the appropriate action related to spraying the Drywell per T-102, "Primary Containment Control".

A. Do NOT spray the Drywell since the safe side of the DWSIL curve cannot be verified per RT-O-40C-530-2.

B. Do NOT spray the Drywell since Torus level is above the limit of T-102 "Primary Containment Control" for spraying the Drywell.

C. Spray the Drywell after verifying the safe side of the DWSIL curve using TI-2501, Point 136 plus 10□degrees F.

D. Spray the Drywell after verifying the safe side of the DWSIL Curve using the hottest temperature indicated on TI-2501, Points 119-127.

Answer: A

Answer Explanation		
Correct:	A	RT-O-40C-530-2 precaution 4.2.2 states that if the calculation of Drywell Bulk Average Temperature is invalid, the safe side of the DWSIL curve cannot be verified. DO NOT SPRAY THE DRYWELL.
Distractors:	B	Per T-102, the Torus level limit for spraying the Drywell is 18 feet. If Drywell sprays are required and all other conditions are met, Torus level at 17 feet and rising would not prevent spraying the Drywell. Plausible If the candidate incorrectly uses any of the given values to determine that operation is in the safe side to the Drywell Spray curve. All given values will plot safe on the curve, however, RT-O-40C-530-2 precaution 4.2.2 states that if the calculation of Drywell Bulk Average Temperature is invalid, the safe side of the DWSIL curve cannot be verified. DO NOT SPRAY THE DRYWELL.
	C	TI-2501, Point 136 (plus 10 degrees F) can be used to calculate approximate drywell temperature for entering ON-120 or T-102, but not for spraying the drywell. Plausible If the candidate incorrectly uses PT 136 plus 10 degrees F which will plot on the safe side of the DWSIL curve, however, RT-O-40C-530-2 precaution 4.2.2 states that if the calculation of Drywell Bulk Average Temperature is invalid, the safe side of the DWSIL curve cannot be verified. DO NOT SPRAY THE DRYWELL.
	D	Using the hottest temperature from TI-2501 points 119-127 is an acceptable method of determining when to initiate RPV blowdown, but it is not acceptable for use on the DWSIL curve. Plausible If the candidate incorrectly uses the highest value of points 119-127 which is 163 degrees F which will plot on the safe side of the DWSIL curve, however, RT-O-40C-530-2 precaution 4.2.2 states that if the calculation of Drywell Bulk Average Temperature is invalid, the safe side of the DWSIL curve cannot be verified. DO NOT SPRAY THE DRYWELL.

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:	994809
User-Defined ID:	B NRC 2019
Cross Reference Number:	295028 G2.4.20 / 295012 2.4.47
Topic:	ILT-1560-11-009 Unit 2 was operating at full power when a small break Loss of Coolant Accident
Num Field 1:	
Num Field 2:	
Text Field:	NRC-09-1
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
High			10CRF55.43(b) 5

Source Documentation

Source:	New Exam item Modified Bank Bank **X** ILT Exam Bank	Previous NRC Exam Other Exam
Reference(s):	T-102 (note #27); RT-O-40C-530-2	
Learning Objective:	ILT-1560-11	
K/A System:	295028 - High Drywell Temperature 295012 - High Drywell Temperature	Importance; RO / SRO 4.3 4.2
K/A Statement:	2.4.20 - Knowledge of the operational implications of EOP warnings, cautions, and notes. 2.4.47 - Ability to diagnosis and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material.	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

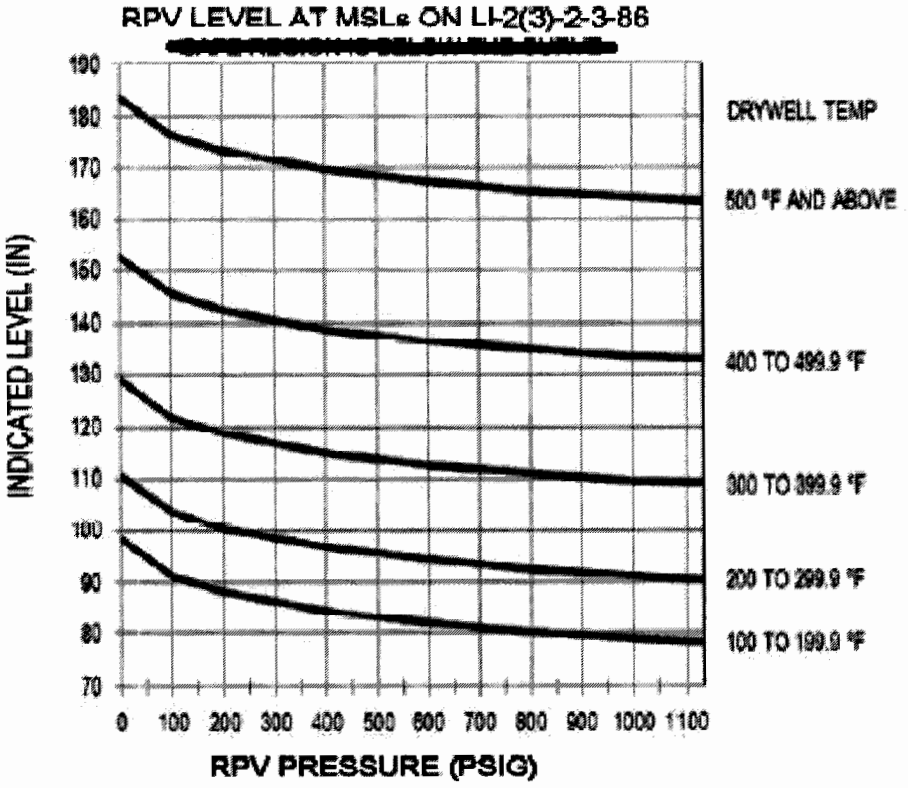
10 **ID: 994304** **Points: 1.00**

Unit 3 was operating at 100% power when a feedwater level control malfunction occurs.

Current plant conditions are as follows:

- RPV level as read on LI-2-2-3-86 is +90 inches
- All control rods are fully inserted
- RPV pressure is 1060 psig and rising slowly
- Drywell temperature is 125 degrees F

WHICH ONE of the following describes the direction to give the URO/PRO for RPV pressure control?



A. Maintain reactor pressure below 1053 psig using the Bypass Jack per OT-102, "Reactor High Pressure".

B. Maintain reactor pressure below 1053 psig using EHC Pressure Set per OT-102, "Reactor High Pressure".

C. Reduce reactor pressure below 1050 psig using a single SRV and prolonged SRV opening per OT-110, "Reactor High Level".

D. Reduce reactor pressure below 1050 psig using multiple SRVs and short-duration SRV openings per OT-110, "Reactor High Level".

Answer: C

Answer Explanation

Choice		Basis or Justification
Correct:	C	When RPV pressure reaches 1050 psig, OT-110, which is executed concurrently with T-101,"RPV Control", directs manual SRV operation using a single SRV (if possible) and prolonged SRV opening.
Distractors:	A	OT-110 Figure 1 an indicated level of +90 inches indicates that actual RPV level may be at or above the main steam lines. OT-110 directs closing the MSIVs if RPV level cannot be maintained below the bottom of the MSIVs (+108 inches), thereby taking away the use of BPVs. In addition, while OT-102 does direct maintaining reactor pressure below 1053 psig, since the reactor is scrammed, OT-102 is no longer applicable. OT-110 is executed concurrently with T-101 "RPV Control". Plausible if the candidate doesn't recall that OT-102 is exited following the Scram.
	B	OT-110 Figure 1 an indicated level of +90 inches indicates that actual RPV level may be at or above the main steam lines. OT-110 directs closing the MSIVs if RPV level cannot be maintain below the bottom of the MSIVs (+108 inches). In addition, while OT-102 does direct maintaining reactor pressure below 1053 psig, since the reactor is scrammed, OT-102 is no longer applicable. OT-110 is executed concurrently with T-101 "RPV Control". Plausible if the candidate doesn't recall that OT-102 is exited following the Scram.
	D	OT-110 directs prolonged SRV opening using a single SRV (or as few as possible) in order to minimize SRV tailpipe loading and the number of SRVs that are effected by higher than normal loads. Plausible if the candidate uses the standard pressure control guidance.

