

NRC Question Data Sheet

1. Unit 1 is at 100% power when the failure of a Main Generator Lockout Relay causes a Unit 1 Main Generator Lockout resulting in:

- Main Turbine Trip
- A Reactor Scram occurs to limit the power excursion

WHICH ONE of the following describes the reason a power excursion occurs as a result of a turbine trip?

- A. A rise in feedwater subcooling when extraction steam is lost.
- B. A rise in void concentration when turbine steam admission valves close.
- C. A reduction in feedwater subcooling when extraction steam is lost.
- D. A reduction in void concentration when turbine steam admission valves close.

Answer Key		
Question ID# 001 Both RO/SRO		
Choice		Basis or Justification
Correct:	D	Void concentration will rapidly deplete on closing of the turbine steam admission valves resulting in a large positive reactivity addition.
Incorrect	A	While this relationship is true, the Reactor power rise will be slight and gradual. This is not the reason for the Scram.
Incorrect	B	This is incorrect since void concentration will deplete, not go up.
Incorrect	C	This is incorrect since feedwater subcooling will go up, not go down.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
HIGH	2.5	2	Y	(b) (5)	N/A

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	LGS UFSAR, Chapter 15.2.3.3.3.1	
Learning Objective:	LLOT1575.03	
Knowledge/Ability K/A	295005 AK3.01	Importance: RO / SRO 3.8 / 3.8
(Description of K&A, from catalog) Knowledge of the reasons for the following responses as they apply to MAIN TURBINE GENERATOR TRIP: Reactor scram		

Required Materials:

Notes and Comments:

Prepared By:

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Limerick Regulatory Exam Author

NRC Question Data Sheet

2. Unit 2 plant conditions are as follows:

- Reactor Power is 100% power
- Plant Monitoring System (PMS) is inoperable

Five minutes later control rod 30-31 inadvertently scrams.

WHICH ONE of the following can be used to confirm that control rod 30-31 is fully inserted?

- A. "XX" (two X's) on the Four Rod Display.
- B. Green "IN" light is lit on the Full Core Display.
- C. "- -" (two dashed lines) on the Four Rod Display.
- D. Blue "SCRAM" light is lit on the Full Core Display.

Answer Key		
Question ID# 002 Both RO/SRO		
Choice		Basis or Justification
Correct:	B	The full in and full out lights on the Full Core Display continue to function with PMS and RDCS inoperable.
Incorrect	A	Two X's on the Four Rod Display indicate that control rod indication is unknown, due to more than one reed switch being made up.
Incorrect	C	A "--" indication on the Four Rod Display indicates an odd numbered reed switch is made up.
Incorrect	D	The blue "SCRAM" light on the Full Core Display indicates that the scram valves are open, and does not indicate control rod position.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
LOW	2.0	3	N	(b) (10)	(b) (5)

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	ARC 108 Reactor, E-4	
Learning Objective:	LLOT0080.02	
Knowledge/Ability K/A	295006 AA2.02	Importance: RO / SRO 4.3 / 4.4
(Description of K&A, from catalog)		
Ability to determine and/or interpret the following as they apply to SCRAM: Control Rod Position		

Required Materials:

Notes and Comments:

Prepared By:
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NRC Question Data Sheet

3. LGS Site conditions are as follows:

- Both Units are at 100% power.
- Both Units' Auxiliary transformers are supplying their respective Unit Auxiliary busses.
- The 10 Station Auxiliary Bus is de-energized for maintenance.
- All other station electrical busses are energized.

The 20 Station Auxiliary Bus supply breaker (205) trips open.

WHICH ONE of the following identifies the status of the 22 Auxiliary Bus and the D22 Safeguard Bus twenty (20) seconds later?

	<u>22 Auxiliary Bus</u>	<u>D22 Safeguard Bus</u>
A.	de-energized	de-energized
B.	energized	de-energized
C.	de-energized	energized
D.	energized	energized

Answer Key		
Question ID# 003 RO/SRO		
Choice	Basis or Justification	
Correct:	D	The 22 Aux Bus will continue to be supplied by the Unit 2 Main Generator D22 Diesel Generators will start and supply the D22 Safeguard Bus in approximately 10 seconds.
Incorrect	A	Both busses will be energized as described above.
Incorrect	B	While this choice is correct for the 22 Aux Bus, it is incorrect for D22 Safeguard Bus, which will be energized by the D22 D/G within 10 seconds
Incorrect	C	While this choice is correct for the D22 Safeguard Bus, it is incorrect for the 22 Aux Bus, which will remain energized from the Unit 2 Main Generator.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
HIGH	3.5	3	Y	(b) (10)	(b) (5)

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	E10/20, Steps 2.1 and 2.3.1	
Learning Objective:	LLOT0640.08	
Knowledge/Ability K/A	295003 AA2.04	Importance: RO / SRO 3.5 / 3.7
(Description of K&A, from catalog) Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF AC POWER: System Lineups		

Required Materials :

Notes and Comments

Prepared By:
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NRC Question Data Sheet

4. Unit 1 plant conditions are as follows:

- Reactor Power is 100%
- Division 4 DC (125 VDC Bus "D") is de-energized.

The following events then occur:

- Drywell Pressure rises to 2.0 psig.
- Both HPCI Exhaust Diaphragms rupture on pump start.
- HPCI room temperature rises and stabilizes at 198°F.
- No operator action is taken.

WHICH ONE of the following describes the status of HPCI steam line containment isolation valves after the events above?

	<u>INBOARD ISOL (1F002)</u>	<u>OUTBOARD ISOL (1F003)</u>
A.	Closed	Open
B.	Closed	Closed
C.	Open	Closed
D.	Open	Open

Answer Key		
Question ID# 004 Both RO/SRO		
Choice	Basis or Justification	
Correct:	C	A HPCI isolation signal is present due to high turbine exhaust rupture diaphragm pressure. The 1F003 valve isolates, however, the 1F002 valve does not isolate due to NO control power to the isolation logic.
Incorrect	A	The 1F002 valve does not isolate due to NO control power to the isolation logic
Incorrect	B	The 1F002 valve does not isolate due to NO control power to the isolation logic
Incorrect	D	The 1F003 valve isolates

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
HIGH	3.0	3	Y	(b) (7)	N/A

Source Documentation	
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank
Reference(s):	GP-8.1, Rev.11, Pg. 31; GE Elemental Dwgs. M-1-E41-1030-F-004, Shts. 1 & 2 M-1-E41-1030-F-005, Shts 1 & 2
Learning Objective:	LLOT0340.14
Knowledge/Ability K/A	295004 Importance: RO / SRO AA1.02 3.8 / 4.1
(Description of K&A, from catalog) Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF DC POWER: Systems necessary to assure safe plant shutdown.	

Required Materials:

Notes and Comments:

Prepared By:
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NRC Question Data Sheet

5. Unit 1 plant conditions are as follows:

- Drywell Temperature is 140°F.
- Drywell Pressure is 1.0 psig and rising slowly.
- OT-101, HIGH DRYWELL PRESSURE, is being executed.

WHICH ONE of the following is a reason why Drywell cooling is maximized?

- A. Ensure continued operation of the Reactor Recirculation Pump motors
- B. Slow the rate of pressure rise to allow time to bypass the potential Drywell Chilled Water system isolation
- C. Protect the integrity of the ADS valve solenoids
- D. Slow the rate of pressure rise to allow Drywell venting

Answer Key		
Question ID# 005 Both RO/SRO		
Choice	Basis or Justification	
Correct:	D	Per OT-101 bases, the Drywell may be vented if pressure is less than 1.68 psig. Therefore, slowing the rate of Drywell pressure rise allows time to vent.
Incorrect	A	The reason for Maximizing Drywell cooling is to slow the rise or prevent reaching 1.68 psig in the Drywell. It is not to protect the Recirc pumps.
Incorrect	B	The Drywell chill water isolation may be bypassed after entry into and meeting the Drywell temperature requirements of T-102
Incorrect	C	The design Drywell temperature of 340°F is to protect the ADS solenoids. This is beyond the bases for OT-101.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
LOW	2.5	2	N	(b) (5)	N/A

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	OT-101, Bases Step 2.1	
Learning Objective:	LLOT1540.05	
Knowledge/Ability K/A	295010 AK3.02	Importance: RO / SRO 3.4 / 3.4
(Description of K&A, from catalog) Knowledge for the reasons for the following responses as they apply to HIGH DRYWELL PRESSURE: Increased Drywell Cooling		

Required Materials:

Notes and Comments:

Prepared By:
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NRC Question Data Sheet

6. Unit 2 plant conditions are as follows:

- The "2B" Recirc. Pump has tripped.
- Reactor power is 68%.
- All feedwater heaters are in service.
- Four OPRM channels are operable.
- The unit is in the Restricted Region of the Power to Flow map.

Subsequently, the "2A" Recirc. Pump inadvertently trips.

WHICH ONE of the following describes the required action and the basis for this action?

- A. SCRAM to prevent the occurrence of thermal hydraulic instabilities.
- B. Restart a Recirc. Pump to prevent RPV thermal stratification.
- C. SCRAM to avoid the reactivity effects of starting a Recirc. Pump in natural circulation.
- D. Insert control rods to exit the Restricted Region of the Power to Flow map.

Answer Key		
Question ID# 006 Both RO/SRO		
Choice	Basis or Justification	
Correct:	C	Although allowed by Tech. Specs., Exelon has decided to continue to direct that a manual scram be inserted with the plant in natural circulation.
Incorrect:	A	A scram is required, however, not to avoid THI. See basis for answer C.
Incorrect	B	By procedure, Limerick does not allow restarting a Recirc. Pump in natural circulation with the Reactor critical.
Incorrect	D	This is not an allowed action in natural circulation.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
LOW	2.0	2	N	(b) (8) to (10)	N/A

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	OT-112 Bases, step 2.1	
Learning Objective:	LLOT1540.05	
Knowledge/Ability K/A	295001 AK1.01	Importance: RO / SRO 3.5 / 3.6
(Description of K&A, from catalog) Knowledge of the operational implications of the following concepts as they apply to PARTIAL OR COMPLETE LOSS OF FORCED CORE FLOW CIRCULATION: Natural circulation		

Required Materials:

Notes and Comments:

Prepared By:
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NRC Question Data Sheet

7. Unit 1 plant conditions are as follows:

- Reactor power is 35%
- GEN STATOR COOLANT TROUBLE (125 B4) Annunciator is alarming

An EO verifies the Stator Cooling Water return temperature is 82°C and rising

WHICH ONE of the following describes the automatic response of EHC due to the conditions above?

- A. LOAD SET will reduce to 21.4%
Bypass valves will remain closed
- B. LOAD SET will reduce to 21.4%
Bypass valves will open
- C. LOAD LIMIT will reduce to 21.4%
Bypass valves will open
- D. LOAD LIMIT will reduce to 21.4%
Bypass valves remain closed

Answer Key		
Question ID# 007 Both RO/SRO		
Choice	Basis or Justification	
Correct:	B	A STATOR WATER COOLING RUNBACK has occurred which lowers load set to 21.4 %, this closes control valves which raises Reactor pressure opening bypass valves
Incorrect:	A	This is incorrect as bypass valves will open
Incorrect	C	This is incorrect as load limit does not runback
Incorrect	D	This is incorrect as load limit does not runback, also bypass valves will open

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	4	N	Y (b)(7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	ON-114, Step 2.10	
Learning Objective:	LLOT0590.03	
Knowledge/Ability K/A	295007 AA1.05	Importance: RO / SRO 3.7 / 3.8
(Description of K&A, from catalog) Ability to operate and/or monitor the following as they apply to HIGH REACTOR PRESSURE: Reactor/Turbine Pressure Regulating System		

Required Materials:

Notes and Comments:

Prepared By:
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NRC Question Data Sheet

ATTACHMENT: SE-1 Provided

8. The Main Control Room has become uninhabitable and SE-1, Remote Shutdown is in progress at the Remote Shutdown Panel with the following conditions:

- All SE-1 immediate operator actions are complete
- All Remote Shutdown Panel transfer switches are in "EMERGENCY".
- Reactor Level is +10"
- Reactor Pressure is 490 psig

WHICH ONE of the following identifies the EARLIEST point from now where Shutdown Cooling can be placed in service?

- A. 1.0 Hours
- B. 1.5 Hours
- C. 2.0 Hours
- D. 2.5 Hours

Answer Key		
Question ID# 008 Both RO/SRO		
Choice	Basis or Justification	
Correct:	B	Using Attachment 2 and 3 to SE-1 and at the maximum cooldown rate, it would take at least 1.5 hours to go from 470 degrees F (490 psig) to 320 degrees F (75 psig)
Incorrect	A	This would mean exceeding the maximum cooldown rate
Incorrect	C	This does not identify the minimum amount of time before SDC can be placed in service.
Incorrect	D	This does not identify the minimum amount of time before SDC can be placed in service.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
HIGH	3.5	5	Y	(b) (10)	(b) (5)

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	SE1, Attachments 2 & 3	
Learning Objective:	LLOT0735.04	
Knowledge/Ability K/A	295016 2.1.25	Importance: RO / SRO 2.8 / 3.1
(Description of K&A, from catalog) Ability to obtain and interpret station reference materials such as graphs / monographs / and tables which contain performance data		

Required Materials:

SE-1

Notes and Comments:

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NRC Question Data Sheet

9. Both units are at 100% power:

- A loss of the 220 KV switchyard occurs followed immediately by a lockout of the 4A Auto Transformer.
- The D12 and D14 Diesel Generators fail to start.
- All other Diesel Generators start as designed.

WHICH ONE of the following systems can be used to provide alternate cooling to the TECW heat exchangers and the procedural direction for using this system?

	<u>Alternate Cooling Water for TECW Heat Exchangers</u>	<u>Procedural Direction</u>
A.	ESW	E-10/20, Loss Of Offsite Power
B.	ESW	E-1, Station Blackout
C.	RECW	E-10/20, Loss Of Offsite Power
D.	RECW	E-1, Station Blackout

Answer Key		
Question ID# 009 Both RO/SRO		
Choice	Basis or Justification	
Correct:	A	ESW can be used to backup normal Service Water for TECW and RECW by performing manual local valve manipulations per E-10/20.
Incorrect	B	The correct procedure is E-10/20. Since six of the Diesel Generators start, this is not a Station Blackout.
Incorrect	C	RECW is not hard piped to backup TECW.
Incorrect	D	RECW is not hard piped to backup TECW. The correct procedure is E-10/20. Since six of the Diesel Generators start, this is not a Station Blackout.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.5	4	Y	(7)	N/A

Source Documentation		
Source:	<input type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input checked="" type="checkbox"/> ILT Exam Bank	
	<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank	
Reference(s):	E-10/20, Attachment 5	
Learning Objective:	LLOT0430.07	
Knowledge/Ability K/A	295018 AA1.01	Importance: RO / SRO 3.6 / 3.5
(Description of K&A, from catalog) Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF COMPONENT COOLING WATER: Backup systems		

Required Materials:

Notes and Comments:

Prepared By:
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NRC Question Data Sheet

10. Unit 1 Reactor Power is 100% with Instrument Air and Service Air in a normal lineup, when the following annunciator alarms:
- 1A INSTRUMENT AIR HEADER LO PRESS (118 B2)

The following indications are observed:

- "1A" Instrument Air Header Pressure is 85 psig and dropping slowly.
- "1B" Instrument Air Header Pressure is 108 psig and steady
- Service Air Header Pressure is 102 psig and rising slowly
- Backup Service Air Receiver is 100 psig and steady

10 minutes later the following indications are observed:

- "1A" Instrument Air Header Pressure is 69 psig and dropping slowly
- "1B" Instrument Air Header Pressure is 100 psig and dropping slowly
- Service Air Header Pressure is 99 psig and dropping slowly
- Backup Service Air Receiver is 102 psig and dropping slowly

WHICH ONE of the following identifies the source of air for the Instrument Air LOADS and Service Air LOADS?

- | <u>Source of Instrument Air</u> | <u>Source of Service Air</u> |
|-----------------------------------|--------------------------------|
| A. "1B" Instrument Air compressor | Service Air Compressor |
| B. "1B" Instrument Air Compressor | Backup Service Air Compressor |
| C. Service Air Compressor | Service Air Compressor. |
| D. Service Air Compressor | Backup Service Air Compressor. |

Answer Key		
Question ID# 010 Both RO/SRO		
Choice	Basis or Justification	
Correct:	A	"1B" Compressor will begin supplying the "1A" loads on higher pressure due to check valves at the individual load. Service Air Compressor remains in service for service air loads.
Incorrect:	B	The Backup Service Air Compressor, which is normally lined up to Unit 1, will only supply Unit 1 Service Air, if service air header pressure drops below 92 psig..
Incorrect	C	Service Air Compressor would only supply IA if both the 1A & 1B IA header pressures are low.
Incorrect	D	See B and C.above

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	4.0	6	Y	Y (b) (5)	N

Source Documentation	
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank
Reference(s):	M-15
Learning Objective:	LLOT0730.02, 04, 07, 10
Knowledge/Ability K/A	295019 Importance: RO / SRO AK3.01 3.3 / 3.4
(Description of K&A, from catalog)	
Knowledge of the reasons for the following responses as they apply to Partial or Complete Loss of Instrument Air: Backup air system supply.	

Required Materials:

Notes and Comments:

Prepared By:
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NRC Question Data Sheet

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

A failure of HV-51-2F008 results in a loss of Shutdown Cooling and necessitated establishing Alternate Shutdown cooling using SRV's and Suppression Pool Cooling.

Conditions have been established as follows:

- Suppression Pool Cooling is in service with "2A" RHR.
- Suppression Pool pressure is 0 psig
- SRV handswitches for the "2K" and "2M" SRV's are in the OPEN position
- Injection to the RPV has been established with the "2D" RHR pump via HV-51-2F017D
- RPV Level is 150" on Shutdown Range
- RPV pressure is 20 psig

WHICH ONE of the following describes the action required in order to establish Alternate Decay Heat removal?

- A. Reduce RPV injection until RPV Level is ≤ 100 "
- B. Increase RPV injection until RPV Level is ≥ 200 "
- C. Reduce RPV injection until RPV pressure is ≤ 25 psig
- D. Increase RPV injection until RPV pressure is ≥ 50 psig

Answer Key		
Question ID# 011 Both RO/SRO		
Choice	Basis or Justification	
Correct	D	50# D/P is required across the SRV's in order to open and establish alternate heat removal.
Incorrect	A	While 100" is an important milestone in OT-100 Reactor High Level, when trying to prevent filling MS lines, filling the MSLS is required for this procedure.
Incorrect	B	Level is high enough to fill the MSL's and no additional Level is required.
Incorrect	C	In order to establish Alternate heat removal the SRV's must open which requires 50# D/P. Correct conditions require raising pressure, not lowering.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	4.0	5	Y	Y (b) (7)	N

Source Documentation	
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank
Reference(s):	ON-121, Step 2.1.7, Attachment 6 S41.7.B, Step 4.2
Learning Objective:	LLOT-5010.01
Knowledge/Ability K/A	295021 AA1.04
	Importance: RO / SRO 3.7 / 3.7
(Description of K&A, from catalog) Ability to operate and or monitor the following as they apply to LOSS OF SHUTDOWN COOLING: Alternate Heat Removal Methods	

Required Materials

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Notes and Comments

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NRC Question Data Sheet

12. Unit 1 plant conditions are as follows:

- Reactor level is 20"
- Reactor Pressure is 350 psig
- Drywell Pressure is 25 psig
- "1B" RHR Pump is operating at 8200 gpm with the following valve indications:

HV-51-1F016B, OUTBOARD SPRAY, green light lit

HV-51-1F017B, LPCI INJECTION, red, green and white lights lit

HV-51-1F021B, INBOARD SPRAY, red light lit

HV-51-1F024B, FULL FLOW TEST, red, green and white lights lit

The CRS has directed the PRO to place "1B" RHR in Drywell Spray.