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:	0.00
System ID:	994304
User-Defined ID:	B NRC 2019
Cross Reference Number:	295008 2.4.4
Topic:	ILT-1540-4-010 SRO
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	ILT05-1 NRC Exam SRO#8
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
Memory			10CRF55.43(b) 5

Source Documentation

Source:	New Exam item Modified Bank X ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	OT-102; OT-110; T-101	
Learning Objective:	PLOT - 1540.4	
K/A System:	295008 - High Reactor Water Level	Importance; RO / SRO 4.7
K/A Statement:	2.4.4 - Ability to recognize abnormal indications for system operating parameters that are entry level conditions for emergency and abnormal operating procedures	
REQUIRED MATERIALS:	None	
Notes and Comments:	this is a K/A match because it requires the SRO candidate to take the abnormal level indication determine that it is an entry condition for OT-110, "Reactor High Level" and then using the procedure determine how to stabilize plant conditions within the limitations of the procedure.	

11 **ID: 2078646** **Points: 1.00**

Unit 2 is operating at 10% power when the following occurs:

- The PRO reports that the "Control Rod Drive Scram Solenoid Group 1" light is OUT on the 20C015 panel.

Following the PRO's report:

- LT 101-A, "RPV level transmitter" fails downscale.

Based on the above conditions which one of the following describes the plant response AND the direction the CRS will provide to the crew.

A. A Half Scram only is received,
bypass the half scram using AO 60F.2-2, "Defeat of a RPS Half Scram" for up to 12 hours.

B. A Half Scram only is received,
insert a half scram using GP-25, "Installation of Trips/Isolations to Satisfy Tech Spec/TRM Requirements for Inoperable Instrumentation" for up to 12 hours.

C. A Full Scram is received,
stabilize plant following the automatic Scram using T-100, "Scram"

D. A Full Scram is received,
stabilize plant following the automatic Scram using T-101, "RPV Control"

Answer: A

Answer Explanation

Choice		Basis or Justification
Correct:	A	The level transmitter failing down scale generates a half scram signal. Since the blown fuse is in the same channel no rod motion results. A half scram can be bypass for up to 12 hours.
Distractors:	B	The level transmitter failing down scale generates a half scram signal. Since the blown fuse is in the same channel no rod motion results. GP-25 is used to insert a half scram signal, It can be performed at anytime and can be in place longer than 12 hours. Plausible if the candidate does not understand the purpose of GP-25 and when it should be used and that there are no time limitations for how long the trip can be installed.
	C	The blown fuse is in the same RPS channel as the failed instrument so no rod motion will occur. Plausible if the candidate does not understand the RPS logic and thinks that the blown fuse along with the half scram caused 1/4 of the control rods to insert and therefore a SDV high level scram signal resulting in a full scram. With the transient beginning at 10% the candidate may believe that RPV level would not drop below 1 inch and therefore be a T-100 entry. This fact is true but a full scram does not occur so the overall statement is wrong.
	D	The blown fuse is in the same RPS channel as the failed instrument so no rod motion will occur. Plausible if the candidate does not understand the RPS logic and thinks that the blown fuse along with the half scram caused 1/4 of the control rods to insert and therefore a SDV high level scram signal resulting in a full scram. With the transient beginning at 10% the candidate may believe that RPV level would drop below 1 inch and therefore be a T-101 entry. This fact is true but a full scram does not occur so the overall statement is wrong.

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:	2078646
User-Defined ID:	B NRC 2019
Cross Reference Number:	212000 A2 19
Topic:	ILT 5060-10d. 001 SRO
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
HIGH			10CRF55.43(b) 5

Source Documentation			
Source:	**X** New Exam item Previous NRC Exam Modified Bank Exam Bank ILT Exam Bank		Other
Reference(s):	M-1-S-54, M-352, Tech Spec section 3.3.1, AO 60F.2-2		
Learning Objective:	PLOY 5060 10d		
K/A System:	212000 - RPS	Importance;	RO / SRO 3.9
K/A Statement:	A2 19 - Ability to (a) predict the impacts of the following on the REACTOR PROTECTION SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Partial system activation (half-SCRAM)		
REQUIRED MATERIALS:	None		
Notes and Comments:	None		

12 **ID: 2086275** **Points: 1.00**

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

- The reactor scrams due to a loss of all off-site power
- Only the E-2 Emergency Diesel Generator starts
- RPV level is -70 inches and dropping slowly.
- 2A DC POWER PANEL LO VOLTAGE (209 C-3) is in alarm.
- 2A DC Bus voltage at Panel 20C021 (CSR) is 0 VDC.

Based on the above plant conditions, assess the plant impact and select the actions required to mitigate the impact

A. RCIC will automatically start
Control RPV level with RCIC using RRC 13.1-2, "RCIC System Operation During a Plant Transient". ONLY

B. RCIC will automatically start
Control RPV level with RCIC using RRC 13.1-2, "RCIC System Operation During a Plant Transient" AND
Swap RCIC suction to the Torus in accordance with SE11, "Loss of Off-site power".

C. RCIC will NOT automatically start
Control RPV level with HPCI using RRC 23.1-2, "HPCI System Operation During a Plant Transient". ONLY

D. RCIC will NOT automatically start
Control RPV level with HPCI using RRC 23.1-2, "HPCI System Operation During a Plant Transient". AND Swap HPCI suction to the Torus in accordance with SE11, "Loss of Off-site power".

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	The SRO candidate must recognize that with low battery voltage on the 2A battery, RCIC will be INOP and not start. Based on that knowledge the SRO candidate must know that the strategy is to use HPCI. Additionally with only one D/G operating the SRO candidate must know that the strategy is to preserve CST level by transferring HPCI suction to the Torus. With Torus temperature low, the appropriate strategy is to use HPCI with suction rom the torus.
Distractors:	A	RCIC is not available. Plausible if the candidate does not recall that power to RCIC is from the 2A battery. If RCIC were available then aligning it for injection would be part of the strategy for level control. Plausible if the SRO candidate does not recall the action required in SE-11 for maintain CST inventory.
	B	RCIC is not available. Plausible if the candidate does not recall that power to RCIC is from the 2A battery. If RCIC were available then aligning it for injection and aligning RCIC suction to the Torus would be the strategy for level control.
	C	With RCIC unavailable, aligning HPCI for injection is part of the level control strategy. Plausible if the SRO candidate does not recall the SE-11 guidance for maintaining CST inventory.

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:	2086275
User-Defined ID:	B NRC 2019
Cross Reference Number:	217000 A2.05
Topic:	ILT 5013 10e 002 SRO. Given a set of conditions (a) predict the impacts of the follow
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
High			10CRF55.43(b) 5

Source Documentation

Source:	**X** New Exam item NRC Exam Modified Bank Bank ILT Exam Bank	Previous Other Exam
Reference(s):	SE-13, SE-11	
Learning Objective:	PLOT-5013-10e	
K/A System:	217000 - RCIC	Importance; RO / SRO 3.3
K/A Statement:	A2.05 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; D.C. power loss	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

13 **ID: 994129** **Points: 1.00**

Unit 2 was operating in MODE1 when the following reports were received from Maintenance and Engineering:

- Station Battery 2CD001 terminal voltage is 98 VDC.
- Repairs cannot be made in a timely manner.

A Unit 2 shutdown to MODE 3 is:

A. required in a maximum of 14 hours.

B. required in a maximum of 24 hours.

C. required in a maximum of 7 days and 12 hours.

D. NOT required unless 4 KV bus de-energization is required.

Answer: A

Answer Explanation

Choice		Basis or Justification
Correct:	A	3.8.4.C requires restoration in 2 hours. 3.8.4.D requires Mode 3 in 12 hours - total is 14 hours
Distractors:	B	if 3.8.4.B is applied mistakenly, then 12 + 12 = 24
	C	if 3.8.4.A is applied mistakenly, then 7 days + 12 hours
	D	if the note in condition A is applied mistakenly then it is possible to interpret that no action are required unless a 4 KV buss is de-energized

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:	994129
User-Defined ID:	B NRC 2019
Cross Reference Number:	263000 2.2.22
Topic:	ILT-5057-002 SRO battery low voltage
Num Field 1:	
Num Field 2:	NA
Text Field:	B

Comments:

Psychometrics

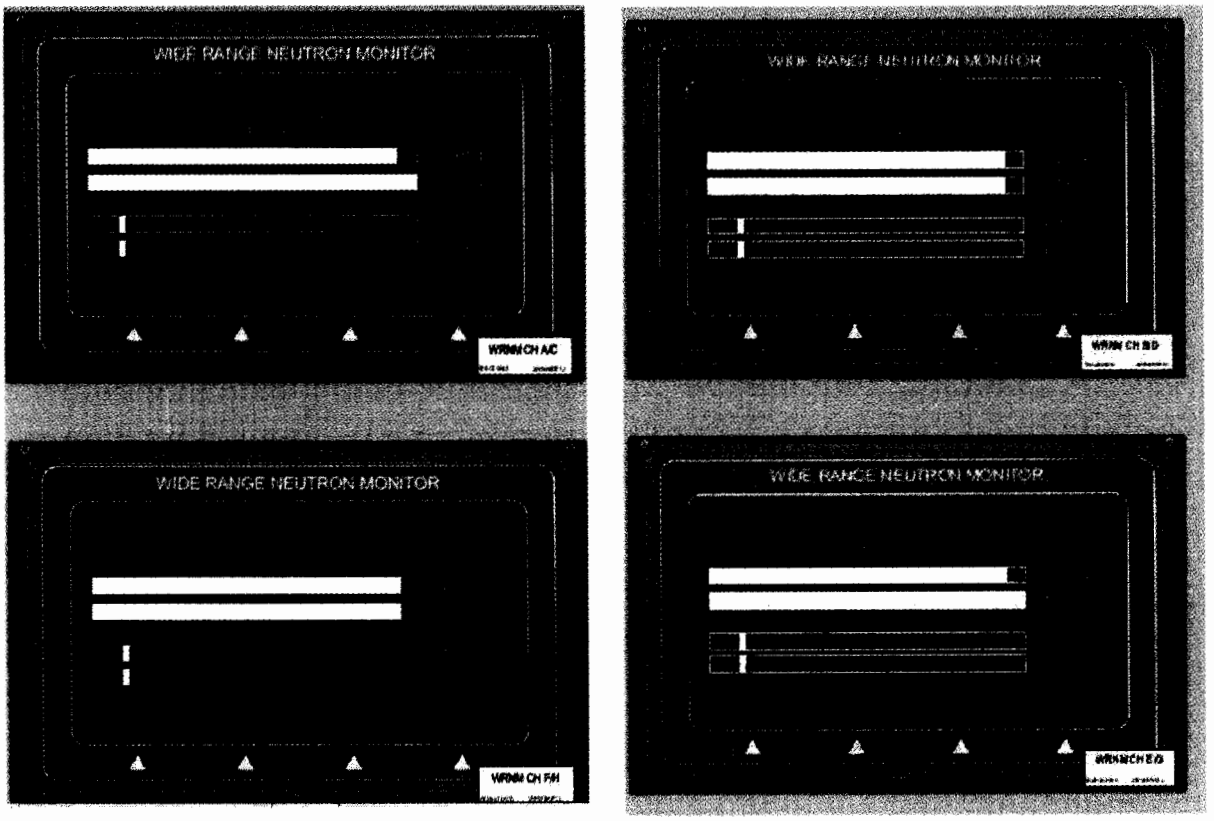
Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
HIGH			10CRF55.41(b) 2

Source Documentation

Source:	New Exam item Modified Bank Bank **X** ILT Exam Bank	Previous NRC Exam Other Exam
Reference(s):	Tech Specs 3.8.4.D and bases	
Learning Objective:	PLOT - 5057-14	
K/A System:	263000 - DC Electrical Distribution	Importance; RO / SRO 4.7
K/A Statement:	2.2.22 - Knowledge of limiting conditions for operations and safety limits	
REQUIRED MATERIALS:	Tech Spec section 3.8.4	
Notes and Comments:	None	

14 **ID: 992976** **Points: 1.00**

The below conditions exist with respect to the Wide Range Neutron monitoring system.




WRNM
7A-D4A
WRNM
7A-D4B

A plant Startup is about to commence, choose the correct statement concerning this situation.

A. The Startup can commence, there is No Tech Spec action required.

B. The Startup can commence, WRNMs 'C' & "G" must be placed in the tripped condition and remain tripped until the Reactor Mode switch is placed in "RUN".

C. The Startup can commence, place the "G" WRNM in the tripped condition within 12 hours.

D. The Startup can NOT commence until all WRNMs are operable.

Answer: C

Answer Explanation

Choice		Basis or Justification
Correct:	C	Three WRNM channels are required per trip system. With the "C" & "G" WRNM inop in the same trip system action must be take to place the "G" WRNM in trip since the "C" WRNM is already bypassed
Distractors :	A	Plausible if the candidate does not understand the logic arrangement for the WRNMs and does not understand that the "C" and "G" monitors are in the same trip system. One WRNM must be tripped and the other bypassed.
	B	Plausible if the candidate believes that both the "C" and "G" monitors must be placed in trip. Only one monitor must be tripped the other monitor should be bypassed.Plausible if the candidate believes that this is one of the required Monitors. then the monitor is required to be returned to operable with in 4 hours per 3.3.1.2
	D	Plausible if the candidate believes that Tech SPec 3.0,4 applies to this situation.

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:	992976
User-Defined ID:	B NRC 2019
Cross Reference Number:	215003 2.2.44
Topic:	ILT-5060-14- 001 SRO
Num Field 1:	305
Num Field 2:	N/A
Text Field:	A
Comments:	

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
HIGH			10CRF55.43(b) 2

Source Documentation

Source:	New Exam item Modified Bank **X** ILT Exam Bank		Previous NRC Exam Other
Reference(s):	Tech Specs and bases		
Learning Objective:	PLOT - 5060-14		
K/A System:	215003 - IRM	Importance;	RO / SRO 4.4
K/A Statement:	2.2.44 - Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions		
REQUIRED MATERIALS:	Tech Spec section 3.3.1.1 and 3.3.1.2 with the setpoints blocked out.		
Notes and Comments:			

15 **ID: 2078794** **Points: 1.00**

Unit 2 is operating at 100%. Residual Heat Removal system surveillance test results indicate the following pump flow rates at a system discharge corresponding to a reactor pressure of 20 psig:

A RHR Pump - 8600 gpm
C RHR Pump - 8500 gpm
B RHR Pump - 8450 gpm
D RHR Pump - 8800 gpm

Which of the following describes the required actions for the noted conditions?