WHICH ONE of the following actions must be performed to initiate Drywell Spray?

- A. Arm and depress "1B" RHR manual LOCA initiation pushbutton and open HV-51-1F016B
- B. Close HV-51-1F021B, then open HV-51-1F016B, then reopen HV-51-1F021B.
- C. Close HV-51-1F017B and open HV-51-1F016B.
- D. Close HV-51-1F024B and open HV-51-1F016B.

Answer Key		
Question ID# 012 Both RO/SRO		
Choice	Basis or Justification	
Correct	C	17B valve must be closed in order to open 16B – all other conditions for opening 16B are already .
Incorrect	A	LOCA Signal already present. PB not required. Also 17B must be closed.
Incorrect	B	This valve manipulation only required if LOCA signal not present. 17B must also be closed..
Incorrect	D	24B dose not need to be closed

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	3.0	4	Y	Y (b) (7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	T-225, Step 4.5	
Learning Objective:	LLOT0370.09	
Knowledge/Ability K/A	295024 EA1.04	Importance: RO / SRO 4.1 / 3.9
(Description of K&A, from catalog) Ability to operate and/or monitor the following as they apply to HIGH DRYWELL PRESSURE: RHR/LPCI		

Required Materials:

Notes and Comments

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NRC Question Data Sheet

13. An EHC piping rupture on Unit 1 has resulted in a Turbine Trip and closure of Turbine Bypass Valves.

Unit 1 Reactor failed to SCRAM and RPV Level was intentionally lowered per T-117.

The following conditions currently exist:

- Reactor power is 6%
- RPV level is -195" and slowly rising
- 1 ADS SRV is open
- RPV pressure is 1000 psig
- Suppression Pool temperature is 145°F and slowly rising
- 2 Loops of suppression Pool cooling are in Service
- Suppression Pool pressure is 6 psig & slowly rising
- Suppression Pool Level is 24.5' and stable

WHICH ONE of the following describes the required action and the reason for taking the action?

- A. Reduce RPV pressure to less than 900 psig, in order to maintain on the safe side of SPIL-1 SRV Tail Pipe Level Limit
- B. Perform Emergency Blowdown per T-112, due to unable to restore and maintain RPV Level above -186"
- C. Reduce RPV pressure to less than 900 psig, in order to maintain on the safe side of SP/T-1 Heat Capacity Temperature Limit
- D. Perform Emergency Blowdown per T-112, due to the safe side of SP-T-1, Heat Capacity Temperature Limit cannot be maintained

Answer Key		
Question ID# 013 Both RO/SRO		
Choice	Basis or Justification	
Correct	C	SP temp is 20°F from HCTL and rising slowly despite having 2 loops of SP Cooling in service. T-102 SP/T-8 directs that of SP temp cannot be maintained on the safe side of HCTL, then maintain RPV pressure on the safe side of HCTL.
Incorrect	A	SP level is high but 3.5 feet away from SP/L-1 limit and level is stable – Reducing pressure for the purposes of maintaining this curve is not warranted.
Incorrect	B	While RPV Level is <-186, it is only 9" OOB and rising slowly. The criteria for T-117LQ is level can be restored. With SRV's being used for pressure control, it is not unusual to go <-186 for short periods of time. T-112 is not warranted under these conditions.
Incorrect	D	SP temp is still 20°F away from HCTL and rising slowly. T-112 is not warranted at this point

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.5	4	Y	Y (b) (10)	Y (b) (5)

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	T-102 sh.1	
Learning Objective:	LLOT1560.04	
Knowledge/Ability K/A	295026 EA2.03	Importance: RO / SRO 3.9 / 4.0
(Description of K&A, from catalog) Ability to determine and/or interpret the following as it applies to Suppression Pool water temperature: Reactor Pressure		

Required Materials:

T-102 Sht. 1

Notes and Comments

Prepared By:

Rick Rhode (610) 718-4085

Limerick Regulatory Exam Author

NRC Question Data Sheet

14. A LOCA is in progress on Unit 2

Drywell Temperature is 148°F

The CRS directs the PRO to maximize drywell cooling

WHICH ONE of the following describes the minimum number of components that must be in service in order to maximize drywell cooling for the above conditions?

Drywell Fans

DWCW Pumps

- | | |
|------------------------|-----|
| A. One Fan per Cooler | One |
| B. One Fan per Cooler | Two |
| C. Two Fans per Cooler | One |
| D. Two Fans per Cooler | Two |

Answer Key		
Question ID# 014 Both RO/SRO		
Choice	Basis or Justification	
Correct:	B	Meets the criteria specified in T-102 Bases, for step DW/T-5
Incorrect:	A	Does not meet the criteria specified in T-102 Bases, step DW/T-5. Only has one DCCW pp cunning vs. two
Incorrect	C	Does not meet the criteria w/respect to the number of required DCCW pps. In addition specifics 2 DW Fans per cooler. Fans are in parallel and are 100% capacity.
Incorrect	D	Does not represent the minimum number. 2 DW fans in-service – DW fans are 100% capacity and in parallel.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	2.5	3	Y	(b) (7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank	
	<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank	
Reference(s):	T-102 Bases, DW/T-5	
Learning Objective:	LOT-1560.06	
Knowledge/Ability K/A	295028 EK2.04	Importance: RO / SRO 3.6 / 3.6
(Description of K&A, from catalog) Knowledge of the interrelations between High Drywell Temperature and the following: Drywell Ventilation		

Required Materials:

T-102

Notes and Comments

Prepared By:
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NRC Question Data Sheet

15. Unit 2 was manually scrammed due to a leak in the Suppression pool.

- Suppression pool level is 20' and lowering
- RCIC is being used for RPV level control
- HPCI is being used for RPV pressure control

Suppression Pool level drops to 17.9'

WHICH ONE of the following describes the required action and the reason for it?

- A. RCIC must be secured due to insufficient Net Positive Suction Head.
- B. HPCI must be secured due to insufficient Net Positive Suction Head
- C. RCIC must be secured in order to prevent direct pressurization of the Suppression Pool
- D. HPCI must be secured in order to present direct pressurization of the Suppression Pool

Answer Key		
Question ID# 015 Both RO/SRO		
Choice	Basis or Justification	
Correct:	D	HPCI Exhaust line is uncovered at 18'. Operation of HPCI, with its relatively high exhaust pressure could result in direct pressurization of the Suppression Pool sufficient to exceed PCPC.
Incorrect	A	NPSH limit for RCIC would be at 12.3' (13.5' for T-102 sh 1)
Incorrect	B	NPSH limit for HPCI would be at 15.42 ft, where it is already secured at 18' for the reason above
Incorrect	C	RCIC Turbine exhaust pressure is insufficient to cause pressurization of the Suppression Pool in excess of PCPL.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	2.5	3	Y	Y (b) (5)	N/A

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank	
	<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank	
Reference(s):	T-102, sh. 1	
Learning Objective:	LLOT1560.05	
Knowledge/Ability K/A	295030 EK3.02	Importance: RO / SRO 3.5 / 3.7
(Description of K&A, from catalog) Knowledge of the reasons for the following responses as they apply to Low SP Water Level: HPCI Operation		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

16. A Loss of all High Pressure Injection has occurred on Unit 1 with conditions as follows:

- All Rods in
- RPV Water Level is -170 and dropping
- No Low Pressure ECCs pumps can be started
- RPV pressure has been recorded at 900 psig and is being maintained with SRV's.

The crew is attempting to restore the 1B CRD pump and line up per T-240

WHICH ONE of the following describes steam cooling conditions under which adequate core cooling is assured?

	<u>RPV Level</u>	<u>RPV Pressure</u>	<u>Injection</u>
A.	-175"	795 psig	None
B.	-185"	800 psig	1B CRD pump
C.	-195"	910 psig	None
D.	-205"	890 psig	1BCRD pump

Answer Key					
Question ID# 016 Both RO/SRO					
Choice		Basis or Justification			
Correct:	A	Core Cooling is assured in steam cooling as long as level is between -161 and -201, with no injection and pressure less than the value recorded in T-111 LR-14. Even though pressure is <100# below recorded value, this supply calls for a new pressure load.			
Incorrect	B	Calculations for MZ1RWL assures that there is no sub cooling at the core inlet. Since any injection would invalidate this assumption, adequate Core Cooling can't be assured if RPV level is <-161 and water is being injected.			
Incorrect	C	Once stabilized, if RPV pressure rises above the value recorded in CR-14, MZIRWL calculations are no longer valid and the core may not be adequately cooled.			
Incorrect	D	The candidate would select this answer if he didn't recognize that the safe area of this curve is below the curve. This is a common error because this varies between curves. It is also incorrect because water is being injected.			
Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.5	5	Y	(b) (8-10)	N/A
Source Documentation					
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank				
Reference(s):	T-111 BASES, LR-12 through LR-17				
Learning Objective:	LOT-1560.03				
Knowledge/Ability K/A	K/A 295031 EK1.01			Importance: RO / SRO 4.6 / 4.7	
(Description of K&A, from catalog) Knowledge of the operational implications of the following concepts as they apply to REACTOR LOW WATER LEVEL: adequate core cooling.					

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

17. Core reload has just commenced on Unit 1 during a refueling outage.

While lowering a fuel assembly not adjacent to an SRM count rate increases from 30 cps to 60 cps.

WHICH ONE of the following describes the required action, if any?

- A. Immediately evacuate the refuel floor
- B. Suspend component movement
- C. Continue lowering fuel assembly
- D. Raise the fuel assembly from the core so that it clears the upper grid

Answer Key		
Question ID# 017 Both RO/SRO		
Choice		Basis or Justification
Correct:	B	FH-105 requires suspension of component movement when one doubling is reached
Incorrect	A	This would only be appropriate in the event of criticality.
Incorrect	C	FH-105 requires suspension of component movement when one doubling is reached
Incorrect	D	This would be correct for the SRM count rate rise if it were <u>not</u> the third assembly adjacent to the detector.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	2.0	3	Y	(b) (8-10)	N/A

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	FH-105, STEP 3.7	
Learning Objective:	LLOT0760.12	
Knowledge/Ability K/A	295023 2.2.28	Importance: RO / SRO 3.5 / 3.3
(Description of K&A, from catalog) Knowledge of new and spent fuel movement procedures.		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

18. Unit 1 Plant is operating at 100% power when the following occurs:

- The "1C" Inboard MSIV fails closed
- REACTOR HI PRESS (107 G2) Annunciator is alarming and will not clear
- Reactor Pressure is 1080 psig and steady

The RO reduces reactor power with recirc flow in order to clear the High Pressure alarm

WHICH ONE of the following describes the limits and the basis for this power reduction?

- A. Reactor Steam Dome Pressure LCO, which is based on Safety Relief Valve sizing
- B. Reactor Steam Dome Pressure LCO, which is based on Turbine Bypass Valve sizing.
- C. Reactor Coolant System Pressure safety limit, which is based on 110% of Recirc Suction piping design pressure
- D. Reactor Coolant System Pressure safety limit, which is based on 110% of Recirc Discharge piping design pressure.

Answer Key		
Question ID# 018 Both RO/SRO		
Choice	Basis or Justification	
Correct:	A	Immediate operator action per OT-102 Reactor High pressure is to reduce reactor power to maintain pressure less than 1053, which is the alarm setpoint. The basis for 1053 is the reactor steam done pressure LCO which is based on SRV sizing
Incorrect	B	Steam done pressure LCO is correct however it is based on SRV, not BPV, sizing.
Incorrect	C	Reactor coolant system pressure safety limit is not correct, while the basis for the safety limit is the Recirc suction piping
Incorrect	D	Neither the reactor coolant system pressure safety limit nor the stated basis is correct

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.5	5	N	(b) (8-10)	N/A

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	OT-102 BASES, step 2.1	
Learning Objective:	LLOT1540.05	
Knowledge/Ability K/A	295025 EK1.05	Importance: RO / SRO 4.4 / 4.7
(Description of K&A, from catalog) Knowledge of the operational implication of the following concept as they apply to HIGH Reactor Pressure Exceeding Safety Limits..		

Required Materials:

:

Notes and Comments

Prepared By:

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NRC Question Data Sheet

19. Unit 1 Plant conditions are as follows:

- Reactor Power is 8%
- Reactor Mode switch is in Startup
- "2D" IRM is failed upscale

An electrical fault results if the loss of 1AY160

WHICH ONE of the following identified the impact in IRMs and status of RPS?

- A. IRM Channels A, C, E, and G loss power, Full Reactor Scram
- B. IRM Channels A, C, E, and G loss power, Reactor 1/2 Scram
- C. ONLY IRM Channels A, and C, loss power, Reactor 1/2 Scram
- D. ONLY IRM Channels A, and C, loss power, Full Reactor Scram

Answer Key		
Question ID# 019 Both RO/SRO		
Choice	Basis or Justification	
Correct:	A	IRM Channels A, C, E, and G loss power on a loss of 1AY160, Full Reactor Scram occurs due to mode switch in startup and RPS A side 1/2 scram loss of 1AY160 and RPS B side 1/2 scram (D IRM upscale)
Incorrect:	B	IRM Channels A, C, E, and G loss power is correct, Reactor 1/2 Scram is incorrect as full reactor scram will occur
Incorrect:	C	ONLY IRM Channels A, and C is incorrect as E & G channels also lose power, Reactor 1/2 Scram is incorrect as full reactor scram will occur
Incorrect:	D	ONLY IRM Channels A, and C, loss power is incorrect as E & G channels also lose power, Full Reactor Scram is correct

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	3	N	(b) 7	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	E-1AY160, Step 1.2 and 1.22, AND GP-2, Caution before step 3.4.7	
Learning Objective:	LLOT0250.07	
Knowledge/Ability K/A	215003 K2.01	Importance: RO / SRO 2.5 / 2.7
(Description of K&A, from catalog) Knowledge of electrical power supplies to the IRM channels/detectors		

Required Materials:

Notes and Comments

Prepared By:

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NRC Question Data Sheet

20. Unit 1 Plant conditions are as follows:

- Reactor Startup is in progress
- "1A" and "1D" IRMs are on range 1
- All other IRMs are on range 2

"1A" SRM is being withdrawn when the count rate drops to 90 CPS

WHICH ONE of the following identified the impact on the Reactor Manual Control System (RMCS)?

- A. No rod blocks are enforced
- B. Only a rod withdraw block is enforced
- C. Only a rod insert block is enforced
- D. Both rod insert and withdrawal rod blocks are enforced

Answer Key		
Question ID# 020 Both RO/SRO		
Choice	Basis or Justification	
Correct:	B	Only a rod withdraw blocks is enforced, is correct as all IRMs are not above range 2 and SRM CPS are less than 100 with detector not full in
Incorrect	A	No rod blocks are enforced, is not correct. It would be correct if all IRMs were above range 2
Incorrect	C	Only a rod insert block is enforced. This is not correct as SRM CPS less than 100 with detector not full in does not enforce an insert block
Incorrect	D	Rod insert and withdrawal rod blocks are enforced SRM CPS are less than 100 with detector not full in

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.5	4	N	(b) (5)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	GP-2 Appendix 1, step 3.3.7 and NOTE	
Learning Objective:	LLOT0240.06:	
Knowledge/Ability K/A	215004 K5.03	Importance: RO / SRO 2.8 / 2.8
(Description of K&A, from catalog) Knowledge of the operational implication of the following concept as they apply to SRM System - changing detector position		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

21. WHICH ONE of the following describes the Rod Block Monitor (RBM) response to a APRM/LPRM failure?
- A. RBM auto bypasses an LPRM if the detector output falls below 10%
 - B. RBM channel INOP occurs if unbypassed LPRMS are less than 70% of total used to calculate flux average
 - C. Rod block occurs if there are less than 20 LPRM inputs to an APRM channel
 - D. Rod block occurs if there are less than 5 LPRMS input signals per axial level to an APRM channel

Answer Key		
Question ID# 021 Both RO/SRO		
Choice		Basis or Justification
Correct:	C	Less than 20 LPRMS input to an APRM channel results in a Rod Block
Incorrect	A	This is incorrect as RBM auto by passes detector if output fails below 3%
Incorrect	B	Incorrect as channel INPO occurs if unbypassed LPRMS are less than 50% of total
Incorrect	D	Incorrect as Rod Block occurs if there are less than 3 LPRMs inputs signals per axial level

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	3.0	4	N	(b) (2)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	ARC 108, A-5	
Learning Objective:	LLOT0275.07B	
Knowledge/Ability K/A	215005 K1.03	Importance: RO / SRO 3.4 / 3.5
(Description of K&A, from catalog) Knowledge of the physical connections and/or cause-effect relationship between APRM/LPRM and the following: RBM		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

22. The CRS has ordered a GP-4 shutdown as a result of the "IE" SRV being stuck open.

Following the performance of GP-4 actions plant conditions are as follows:

- Reactor power is 28%
- "IE" SRV is still open
- Suppression Pool temp is 112°F and going up
- T-270 is complete, injection has been terminated
- Reactor Level is -25" and going down

WHICH ONE of the following describes an appropriate RPV water Level band and the reason for this band?.

- A. -60" to -100" in order to lower power by reducing core inlet subcooling
- B. -60" to -100" in order to lower power by reducing natural circulation driving load and core flow
- C. -161" to -186" in order to lower power by reducing core inlet subcooling
- D. -161" to -186" in order to lower power by reducing natural circulation driving head and core flow

Answer Key		
Question ID# 022 Both RO/SRO		
Choice	Basis or Justification	
Correct:	D	Conditions are set for level lowering to below TAF. The bases for this level lowering is reduction of natural circulation driving head
Incorrect	A	This is the appropriate level band and reasons for the first level lowering. This is N/A once SP temp is 110° and SRV is open
Incorrect	B	This level condition is not appropriate, the reason is associated with the – 161 -, -186 level band
Incorrect	C	This level band is correct, the reason is associated with the higher level band

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	5	Y	(b) (5)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	T-117, T-117 Bases, LQ-6 through LQ-11 and LQ-16.	
Learning Objective:	LLOT1560.05	
Knowledge/Ability K/A	295037 EK.2.09	Importance: RO / SRO 4.0 / 4.2
(Description of K&A, from catalog) Knowledge of the interrelations between SCRAM cond. Present and Reactor Power above APRM down SCL or unknown & the following...Reactor Water Level		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

23. Unit 2 was operating at 100% when a Turbine Trip occurs. Two minutes later the following conditions are noted:

- Reactor Power is 0%
- Reactor Level is 35"
- Reactor Pressure: 960 psig and steady
- Rod 26-11 is at position 48
- Rod 50-31 is at position 48
- Rod 22-51 is at position 48
- All other control rods are at 00
- SBLC is not running

WHICH ONE of the following meets the criteria for no ATWS?