A. No action is required.

B. Restore ONLY "A" Loop RHR to OPERABLE status within 7 days.

C. Restore ONLY "B" Loop RHR to OPERABLE status within 7 days.

D. Restore BOTH RHR Loops to OPERABLE status within 7 days.

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	The candidate must determine that there is a pump in each LPCI loop with a flow below the acceptable value. This would require both loops to be returned to operable status within the 7 day Tech Spec limit
Distractors:	A	Plausible if the candidate does not believe that any pump is outside of the required flow rate value.
	B	Plausible if the candidate believes that only one pump in the "A" loop below the required value or does not understand the arrangement on RHR pumps and believes that both pumps with low flow are in the "A" loop.
	C	Plausible if the candidate believes that only one pump in the "B" loop below the required value or does not understand the arrangement on RHR pumps and believes that both pumps with low flow are in the "B" loop.

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:	2078794
User-Defined ID:	B NRC 2019
Cross Reference Number:	209001 2.2.42
Topic:	ILT-5010-13-001 SRO
Num Field 1:	
Num Field 2:	N/A
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
HIGH			10CRF55.43(b) 2

Source Documentation		
Source:	New Exam item Exam Modified Bank Other Exam Bank **X** ILT Exam Bank	Previous NRC
Reference(s):	Tech Spec 3.5.1	
Learning Objective:	PLOT 5010-13	
K/A System:	209001 - LPCI	Importance; RO / SRO 4.6
K/A Statement:	2.2.42 - Ability to recognize system parameters that are entry conditions for Technical Specifications.	
REQUIRED MATERIALS:	Tech Spec section 3.5.1 including SRs	
Notes and Comments:	In order to develop a SRO question for this K/A , an evaluation of the condition was added to the recognition of the Tech Spec entry condition.	

16 **ID: 1650589** **Points: 1.00**

The following conditions existed following a Loss of Coolant Accident on Unit 3:

- Drywell pressure is 3.5 psig.
- Torus water temperature is 100 degrees F
- RPV level is +10 inches and slowly lowering.
- RPV pressure is 900 psig and lowering.
- Torus cooling has been placed in service on the "A" Loop.

10 minutes later the following conditions exist:

- RPV level has lowered to -190 inches
- RPV pressure has lowered to 300 psig

The CRS will direct the Reactor Operator to _____.

A. Restore and maintain RPV level above -172 inches using SO 10.7.B-3, "Residual Heat Removal System Automatic Response During a LOCA and Manual System Initiation Upon Automatic Injection Failure"

B. Realign "A" loop RHR for Torus cooling using RRC 10.1-3, "RHR System Torus Cooling During a Plant Event"

C. Realign "A" loop RHR for injection using SO 10.7.A-3, "Residual Heat Removal System LPCI Mode Manual Start" ONLY

D. Continue to operate "A" loop RHR in Torus cooling per RRC 10.1-3, "RHR System Torus Cooling During a Plant Event" AND align "B" loop RHR for injection using SO 10.7.A-3, "Residual Heat Removal System LPCI Mode Manual Start".

Answer: A

Answer Explanation

Choice		Basis or Justification
Correct:	A	No bypass switches are turned to place Torus cooling in service. When the LOCA signal is received, the system will automatically realign from Torus cooling to injection. The CRS will direct the RO to restore and maintain RPV level per the EOPs. Procedure SO 10.7.B-3 provides guidance on verifying that the RHR system has aligned correctly and actions to take to maintain RPV level.
Distractors :	B	LPCI must remain aligned for injection with low RPV level. With RPV level low realigning RHR for torus cooling is not an acceptable strategy. Plausible if the candidate does not understand the requirements during a LOCA initiation.
	C	The system will automatically align for injection. Plausible if the candidate does not understand the LOCA logic, or the steps required to place Torus cooling in service.
	D	The system will automatically align for injection. Plausible if the candidate does not understand the LOCA logic, or the steps required to place Torus cooling in service or if the candidate confuses the actions required during a LOCA with those during an ATWS which allows Torus cooling to remain in service or be placed back into Torus cooling.

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:	1650589
User-Defined ID:	B NRC 2019
Cross Reference Number:	219000 A2.14
Topic:	ILT 5010-10h-001 A CERT B NRC SRO
Num Field 1:	
Num Field 2:	A CERT
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
High			10CRF55.43(b)(5)

Source Documentation			
Source:	New Exam item Modified Bank Bank **X** ILT Exam Bank		Previous NRC Exam Other Exam
Reference(s):	SO 10.7.B		
Learning Objective:	PLOT 5010 - 10h		
K/A System:	219000 RHR/LPCI: Torus /Suppression Pool Cooling Mode	Importance;	RO / SRO 4.1 / 4.3
K/A Statement:	A2.14 - Ability to (a) predict the impact of the following on the RHR/LPCI: TORUS/SUPPRESSION POOL COOLING MODE: and (b) based on those predictions, use procedures to correct, control or mitigate the consequences of those abnormal conditions or operations: Loss of coolant accident.		
REQUIRED MATERIALS:	None		
Notes and Comments:	None		

17 **ID: 2078825** **Points: 1.00**

A startup is in progress on Unit 3. The following condition exist:

Reactor power 2%
Reactor pressure 700 psig
Identified leakage 20 gpm
Unidentified leakage 4 gpm
Unidentified leakage increase in last 12 hours 3 gpm
A leak is identified on RWCU piping upstream of of MO-3-12-15, "RWCU Inboard Isolation"

Select the most limiting required action for the above conditions

A. No actions are required.

B. Reduce the rise in Unidentified Leakage within 4 hours ONLY.

C. Reduce the rise in Unidentified Leakage within 4 hours OR verify the source of the Unidentified Leakage is not "Service Sensitive Steel" within 4 hours.

D. Be in Mode 3 in 12 hours.

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct :	D	A leak on the RWCU line before the first isolation valve is Pressure Boundary Leakage. No pressure boundary leakage is permitted, therefore the Reactor must be in Mode 3 in 12 hours.
Distractors:	A	Plausible if the candidate does not recognize that the leakage is "Pressure Boundary Leakage". All other limits are acceptable.
	B	Plausible if the candidate does not recognize that the limit for the rise in Unidentified Leakage only applies in Mode 1 and doesn't understand that the leakage is boundary leakage.
	C	Plausible if the candidate does not recognize that the limit for the rise in Unidentified Leakage only applies in Mode 1 and doesn't understand that the leakage is boundary leakage.