- A. Rods 26-11, 50-31, and 22-51 inserted to position 04
- B. Rod 26-11 and 50-31 at position 02 and 22-51 at position 04
- C. Rods 26-11 and 50-31 at position 00 and 22-51 at position 48
- D. Rod 26-11 at position 00 and rods 50-31 and 22-51 at position 48

Answer Key		
Question ID# 023 Both RO/SRO		
Choice	Basis or Justification	
Correct:	C	Meets the Tech Spec definition of shutdown margin with the single strongest rod fully withdrawn and all other rods fully inserted
Incorrect	A	Does not meet the Tech Spec SDM criteria
Incorrect	B	Criteria stipulate that if one rod is fully withdrawn or less, all other rods must be fully inserted. Having one out and all others to or beyond 02 does not met the definition
Incorrect	D	Does not meet the Tech Spec SDM criteria

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	4	Y	(b) (10)	(b) (5)

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	T-101, note 14, Tech Specs definition of Shutdown Margin	
Learning Objective:	LLOT1560.03	
Knowledge/Ability K/A	295037 EA 2.05	Importance: RO / SRO 4.2 / 4.3
(Description of K&A, from catalog) Ability to determine and/or interpret the following as they apply to SCRAM condition present and Reactor power above APRM downscale or unknown: Control Rod Position		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

24. A Radiological accident has caused the following Annunciator to alarm:

- North Stack Hi-Hi Radiation (003 E1)
- North Stack Hi Radiation (003 E2)

WHICH ONE of the following areas is the location of the radiation release, and the required action to mitigate the release?

- A. Standby Gas Treatment Exhaust
Enter and execute T-104 Radiological Release
- B. Standby Gas Treatment Exhaust
Perform ST-6-104-880-0, Gaseous Effluent Dose Rate Determination
- C. Reactor Enclosure Equipment Exhaust (REECE)
Evacuate all unnecessary personnel per SE-24, Plant Evacuations
- D. Reactor Enclosure Equipment Exhaust (REECE)
Enter and execute T-103, Secondary Containment Control

Answer Key					
Question ID# 024 Both RO/SRO					
Choice		Basis or Justification			
Correct:	B	Possible source, ST must be performed and LGS Emergency Plan annex, Table 3-1 must be consulted			
Incorrect	A	Possible source but alarm alone is not sufficient reason to enter and execute T-104			
Incorrect	C	Not a possible source based on the given conditions, although the action is plausible given this source			
Incorrect	D	Not a possible source based on the given conditions, although the action is plausible given this source			
Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.5	4	N	(b) (7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	ARC-MCR-003-E1, ST-6-104-880-0, T-104	
Learning Objective:	LLOT0720.03	
Knowledge/Ability K/A	295038 EK2.03	Importance: RO / SRO 3.6 / 3.8
(Description of K&A, from catalog) Knowledge of the interrelationship between HIGH OFFSITE RELEASE RATE and: Plant ventilation systems		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

25. Unit 1 is at 100% reactor power when the following Fire alarms are received:

- REAC 1 EI 177 HPCI PUMP ROOM (006 F-2-U)
- REAC 1 EL 217 WEST SIDE (006 E-3-U)

WHICH ONE of the following identifies the appropriate immediate operator action?

- A. Dispatch the fire brigade to respond to the fire
- B. Dispatch the Fire Brigade Leader to investigate the alarms
- C. Evacuate The entire Unit 1 Reactor Enclosure to support personnel accountability
- D. Start the motor and Diesel Driven Fire Pumps to prepare for fire suppression system actuation

Answer Key					
Question ID# 025 Both RO/SRO					
Choice		Basis or Justification			
Correct:	B	Since the SE-8 is entered based on alarms <u>only</u> , the Fire Brigade Leader is dispatched to investigate first			
Incorrect	A	This would be appropriate if there was a report of a fire or the alarm was accompanied by Fire pump auto start			
Incorrect	C	This would be considered a partial plant evacuation, which is only appropriate in the event of a fire in 2 or more large operating areas.			
Incorrect	D	Auto start is only verified if an actual fire is in progress, which has not been determined yet.			
Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	2.5	3	N	N	N

Source Documentation	
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank
Reference(s):	SE-8 step 3.2, SE-24
Learning Objective:	LLOT1563.02
Knowledge/Ability K/A	600000 Importance: RO / SRO AK 3.04 2.8 / 3.4
(Description of K&A, from catalog) Knowledge of the reasons for the following responses as they apply to FIRE ON SITE: actions contained in abnormal procedures for plant fire on site.	

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

26. Unit 2 Plant conditions are as follows:

- Main Condenser vacuum is 20" and dropping.
- Reactor is scrammed
- Main Turbine is tripped and coasting down at 100 RPM
- Sealing Steam header pressure is 0 psig

The CRS orders the PRO to break Main Condenser vacuum

WHICH ONE of the following describes the reason for this action?

- A. Rapidly reduce turbine speed in order to prevent damage due to windage
- B. Reduce differential pressure across Turbine seals to prevent turbine exhaust hood over-pressurization
- C. Rapidly reduce turbine speed in order to prevent damage due to uneven rotor heating
- D. Reduce differential pressure across turbine seals to prevent damage due to drawing cold air across the hot rotor.

Answer Key					
Question ID# 026 Both RO/SRO					
Choice		Basis or Justification			
Correct:	D	With no sealing steam pressure, main condenser vacuum will draw cold air across the seals and the hot turbine rotor			
Incorrect	A	Preventing windage damage is the reason why vacuum should not be broken greater than 1200 RPM			
Incorrect	B	Preventing Turbine exhaust hood over-pressurization is the reason for tripping the Main Turbine at 21.5" VAC			
Incorrect	C	Uneven rotor heating is a problem if sealing steam is applied to a stationary turbine rotor			
Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	3.5	4	Y	(b) (7)	N

Source Documentation	
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank
Reference(s):	OT-116 BASES, step 3.3
Learning Objective:	LLOT1540.05
Knowledge/Ability K/A	295002 Importance: RO / SRO AK2.11 2.6 / 2.7
(Description of K&A, from catalog) Knowledge of the interrelationship between LOSS of MAIN Condenser VAC and ... Seal steam:	

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

27. A Reactor Startup is in progress on Unit 2

Reactor Power is 3%

- A Reactor Scram is attempted
- Ten Control Rods Remain at Positions 04 to 48

WHICH ONE of the following describes the required operator action?

- A. Enter T-100, Bypass RWM and Insert Control Rods with S73.0.D
- B. Enter T-100, Insert Control Rods with T-213
- C. Enter T-101, Bypass RWM and Insert Control Rods with S73.0.D
- D. Enter T-101, Insert Control Rods with T-213

Answer Key		
Question ID# 027 Both RO/SRO		
Choice	Basis or Justification	
Correct:	A	As Reactor power is below 4% entry into T-100 is appropriate, Bypass RWM and Insert Control Rods with S73.0.D is directed
Incorrect	B	T-213 is not directed in T-100
Incorrect	C	As Reactor power is below 4% entry into T-100 (vice T-101) is appropriate
Incorrect	D	As Reactor power is below 4% entry into T-100 (vice T-101) is appropriate and T-213 is not directed in T-100

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	3.0	3	N		N

Source Documentation	
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank
Reference(s):	T-100 Bases step RC/Q-3
Learning Objective:	LLOT1540.02
Knowledge/Ability K/A	295015 Importance: RO / SRO AA2.01 4.1 / 4.3
(Description of K&A, from catalog) Ability to determine and/or interpret the following as they apply to INCOMPLETE SCRAM...Reactor Power	

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

28. Unit 1 Plant conditions are as follows:

- Reactor Power is 100%
- Drywell Cooling is maximized

An inadvertent Group VIIIA isolation occurs

WHICH ONE of the following describes the status of Drywell Chilled Water service to the drywell one minute later?

- A. "A" loop in Service ONLY
- B. "B" loop in Service ONLY
- C. Both loops in service
- D. No loops in service

Answer Key		
Question ID# 028 Both RO/SRO		
Choice	Basis or Justification	
Correct:	D	An inadvertent VIIIA isolation would result in both A & B loop DWCW supply and return valves isolating
Incorrect	A	"A" loop will not remain in service
Incorrect	B	"B" loop will not remain in service
Incorrect	C	Both loops will be isolated rather than remain in service

Psychometrics					
	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	2.5	2	N	(b) (8, 9, 10)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	GP-8.1 for Group VIIIA	
Learning Objective:	LLOT0180.05	
Knowledge/Ability K/A	295020 AK1.05	Importance: RO / SRO 3.3 / 3.6
(Description of K&A, from catalog) Knowledge of the operational implications of the following concepts as they apply to INADVERTENT CONTAINMENT ISOLATION – Loss of Drywell/Containment Cooling		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

29. Unit 1 plant conditions are as follows:

- Reactor Power is 100%
- Hydrogen Water Chemistry is not in service

The following annunciators are received:

- MAIN STEAM LINE DIV 1 RAD MONITOR HI/DOWNSCALE (109 F1)
- MAIN STEAM LINE DIV 2 RAD MONITOR HI/DOWNSCALE (109 F2)

Subsequently the following annunciator is received:

- MAIN STEAM LINE HIGH HIGH RADIATION (107 I1)

WHICH ONE of the following describes the procedure(s), which must be entered for valid alarms, and the required operator action(s)?

- A. Enter ON-102 ONLY, reduce reactor power in accordance with GP-5, Appendix 2
- B. Enter T-103 ONLY, perform a GP-3 Normal Plant shutdown
- C. Enter ON-102 and T-103, perform a rapid plant shutdown and close the MSIV's.
- D. Enter ON-102 and T-103 perform a rapid plant shutdown and Emergency Blow down per T-112

Answer Key		
Question ID# 029 Both RO/SRO		
Choice	Basis or Justification	
Correct:	C	Main steam line high rad requires entry into ON-102 and T-103. The high-high rad alarm indicates three times NFPB. Per T-103 this requires a rapid plant shutdown and closure of the MSIV's
Incorrect	A	While reducing power is an immediate action per ON-102, question conditions also require entry into T-103 and the actions described in "C" above
Incorrect	B	ON-102 entry is also required and a GP-3 shutdown would be appropriate per T-103 if 2 or more areas exceeded MSO rad level, but is not adequate for the stated conditions
Incorrect	D	An emergency blow-down would be appropriate per T-103 if two or more areas exceeded MSO and a primary system was discharging into the Reactor Enclosure, but is not required for MSL High-High Rad only

Psychometrics					
	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	4.0	5	Y	Y (b)(10)	Y (b)(2)

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	ARC-MCR-109-F1, ARC-MCR-109-F2, ARC-MCR-107-I1, ON-102 Step 1.2, T-103	
Learning Objective:	LLOT1560.02, LLOT1550.01	
Knowledge/Ability K/A	295033 G2.4.4	Importance: RO / SRO 4.0 / 4.3
(Description of K&A, from catalog) High Secondary Containment Radiation Levels: Ability to recognize abnormal indications for system operating parameters which are entry level conditions for emergency and abnormal operating procedures.		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

30. Plant conditions are as follows:

- A LOCA is in progress
- Drywell Hydrogen is 3%
- Drywell Oxygen is 8%
- Suppression Pool Hydrogen is 7%
- Suppression Pool Oxygen is 4%

WHICH ONE of the following identifies the flowpath for combustible gas monitoring and control?

- A. DW/G-3 and SP/G-1
- B. DW/G-2 and SP/G-2
- C. DW/G-3 and SP/G-3
- D. DW/G-2 and SP/G-1

Answer Key		
Question ID# 030 Both RO/SRO		
Choice	Basis or Justification	
Correct:	A	Applying the containment H ₂ and O ₂ levels to the tables, PC/G-1 and PC/G-2 in T-102, sh. 2, results in the use of flowpaths DW/G-3 and SP/G-1
Incorrect	B	Neither of these flowpaths are correct per PC/G-1 and PC/G-2, T-102, sh. 2
Incorrect	C	The drywell flowpath is correct, the suppression pool flowpath is not, per PC/G-1 and PC/G-2, T-102, sh. 2.
Incorrect	D	The suppression pool flowpath is correct, the drywell flowpath is not, per PC/G-1 and PC/G-2, T-102, sh. 2.

Psychometrics					
	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.5	4	Y	Y (b)(10)	Y (b)(5)

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank - Modified LOR <input type="checkbox"/> ILT Exam Bank <input type="checkbox"/> Exam bank item	
Reference(s):	T-102, sheet 2 and T-102 Bases Step PC/G-5	
Learning Objective:	LLOT1560.06	
Knowledge/Ability K/A	500000 EA 2.03	Importance: RO / SRO 3.3 / 3.8
(Description of K&A, from catalog)		
Ability to determine and/or interpret the following as they apply to HIGH PRIMARY CONTAINMENT HYPROGEN CONCENTRATIONS: Combustible limits for drywell		

Required Materials:

T-102 sht. 2

Notes and Comments

Prepared By:
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NRC Question Data Sheet

31. Unit 2 was forced to shutdown due to a Main Condenser Hotwell leak.

Following the scram, a steam leak in the RCIC room resulted in an Emergency Blowdown per T-112.

Conditions are as follows:

- Reactor Pressure is 90 psig and dropping
- Reactor level is -30" and dropping
- Drywell Pressure is 1.2 psig and steady

The PRO has been directed to maintain RPV level with Low Pressure ECCS.

WHICH ONE of the following actions will result in injecting to the RPV with Low Pressure ECCS? (No other operator actions are taken)

- A. Arm and depress the Core Spray Div. 1 Manual Initiation Pushbutton
- B. Start the "2A" Core Spray Pump and take the HV-52-2F005A, Inboard Injection Valve, to OPEN
- C. Arm and depress the Core Spray Div. 3 Manual Initiation Pushbutton
- D. Start the "2C" RHR Pump, HV-51-2F017C LPCI, Injection Valve, will OPEN Automatically

Answer Key		
Question ID# 031 Both RO/SRO		
Choice	Basis or Justification	
Correct:	A	Div 1 Manual Initiation Pushbutton will provide a Div 1 LOCA Signal, Start the "1A" pump and open the injection valves as long as the Reactor low pressure permissive is met.
Incorrect	B	The HV-52-2F005 will not open unless there is a LOCA signal present
Incorrect	C	Div 3 Manual Initiation Pushbutton will start the "1C" Core Spray Pump, but it will not make up the open logic for the injection valves. Only the Div 1(2) Pushbuttons will do that
Incorrect	D	The HV-51-2F017C will not open automatically unless there is a LOCA signal present.

Psychometrics					
	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.5	4	Y	Y (b)(7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	S52.7A, note above step 4,4	
Learning Objective:	LLOT0350.10	
Knowledge/Ability K/A	209001 PWG 2.1.30	Importance: RO / SRO 3.9 / 3.4
(Description of K&A, from catalog)		
Ability to locate and operate components associated with Low Pressure Core Spray System		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

32. Unit 2 plant conditions are as follows:

- Reactor power is 100%
- Division 3 Safeguard 125V /1250V DC is inoperable due to maintenance on the battery charger

An inadvertent Group 1 isolation causes a reactor scram

- Unit 2 RCIC starts on low reactor level
- A steam leak develops in the RCIC room. RCIC room temperature reaches 210°F

WHICH ONE of the following describes the required action?

- A. Trip the RCIC Turbine
- B. Close the HV-49-2F007, RCIC Steam Line Inboard isolation
- C. Close the HV-49-2F008, RCIC Steam Line Outboard isolation.
- D. Depress the RCIC Manual Isolation Pushbutton

Answer Key		
Question ID# 032 Both RO/SRO		
Choice	Basis or Justification	
Correct:	B	With a loss of Div 3 DC, the 2F007 will fail to isolate on High RCIC room temperature (205°F) and must be closed
Incorrect	A	The RCIC Turbine will trip on a Div 1 NS4 isolation signal on High RCIC Room temperature
Incorrect	C	The 2F008 will close on a Div 1 NS4 Isolation signal on High RCIC Room temperature
Incorrect	D	Manual isolation will not close 2F007 valve due to loss of Div 3 DC

Psychometrics					
	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	4	Y	Y (b)(5)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	E-2FC, GE DWG M-1-E51-1040-E-028, Sht.1	
Learning Objective:	LLOT0380.05, LLOT0380.12	
Knowledge/Ability K/A	217000 A2.05	Importance: RO / SRO 3.3 / 3.3
(Description of K&A, from catalog) : Ability to (a) predict the impact of the following the RCIC system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: DC power loss		

Required Materials:

Notes and Comments

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NRC Question Data Sheet

33. Unit 1 conditions are as follows

- Reactor water level is 35"
- "1B" RHR is in Suppression Pool Cooling

Div 2 Safeguard DC Bus is subsequently deenergized

WHICH ONE of the following describes the effect on "1B" RHR Loop if Reactor Water level lowers to -140"

- A. "1B" RHR loop will realign to the LPCI mode
- B. "1B" RHR pump will load shed and remain shutdown
- C. "1B" RHR loop will remain in Suppression Pool Cooling
- D. "1B" RHR pump will continue to run; minimum flow valve will open

Answer Key		
Question ID# 033 Both RO/SRO		
Choice	Basis or Justification	
Correct:	C	RHR will remain in suppression pool cooling as F024 (SP cooling valve (and F017B (LPCI Inject valve) will not reposition during the LOCA due to the Loss of Div 2 DC
Incorrect:	A	F024 and F017B will not reposition due to loss of Div 2 DC
Incorrect:	B	RHR pump will not load shed during a LOCA
Incorrect:	D	Min flow valve will not open

Psychometrics					
	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	4	Y	Y (b)(7)	N

Source Documentation		
Source:	<input type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input checked="" type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	E-1FB U/1, GE DWG. M-1-E11-1040-E-039 SH.1	
Learning Objective:	LLOT0370.3e	
Knowledge/Ability K/A	203000 K6.02	Importance: RO / SRO 2.8 / 3.0
(Description of K&A, from catalog) Knowledge of the effect that a loss or malfunction of the following will have on the RHR/LPCI: injection mode: D.C. electrical power		

Required Materials:

Notes and Comments:

Existing bank question, Stem and Distractors Modified

Prepared By:

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NRC Question Data Sheet

34. Unit 1 Plant conditions are as follows:

- Opcon 4
- 1A RHR is in shutdown cooling

Reactor water level drops from +70" to -10"

WHICH ONE of the following identifies a RHR pump and valve response to the above conditions?