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:	2078825
User-Defined ID:	B NRC 2019
Cross Reference Number:	204000 2.2.40
Topic:	ILT-5012-13-001 SRO Given a set of conditions related to the Reactor Water
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
HIGH			10CRF55.43(b) 2

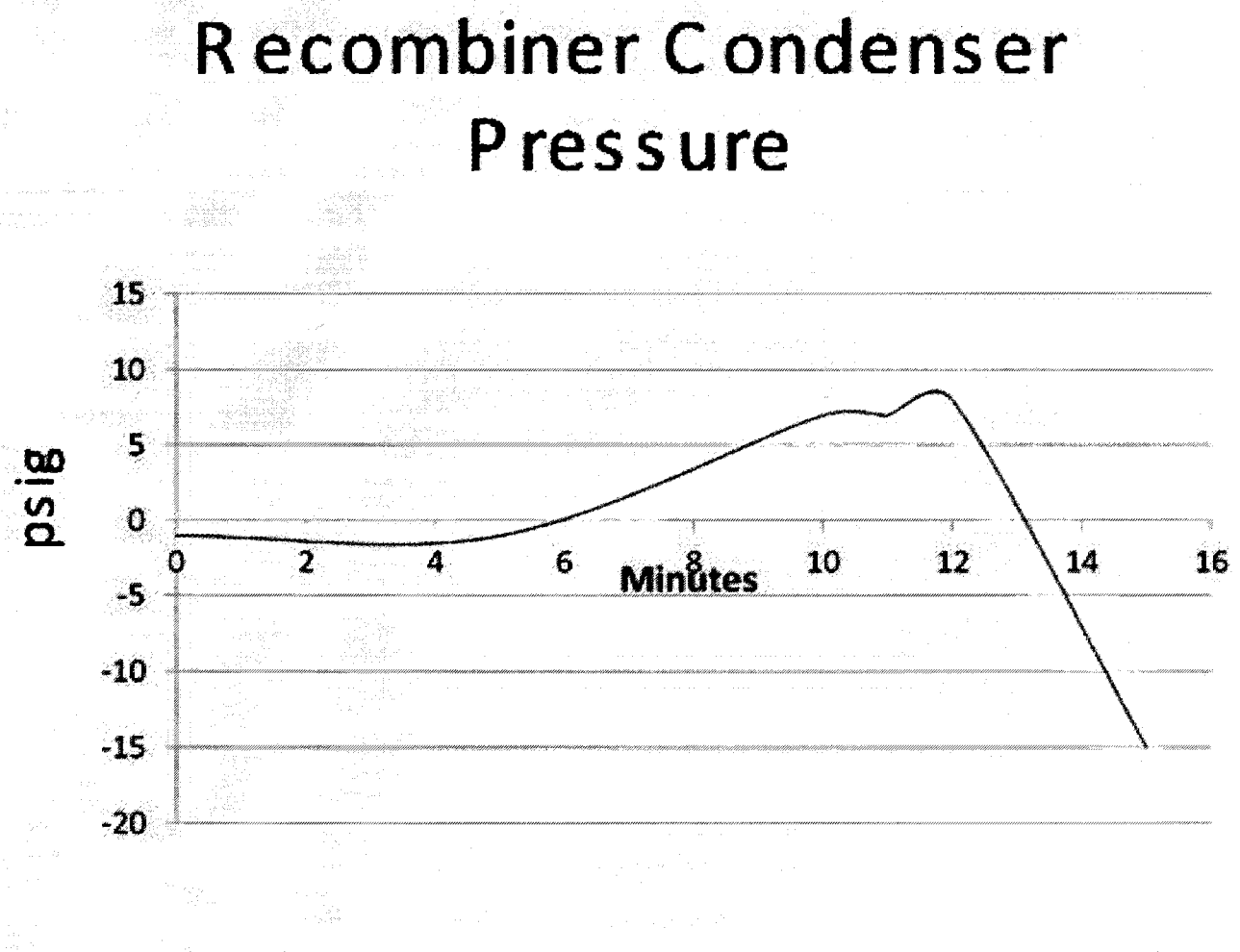
Source Documentation

Source:	**X** New Exam item NRC Exam Modified Bank Bank ILT Exam Bank	Previous Other Exam
Reference(s):	Tech Spec 3.4.4 and bases	
Learning Objective:	PLOT-5012-13	
K/A System:	204000 - RWCU	Importance; RO / SRO 4.7
K/A Statement:	2.2.40 - Ability to apply Technical Specifications for a system	
REQUIRED MATERIALS:	Tech Spec section 3.4.4	
Notes and Comments:	None	

18 **ID: 2078847** **Points: 1.00**

A loss of cooling to the Off-Gas Recombiner Condenser has occurred.

Using the chart determine the appropriate actions. Assume the loss of cooling began at T=0.



A. MO-2990A, "Steam Supply" has isolated.
Reduce reactor power using GP-9-2, "Fast Reactor Power Reduction".

B. The recycle valve (CV-2768) failed to open.
Open the recycle valve per the ARC and return the Jet Compressors to service using AO 8.1-2, "Recovery from Off-Gas System Isolation".

C. The recycle valve (CV-2768) opened and is returning condenser pressure to normal.
Continue to monitor operations of the Off-Gas system per SO 8.8.A-2, "Off-Gas System Routine Inspection".

D. MO-2990A, "Steam Supply" has isolated; swap Off-Gas Jet Compressors using AO 8.1-2, "Recovery from Off-Gas System Isolation".

Answer: A

Answer Explanation

Choice		Basis or Justification
Correct:	A	The recycle valve opened as indicated by the flat spot on the curve at approx. 7 psig. The rise in pressure indicates that the recycle valve was not enough to control Recombiner Condenser pressure. When Recombiner Pressure reaches 8 psig. MO-2990 isolates. There are no alternate components in the Recombiner System that can be placed in service for this condition. This will cause main condenser vacuum to drop and require entry into OT-106, "Condenser Low Vacuum" and require a power reduction.
Distractors :	B	The recycle valve did open to try and control pressure as evidenced by the flat spot on the graph. plausible if the candidate can not correctly diagnose plant plant conditions based of the graph. Returning a jet compressor to service will not remedy the problem. Plausible if candidate believes that returning the jet compressor to service and therefore restoring system flow will improve system performance and reduce system flow.
	C	The recycle valve is not successfully controlling Recombiner pressure as indicated by the rise in system pressure to 8 psig and then the rapid drop as MO-2990 isolated. plausible if the candidate believes that the drop in pressure at 12 minutes is the recycle valve operating properly instead of the isolation causing the drop in pressure.
	D	The MO-2990 is isolated but there are not alternate components in the Recombiner System that can be placed in service to restore the system. Plausible if the candidate does not understand the flowpath through the recombiner and believes that there is a second recombiner condenser just as there is a second jet compressor.

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:	2078847
User-Defined ID:	B NRC 2019
Cross Reference Number:	271000 2.1.25
Topic:	ILT - 5008 9d-001 SRO
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
HIGH			10CRF55.43(b) 5

Source Documentation

Source:	New Exam item Exam Modified Bank Other Exam Bank **X** ILT Exam Bank	Previous NRC
Reference(s):	SO 8.8.A-2, AO 8.1-2, OT-106, GP-9-2 ARC-231 C-2	
Learning Objective:	PLOT-5008-9d	
K/A System:	271000 - Offgas	Importance; RO / SRO 4.2
K/A Statement:	2.1.25 - Ability to interpret reference materials, such as graphs, curves, tables, etc.	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

19 **ID: 994425** **Points: 1.00**

Unit 2 Fuel Pool level is currently 232' 7".

Prior to inserting the TN-68 Spent Fuel Storage cask into the Fuel Pool Cask Pit per procedure SF-221 "Spent Fuel Casks TN-68 Loading and Transport Operations",

Fuel Pool Cooling is __(1)___

AND

Fuel Pool level is __(2)____.

A. (1) maximized
(2) lowered.

B. (1) secured
(2) lowered.

C. (1) secured
(2) raised.

D. (1) maximized
(2) raised

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	Procedure SF-221 requires that Fuel Pool Cooling system is secured and to establish Fuel Pool level between 232' 4" and 232' 6".
Distractors:	A	Plausible if the candidate believes that fuel pooling would be need to maintain the added mass in the fuel pool at temperature.
	C	Plausible if the candidate does not recall the required Fuel pool level.
	D	Plausible if the candidate believes that fuel pooling would be need to maintain the added mass in the fuel pool at temperature. Plausible if the candidate does not recall the required Fuel pool level.

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:	994425
User-Defined ID:	B NRC 2019
Cross Reference Number:	2.1.42
Topic:	ILT-5071-2a & b-002 SRO Prior to inserting the TN-68 Spent Fuel Storage cask into
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	

Comments:

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
Memory			10CRF55.41(b) 7

Source Documentation

Source:	New Exam item Modified Bank Bank **X** ILT Exam Bank	Previous NRC Exam Other Exam
Reference(s):	SF-221	
Learning Objective:	PLOT - 5071-2a 7 b	
K/A System:		Importance; RO / SRO 3.4
K/A Statement:	2.1.42 - Knowledge of new and spent fuel movement procedures	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

20 **ID: 2078862** **Points: 1.00**

Repairs have been made to a low pressure ECCS injection valve.

- partial pump valve and flow test to test the operability of the valve will be performed.
- The valve initially fails to open within the surveillance test limit.
- The valve is stroked three more times within 30 minutes, and on the third stroke the valve open time is within the surveillance test limits.

The injection valve is __(1)__, __(2)__.

A. (1) operable
(2) direct maintenance to inspect the valve

B. (1) operable
(2) wait 10 minutes and re-stroke the valve if the time is within the surveillance test limit return the system to operable

C. (1) inoperable
(2) direct maintenance to inspect the valve

D. (1) inoperable
(2) wait 10 minutes and re-stroke the valve if the time is within the surveillance test limit return the system to operable

Answer: C

Answer Explanation

Choice		Basis or Justification
Correct:	C	In accordance with OP-AA-108-115 step 4.5.3 "Repetitive testing to achieve acceptable test results without identifying the root cause or correction of a problem in a previous test is **not** acceptable as a means to establish or verify operability and may constitute unacceptable preconditioning." Therefore the valve is inoperable as repetitive strokes were used to meet the surveillance test limits. Maintenance is directed to inspect the valve to also meet step 4.5.3 which states "Examine test failures to determine the cause and correct the problem before resumption of testing."
Distractors :	A	Plausible if candidate misunderstands that if pre-conditioning is used to meet a surveillance test, the component is inoperable.
	B	Plausible if candidate misunderstands that if pre-conditioning is used to meet a surveillance test, the component is inoperable. Plausible if candidate believes that since the valve tested twice in a row within the surveillance limit, it can be declared operable even with repetitive testing.
	D	Plausible if candidate believes that since the valve tested twice in a row within the surveillance limit, it can then be declared operable even with repetitive testing.

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:	0.00
System ID:	2078862
User-Defined ID:	B NRC 2019
Cross Reference Number:	2.2.21
Topic:	ILT-1529-1c.-003 SRO In accordance with the Conduct of Operations Manual, describ
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
Memory			10CRF55.43(b) 5

Source Documentation

Source:	**X** New Exam item Previous NRC Exam Modified Bank Other Exam Bank ILT Exam Bank	
Reference(s):	OP-AA-108-115	
Learning Objective:	PLOT - 1529.1c	
K/A System:		Importance; RO / SRO 4.1
K/A Statement:	2.2.21 - Knowledge of pre and post maintenance operability requirements	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	

21 **ID: 2078934** **Points: 1.00**

Unit 3 is operating at 100% power

The following indications are observed:

- Main Steam Line radiation monitors (RR-3-17-252) indicate 5 E+3 mR/hr.
- "Main Steam Line HI Radiation" alarm at Panel 318 D-2 is received.
- Air Ejector Discharge radiation monitor (RR-3-17-152) indicates 30 mR/hr.

Which one of the following describes the potential reason for the above indications and what procedural guidance is required to be directed?

A. A resin injection has occurred; lower power in accordance with GP-9-3, "Fast Reactor Power Reduction" using flow and rods.

B. A resin injection has occurred; lower power in accordance with GP-9-3, "Fast Reactor Power Reduction" using rods ONLY.

C. Fuel cladding damage has occurred; lower power in accordance with GP-9-3, "Fast Reactor Power Reduction" using flow and rods.

D. Fuel cladding damage has occurred; lower power in accordance with GP-9-3, "Fast Reactor Power Reduction" using rods ONLY.

Answer: A

Answer Explanation

Choice		Basis or Justification
Correct :	A	The injection of a resin into the reactor will cause a rise in N-16 and N-13 activity in the main steam lines. During operation, the dissolved O2 is the reactor reacts with the N-16 and N-13 to form nitrates (NO3). NO3 is soluble in water and does not readily carry over with the steam. A change in pH causes the N-16 and N-13 to combine with the free hydrogen to produce ammonia (NH3) and nitrous oxide (N2O). Ammonia and nitrous oxide are more volatile; therefore more N-16 and N-13 carries over with the steam. The rise in N-16 only indicates on the main steam line radiation monitors because of the short half life of the N-16. N-13 has a slightly longer half life and will cause a small rise on the SJAE radiation monitor. ON-103, "Main Steam Line High Radiation" directs performing GP-9. ON-103 does not direct only inserting control rods.
Distractors:	B	The injection of a resin into the reactor will cause a rise in N-16 and N-13 activity in the main steam lines. During operation, the dissolved O2 is the reactor reacts with the N-16 and N-13 to form nitrates (NO3). NO3 is soluble in water and does not readily carry over with the steam. A change in pH causes the N-16 and N-13 to combine with the free hydrogen to produce ammonia (NH3) and nitrous oxide (N2O). Ammonia and nitrous oxide are more volatile; therefore more N-16 and N-13 carries over with the steam. The rise in N-16 only indicates on the main steam line radiation monitors because of the short half life of the N-16. N-13 has a slightly longer half life and will cause a small rise on the SJAE radiation monitor. ON-103, "Main Steam Line High Radiation" directs performing GP-9. ON-103 does not direct only inserting control rods. Plausible as there are certain times when performing GP-9 that you would lower power with Rods only.
	C	The Steam Jet Air Ejector (SJAE) Discharge radiation monitor (RR-3-17-152) is slightly elevated because of the effects of N-13 which has a half life long enough to be indicated on the SJAE radiation monitor. Failed fuel cladding causes the release of fission product gases (Xe, Kr, I) into the reactor cooling. Fuel leaks do not cause Main Steam Line radiation levels to rise. The 1/2 life of Xe and Kr are long enough to indicate on the SJAE discharge radiation monitors. ON-103, "Main Steam Line High Radiation" directs performing GP-9. ON-103 does not direct only inserting control rods.
	D	ON-103, "Main Steam Line High Radiation" directs performing GP-9. ON-103 does not direct only inserting control rods. The GP-9 power reduction would include use of inserting control rods once the core flow limit is reached. Plausible as there are certain times when performing GP-9 that you would lower power with Rods only.