	<u>RHR A Pump</u>	<u>HV-51-F006A Shutdown Cooling Suction Valve</u>	<u>HV-51-F009 Shutdown Cooling Isolation valve</u>
A.	Running	Open	Open
B.	Running	Open	Closed
C.	Tripped	Closed	Open
D.	Tripped	Open	Closed

Answer Key		
Question ID# 034 Both RO/SRO		
Choice	Basis or Justification	
Correct:	D	When level decreases to below +12.5" Shutdown Cooling will isolate F009, which in turn trips the ARHR pump, F006 remains open as there is no auto closure
Incorrect	A	Incorrect as F009 will close with level below +125" and pump will trip
Incorrect	B	Incorrect as pump will trip when level drops below 12.5" due to F009 closure
Incorrect	C	Incorrect as F006A will not automatically close and F009 <u>will</u> close when level drops below +125"

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	3	Y	Y (b)(7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	S51.8.B, step 3.2	
Learning Objective:	LLOT0370.14c	
Knowledge/Ability K/A	205000 K6.04	Importance: RO / SRO 3.6 / 3.6
(Description of K&A, from catalog) Knowledge of the effect that a loss or malfunction of the following will have on the Shutdown Cooling System (RHR shutdown Cooling Mode):Reactor water level		

Required Materials:

Notes and Comments

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NRC Question Data Sheet

35. Unit One Plant conditions are as follows:

- Reactor Power is 100%
- The RO Selects Single-Element control on the Feedwater Master Level Controller (LIC-M1-1R600)

WHICH ONE of the following describes the response of this Master Level Controller to a Reactor SCRAM?

- A. Controller will swap to three-element when SCRAM Profile is activated
- B. Controller will swap to three-element when SCRAM Profile is reset
- C. Controller will swap to three-element when Reactor Power is below 20%
- D. Controller will remain in single-element

Answer Key		
Question ID# 035 Both RO/SRO		
Choice	Basis or Justification	
Correct:	A	SCRAM profile will swap controller to three element even if operator selected single element.
Incorrect	B	This is incorrect as FW will swap to single element when SCRAM profile is reset
Incorrect	C	This is incorrect as FW will swap to single element at ~20%
Incorrect	D	This is incorrect a controller will not remain in single element if single is selected (IF FW flow failure had caused swap to single element this would be correct).

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	3	Y	Y (b)(7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	S.06.1.D Unit 1, Attachment 1	
Learning Objective:	LLOT0550.08	
Knowledge/Ability K/A	259002 K5.01	Importance: RO / SRO 3.1 / 3.1
(Description of K&A, from catalog) Knowledge of the operational implications of the following concepts as they apply to reactor water level control system: controller operation		

REQUIRED MATERIALS:

Notes and Comments:

This question relates to the LGS plant specific FW controllers.

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NRC Question Data Sheet

36. Unit One conditions are as follows:

- HPCI is in service for Reactor Vessel Pressure Control (CST to CST)
- FIC-055-1R600 "HPCI FLOW CONTROL VALVE AUTO/MAN switch" is in auto
- HV-55-1F008 "HPCI, Test Loop Shutoff" is throttled to maintain pump discharge pressure 150 psig over Reactor Pressure.
- The RO throttles HV-55-1F008 in the closed direction for one second.

WHICH ONE of the following identifies the effect of throttling HV-55-1F008 on HPCI Turbine Speed and Flowrate one minute later?

<u>HPCI Turbine Speed</u>	<u>Flowrate</u>
A. No change	Goes up
B. Goes up	No change
C. Goes down	No change
D. No change	Goes down

Answer Key		
Question ID# 036 Both RO/SRO		
Choice	Basis or Justification	
Correct:	B	With Flow Controller in AUTO, system flow is maintained constant. IF F008 is throttled closed HPCI speed will need to increase to maintain the same flow
Incorrect	A	Flow Controller is in Auto, maintaining system flow constant
Incorrect	C	To maintain constant flow w/F008 throttled closed , speed goes up.
Incorrect	D	Flow Controller is in Auto, maintaining system flow constant.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	2.5	3	N	Y (b)(7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	S55.1.D, note Step 4.4.3	
Learning Objective:	LLOT0340.12	
Knowledge/Ability K/A	206000 HPCI A1.09	Importance: RO / SRO 3.4 / 3.5
(Description of K&A, from catalog) Ability to predict and/or monitor changes in parameter associated with operating HPCI controls including: Turbine speed.		

Required Materials:

Notes and Comments

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NRC Question Data Sheet

37. Unit One plant conditions are as follows:

- ADS Auto Inhibit Switches are in "NORM"
- RPV Water Level is -10" and lowering
- RPV Pressure is 400 psig and steady
- Drywell Pressure is 1.8 psig
- Core Spray pumps "1B" and "1D" are Running
- Core Spray pumps "1A" and "1C" are Tripped and cannot be started
- ALL RHR pumps are Tripped and cannot be started

RPV Water level drops below -129".

WHICH ONE of the following identifies the response of DIV I and/or DIV III ADS subsystems?

	<u>DIV 1 ADS</u>	<u>DIV 3 ADS</u>
A.	Initiates after 105 second TD	Will not initiate
B.	Initiates after 525 second TD	Will not initiate
C.	Will not initiate	Initiates after 105 second TD
D.	Will not initiate	Initiates after 525 second TD

Answer Key		
Question ID# 037 Both RO/SRO		
Choice	Basis or Justification	
Correct:	C	DIV I ADS will not initiate as no Div I Core Spray or RHR pumps are running DIV III will initiate as B & D core spray pumps are running 105 sec is correct as -129 and HI DW pressure are met.
Incorrect:	A	DIV I will not initiate without correct pumps running DIV III will initiate as described above
Incorrect	B	DIV I ADS will not initiate without correct pumps running DIV III will initiate as described above
Incorrect	D	DIV I will not initiate is correct but, DIV III initiating after 525 seconds is incorrect as -129 and 1.68# conditions bypass 420 sec timer.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.5	4	Y	Y (b)(7)	N

Source Documentation		
Source:	<input type="checkbox"/> New Exam Item <input checked="" type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank	
	<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank	
Reference(s):	B21-1060 (ADS) Sh. 3	
Learning Objective:	LLOT0350.04c	
Knowledge/Ability K/A	209001 K3.02	Importance: RO / SRO 3.8 / 3.9
(Description of K&A, from catalog) Knowledge of the effect that a loss or malfunction of core spray will have on the following: ADS Logic		

REQUIRED MATERIALS:

Notes and Comments:

Existing Question, Stem and Distractors Modified

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NRC Question Data Sheet

38. Unit One plant conditions are as follows:

- An ATWS has occurred
- Reactor level is -20" and lowering
- Reactor power is 30% and steady
- No operator action are taken

Reactor level drops to -40"

- Three Minutes Later Reactor Power is 27% and slowly lowering

WHICH ONE of the following identifies expected lights and alarms for the given conditions:

- A. Squib valve continuity lights NOT Lit; "Core Spray Line internal break" Alarm annunciated.
- B. Squib valve continuity lights NOT Lit "Standby Liquid Tank Lo-Lo level" alarm annunciated
- C. Squib valve continuity lights Lit, "RWCU System Isolated" alarm annunciated
- D. Squib valve continuity lights Lit, DIV 1/2 RRCS channel activated.

Answer Key		
Question ID# 038 Both RO/SRO		
Choice	Basis or Justification	
Correct:	A	Squib valve continuity Light not lit is correct as 3 minutes after -40" is reached with power above 4% SLC will have initiated. Additionally injection will result in "core spray line internal break" alarm
Incorrect	B	Is incorrect as SLC tank low-low level would not be alarming at this point.
Incorrect	C	Squib valve continuity lights lit is wrong as SLC will have initiated
Incorrect	D	Squib valve continuity lights lit is wrong as SLC will have initiated

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	3	Y	Y (b)(5)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam 2001 <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	S48.1.B, section 4.0, ANN 113, B5	
Learning Objective:	LLOT0310.06	
Knowledge/Ability K/A	211000 A1.10	Importance: RO / SRO 3.7 / 3.7
(Description of K&A, from catalog) Ability to predict and/or monitor changes in parameters associated with operating SBLC system controls including : lights and alarms:		

REQUIRED MATERIALS:

Notes and Comments

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NRC Question Data Sheet

39. Unit 2 conditions are as follows:

- Turbine Shell Warming is in progress
- Turbine First Stage Pressure, rises to 200# psig
- PIS-001-652A and D are lit on panel 10609/10C611 in the Aux Equipment Room

WHICH ONE of the following identifies the expected plant response

- A. Full Reactor SCRAM on Turbine Stop Valve closure
- B. Full Reactor SCRAM on Turbine Control Valve closure
- C. Half SCRAM on Turbine Stop Valve closure.
- D. Half SCRAM on Turbine Control Valve closure.

Answer Key		
Question ID# 039 Both RO/SRO		
Choice	Basis or Justification	
Correct:	A	A full Reactor SCRAM will occur on 3 out of 4 stop valve closed with Reactor power greater than 30%. Reactor power greater than 30% is indicated by pressure lights lit in AER
Incorrect	B	Turbine control valve closure scram is wrong as turbine control valves are open to support shell warming
Incorrect	C	This answer is wrong as a complete SCRAM will occur
Incorrect	D	This answer is wrong as a complete SCRAM will occur

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	4.5	3	Y	Y (b)(7)	N

Source Documentation					
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank				
Reference(s):	GP-2 Appendix 3, step 3.2.8 caution ANN 107, A2				
Learning Objective:	LLOT0300.04				
Knowledge/Ability K/A	212000 RPS K4.12 <table style="float: right; border: none;"> <tr> <td>Importance:</td> <td>RO / SRO</td> </tr> <tr> <td></td> <td>3.9 / 4.1</td> </tr> </table>	Importance:	RO / SRO		3.9 / 4.1
Importance:	RO / SRO				
	3.9 / 4.1				
(Description of K&A, from catalog) Knowledge of RPS design feature and/or interlocks which provide for bypassing of selected SCRAM signals (manually and automatically):					

REQUIRED MATERIALS:

Notes and Comments

Prepared By:
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 Limerick Regulatory Exam Author

NRC Question Data Sheet

40. Unit 1 plant conditions are as follows:

- Reactor power 100%
- Reactor level 35"
- LT-42-IN004A "Feedwater Narrow Range Level Transmitter" fails downscale
- Half hour later LT-42-IN004C "Feedwater Narrow Range Level Transmitter" fails upscale.

WHICH ONE of the following describes the impact on feedwater level control, and impact on Reactor level

- A. Feedwater Master Level Controller will swap to single element, Reactor level will go up
- B. Feedwater Master Level Controller will swap to single element, Reactor level will remain at 35"
- C. Feedwater Master Level Controller will remain in three element, Reactor level will remain at 35"
- D. Individual Reactor Feed Pump Speed Controllers will swap to manual, Reactor level will go up.

Answer Key		
Question ID# 040 Both RO/SRO		
Choice	Basis or Justification	
Correct:	C	A failure of two level transmitter (1/2 hour apart) will not result in a FW failure, Master level controller will remain in 3 element, and Reactor level will remain unchanged
Incorrect:	A	This is incorrect as FW will not swap to single element on level transmitter failures (1/2 hour apart), additionally level will remain at 35"
Incorrect:	B	This is incorrect as FW will not swap to single element on level transmitter failures (1/2 hour apart)
Incorrect:	D	A failure of two level transmitters (1/2 hour apart) will not result in speed controllers swapping to manual (two failure simultaneously, or three failures would), additionally reactor level will not go up

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.5	3	Y	Y (b)(7)	N

Source Documentation		
Source:	<input type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input checked="" type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	S06.1.H U/1, Attachment 1	
Learning Objective:	LLOT0550.10C	
Knowledge/Ability K/A	259001 K6.07	Importance: RO / SRO 3.8 / 3.8
(Description of K&A, from catalog) Knowledge of the effect that a loss or malfunction of the following: Reactor Water Level control system		

REQUIRED MATERIALS:

Notes and Comments:

Modified Question from LOR bank

Prepared By:
Rick Rhode (610) 718-4085
Limerick Regulatory Exam Author

NRC Question Data Sheet

41. Unit 1 plant conditions are as follows:

- An ATWS is in progress
- Reactor Power is 50% and Steady
- Reactor Water Level is 35" and Steady
- Reactor Pressure is 1045 psig and Steady

RRCS DIV 1 "B" AND DIV II "A" Manual Initiation Pushbuttons are Armed and Depressed

WHICH ONE of the following identifies RRCS response?

- A. ARI will initiate immediately
- B. Recirc Pumps will trip in 9 seconds
- C. SLC will initiate if APRMs are not downscale in 118 seconds
- D. DIV I/II RRCS Annunciators ONLY, ARI solenoids remains deenergized

Answer Key		
Question ID# 041 Both RO/SRO		
Choice		Basis or Justification
Correct:	D	RRCS manual initiation requires depressing both pushbuttons in the SAME Division, the noted action (one pushbutton in separate divisions) will not initiate RRCS
Incorrect	A	ARI will not initiate as RRCS is not initiated, and conditions for automatic initiation are not met
Incorrect	B	Recirc pump trip does not initiate from manual RRCS initiation, and conditions for automatic initiation are not met
Incorrect	C	SLC will not initiate as RRCS is not initiated, and conditions for automatic initiation are not met

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	3.0	3	Y	Y (b)(7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	GP-18 Attachment 4, ANN 004 F-5	
Learning Objective:	LLOT0315.05	
Knowledge/Ability K/A	212000 A4.16	Importance: RO / SRO 4.4 / 4.4
(Description of K&A, from catalog) Ability to manually operate and/or monitor in the control room: Manually activate anticipated transient without scram circuitry/RRCS		

REQUIRED MATERIALS:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

42. Unit 1 plant conditions are as follows:

- Reactor Power is 100%
- Normal Reactor Enclosure ventilation is in service
- Both Standby Gas Treatment System fans are in AUTO

LIS-42-1N681A and LIS-42-1N681B fail downscale resulting in the following annunciator:

- 1A REACTOR ENCL ISOLATION SIGNAL INITIATED (004 E-1)

WHICH ONE of the following identifies the status of Standby Gas Treatment 5 minutes later?

- A. "0A" Fan and "0B" Fan running
- B. Only "0A" Fan running
- C. Only "0B" Fan running
- D. Both Fans off

Answer Key		
Question ID# 042 Both RO/SRO		
Choice	Basis or Justification	
Correct:	B	"A" Reactor enclosure isolation and "A" SGTS start will occur on LIS-42-IN681A and B downscale failure
Incorrect:	A	Incorrect as B Fan will not start
Incorrect	C	Incorrect as B Fan will not start
Incorrect:	D	Incorrect as A Fan will start

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	4.0	4	N	Y (b)(7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank	
	<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank	
Reference(s):	ANN 004 E-1	
Learning Objective:	LLOT0200.10B	
Knowledge/Ability K/A	261000 K6.08	Importance: RO / SRO 3.1 / 3.1
(Description of K&A, from catalog) Knowledge of the effect that a Loss or Malfunction of the following will have on the SGTS system: Reactor vessel level		

Required Materials:

Notes and Comments

Prepared By:
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 Limerick Regulatory Exam Author

NRC Question Data Sheet

43. Unit 1 plant conditions are as follows:

- Reactor Power is 100%
- Reactor Level is 35"

A Condensate Min Flow controller malfunction results on the following:

- Reactor Feed Pump (RFP) Suction Pressure drops to 230 psi for 6 seconds, and then goes up to 250 psi.

WHICH ONE of the following identifies the impact on the feedwater system?

- A. "1A" RFP has tripped "1B" and "1C" RFPs are running
- B. "1C" RFP has tripped "1A" and "1B" RFPs are running
- C. "1B" and "1A" RFP have tripped "1C" RFPs is running
- D. All RFPs have tripped

Answer Key		
Question ID# 043 Both RO/SRO		
Choice	Basis or Justification	
Correct:	B	'1C" RFP will trip on Low suction after 5 seconds pressure due to suction pressure less than 233 psi for 5
Incorrect	A	"1A" RFP will not trip as "C" RFP trips first followed by "1B" at 10 seconds and "1A" at 15 seconds
Incorrect	C	"1B" and "1A" tripped is wrong as "1C" RFP will trip first
Incorrect	D	All RFPs tripped is wrong as suction pressure stabilized prior to trip of all 3 RFPs

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.5	3	Y	Y (b)(3)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank	
	<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank	
Reference(s):	ANN 104 Cond E-2 ANNs 102 Feed A1, B1, C1	
Learning Objective:	LLOT0520.08	
Knowledge/Ability K/A	256000 K1.02	Importance: RO / SRO 3.3 / 3.3
(Description of K&A, from catalog) Knowledge of the Physical connections and/or cause – effect relationship between condensate system and the following: Reactor Feedwater System		

REQUIRED MATERIALS:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

44. Unit 1 has been scrammed due to a LOCA.

RCIC auto-initiated following the SCRAM. Conditions are as follows:

- RPV water level has recovered to +35" and is steady
- Drywell pressure is 2.5 psig and steady
- The CRS has directed that RCIC be secured

WHICH ONE of the following will shutdown the RCIC turbine and leave RCIC ready for auto injection?

- A. Reset the RCIC initiation signal seal-in.
Depress the RCIC Turbine Manual Isolation pushbutton
Close the RCIC Trip throttle valve (HV-50-112)
- B. Depress the RCIC Turbine Manual Isolation Pushbutton
Close the RCIC steam supply valve (HV-50-1F045)
Reset the RCIC trip throttle valve (HV-50-112)
- C. Reset the RCIC initiation signal seal-in
Depress the RCIC turbine trip pushbutton
Close the RCIC Steam Supply valve (HV-50-1F045)
Reset the RCIC trip throttle valve (HV-50-112)
- D. Depress the RCIC Turbine Trip pushbutton
Place the RCIC Pump Discharge Flow controller in MANUAL
Set the RCIC Pump Discharge flow Controller to 0%
Close the RCIC Trip Throttle Valve (HV-50-112)

Answer Key		
Question ID# 044 Both RO/SRO		
Choice	Basis or Justification	
Correct:	C	Since the initiation signal is no longer present the operator can reset it, Trip the turbine and close the steam supply. Resetting the Trip throttle valve leaves RCIC ready for auto injection
Incorrect	A	Once the initiation signal is reset, the manual isolation will not work
Incorrect	B	These steps will shutdown RCIC, but the isolation must be reset in order to be ready for auto injection
Incorrect	D	These steps will shutdown RCIC if the initiation signal were still present. RCIC will not be ready to auto inject

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	2.5	3	Y	Y (b)(7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	S49.2A section 4.1, S49.1C section 4.3	
Learning Objective:	LOT0380.08	
Knowledge/Ability K/A	217000 A4.04	Importance: RO / SRO 3.6 / 3.6
(Description of K&A, from catalog) Ability to manually operate and/or monitor in the control room --Manually initiated controls		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

45. WHICH ONE of the following identifies the expected SRV indications DURING an ADS Automatic Blowdown?

	<u>Amber</u> <u>"Has Lifted Light"</u>	<u>White</u> <u>"Solenoid energized Light"</u>
A.	Lit	Not Lit
B.	Lit	Lit
C.	Not Lit	Lit
D.	Not Lit	Not Lit

Answer Key		
Question ID# 045 Both RO/SRO		
Choice	Basis or Justification	
Correct:	B	During an automatic blowdown both amber "has lifted" (Acoustic monitor) and white solenoid (ADS Div I & III) lights will light.
Incorrect	A	This is incorrect as white solenoid energized light will be lit on ADS auto initiation
Incorrect	C	This is incorrect as Amber "has lifted" light will be lit
Incorrect	D	This is incorrect as both lights will be lifted if there was no increased Drywell pressure this would be true

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	2.0	2	Y	Y (b)(7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	OT-114, ARC 110 B-2	
Learning Objective:	LLOT0330.07a	
Knowledge/Ability K/A	218000 A3.01	Importance: RO / SRO 4.2/ 4.3
(Description of K&A, from catalog) Ability to monitor automatic operations of the ADS including: ADS valve operation:		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

46. Unit 1 is operating at 100%

An inadvertent RPV Low, Low Level signal (-38") results in NSSSS isolations

WHICH ONE of the following describes the response of the Bypass Leakage Barrier Blocks and Vents?

- A. Instrument Gas Block Valves are closed and the Vents are open.
- B. Recirc Pump Seal Purge Block Valves are closed and the Vents are open.
- C. Main Steam Line Drain Block Valves are closed and the Vents are open.
- D. N₂ Supply Block Valves are closed and the Vents are open.

Answer Key		
Question ID# 046 Both RO/SRO		
Choice	Basis or Justification	
Correct:	D	N ₂ Supply valve closes and vent valve opens on a Lo-Lo Reactor level signal (VIIB)
Incorrect:	A	This is incorrect as instrument gas block valves isolate at Lo-Lo-Lo Level
Incorrect	B	This is incorrect as recirc vent valves do not automatically open on an isolation
Incorrect	C	This is incorrect as main steam line vent valves do not automatically open

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	3.5	3	Y	Y (b)(5)	N

Source Documentation		
Source:	<input type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input checked="" type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	GP-8.1, Reactor Level 2-Low, Low section	
Learning Objective:	LLOT0180.08d	
Knowledge/Ability K/A	223002 A2.05	Importance: RO / SRO 3.3/ 3.6
(Description of K&A, from catalog) Ability to predict the impact of Nuclear Boiler Instrumentation failure on the primary containment isolations system/nuclear steam supply shutoff and base on those predictions, use procedures to correct, control or mitigate the consequences of those abnormal conditions or operations.		

Required Materials:

Notes and Comments:

Modified LOR Bank Question

Prepared By:

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Limerick Regulatory Exam Author

NRC Question Data Sheet

47. D11 Diesel Generator is operating in parallel with the 101 Safeguard Bus with the following indications:

- 60 Hz
- 2000 KW
- 1600 KVAR

WHICH ONE of the following actions will restore the Diesel generator within operating limits?

- A. Place Speed Governor in RAISE to adjust real load to 2100 KW
- B. Place Speed Governor in LOWER to adjust real load to 1900 KW
- C. Place Voltage Regulator in RAISE to adjust reactive load to 1700 KVAR
- D. Place Voltage Regulator in LOWER to adjust reactive load to 1500 KVAR

Answer Key		
Question ID# 047 Both RO/SRO		
Choice	Basis or Justification	
Correct:	D	Reducing VARS to less than 1500 restores KVAR's to less than 75% KW, which corresponds to a Power Factor of 0.8
Incorrect:	A	Raising KW would also restore the ratio of KVAR to KW, but KW would have to be raised to 2133 KW.
Incorrect:	B	Lowering KW would make the D/G further from it's operating limit.
Incorrect:	C	Raising KVAR would also make the D/G further from its operating limit.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	2.5	3	Y	Y (b)(7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	S92.1.0, caution above step 4.5.5	
Learning Objective:	LLOT0670.02	
Knowledge/Ability K/A	264000 A4.01	Importance: RO / SRO 3.3 / 3.4
(Description of K&A, from catalog) Ability to manually operate and/or monitor in the control room: Adjustment of exciter voltage		

Required Materials:

Notes and Comments

Prepared By:

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Limerick Regulatory Exam Author

NRC Question Data Sheet

48. Unit 1 Plant conditions are as follows:

- "1A" CRD pump is in service
- Reactor power is 100%
- Reactor Level is 35"

A failure of a level instrument line results in the following Annunciators:

- EXCESS FLOW CHECK VALVE OPERATED C218 (112 E5)
- DIV 3 REACTOR LO-LO-LO- Level (113 E3)

WHICH ONE of the following identifies the effect on the CRD system and the Action required to restore CRD?

- A. "1A" CRD pump trips
Can be restarted from the MCR
- B. "1A" CRD pump remains running
No action required
- C. "1A" CRD pump trips and cannot be restored
"1B" CRD pump must be placed in-service from the MCR
- D. "1A" CRD pump trips
Can only be restarted from 4 KV switchgear

Answer Key		
Question ID# 048 Both RO/SRO		
Choice	Basis or Justification	
Correct:	A	A CRD will trip due to Div III LOCA signal and LOCA load shed it can be restarted from the MCR
Incorrect	B	This is incorrect as a CRD pump will trip due to Div III LOCA load shed
Incorrect	C	This is incorrect as a CRD can be restarted
Incorrect	D	This is incorrect as CRD can be restarted from the MCR

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	2.5	3	Y	Y (b)(5)	N

Source Documentation		
Source:	<input type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input checked="" type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	SE-10, step 4.6	
Learning Objective:	LLOT0660.05b	
Knowledge/Ability K/A	262001 A2.02	Importance: RO / SRO 3.6 / 3.9
(Description of K&A, from catalog) Ability to predict the impact of a LOCA on A C electrical distribution; and based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations		

Required Materials:

Notes and Comments:

This question was extensively modified from Question 373224 (ILT LERT EXAM 2005)

Prepared By:

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Limerick Regulatory Exam Author

NRC Question Data Sheet

49. Unit 1 Plant conditions are as follows:

- Reactor is Scrammed
- Reactor Pressure is 600 psig
- Division I DC is Lost
- Reactor water level is +115"

Which one of the following can be used to lower Reactor Pressure?

- A. "1B" SRV from the MCR
- B. "1C" SRV from the RSP
- C. "1J" SRV from the AER
- D. "1S" SRV from the AER

Answer Key		
Question ID# 049 Both RO/SRO		
Choice	Basis or Justification	
Correct:	D	S SRV is a ADS SRV and has power in the AER. While it is not one of the preferred SRV's (B,J,C) for use in OT-110, as the preferred SRVs are not available a non-preferred SRV is directed.
Incorrect	A	While B SRV is one of the preferred SRV's for use with high level it cannot be operated from the MCR due to the Loss of Div I DC
Incorrect	B	While C SRV is one of the preferred SRV's for use with high level it cannot be operated from the MCR due to the Loss of Div I DC
Incorrect	C	While J SRV is one of the preferred SRV's for use with high level, control is not available in the AER

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	3	Y	Y (b)(7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam 0801#221 <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	OT-110 Step 3.1.4	
Learning Objective:	LLOT0120.12a	
Knowledge/Ability K/A	239002 K4.05	Importance: RO / SRO 3.6 / 3.7
(Description of K&A, from catalog) Knowledge of SRV design features and/or interlocks which provide for allowing SRV operation from more than one location		

Required Materials:

Notes and Comments

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NRC Question Data Sheet

50. Unit 1 plant conditions are as follows:

- Reactor Power is 100%
- 1A RECW pump is blocked for bearing replacement
- 1B RECW pump trips and cannot be restarted

WHICH ONE of the following identifies the effect on the Reactor Recirc. pumps and required operator action.

- A. Seal cavity temperature rises
Reduce pump speed to maintain cavity temperature below 200°F.
- B. Seal cavity temperature rises
Trip the RECIRC pumps within 10 minutes
- C. Pump motor temperature rises
Trip the RECIRC pumps if motor winding temperature exceeds 200°F
- D. Pump motor temperature rises
Trip the RECIRC pumps within 10 minutes

Answer Key		
Question ID# 050 Both RO/SRO		
Choice	Basis or Justification	
Correct:	B	loss of RECW will result in an increase in seal cavity temperature ON-113 directs tripping a RECIRC pump within 10 minutes of a loss of RECW
Incorrect:	A	On high seal cavity temperature ON-113 directs reducing speed to maintain temperature this occurs at a cavity temperature of 175°F not 200°F
Incorrect:	C	Pump motor temperature is unaffected by a LOSS of RECW (DWCW supplies motor cooler)
Incorrect:	D	Pump motor temperature is unaffected by a LOSS of RECW (DWCW supplies motor cooler)

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	2.5	3	Y	Y (b)(5)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	ON-113 step 2.1, S43.0.D	
Learning Objective:	LLOT0030.07b:	
Knowledge/Ability K/A	202001 A2.17	Importance: RO / SRO 3.1 / 3.2
(Description of K&A, from catalog) Ability to predict the impact of a loss of seal cooling water on the RECIRC system; and based on those predictions use procedures to correct, control or mitigate the consequences of those abnormal conditions or operations.		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

51. Unit 2 Plant conditions are as follows:

- "2A" RECW pump is running with its handswitch in AUTO after START
- "2B" RECW pumps is off with its handswitch in AUTO after STOP

A complete loss of Offsite Power (LOOP) occurs

All 4 KV systems operate as designed with all buses re-energizing
SIMULTANEOUSLY

WHICH ONE of the following describes the response of the RECW pumps?

- A. "2A" RECW pump auto re-starts
"2B" RECW pump auto starts in standby
- B. "2A" RECW pump auto re-starts.
"2B" RECW pump does NOT auto start in standby
- C. "2A" RECW pump does NOT auto re-start
"2B" RECW pump auto starts in standby
- D. "2A" RECW pump does NOT auto re-start
"2B" RECW pump does NOT auto start in standby

Answer Key		
Question ID# 051 Both RO/SRO		
Choice	Basis or Justification	
Correct:	A	When their respective safeguard MCC's re-energized both RECW pumps auto start on low heat exchange outlet pressure
Incorrect	B	2A portion of this distractor is correct, 2B portion is incorrect, for the reason stated above
Incorrect	C	2A portion of this distractor is incorrect, 2B portion is correct for the reason stated above
Incorrect	D	Both the 2A and 2B portions of this distractor are incorrect as stated above.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	3.0	3	Y	Y (b)(7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	E-565	
Learning Objective:	LLOT0460.07	
Knowledge/Ability K/A	400000 K4.01	Importance: RO / SRO 3.4 / 3.9
(Description of K&A, from catalog) Knowledge of the CCWS design features and/or interlocks that provide for the following automatic start of standby pump		

Required Materials:

Notes and Comments

Prepared By:

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NRC Question Data Sheet

52. Unit 1 plant conditions are as follows:

- Reactor Startup is in progress
- Reactor power is 20%

Control rod withdraw is in progress

WHICH ONE of the following will result in a Rod withdraw block

- A. RBM upscale
- B. RBM downscale
- C. Control rod withdrawn past its withdraw limit
- D. RMCS "Activities Control Disagree" Alarm

Answer Key		
Question ID# 052 Both RO/SRO		
Choice	Basis or Justification	
Correct:	D	Activities control disagree results in a Rod withdrawn and insert block due to a malfunction of RMCS
Incorrect	A	RBM upscale will not result in a rod block as Reactor power is less than 30%
Incorrect	B	RBM downscale will not result in a block as Reactor power is less than 30%
Incorrect	C	CR withdraw will not result in a Rod block as Reactor power is above RWM LPSP (18%)

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	3.0	3	Y	Y (b)(7)	N

Source Documentation					
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank				
Reference(s):	S73.0.B, step 4.2 & note above step, ANN 108 D-4				
Learning Objective:	LLOT0080.06 =				
Knowledge/Ability K/A	201002 K3.02 <table style="float: right; border: none;"> <tr> <td>Importance:</td> <td>RO / SRO</td> </tr> <tr> <td></td> <td>2.9 / 3.2</td> </tr> </table>	Importance:	RO / SRO		2.9 / 3.2
Importance:	RO / SRO				
	2.9 / 3.2				
(Description of K&A, from catalog) Knowledge of the effect that a loss or malfunction of RMCS will have on RBM					

Required Materials:

Notes and Comments

Prepared By:
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Limerick Regulatory Exam Author

NRC Question Data Sheet

53. Unit 1 plant conditions are as follows:

- Reactor "STARTUP" is in progress
- Reactor Power is 12%
- Insert limit for current RWM rod group is "00"
- Withdraw limit for the current RWM rod group is "12"
- Control Rod 10-39 is selected

Control Rod 10-39, the first rod of the current group, is withdrawn to position "14" with no further operator taken.

WHICH ONE of the following identifies the ability to move control rod 10-39?

- A. Rod can be withdrawn and inserted without additional actions
- B. Rod can only be inserted without additional action
- C. Rod insertion requires Rod to be bypassed in the RWM
- D. Rod insertion or withdraw requires a substitute position to be entered into RWM

Answer Key		
Question ID# 053 Both RO/SRO		
Choice	Basis or Justification	
Correct:	B	RWM allow correction (insert) as it is a single notch error
Incorrect	A	Rod cannot be withdrawn as RWM will enforce a withdraw block
Incorrect	C	Rod does not need to be bypassed to allow insertion
Incorrect	D	This is not correct as substitute rod position is only used if there is no position indication

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	3.0	3	N	Y (b)(7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank	
	<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank	
Reference(s):	ON-123 step 2.12	
Learning Objective:	LLOT0093f	
Knowledge/Ability K/A	201006 K4.06	Importance: RO / SRO 3.2 / 3.4
(Description of K&A, from catalog) Knowledge of RWM design features and/or interlocks which provide for correction of out of sequence rod position		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

54. A Unit 1 plant conditions are as follows:

- Reactor was scrammed due to a condensate line rupture.
- Reactor level is -35" and lowering
- D124 safeguard load center transformer breaker tripped on over current

The RO is directed to start Standby Liquid Control for Reactor Level Control

- "1A" and "1C" SLC injection pumps are started and verified to be injecting

WHICH ONE of the following describes the expected RWCU response?

- A. HV-44-1F004 "RWCU Outboard Suction Valve" closes
- B. HV44-1F001 "RWCU Inboard Suction Valve" closes
- C. HV-44-1F004 "RWCU Outboard Suction Valve" and HV-44-1F001 "RWCU Inboard Suction Valve" close
- D. HV-44-1F040 "RWCU Inlet Suction Valve" closes

Answer Key		
Question ID# 054 Both RO/SRO		
Choice	Basis or Justification	
Correct:	B	"A" or "C" SLC pump start close F001 valve as "B" was not started (D124 is power supply for the "B" pump) F004 did not close
Incorrect	A	F004 does not close as "B" SLC pump did not start
Incorrect	C	While F001 did close answer is incorrect as F004 did not close due to "B" SLC pump not started
Incorrect	D	F040 does not receive and isolation signal on SLC start

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	3	N	Y (b)(7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank	
	<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank - LORT	
Reference(s):	GP-8.1, Signal Y	
Learning Objective:	LLOT0110.05	
Knowledge/Ability K/A	204000 A3.03	Importance: RO / SRO 3.6 / 3.6
(Description of K&A, from catalog) Ability to monitor automatic operation of RWCU including: response to system isolations:		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

55. Unit 1 plant conditions are as follows:

- Reactor Power is 100%
- 1AY160 is lost due to a ground

30 minutes later a Reactor SCRAM and Turbine trip occur

- Reactor pressure is 900# and steady
- Turbine speed is 300 RPM and dropping

WHICH ONE of the following identifies the ability to lower Reactor Pressure using the bypass valves?

- A. Bypass Valves cannot be used to Control Reactor Pressure
- B. Bypass Valves can be opened by Raising the Bypass Jack
- C. Bypass Valves can be opened by Lowering Pressure Set
- D. Bypass Valves can be opened by raising Maximum Combined Flow

Answer Key		
Question ID# 055 Both RO/SRO		
Choice	Basis or Justification	
Correct:	A	Due to Loss of 1AY160 and PMG (Turbine speed 300 RPM) bypass will not operate
Incorrect	B	Bypass jack will not operate due to loss of 1AY160
Incorrect	C	Pressure set will not operate due to the loss of 1AY160
Incorrect	D	Raising max combine flow (115%) will not open bypass valves (CV's are closed)

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	3.0	3	Y	Y (b)(7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank	
	<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank	
Reference(s):	E-1AY160 Attachment #1	
Learning Objective:	LLOT0560.010k	
Knowledge/Ability K/A	262002 K3.15	Importance: RO / SRO 2.6 / 2.7
(Description of K&A, from catalog) Knowledge of the effect that a loss or malfunction of UPS will have on Main Turbine Operation		

Required Materials:

Notes and Comments

Prepared By:

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NRC Question Data Sheet

56. WHICH of the following identifies one of the long term impacts of a complete loss of instrument air?
- A. Only Outboard MSIVs close
All SRVs can be opened
 - B. Only Inboard MSIVs close
Only ADS and RSP SRVs can be opened
 - C. Inboard and Outboard MSIVs close
All SRVs can be opened
 - D. Inboard and Outboard MSIVs close
Only ADS and RSP SRVs can be opened

Answer Key		
Question ID# 056 Both RO/SRO		
Choice	Basis or Justification	
Correct:	D	Outboard MSIVs close on loss of instrument air inboard MSIVs close on loss of PCIG (PCIG is lost due to loss of Instrument Air Only ADS and RSP SRVs have accumulator and can be opened with Loss of PCIG
Incorrect	A	This is incorrect as inboard MSIVs also close. Also non ADS SRVs cannot be opened from handswitches due to loss of PCIG
Incorrect	B	This is incorrect as outboard MSIVs also close
Incorrect	C	This is incorrect as non-ADS SRVs cannot be opened from handswitches due to loss of PCIG

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	4.0	3	Y	Y (b)(9)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	ON-119 Attachment 1	
Learning Objective:	LLOT0730.08	
Knowledge/Ability K/A	300000 K1.03	Importance: RO / SRO 2.8 / 2.9
(Description of K&A, from catalog) Knowledge of the connections and/or cause effect relationships between instrument air and containment air		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

57. Unit 1 plant conditions are as follows:

- An ATWS is in progress
- Reactor power is 40% and steady
- Reactor level is -60" and steady

A Turbine trip occurs; and Reactor Power remains 40%

WHICH ONE of the following identify conditions that will result in a RRCS Feedwater Runback, and when the Runback will occur