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:	2078934
User-Defined ID:	B NRC 2019
Cross Reference Number:	2.3.15
Topic:	ILT-5063-11-001 SRO B NRC. Given a set of conditions evaluate plant performance and make operati
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
HIGH			10CRF55.43(b) 4

Source Documentation		
Source:	New Exam item X Modified Bank (1117626) ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	ARC 318 D-2	
Learning Objective:	PLOT-5063-11	
K/A System:		Importance; RO / SRO 3.1
K/A Statement:	2.3.15 - Knowledge of radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personal monitoring equipment etc.	
REQUIRED MATERIALS:	None	
Notes and Comments:	Modified from question 1117626	

QUESTION PREVIEW

1 **ID: 1117626** **Points: 1.00**

Unit 3 is operating at 100% power

The following indications are observed:

- Main Steam Line radiation monitors (RR-3-17-252) indicate 1.3 E+3 mR/hr.
- Vent Stack Exhaust radiation monitors (RR-3979) indicates 3 E-7 µCi/cc.
- Air Ejector Discharge radiation monitor (RR-3-17-152) indicates 7.5 E+2 mR/hr.
- Main Stack Gas radiation monitor (RR-0-17-051A) indicates 3.7 E-6 µCi/cc.

Which one of the following describes the potential reason for the above indications and what procedural guidance is required to be directed?

A. A resin injection has occurred; lower power in accordance with GP-9-3, "Fast Reactor Power Reduction" using flow and rods.

B. A resin injection has occurred; lower power in accordance with GP-9-3, "Fast Reactor Power Reduction" using rods ONLY.

C. Fuel cladding damage has occurred; lower power in accordance with GP-9-3, "Fast Reactor Power Reduction" using flow and rods.

D. Fuel cladding damage has occurred; lower power in accordance with GP-9-3, "Fast Reactor Power Reduction" using rods ONLY.

Answer C

22 **ID: 1097665** **Points: 1.00**

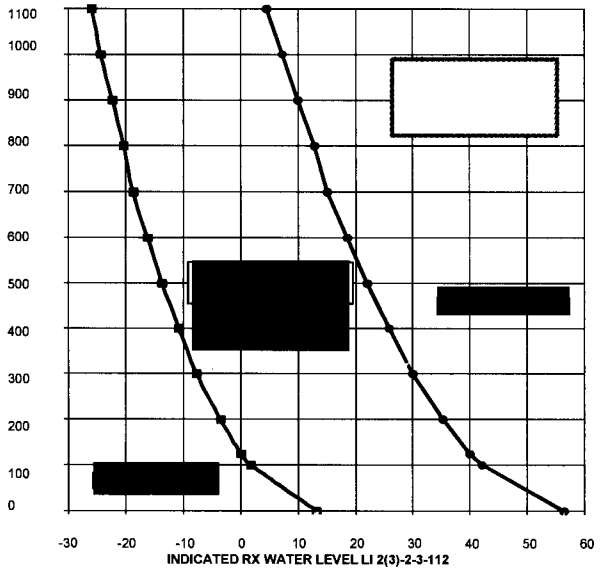
Control has been established at the Unit 2 HPCI Alternative Shutdown Panel (ASP) using SE-10, "Alternative Shutdown". The following conditions exist:

- RPV level as indicated on LI-2-2-2-112 at the HPCI ASP is +10 inches.
- RPV pressure is 1000 psig.
- The HPCI System is not in service.

Below is SE-10 Attachment 9, Figure 1.

FIGURE 1

ACTUAL RX LEVEL AS A FUNCTION OF RX PRESS AND INDICATED LEVEL



Based on the above conditions, per SE-10, direct a RO to align _____.

A. HPCI for injection into the RPV

B. RCIC for injection into the RPV

C. HPCI for CST to CST operations

D. RCIC for CST to CST operation

Answer: C

Answer Explanation

Choice		Basis or Justification
Correct:	C	Actual RPV level is above 40 inches using Figure 1. Step ASD/R-24 directs starting HPCI and maintaining actual RPV level between 0 and +40 in. using SE-10 ATTACHMENT 9. Since level is above 40 inches HPCI should not be used for RPV injection and can be used in the CST to CST mode for pressure control.
Distractors:	A	Level is not below 0 in. Plausible if the candidate does not interpret the graph correctly or does not understand the operating regions on the graph. If the candidate believes that RPV level is low then starting HPCI would be correct.
	B	Level is not below 0 in. Plausible if the candidate does not interpret the graph correctly or does not understand the operating regions on the graph. If the candidate believes that RPV level is low then starting RCIC would be correct.
	D	.Actual RPV level is above 40 inches using Figure 1. Step ASD/R-24 directs starting HPCI and maintaining actual RPV level between 0 and +40 in. using SE-10 ATTACHMENT 9. There is only direction to use RCIC for injection. Since level is above 40 inches RCIC should not be used for RPV injection. There is not guidance nor can RCIC be run in the CST-CST mode.

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:	1097665
User-Defined ID:	B NRC 2019
Cross Reference Number:	2.4.34 OR 295016 AA2.02
Topic:	ILT-1555-12--009 SE-10 SRO C CERT B NRC
Num Field 1:	C Cert
Num Field 2:	
Text Field:	

Comments:

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
High			10CFR55.43(b)(5)

Source Documentation

Source:	New Exam item Modified Bank **X** ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	SE-10 Alternative Shutdown	
Learning Objective:	PLOT 1555 -12	
K/A System:	Generic or 295016 Control Room Abandonment	Importance: SRO 4.1 or 4.3
K/A Statement:	2.4.34 - Knowledge of RO tasks performed outside the main control room during an emergency and the resultant operational effects OR AA2.02: Ability to determine and/or interpret the following as they apply to CONTROL ROOM ABANDONMENT: Reactor water level	
REQUIRED MATERIALS:	**None**	
Notes and Comments:	None	

23 **ID: 2086295** **Points: 1.00**

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

- RPV level is -110 inches and lowering
- ALL RHR and Core Spray pumps have been manually started
- Drywell pressure 10 psig and rising

Three minutes later RPV level is -165 inches and the following alarm is received 227 D-4, "Blowdown Timers Initiated"

Based on the above information, an ADS blowdown __(1)__ initiated, and the CRS shall direct ___(2)____.

A. (1) has
(2) the crew to allow the blowdown to go to completion

B. (1) has
(2) the PRO to inhibit the blowdown using RRC 1G.1-2, "Automatic Depressurization System Inhibit"

C. (1) has NOT
(2) the crew to allow the blowdown to go to completion

D. (1) has NOT
(2) the PRO to inhibit the blowdown using RRC 1G.1-2, "Automatic Depressurization System Inhibit"

Answer: D

Answer Explanation

Choice		Basis or Justification
Correct:	D	RPV level is below the setpoint of -160 inches and Drywell pressure is above the setpoint of 2 psig so the conditions are correct to start the 105 second timer. Per ARC 227 D-4, the timer has initiated but the blowdown will not begin for 105 seconds. Since RPV level is not at -172 inches T-111 will direct inhibiting ADS.
Distractors :	A	The conditions are met for the ADS blowdown. Plausible if the candidate does not recall that the initiation conditions starts the timer before beginning the blowdown. Allowing the blowdown to go to completion does not meet the guidance in the EOPs. Plausible if the candidate does not understand that an ADS blowdown is only an appropriate action, if the crew has control of the plant, when RPV level reaches -172 inches.
	B	The conditions are met for the ADS blowdown. Plausible if the candidate does not recall that the initiation conditions starts the timer before beginning the blowdown.
	C	Allowing the blowdown to go to completion does not meet the guidance in the EOPs. Plausible if the candidate does not understand that an ADS blowdown is only an appropriate action, if the crew has control of the plant, when RPV level reaches -172 inches.