- A. Reactor Pressure 1160 psig
Runback occurs in 118 seconds
- B. Reactor Pressure 1160 psig
Runback occurs in 25 seconds
- C. Reactor pressure 1096 psig
Runback occurs in 30 seconds
- D. Reactor pressure 1096 psig
Runback occurs in 9 seconds

Answer Key		
Question ID# 057 Both RO/SRO		
Choice	Basis or Justification	
Correct:	B	RRCS Feedwater runback occurs IF Reactor power is greater than 4% and Reactor pressure is greater than 1149. Additionally runback occurs with a 25 second time delay
Incorrect	A	118 seconds is incorrect (118 seconds is the RRCS SBLC initiation time delay)
Incorrect	C	Reactor pressure 1096 is incorrect (1096 is the Reactor Scram setpoint) additionally 30 seconds is the Feedwater runback length once initiated
Incorrect	D	Reactor pressure 1096 is incorrect additionally 9 seconds is incorrect (9 seconds is the RRCS Recirc pump RPT Breaker time delay)

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
HIGH	3.0	3	Y	N/A	N/A

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank	
Reference(s):	GE Elementary Drawing G31-1020 ARC 004, B-4	
Learning Objective:	LLOT0315.04	
Knowledge/Ability K/A	216000 2.4.50	Importance: RO / SRO 3.3 / 3.3
(Description of K&A, from catalog) Ability to verify system alarm setpoints and operate controls identified in the alarm response manual Nuclear Boiler Instrumentation		

Required Materials:

Notes and Comments:

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NRC Question Data Sheet

58. WHICH ONE of the following lists contains ONLY Non-Safeguard DC System loads?
- A. Turbine Enclosure Area Rad Monitors
Refuel Floor HVAC Isolation logic
Primary RPS/UPS Inverter Power
Recirc MG Set Emergency Lube Oil Pumps
 - B. 13.2 KV Breaker Control Power
Main Control Room Annunciator
Emergency Lighting Panels
Primary RPS/UPS inverter Power
 - C. Primary APRM Inverter Power
Reactor Enclosure HVAC Isolation logic
4KV Breaker Control Pumps
RFP Emergency Lube Oil Pumps
 - D. Recirc MG Set Emergency Lube Oil Pumps
Primary APRM Inverter Power
Emergency Lighting Panels
Main Control Room Annunciator

Answer Key		
Question ID# 058 Both RO/SRO		
Choice	Basis or Justification	
Correct:	D	All 4 loads are Now Safeguard DC
Incorrect:	A	Refuel Floor HVAC Isolation logic and Primary RPS/UPS Inverter Power are Safeguard DC loads
Incorrect:	B	Primary RPS/UPS inverter Power is a Safeguard DC load
Incorrect:	C	Reactor Enclosure HVAC Isolation logic and 4RV Breaker Control Power are Safeguard DC loads

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	3.0	3	Y	(b) (7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	E-33, Sh 1-3 E-619, Sh 1-3	
Learning Objective:	LLOT0690.04	
Knowledge/Ability K/A	263000 K2.01	Importance: RO / SRO 3.1 / 3.4
(Description of K&A, from catalog) Knowledge of electrical power supplies to the following: Major DC loads		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

59. WHICH ONE of the following describes the reason Drywell Vacuum Relief Valves open?
- A. Prevent drawing excess negative pressure in the Drywell
 - B. Prevent drawing excess negative pressure in the Suppression Pool
 - C. Equalize pressure between the SRV Downcomer and the Suppression Pool
 - D. Ensure the Suppression Pool pressure remains higher than Drywell pressure

Answer Key		
Question ID# 059 Both RO/SRO		
Choice	Basis or Justification	
Correct:	A	Vacuum Breakers Relief's will open on Drywell Pressure lower than Suppression Pool Pressure
Incorrect	B	Vacuum Breaker Operate on to ensure Drywell is not drawn negative
Incorrect	C	While some equalization will occur when Vacuum Breaker opens it is not the reason they open
Incorrect	D	The exact opposite is true, as Vacuum Breakers relieve the higher Suppression Pool pressure to the Drywell.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	3.0	3	Y	Y (b)(5)	N

Source Documentation		
Source:	<input type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input checked="" type="checkbox"/> ILT Exam Bank	
	<input checked="" type="checkbox"/> Previous NRC Exam 0999#119 <input type="checkbox"/> Other Exam Bank	
Reference(s):	ANN 114 G-1	
Learning Objective:	LLOT0130.02f	
Knowledge/Ability K/A	223001 K5.01	Importance: RO / SRO 3.1 / 3.3
(Description of K&A, from catalog) Knowledge of the Operational implications of Vacuum Breaker/relief operations as applies to pri cont system and auxiliaries		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

60. Unit 1 at 100% power when the following Alarm is received:

- 1DB-1 250V DC MCC undervoltage (122 G-2)

WHICH ONE of the following identifies the system that is no longer operable, and the required action?

- A. ADS, Station an Equipment Operator in the AER for SRV operation
- B. RPS, Stop all "B" side RPS testing
- C. HPCI, Declare HPCI Inoperable per Technical Specification
- D. RCIC, Perform T-249 for RCIC

Answer Key		
Question ID# 060 Both RO/SRO		
Choice	Basis or Justification	
Correct:	C	HPCI is INOP due to loss of power to initiation logic and MOV's on a loss of Div 2 DC, HPCI should be declared INOP as a result of the loss of initiation logic
Incorrect:	A	ADS is supplied by Div 1 and Div 3 DC
Incorrect:	B	While "B" RPS will swap to its AC power source, it is still operable
Incorrect:	D	RCIC is supplied by Div 1 and Div 3 DC

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	3.5	3	Y	Y (b) (10)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	ARC-MCR-122 G2, ARC MCR-117 A1	
Learning Objective:	LLOT0690.02	
Knowledge/Ability K/A	263000 2.4.31	Importance: RO / SRO 3.3 / 3.4
(Description of K&A, from catalog) DC Electrical Distribution: Knowledge of annunciators alarms and indications/and use of the response instructions		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

61. LOCA/LOOP Testing is in progress during a refueling outage on Unit 1

The PRO is monitoring D11 Diesel Generator indications as the Team prepares to drop power to the bus.

WHICH ONE of the following identifies values for both frequency and voltage that will satisfy the requirement for the D11 Diesel Generator breaker to close in on the bus?

	<u>Frequency</u>	<u>Voltage</u>
A.	56.2 Hz	4.1 KV
B.	57.4 Hz	4.0 KV
C.	58.6 Hz	3.9 KV
D.	59.8Hz	3.8 KV

Answer Key		
Question ID# 061 Both RO/SRO		
Choice		Basis or Justification
Correct:	B	Frequency and Voltage are required to be 95% of rated in order to energize the Diesel Ready to Load relay and close the output Breaker. These values would be 57 Hz and 3.952 KV
Incorrect	A	Voltage meets the requirement, Frequency does not
Incorrect	C	Frequency meets the requirement, voltage does NOT
Incorrect	D	Frequency meets the requirement, voltage does not

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
HIGH	3.5	4	Y	Y (b) (7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	E-164	
Learning Objective:	LLOT0670.02. LLOT0660.04	
Knowledge/Ability K/A	264000 A3.03	Importance: RO / SRO 3.4 / 3.4
(Description of K&A, from catalog) Ability to monitor automatic operations of the Emergency Generators including: Indicating lights, meters and recorders		

Required Materials:

Notes and Comments

Prepared By:

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NRC Question Data Sheet

62. Unit 1 conditions are as follows:

- Reactor is shutdown
- Drywell pressure is 12 psig and steady
- Reactor pressure is 430 psig and steady

"1A" RHR is placed in Suppression Pool Spray

- Reactor pressure drops to 280 psig
- Div 1 LPCI INJECTION VALVE DELTA P PERMISSIVE (113A F4) Annunciator is in ALARM

WHICH ONE of the following identifies the response of 1A RHR

- A. Suppression Pool Spray automatically isolates and can be immediately re-established
- B. Suppression Pool Spray automatically isolates and cannot be re-established until "A" LPCI Injection Valve is closed
- C. Suppression Pool Spray remains in service and must be manually secured to prevent pump runout
- D. Suppression Pool Spray remains in service "A" LPCI injection valve remains closed

Answer Key		
Question ID# 062 Both RO/SRO		
Choice	Basis or Justification	
Correct:	C	LPCI Injection valve opens (Delta P ANN) as Suppression Pool Spray was placed in service after LPCI initiation signal was present (LOCA signal) it will not automatically isolate and must be manually secured to prevent pump runout with LPCI Injection valve open
Incorrect	A	This is incorrect as spray does not isolate (LOCA) signal received previously) additionally, it cannot be re-established until LPCI injection valve is closed
Incorrect	B	This is incorrect as spray does not isolate (LOCA signal received previously)
Incorrect	D	This is incorrect as LPCI injection valve will open (Delta P ANN)

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	4.0	3	Y	Y (b)(7)	

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	ARC-MCR-113 F4, T-225 step 4.2.2	
Learning Objective:	LLOT0370.09b	
Knowledge/Ability K/A	230000 A4.02	Importance: RO / SRO 3.8/ 3.6
(Description of K&A, from catalog) Ability to manually operate and/or monitor in the control Room. Spray valves		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

ATTACHMENT: ON-126 Provided

63. Unit 1 plant conditions are as follows:

- 1200 MWe
- 240 MVARs (lagging)
- Generator Hydrogen Pressure is 60 psig and steady

WHICH ONE of the following actions is required?

- A. Reduce Reactive Load to 200 MVARs lagging
- B. Reduce Generator Output below 1125 MWe
- C. Raise Service Water Flow to Stator Coolers
- D. Raise Hydrogen Pressure to 65 psig

Answer Key		
Question ID# 063 Both RO/SRO		
Choice	Basis or Justification	
Correct:	B	Reduction in real load to less than 1125 Mwe will restore the MW /MWe output to a value consistent with 60 psig H ₂ heating curve. Pressure and within the armature
Incorrect:	A	Reducing MVAR will not reduce the MW/MWe output to within the armature heating curve
Incorrect:	C	While stator cooling removes heat from the armature the only way to prevent armature overheating is to operate within the Generator Output capability curve.
Incorrect:	D	H ₂ Pressure would have to be restored to 75 psig in order to restore the MW/MWe output to within the armature heating curve

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.5	4	N	Y (b)(5)	N

Source Documentation		
Source:	<input type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input checked="" type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	ON-126, Attachment 1	
Learning Objective:	LLOT0600.10	
Knowledge/Ability K/A	245000 A1.01	Importance: RO / SRO 2.7 / 2.7
(Description of K&A, from catalog) Ability to predict and/or monitor changes in parameters associated with operating the MAIN TURBINE GENERATOR and AUXILIARY SYSTEMS controls including; Generator Megawatts		

Required Materials:

ON-126

Notes and Comments

Prepared By:

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NRC Question Data Sheet

64. Unit 1 conditions are as follows

- Reactor power is 100%

A failure of 1BY185 occurs

WHICH ONE of the following identifies the expected plant response?

- A. Rod Insert and Withdrawal Block
RPS "A" side $\frac{1}{2}$ SCRAM
- B. Rod Insert and Withdrawal Block
RPS "B" side $\frac{1}{2}$ SCRAM
- C. Rod Withdrawal Block only
RPS "A" side $\frac{1}{2}$ SCRAM
- D. Rod insert Block only
RPS "B" side $\frac{1}{2}$ SCRAM

Answer Key		
Question ID# 064 Both RO/SRO		
Choice	Basis or Justification	
Correct:	B	A loss of 1BY185 results in a ½ SCRAM Loss of power to 2 PRNMS voter units, RBM Rod Blocks occur due to data fault on RPIS INOP
Incorrect	A	This is incorrect as ½ SCRAM occurs on "B" channel
Incorrect	C	This is incorrect as Rod Block occurs on both insert and withdrawal due to data fault on RPIS INOP and ½ SCRAM occurs on "B" channel.
Incorrect	D	This is incorrect as Rod Block occurs on both insert and withdrawal due to data fault on RPIS INOP

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	3.5	3	N	Y (b)(7)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	ANN 108 Reactor D-4, ANN 108 Reactor F-3	
Learning Objective:	LLOT0280.03d	
Knowledge/Ability K/A	215002 K2.03	Importance: RO / SRO 2.8 / 2.9
(Description of K&A, from catalog) Knowledge of electrical power supplies to the APRM channels		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

65. Plant conditions are as follows:

- Control Room Ventilation System is operating in the normal mode

A Control Room Intake High Radiation Isolation Signal is received on the "D" channel only

WHICH ONE of the following is the expected Control Room Ventilation system status?

	<u>CREFAS FAN RUNNING</u>	<u>OUTSIDE AIR ENTERING MCR</u>
A.	"0A	Yes
B.	"0A"	No
C.	"0B"	Yes
D.	"0B"	No

Answer Key		
Question ID# 065 Both RO/SRO		
Choice	Basis or Justification	
Correct:	D	"D" RAD Signal will start the 0B Fan and result in normal CR ventilation isolation. It will not lineup the correct dampers to supply outside air to the MCR (Additional channel isolations needed)
Incorrect:	A	Outside air will not be lined up as correct dampers to supply outside air to MCR are not opened on a "D" only isolation signal also 0A Fan will not start on a "D" RAD signal
Incorrect:	B	0A Fan will not start on a "D" RAD signal
Incorrect:	C	Same text as "A" distractor

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	4.0	4	N	Y (b)(7)	N

Source Documentation					
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank				
Reference(s):	P&ID M-26 sht 5 detail "D", M-78 sht 1				
Learning Objective:	LLOT0450.7a				
Knowledge/Ability K/A	290003 K4.01 <table style="float: right; border: none;"> <tr> <td>Importance:</td> <td>RO / SRO</td> </tr> <tr> <td></td> <td>3.1 / 3.2</td> </tr> </table>	Importance:	RO / SRO		3.1 / 3.2
Importance:	RO / SRO				
	3.1 / 3.2				
(Description of K&A, from catalog) Knowledge of Control Room HVAC: design features and/or interlocks which provide for system initiations/reconfiguration Recirculation System					

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

ATTACHMENT: TSG 3.2 Provided

66. Unit 1 plant conditions are as follows:

- SAMP-1 and SAMP-2 were entered 90 minutes ago
- Drywell pressure and temperature are increasing
- RPV lower head temperature has been upscale for 40 minutes
- RPV level has been downscale for 60 minutes
- No RPV injection has occurred for 90 minutes

In conjunction with the above conditions, WHICH ONE of the following would indicate a core breach?

	<u>RPV Pressure</u>	<u>DW Pressure</u>	<u>DW H₂</u>
A.	1000 psig	20 psig	0.8%
B.	1000 psig	20 psig	7.0%
C.	50 psig	50 psig	0.8%
D.	50 psig	50 psig	7.0%

Answer Key		
Question ID# 066 Both RO/SRO		
Choice		Basis or Justification
Correct:	D	Core breach is indicated by RPV and Drywell pressure equal and hydrogen consistent with fuel damage
Incorrect:	A	Reactor Pressure is too high to indicate a core breach
Incorrect:	B	Reactor pressure is too high to indicate a core breach
Incorrect:	C	Hydrogen is not present in a quantity that would indicate a core breach

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
HIGH	3.5	4	Y	N	Y(b)(5)

Source Documentation		
Source:	<input type="checkbox"/> New Exam Item <input checked="" type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank	
	<input type="checkbox"/> Previous NRC Exam <input checked="" type="checkbox"/> Other Exam Bank (LOR)	
Reference(s):	TSG-3.2	
Learning Objective:	LLOT1562.02	
Knowledge/Ability K/A	2.4.21	Importance: RO / SRO 3.7/ 4.3
(Description of K&A, from catalog) Knowledge of the parameters and logic used to assess the status of safety functions		

Required Materials:

TSG 3.2

Notes and Comments:

Question taken from LOR Bank

Prepared By:

Rick Rhode (610) 718-4085

Limerick Regulatory Exam Author

NRC Question Data Sheet

67. WHICH ONE of the following ALARMS is consistent with the noted conditions?
- A. B REAC ENCL HVAC PCL 1BC208 trouble (004 A3)
HPCI Room temperature 175°F and rising
 - B. DIV 1 DRYWELL HI PRESS (113 E4)
Drywell pressure 0.5 psig and rising
 - C. REACTOR HI PRESSURE TRIP (107 G1)
Reactor pressure 1045 psig and steady
 - D. SCRAM DISCHARGE VOLUME HI LEVEL TRIP (107 C1)
SDV level in AER is 10% and rising

Answer Key		
Question ID# 067 Both RO/SRO		
Choice	Basis or Justification	
Correct:	A	1BC208 panel trouble and HPCI room temp are consistent
Incorrect:	B	Drywell pressure value is below Alarm setpoint
Incorrect:	C	Reactor pressure valve is below the ALARM setpoint
Incorrect:	D	SDV level is below the ALARM setpoint

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	3.5	3	N	N	Y (b)(5)

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank	
	<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank Modified	
Reference(s):	ANNs 004 A3	
Learning Objective:	LLOT1560.02	
Knowledge/Ability K/A	2.4.46	Importance: RO / SRO 3.5 / 3.6
(Description of K&A, from catalog) Ability to verify that the ALARMS are consistent with plant conditions.		

Required Materials:

Notes and Comments

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NRC Question Data Sheet

68. Both units are at 100% when the following alarms:

- LIQUID RADWASTE DISCHARGE HI RADIATION (003 A5)

The Radwaste Operator contacts the MCR and reports the following in alarm in the Radwaste Control Room

LIQUID RADWASTE DISCHARGE RAD MONITOR HIHI/NOP (0A304, C-1)

WHICH ONE of the following flowpaths will automatically isolate based on these conditions?

- A. Equipment Drain Sample Tank discharge to CST
- B. Waste Sludge Tank discharge to External Processing
- C. Floor Drain Sample Tank discharge to Cooling Tower Blowdown Line
- D. Reactor Enclosure flow Drain Sump discharge to Liquid Radwaste

Answer Key		
Question ID# 068 Both RO/SRO		
Choice	Basis or Justification	
Correct:	C	Liquid Radwaste discharge to Cooling Tower Blowdown Line isolates on Hi Hi Rad.
Incorrect	A	Equipment Drain Sample Tank to CST isolation ion EDST Level <u>only</u> (Pump off, discharge valve closes)
Incorrect	B	Waste Sludge Tank to external processing isolate on Low Waste Sludge Tank level <u>only</u> (Pump off, discharge valve closes)
Incorrect	D	The only central functions associated with RE Flow Drain Suppression pumps are – off on Low Level and Lockout in Primary Containment Isolation Hi Rod (Post LOCA Rad Monitor HiHi)

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	3.0	3	N	N	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	ARC-MCR-003 RAD-A-5, ARC-BOP-0AC304-C-1	
Learning Objective:	LLOT-0705.04	
Knowledge/Ability K/A	2.3.11	Importance: RO / SRO 2.7 / 3.2
(Description of K&A, from catalog) Ability to control radiation releases		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

69. An Equipment Operator (EO) is required to enter an area in the Main Condenser with a general area radiation level of 3 Rem/hr in order to investigate an EHC leak.

The EO's radiation history is as follows:

- 1760 mrem cumulative exposure for the current year (TEDE)
- 19 Rem lifetime exposure to this date (TEDE)
- NRC form 4 completed and on file
- No dose extensions have been obtained

The surveillance test will take 45 minutes to complete

WHICH ONE of the following radiation exposure limits, if any, would be exceeded if the EO performs the surveillance test?

- A. No limits are exceeded
- B. Administrative Dose Control Level ONLY
- C. Administrative Dose control Level AND NRC Exposure Limit ONLY
- D. Administrative Dose Control Level, NRC Exposure Limit, AND Emergency Exposure Limit

Answer Key		
Question ID# 069 RO/SRO		
Choice	Basis or Justification	
Correct:	B	3 Rem = 3000 mrem 3000 mrem X .75 = 2250 mrem 2250 mrem + 1760 mrem = 4010 mrem 4010 mrem exceeds Admin Dose Control Level
Incorrect	A	Admin Dose Control Level is exceeded
Incorrect	C	4010 mrem <NRC Limit of 5000 mrem
Incorrect	D	4010 mrem <NRC Limit of 5000 mrem 4010 mrem <Emergency Exposure Limit of 10,000 mrem for protecting station property

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	4	Y	N	Y (b)(4)

Source Documentation	
Source:	<input type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam 2002 <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input checked="" type="checkbox"/> ILT Exam Bank
Reference(s):	RP-AA-203 sects 4.1.1, 4.2, 4.5
Learning Objective:	LLOT1760.04,.05
Knowledge/Ability K/A	2.3.4 Importance: RO / SRO 2.5 / 3.1
(Description of K&A, from catalog) Knowledge of radiation exposure limits and contamination control/including permissible levels in excess of those authorized..	

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

ATTACHMENT: GP-2 Appendix 1 Provided

70. Unit 2 plant conditions are as follows:

- Reactor Startup in progress
- All Group 1 and Group 2 control rods are fully withdrawn
- SRM count rates have doubled twice since the startup began

WHICH ONE of the following describes the control rod notch positions where single notch withdrawal is required?

- A. between 00 and 12
- B. between 00 and 30
- C. between 04 and 30
- D. between 12 and 48

Answer Key		
Question ID# 070 Both RO/SRO		
Choice	Basis or Justification	
Correct:	A	After 75% rod density (Group 1-2 fully withdrawn), control rod withdraw between notch positions 00 to 12 shall be restricted to single notch movements until criticality is achieved
Incorrect	B	See above
Incorrect	C	Single notch requirement between 04 to 30 applies once my SRM count rate reaches four doublings, until the reactor is critical and one Turbine Bypass Valve is partially open
Incorrect	D	See "A"

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	3.0	3	N	N	N

Source Documentation			
Source:	<input type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input checked="" type="checkbox"/> ILT Exam Bank		
Reference(s):	GP-2, Appendix 1, Caution after step 3.2.7		
Learning Objective:	LLOT1530.02		
Knowledge/Ability K/A	2.2.1 <table style="float: right; border: none;"> <tr> <td>Importance: RO / SRO</td> </tr> <tr> <td>3.7 / 3.6</td> </tr> </table>	Importance: RO / SRO	3.7 / 3.6
Importance: RO / SRO			
3.7 / 3.6			
(Description of K&A, from catalog) Ability to perform pre-startup procedures for the facility/including operating those controls associated with plant equipment that could affect reactivity			

Required Materials:

GP-2, Appendix 1

Notes and Comments

Prepared By:

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NRC Question Data Sheet

71. Unit 1 PRO is performing ST-6-051-231-1 "A RHR pump, valve, and Flow Test"

At step 4.3.6, the PRO discovers that HV-51-IF021A is incorrectly identified as HV-51-1F022A

WHICH ONE of the following identifies the status of the Surveillance Test and the action required to correct the error?

- A. Stop the test. Create a Partial Procedure to delete the affected portion of the procedure per AD-LG-101-1002 "Temporary Changes to Approved Documents and Partial Procedure Use" prior to resumption of the ST
- B. Stop the test. Initiate a Temporary Change to correct the component number error per AD-LG-101-1002 "Temporary Changes to Approved Documents and Partial Procedure Use" prior to resumption of the ST.
- C. Continue the test. When it is complete, identify the component number error in an Action Tracking item to permanently revise the procedure per AD-AA-101, "Processing of Procedures and T & RM's".
- D. Continue the test. When it is complete, identify the component number error in an Action Tracking item to permanently revise the procedure per AD-LG-101-1004 "Procedure Performance Improvement System (PPIS)".

NRC Question Data Sheet

72. 1A Reactor Feed Pump needs to be worked at power.

- Only one valve is available for isolation of the pump suction.
- Pump suction pressure is 450 psig.
- Pump suction temperature is 360°F.

WHICH ONE of the following clearance requirements will allow this work to be performed?

- A. A Clearance Technical Evaluation shall be performed
- B. The work shall be performed under an Exceptional Clearance
- C. A Component Walkdown must be performed prior to application
- D. The single isolation valve must be restrained and locked in the closed position

Answer Key		
Question ID# 072 Both RO/SRO		
Choice	Basis or Justification	
Correct:	B	When 2 valve protection is required but not available then the clearance shall be designated as "Exceptional".
Incorrect:	A	A technical review is required only when there are questions about a systems response to the proposed isolation technique (such as logic system response)
Incorrect:	C	A walkdown is suggested in circumstances where clearance information or documentation is missing or in question
Incorrect:	D	A Blocking device (such as a lock, restraint, or gag) is only required for a component that can fail to a position other than the tagged position.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	2.5	3	N	Y (b)(10)	N

Source Documentation	
Source:	<input type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank <input type="checkbox"/> Previous NRC Exam <input checked="" type="checkbox"/> Other Exam Bank (CAT)
Reference(s):	OP-MA-109-101, attachment 4
Learning Objective:	OP-MA-109-101 DB16 objective #2
Knowledge/Ability K/A	2.2.13 Importance: RO / SRO 3.6 / 3.8
(Description of K&A, from catalog) Knowledge of Clearance and Tagging procedures	

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

73. Given the following values from the most recent P-1:

- MFLCPR 0.954
- MFLPD 1.015
- MAPRAT 0.991
- FLLLP 0.967

WHICH ONE of the following identifies the thermal limit(s) that require action, if any?

- A. MFLPD
- B. MFLPD and MAPRAT
- C. MFLPD, MAPRAT, and FLLLP
- D. All values are acceptable; no action is required

Answer Key		
Question ID# 073 Both RO/SRO		
Choice	Basis or Justification	
Correct:	B	MFLPD (>1.0) and MAPRAT (>0.99) require entry into GP-14
Incorrect:	A	MFLPD does require action (see above) but this choice omits MAPRAT, which also requires action
Incorrect:	C	FLLLP does not require action
Incorrect:	D	MFLPD and MAPRAT require action

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
HIGH	2.5	3	N	N	N

Source Documentation		
Source:	<input type="checkbox"/> New Exam Item <input type="checkbox"/> Modified NRC Bank Item <input type="checkbox"/> ILT Exam Bank	
	<input type="checkbox"/> Previous NRC Exam <input checked="" type="checkbox"/> Other Exam Bank (LOR-modified)	
Reference(s):	GP-5, Sect 3.1.1	
Learning Objective:	LLOT0741.04	
Knowledge/Ability K/A	2.1.19	Importance: RO / SRO 3.0 / 3.0
(Description of K&A, from catalog) Ability to use plant computer to obtain and evaluate parametric information on system or component status.		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

74. ST-6-011-232-0, "B" LOOP ESW PUMP VALVE and FLOW TEST has been completed.

- Restoration is in progress and Unit Cooler Throttle Valve 11-2023B must be returned to it's throttled position

WHICH ONE of the following verification techniques shall be used to restore this valve?

- A. Peer Check.
- B. First Check
- C. Concurrent Verification
- D. Independent Verification

Answer Key		
Question ID# 074 Both RO/SRO		
Choice	Basis or Justification	
Correct:	C	Valve throttling is an example when concurrent verification is appropriate IAW HV-AA-101, step 4.3.3.1
Incorrect:	A	Peer check is used to verify manipulation of components however in peer check, audio and/or visual cues are permitted in identifying the component. This would not be permitted in this circumstance.
Incorrect:	B	First check verifies the first component manipulation in a specific task. It would not be used for restoration.
Incorrect:	D	In Independent verification, the verifying party does not witness the manipulation. This does not work for a throttle valve because you can not visually verify it is in the correct throttle position without touching the component or witnessing the operation.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	2.0	2	N	Y (b)(10)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	HU-AA-101, step 4.3.3.1	
Learning Objective:	LLOT1574.05d	
Knowledge/Ability K/A	2.1.29	Importance: RO / SRO 3.4 / 3.3
(Description of K&A, from catalog) Knowledge of how to conduct and verify valve lineups.		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

75. Given the following conditions:

- Both units are operating at full power
- The entire shift attended the morning Shift Turnover Meeting given by the Control Room Supervisor (CRS) and Shift Manager (SM)

At 1100, the 3rd RO relieves the Unit 2 RO for lunch

The Unit 2 RO will be eating lunch in the Main Control Room (MCR) Lunchroom

WHICH ONE of the following identifies the required MINIMUM TURNOVER ACTIVITY, and MAXIMUM DURATION of the mid shift turnover for the given conditions?

- A. Read the MCR logs through the last previous day on shift
The relief duration shall be a MAXIMUM of 30 minutes.
- B. Read the MCR logs through the last previous day on shift
The relief duration shall be a MAXIMUM of 60 minutes
- C. Review the Shift Turnover Checklist and update plant status
The relief duration shall be a MAXIMUM of 30 minutes.
- D. Review the Shift Turnover Checklist and get an updated plant status.
The relief duration shall be a MAXIMUM of 60 minutes

Answer Key		
Question ID# 075 Both RO/SRO		
Choice	Basis or Justification	
Correct:	D	Mid-shift turnover of less than 1 hour consists of a review of the Shift Turnover checklist and update of plant status, provided the original watch stander remains in the Main Control Room area
Incorrect:	A	Reading the MCR logs through the last previous day on shift applies to a full shift turnover, short turnover duration is 60 minutes, not 30.
Incorrect:	B	Duration is correct, turnover criteria described applies to full turnover, not short duration
Incorrect:	D	Turnover criteria is correct, short turnover duration is 60 minutes, not 30

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	2.5	3	N	Y (b)(10)	N

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	OP-AA-112-101, Sect 4.1.7	
Learning Objective:	LLOT1574.24	
Knowledge/Ability K/A	2.1.3	Importance: RO / SRO 3.0 / 3.4
(Description of K&A, from catalog) Knowledge of Shift Turnover practices		

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

ATTACHMENT: S06.1.H, Partial Provided

76 Unit 1 Plant conditions are as follows:

- Reactor power is 100%
- Reactor level is 35" and steady

"1A" Reactor Feed Pump Primary and Secondary Feed Flow Transmitters fail downscale resulting in the following:

- FEEDWATER TROUBLE (107 D5) Annunciator is in alarm
- Feedwater Operator Station, Alarm Identity 1XX-FW302.1TFFE is displayed

WHICH ONE of the following identifies the immediate impact on Feedwater Level Control and capability of Feedwater to control level during a Reactor SCRAM?

- A. Will continue to control level automatically
Will automatically control level post SCRAM
- B. Will continue to control level automatically
RO will need to manually control feedwater post SCRAM
- C. Will not control level automatically
Will automatically control level post SCRAM
- D. Will not control level automatically
RO will need to manually control level post SCRAM

Answer Key		
Question ID# 076 SRO Only		
Choice	Basis or Justification	
Correct:	B	With 2 feed flow transmitters failed, Feedwater will still control level <u>But</u> during a SCRAM post SCRAM profile will not activate this will require operator to take manual control
Incorrect:	A	This is incorrect as post SCRAM level control will require operator action
Incorrect	C	This is incorrect as feedwater level will automatically control level and post SCRAM will require operator action
Incorrect	D	Thi is incorrect as feedwater will control level manually

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	4	Y	Y (b)(5)	Y (b)(5)

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	S06.1.H U/1, Alarm Identity 1XX-FW302.1TFFE S06.1.D U/1 Appendix 1	
Learning Objective:	LLOT0550.10d	
Knowledge/Ability K/A	259002 A2.02	Importance: RO / SRO 3.3 / 3.4
(Description of K&A, from catalog) Ability to predict the impact of the following on Reactor water level control and based on those predictions use procedures to correct, control or mitigate the consequence of those abnormal conditions or operations: Loss of any number of Reactor feedwater flow inputs.		

Required Materials:

Partial copy of S06.1.H (exclude pages regarding level transmitters)

Notes and Comments:

Prepared By:
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NRC Question Data Sheet

77 Unit 1 plant conditions are as follows:

- Reactor power is 10%
- Reactor level is -200" and lowering
- All MSIVs are closed
- Suppression Pool temperature is 120°F and rising
- A Blowdown is in progress with 3 SRVs open
- Reactor pressure is 650 psig and lowering

The Floor Supervisor report T-251 is complete for Unit 1

WHICH ONE of the following identifies the required operator action?

- A. Immediately inject with HPCI
Restore level to -60" to -100"
- B. Immediately inject with HPCI
Restore level to -161" to -186"
- C. Inject with HPCI when Reactor pressure is below 400 psig
Restore level to -60" to -100"
- D. Inject with HPCI when Reactor pressure is below 400 psig
Restore level to -161" to -186"

Answer Key		
Question ID# 077 SRO Only		
Choice	Basis or Justification	
Correct:	D	As Blowdown is already in progress, injection cannot occur until MIN ALT FLOODING PRESSUE is met. With only 3 SRVs open that occurs at 400 psig. Level band is -161" to -186" as Supp pool temp is greater than 110 degrees
Incorrect:	A	Injecting immediately is incorrect as Blowdown has already started. -60" to -100" is incorrect as Supp pool temp is greater than 110 degrees
Incorrect	B	Injecting immediately is incorrect as Blowdown has already started.
Incorrect	C	-60" to -100" is incorrect as Supp pool temp is greater than 110 degrees

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	4.0	4	Y	Y (b)(10)	Y (b)(5)

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	T-117 BASES, Step LQ-21	
Learning Objective:	LLOT1560.05	
Knowledge/Ability K/A	295037 2.1.20	Importance: RO / SRO 4.3 / 4.2
(Description of K&A, from catalog) SCRAM condition present and Reactor power above APRM downscale or unknown: Ability to execute procedural steps		

Required Materials:

T-117

Notes and Comments

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NRC Question Data Sheet

ATTACHMENT: SAMP-1, Sht 1 Provided

78 Unit 1 plant conditions are as follows:

- SAMP-1 and SAMP-2 have been entered
- The Reactor was shutdown 20 minutes ago
- Reactor Level is unknown
- Reactor pressure is 800 psig and steady
- RCIC is injecting at 600 GPM
- ALL other high pressure injection systems are unavailable
- Suppression pool level is 25'
- Suppression pool pressure is 24 psig

WHICH ONE of the following SAMP-1 sheets must be executed?

- A. Sheet 4
- B. Sheet 5
- C. Sheet 6
- D. Sheet 7

Answer Key		
Question ID# 078 SRO Only		
Choice	Basis or Justification	
Correct:	D	Sht 7 is required as injection is below MDRIR, and conditions are unsafe on PSP
Incorrect:	A	Sht 4 is incorrect as level is unknown
Incorrect	B	Sht 5 is incorrect as RPV injection is below MDRIR
Incorrect	C	Sht 6 is incorrect as conditions are unsafe on PSP

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	4.0	4	Y	Y (b)(10)	Y (b)(5)

Source Documentation		
Source:	<input type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank	
	<input type="checkbox"/> Previous NRC Exam <input checked="" type="checkbox"/> Other Exam Bank (LOR)	
Reference(s):	SAMP 1, Sheet 1	
Learning Objective:	LLOT1562.6	
Knowledge/Ability K/A	295031 2.4.6	Importance: RO / SRO 3.1 / 4.0
(Description of K&A, from catalog) Reactor Low Water Level Knowledge system based EOP mitigation strategies		

Required Materials:

SAMP1 Sht 1

Notes and Comments

Prepared By:

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NRC Question Data Sheet

ATTACHMENT: OT-112, Partial Provided

79 Unit 1 Reactor Power is 100%

The following transient occurs with the indicated plant conditions:

- 1B Recirc Pump trips
- 1A Recirc Pump speed is 65%
- ALL four OPRM Operator Display Assemblies indicate Reactor power is 58.%
- XR-042-1R613 indicates Core Plate differential pressure is 1.3 psid
- XR-042-1R613 indicates Core Flow is 42.00E6#

WHICH ONE of the following is the required operator action?

- A. Insert control rods until the Restricted Region of the Power/Flow Map is exited
- B. Immediately Scram the Reactor
- C. Restart 1B Recirc pump, and raise core flow with 1B Recirc pump
- D. Reduce Recirc pump speed to less than 60% and manually Scram the reactor.

Answer Key		
Question ID# 079 SRO Only		
Choice	Basis or Justification	
Correct:	A	Because the speed of the operating Recirc Pump is >60%, the Core Flow and Reactor power indications provided should be used to determine operating point. With the given information, the plant is in the Restricted Region, and the correct action is an immediate exit by the insertion of control rods or the raising of Recirculation flow.
Incorrect:	B	Immediately scram the reactor is not correct because the operating point is not in the Exclusion Region, therefore, a reactor scram is not required.
Incorrect	C	Restart 1B Recirc Pump and raise core flow with 1B recirc pump is wrong as restarting a pump to raise flow is not allowed in OT-112
Incorrect	D	Reduce Recirc pump speed to less than 60% and manually scram the reactor is not correct as reducing speed drive the reactor further into the restricted region.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	5	N	Y (b)(10)	Y (b)(5)

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank	
Reference(s):	OT-112, Step 3.7	
Learning Objective:	LLOT0040.07g	
Knowledge/Ability K/A	295001 AA2.01	Importance: RO / SRO 3.5 / 3.8
(Description of K&A, from catalog) Ability to determine and/or interpret the following as they apply to a partial or complete loss of forced core flow circulation: Power/Flow map		

Required Materials:

OT-112, Power to Flow Maps Attachment 1 & 2 only

Notes and Comments

Prepared By:
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NRC Question Data Sheet

ATTACHMENT: S61.0.A Provided

80 Unit 1 plant conditions are as follows:

- A steam leak exists in the Drywell
- Drywell Pressure is .7 psig and steady
- Drywell Temperature is 134 degrees F and steady

The following alarms/indicators have been received

- Drywell Equipment Drain/Floor Drain Sump Leakage Hi Flow (112 C-5)
- Drywell Equipment Drain Hi Total Flow (112 J-1)
- Drywell Floor Drain Tank Hi/Lo Level (112 K-2)
- 00C424 Unit 1 DW Equipment Drain Tank Leak Rate Change Exceeding 2 GPM red light lit

WHICH ONE of the following Annunciators/Indications require the highest priority?