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:	2086295
User-Defined ID:	B NRC 2019
Cross Reference Number:	2.4.50
Topic:	ILT-5001G 8c 001 SRO. For annunciator alarms, indications, or response procedures associated with th
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
High			10CRF55.43(b) 5

Source Documentation		
Source:	**X** New Exam item NRC Exam Modified Bank Bank ILT Exam Bank	Previous Other Exam
Reference(s):	ARC 227 D-4, T-111	
Learning Objective:	PLOT 5001G 08c	
K/A System:	2.4 Emergency Procedures/Plan	Importance; RO / SRO 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	

24 **ID: 2079016** **Points: 1.00**

- Unit 2 is shutdown with all control rods fully inserted.
- RPV level is +25 inches.
- The 2A RHR Pump is running in Shutdown Cooling at 9,000 gpm flow per SO 10.1.B-2 "RHR System Shutdown Cooling Mode Manual Start".
- Maintenance requests to locally set the open and closed limit switches on MO 2-10-16A "RHR Pump Min. Flow Valve".
- This action will require the MO 2-10-16A to be taken off of its closed seat.

With regards to the maintenance request the CRS should direct the following:

A. Allow the Maintenance request
after directing a RO to secure the 2A RHR Pump ONLY per SO 10.1.B-2, "Residual Heat Removal System Shutdown Cooling Mode Manual Start"

B. Allow the Maintenance request
after directing a RO to secure the 2A RHR Pump AND closing MO-2-10-25A "Inboard Discharge Valve"per SO 10.1.B-2, "Residual Heat Removal System Shutdown Cooling Mode Manual Start"

C. Do NOT allow the Maintenance request
as this would cause a PCIS Group II Shutdown Cooling isolation and require entry into ON-125 "Loss or Unavailability of Shutdown Cooling".

D. Do NOT allow the Maintenance request
as this would cause the 2A RHR Pump to trip on overcurrent due to excessive pump flow (pump runout) requiring entry into ON-125 "Loss or Unavailability of Shutdown Cooling".

Answer: C

Answer Explanation

Choice		Basis or Justification
Correct:	C	The work cannot occur because reactor water would lower due to being diverted to the Torus if minimum flow valve MO-16A is opened. To prevent this from occurring, the minimum flow valve for the RHR pump in shutdown cooling is procedurally controlled closed with its feed removed during shutdown cooling operation. ON-125 would have to be entered once the PCIS Group II isolation occurred since shutdown cooling would become unavailable.
Distractors :	A	The work cannot occur due to reactor water being diverted to the Torus if the minimum flow valve MO-16A is opened. Plausible if candidate believes shutting the pump down will prevent the reactor water being diverted.
	B	The work cannot occur due to reactor water being diverted to the Torus if the minimum flow valve MO-16A is opened. Also, to avoid diverting flow to the Torus either the SDC suction MO-17, MO-18, or MO-15A would need to be closed. Plausible if candidate believes shutting the pump down and isolating valve will prevent the reactor water being diverted.
	D	Even with the minimum flow valve fully open during pump operation the RHR pump total flow would not exceed pump runout flow of >12, 500 gpm. Plausible because even though the work will NOT be signed off, the reason is wrong.

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:	0.00
System ID:	2079016
User-Defined ID:	B NRC 2019
Cross Reference Number:	2.2.18
Topic:	ILT-5010-5p-001 SRO. Describe the relationships between RHR and
Num Field 1:	
Num Field 2:	
Text Field:	

Comments:

Psychometrics

Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
Memory			10CRF55.43(b) 5

Source Documentation

Source:	New Exam item Modified Bank **X** ILT Exam Bank (508299)	Previous NRC Exam Other Exam Bank
Reference(s):	SO 10.1.B-2, ON-125	
Learning Objective:	PLOT 5010. 5p	
K/A System:		Importance; RO / SRO 3.9
K/A Statement:	2.2.18 - knowledge of the process for managing maintenance activities during shutdown operations, such as risk assessments, work prioritization etc.	
REQUIRED MATERIALS:	None	
Notes and Comments:		

25 **ID: 994327** **Points: 1.00**

- Unit 2 is being shutdown for a refueling outage in accordance with procedure GP-3-2, "Normal Plant Shutdown"
- The initial Drywell entry is being prepared in accordance with procedure RP-PB-461, "Drywell Initial Entry"

To protect personnel making the Drywell entry from unneccessary radiation exposure, procedures GP-3-2 and RP-PB-461 require that Operations personnel apply a(n) ____(1)____ to the Traversing In-core Probe (TIP) System controls.

RP-PB-461 also requires Drywell entry approval from both a Radiation Protection Supervisor and from ____(2)_____.

A. (1) Tagout
(2) the Plant Manager

B. (1) Tagout
(2) Operations Shift Management

C. (1) ACPS
(2) Operations Shift Management

D. (1) ACPS
(2) the Plant Manager

Answer: B

Answer Explanation

Choice		Basis or Justification
Correct:	B	Per GP-3-2 (Rev.1, step 6.76) and RP-PB-461, Attachment 1 -Initial Entry Checklist, Operations personnel must apply a clearance to the Traversing In-core Probe (TIP) System controls in order to ensure that TIPS are not run and in their shields to protect personnel from any accidental radiation exposure. RP-PB-461, Attachment 1, also requires Drywell entry approval from both a Radiation Protection Supervisor and from Operations Shift Management.
Distractors:	A	The management level of approval in incorrect. RP-PB-461, Attachment 1, requires Drywell entry approval from both a Radiation Protection Supervisor and from Operations Shift Management.
	C	Incorrect. An Equipment Status Tag is not an acceptable process for protecting station personnel. Per GP-3-2 (Rev.1, step 6.76) and RP-PB-461, Attachment 1 -Initial Entry Checklist, Operations personnel must apply a clearance to the Traversing In-core Probe (TIP) System controls in order to ensure that TIPS are not run and in their shields to protect personnel from any accidental radiation exposure.
	D	Both parts are incorrect. An Equipment Status Tag is not an acceptable process for protecting station personnel. Per GP-3-2 (Rev.1, step 6.76) and RP-PB-461, Attachment 1 -Initial Entry Checklist, Operations personnel must apply a clearance to the Traversing In-core Probe (TIP) System controls in order to ensure that TIPS are not run and in their shields to protect personnel from any accidental radiation exposure. RP-PB-461, Attachment 1, requires Drywell entry approval from both a Radiation Protection Supervisor and from Operations Shift Management.

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:	0.00
System ID:	994327
User-Defined ID:	B NRC 2019
Cross Reference Number:	G2.3.13
Topic:	ILT-1730-2c-001 SRO Drywell Initial Entry
Num Field 1:	
Num Field 2:	0.00
Text Field:	

Comments:

Psychometrics			
Level of Knowledge	Difficulty	Time Allowance (minutes)	SRO
MEMORY			10CRF55.43(b)(4)

Source Documentation		
Source:	New Exam item Modified Bank **X** ILT Exam Bank	Previous NRC Exam Other Exam Bank
Reference(s):	GP-3-2; RP-PB-461	
Learning Objective:	PLOT-1730-2c	
K/A System:	2.3 Radiation Control	Importance: RO / SRO 3.8
K/A Statement:	2.3.13 - Knowledge of radiological safety procedures pertaining to licensed operator duties, such as response to radiation monitor alarms, containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc.	
REQUIRED MATERIALS:	None	
Notes and Comments:	None	