- A. Drywell Equipment Drain/Floor Drain Sump Leakage Hi Flow (112 C-5)
- B. Drywell Equipment Drain/floor Drain Sump Leakage Hi Flow (112 C-5) with Unit One Drywell Equipment Drain Hi Total Flow (112 J-1)
- C. Drywell Equipment Drain Hi-Total Flow (112 J-1)
- D. Drywell Floor Drain Tank Hi/Lo Level (112 K-2)

Answer Key		
Question ID# 080 SRO Only		
Choice	Basis or Justification	
Correct:	D	Floor drain tank Hi/Lo level is priority 2 which is higher than any distractor, This requires use of S61.0A to determine
Incorrect:	A	Leakage Hi Flow and Leak rate change exceeding 2 GPM is priority 3
Incorrect	B	Leakage Hi Flow and Drywell equipment total flow is priority 4
Incorrect	C	Drywell equipment drain Hi Total flow is priority 4

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	4.0	4	N	N	N

Source Documentation		
Source:	<input type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input checked="" type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	S61.0A step 4.20/4.22	
Learning Objective:	LLOT0135.02	
Knowledge/Ability K/A	295024 2.1.23	Importance: RO / SRO 3.9 / 4.0
(Description of K&A, from catalog) High Drywell pressure ability to perform specify system an integrated plant procedures during different modes of plant operations.		

Required Materials:

S61.0.A

Notes and Comments:

Question from LOR Bank

Prepared By:

Rick Rhode (610) 718-4085

Limerick Regulatory Exam Author

NRC Question Data Sheet

81 Unit 2 conditions are as follows:

- "2B" loop of SDC is in service
- SDC flowrate is 9000 gpm
- RPV pressure is 25 psig
- "2B" RHR Heat Exchanger inlet temperature on DAS is 145°F
- "2B" RHR Heat Exchanger outlet temperature on 20C601 T1-51-227B is 125°F

"2B" Recirculation Pump Suction and Discharge Valves are discovered to be OPEN.

WHICH ONE of the following represents actual reactor coolant temperature based on plant conditions?

- A. 125°F
- B. 145°F
- C. 220°F
- D. 268°F

Answer Key		
Question ID# 081 SRO Only		
Choice	Basis or Justification	
Correct:	D	Answer requires operator to determine that shutdown cooling bypass leakage path exists, and use STM tables to interpret Reactor pressure to determine coolant temperature
Incorrect:	A	This is incorrect as RHR and heat exchanger outlet temperature cannot be used as Recirc pump valves open are creating bypass leakage
Incorrect	B	This is incorrect as it does not match Reactor pressure valve on STM table
Incorrect	C	This is incorrect as it does not match Reactor pressure valve on STM table

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	4.0	4	Y	Y (b)(10)	Y (b) (5)

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank	
	<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank	
Reference(s):	S51.8 B step 3.13	
Learning Objective:	LLOT0370.13	
Knowledge/Ability K/A	295021 AA2.06	Importance: RO / SRO 3.2 / 3.3
(Description of K&A, from catalog) Ability to determine and/or interpret the following as they apply to a loss of shutdown cooling: Reactor Pressure		

Required Materials:

Steam Tables

Notes and Comments:

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NRC Question Data Sheet

ATTACHMENTS: ANN 106, D2 and GP-5, Partial Provided

82 Unit 1 conditions are as follows:

- Reactor Power is 50%
- BESSI System is not in operation
- LP Turbine Inlet Pressure is 100 psig
- LP Turbine Back Pressure is 7.1 in Hg abs

The following annunciators are received

- TURBINE HIGH BACK PRESSURE (106 D2)
- 1A CONDENSOR LO VACUUM (104 E-5)

WHICH ONE identifies the required operator action

- A. Immediately Perform A GP-4 shutdown
- B. Reduce reactor power to place turbine in limited operation region
- C. Reduce reactor power to place turbine in unlimited operation region
- D. Immediately lower turbine inlet pressure with pressure set

Answer Key		
Question ID# 082 SRO Only		
Choice	Basis or Justification	
Correct:	C	Student must plot values on GP-5 attachment 7 to determine that turbine is operating in the limited region. And determine corrective action per ARC 106 D2
Incorrect:	A	An immediate GP-4 is not required based on valves
Incorrect	B	This is incorrect as valves due not place turbine outside of limited region. Additionally operation above limited region would result in a turbine trip
Incorrect	D	Lower turbine inlet pressure would not take turbine to unlimited region

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	3	Y	Y (b) (10)	Y (b) (5)

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	ANN 102 D-2, GP-5 Attachment 7	
Learning Objective:	LLOT0500.06a	
Knowledge/Ability K/A	295002 AA2.01	Importance: RO / SRO 2.9 / 3.1
(Description of K&A, from catalog) Ability to determine and/or interpret condenser vacuum/absolute pressure as it applies to a loss of main condenser vacuum		

Required Materials:

ANN 106 D-2 and GP-5 Attachment 7

Notes and Comments

Prepared By:

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NRC Question Data Sheet

83 Unit 1 conditions are as follows

- Reactor Power is 100%
- No testing which adds heat to the Suppression Pool is occurring

WHICH ONE of the following identifies the Technical Specification Limit for Suppression Pool Temperature and the bases for the limit?

- A. 105°F
Provides sufficient temperature margin for SBLC injection during an ATWS
- B. 105°F
Bulk water temperature following a blowdown maintain NPSH for RHR and core Spray pumps
- C. 95°F
Provide sufficient temperature margin for SBLC injection during an ATWS
- D. 95°F
Bulk water temperature following a blowdown maintains NPSH for RHR and Core Spray pumps

Answer Key		
Question ID# 083 SRO Only		
Choice	Basis or Justification	
Correct:	D	Tech Spec 3.6.2.1 limits suppression pool max temperature to 95°F w/no testing that adds heat to the suppression pool and maintain water temperature and suppression chamber conditions following a blowdown to support ECCS NPSH
Incorrect:	A	105°F is incorrect as no testing is in progress that adds heat to the suppression pool
Incorrect	B	105°F is incorrect as no testing is in progress that adds heat to the suppression pool
Incorrect	C	Is incorrect as temperature limit is not based on providing sufficient temperature margin for SBLC injection during an ATWS

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	2.0	3	N	N	Y (b)(2)

Source Documentation	
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank
Reference(s):	Tech Spec basis 3.6.2.1
Learning Objective:	LLOT0130.04f
Knowledge/Ability K/A	295013 2.2.25 Importance: RO / SRO 4.0 / 4.0
(Description of K&A, from catalog) Knowledge of bases in Tech Specs for limiting conditions for operation and safety limits: High Suppression Pool Temperature	

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

84 Given the following plant conditions:

- A Loss Of Offsite Power and failure of all diesels to start, has occurred

WHICH ONE of the following identifies the method used to verify that a successful Reactor Scram has occurred?

- A. APRM's indicate 0%
- B. PMS reads "SCRAM-ALL RODS IN"
- C. Green "IN" lights is Lit on the Full Core Display
- D. RPS "A" and "B" channel indicating lights are NOT Lit

Answer Key		
Question ID# 084 SRO Only		
Choice	Basis or Justification	
Correct:	A	E-1 directs APRM's be referenced to ensure SCRAM
Incorrect:	B	This would normally indicate a successful SCRAM but PMS will lose power in a station blackout
Incorrect	C	These lights will be out indicating RPS de-energized but that does not ensure that rods actually went in
Incorrect	D	This would normally indicate a successful scram but the Full Core Display will lose power in a station blackout

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	2.0	3	Y	Y (b)(10)	Y (b)(5)

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	E-1	
Learning Objective:	LLOT0275.13	
Knowledge/Ability K/A	295003 AA2.02	Importance: RO / SRO 4.2 / 4.3
(Description of K&A, from catalog) Ability to determine or interpret the following as they apply to a Partial or Complete Loss of AC Power. .Reactor power/pressure/and level		

Required Materials:

Notes and Comments

Prepared By:

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Limerick Regulatory Exam Author

NRC Question Data Sheet

ATTACHMENT: T-291 Provided

85 Unit 1 plant conditions are as follows:

- A steam leak occurred in the Reactor enclosure
- T-290 readings are reported as follows:
- TE41-1N010A, B,C and D (Outboard MSIV Room) all indicate 190°F
- TE41-1N014 (Outboard MSIV Room) indicates 195°F
- "1B" Wide Range level recorder (XR-42-1R623B) is indicating –130"
- Fuel Zone Level indicator (LI-42-1R610) is indicating –160"

WHICH ONE of the following statement below describes the effect on reactor water level indication?

	<u>XR-42-1R623B</u>	<u>LI-42-1R610</u>
A.	Valid	Not Valid
B.	Valid	Valid
C.	Not Valid	Valid
D.	Not Valid	Not Valid

Answer Key		
Question ID# 085 SRO Only		
Choice	Basis or Justification	
Correct:	C	Indicators are valid if temp is below MRT, and level is above MIL. As temp is above MRT only level distinguishes answer. MIL for 1R623B is -124" therefore it is invalid. MIL for 1R610 is -303" therefore it is valid
Incorrect:	A	1R623B is not valid as level is below MIL (-124")
Incorrect	B	1R623B is not valid as level is below MIL (-124")
Incorrect	D	1R610 is valid as level is above MIL (-303")

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	3	Y	Y (b)(10)	Y (b)(5)

Source Documentation	
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank
Reference(s):	T-291 Attachment 2
Learning Objective:	LLOT1561.03
Knowledge/Ability K/A	295032 EA2.02 Importance: RO / SRO 3.3 / 3.5
(Description of K&A, from catalog) Ability to determine and/or interpret equipment operability as it applies to high secondary containment area temperature	

Required Materials:

T-291

Notes and Comments

Prepared By:

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NRC Question Data Sheet

86 Unit 1 conditions are as follows:

- A Startup is in progress following a refueling outage
- Reactor Power at 18%
- Main Turbine is synched to the grid

House Loads are being transferred to the Unit Aux Buses with the lineup as follows:

- 11 Bus Unit Aux Feeder BKR is closed
- 10/11 Feeder BKR is open
- 12 Bus Unit Aux Feeder BKR is open
- 20/12 Feeder BKR is closed

A Generator Protection Relay failure causes a Generator Lockout and Main Turbine trip

WHICH ONE of the following describes the status of the startup Bus Breakers and Recirc Pump MG set Drive Motor Breakers following the Turbine Trip?

	<u>10/11 BKR</u>	<u>20/12 BKR</u>	<u>"1A" MG DM BKR</u>	<u>"1B" MG DM BKR</u>
A.	CLOSED	CLOSED	OPEN	OPEN
B.	OPEN	CLOSED	OPEN	CLOSED
C.	CLOSED	CLOSED	OPEN	CLOSED
D.	CLOSED	CLOSED	CLOSED	CLOSED

Answer Key		
Question ID# 086 SRO Only		
Choice	Basis or Justification	
Correct:	C	The 11 Bus fast transfers on the Turbine trip, the 1A Recirc pump MG set Drive Motor trips on the generator lockout because the 11 Bus was powered from the Unit Aux transformer at the time.
Incorrect:	A	This would have been the lineup if the transfer of House loads had been complete and the 12 Bus was powered from the Unit aux transformer at the time of the Turbine Trip
Incorrect	B	This lineup supposes that the fast transfer of the 11 Bus did not take place therefore the 1A MG set DM BKR tripped. There is no information to support this scenario
Incorrect	D	This lineup supposes that the 1A MG set drive motor breaker would stay closed during the fast transfer of the 11 Bus. This is not true.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	3	Y	Y (b)(10)	Y (b)(5)

Source Documentation	
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank
Reference(s):	E-140, E-145, E-151
Learning Objective:	LLOT0640.03b
Knowledge/Ability K/A	295005 AA2.08 Importance: RO / SRO 3.2 / 3.3
(Description of K&A, from catalog) Ability to determine and/or interpret the following as they apply to MAIN TURBINE GENERATOR TRIP...Electrical distribution status	

REQUIRED MATERIALS:

Notes and Comments

Prepared By:

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Limerick Regulatory Exam Author

NRC Question Data Sheet

87 Unit 1 Plant conditions are as follows

- Reactor Power is 100%
- I&C reports that "1C" Main Steam Line (MSL) High Flow Transmitters PDT-41-1N088B and PDT-41-IN088C have failed their Surveillance Test
- All other MSL Flow Transmitters are OPERABLE

WHICH ONE of the following describes the status of the MSIV Isolation logic and the required action?

- A. "1C" MSL MSIV isolation logic is INOPERABLE
Place ONE Channel in the tripped condition within 6 hours.
- B. Div 1 MSIV isolation logic is INOPERABLE
Place ONE Channel tripped condition within 6 hours
- C. Div 1 and 2 MSIV isolation logic are INOPERABLE
SCRAM Unit one, and place BOTH Channels the tripped condition within 1 hour
- D. Div 1 and 2 MSIV isolation logic are INOPERABLE
Place ONE Channel in the tripped condition within 1 hour.

Answer Key		
Question ID# 087 SRO Only		
Choice	Basis or Justification	
Correct:	D	88C is Div 1. 88B is Div 2. therefore there is only one Div 1 and Div 2 instrument operable for the "1C" MSL. Less than required number for 2 trip systems place one in the tripped condition within 1 hour.
Incorrect:	A	A common misconception is that a streamline is a trip system. If only one trip system is affected, you have 6 hours until having to place it in the tripped condition
Incorrect	B	If only one trip system were affected, this would be correct
Incorrect	C	The number of affected systems per line is correct however placing both in the tripped condition would cause a group 1 isolation. Tech Spec does not require this..

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	5	N	Y (b)(5)	Y (b)(2)

Source Documentation	
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank
Reference(s):	Unit 1 Tech Specs, LCO 3.3.2
Learning Objective:	LLOT0180.10C
Knowledge/Ability K/A	223002 A2.08 Importance: RO / SRO 2.7 / 3.1
(Description of K&A, from catalog) Ability to predict the impact of the following on NSSSS and based on those predictions, use procedures to correct, control, mitigate the consequences of those abnormal conditions or operations... Surveillance testing.	

REQUIRED MATERIALS:

Notes and Comments

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NRC Question Data Sheet

88 Unit 2 is in OPCON 5 and all fuel movements have been completed and core verification has been performed. Plant status is as follows:

- The 201 Safeguards Transformer has been de-energized
- The 101 Safeguards Transformer is supplying all 4KV uses
- D21 and D23 Diesel Generators are INOPERABLE for planned maintenance
- Surveillance testing has just been completed on D24 Diesel Generator
- Control rod stroke time testing is in progress in the MCR
- The Steam Separator is being seated in the Dryer/Separator pit

The inside EO reports that D24 Fuel Oil Transfer pump has seized

WHICH ONE of the following describes the most limiting action required by Tech Specs?

- A. Stop control rod stroke time testing immediately
- B. Stop movement of the steam separator immediately
- C. Demonstrate the operability of D22 Diesel Generator within 1 hour
- D. Restore the 201 Safeguard Transformer to operability within 72 hours.

Answer Key		
Question ID# 088 SRO Only		
Choice	Basis or Justification	
Correct:	A	Tech Spec 3.8.1.2 requires suspension of Core ALTERATIONS with the AC Powr sources inoperable in OPCON 5. Control rod movement with fuel in the vessel must be stopped.
Incorrect:	B	Movement of the Steam Separator does not qualify as a core alteration
Incorrect	C	Would be required if in OPCON 1,2 or 3. Not required in OPCON 5
Incorrect	D	Would be required if Unit 2 were in OPCON 1,2, or 3 or if a Unit 1 D/G were INOP

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	4.0	4	Y	N	Y (b)(2)

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	Tech Spec 3.8.1.2	
Learning Objective:	LLOT0670.13	
Knowledge/Ability K/A	264000 2.2.22	Importance: RO / SRO 4.0 / 4.0
(Description of K&A, from catalog) Knowledge of limiting conditions for operational and safety limits.		

REQUIRED MATERIALS:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

89 Unit 2 conditions are as follows:

- An inadvertent Group 1 isolation resulted in MSIV closure and Unit Scram
- RPV level is 35" being maintained by RCIC in Auto
- RPV pressure is 900 psig and lowering slowly

The RCIC flow controller fails in AUTO

- Controller is switched to MANUAL and adjusted so that level is +35" and steady.
- No other operator action is taken.

WHICH ONE of the following describes the expected RPV level trend over the next 30 minutes, and the required operator action?

- A. RPV level will go down
RCIC flow controller output must be raised to increase flow demand signal
- B. RPV level will go up
RCIC flow controller output must be lowered to reduce flow demand signal
- C. RPV level will go down
RCIC flow controller output must be raised to increase turbine speed
- D. RPV level will go up
RCIC flow controller output must be lowered to reduce turbine speed

Answer Key		
Question ID# 089 SRO Only		
Choice	Basis or Justification	
Correct:	D	With the RCIC flow controller in MANUAL, it is maintaining constant speed. With the turbine at constant speed, as, RPV pressure goes down, injection will rise and RPV level will rise. The controller must be dialed down to reduce turbine speed.
Incorrect:	A	RPV level will go up not down. The RCIC flow controller maintains a flow demand in AUTO, not MANUAL
Incorrect	B	The RCIC flow controller maintains a flow demand in AUTO not MANUAL
Incorrect	C	RPV level will go up not down as RPV pressure decreases

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	3	Y	Y (b)(5)	Y (b)(5)

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	S49.7.A	
Learning Objective:	LLOT0380.08	
Knowledge/Ability K/A	217000 A2.10	Importance: RO / SRO 3.1 / 3.1
(Description of K&A, from catalog) Ability to predict the impact of the following on the RCIC system and, based on those predictions, use procedures to correct, control or mitigate the consequences of those abnormal conditions or operations: Turbine Control System		

REQUIRED MATERIALS:

Notes and Comments

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NRC Question Data Sheet

ATTACHMENT: OT-102, Partial Provided

90 Unit 1 Plant conditions are as follows:

- Reactor Power is 100%
- A Turbine Control Valve Solenoid failure results in the closure of the #2 Turbine Control Valve.

WHICH ONE of the following identifies the impact on plant operations and required operator actions?

- A. Reactor Pressure remains constant
Reduce reactor Power to less than 75%
- B. Reactor Pressure remains constant
Ensure reactor power remains above 90%
- C. Reactor Pressure rises
Reduce reactor power to less than 90%
- D. Reactor Pressure rises
Reduce reactor power to less than 25%

Answer Key		
Question ID# 090 SRO Only		
Choice	Basis or Justification	
Correct:	C	Reactor pressure will increase slightly requiring entry into OT-102. OT-102 requires power to be lowered to below 90% on a control valve closure.
Incorrect:	A	This is incorrect as Reactor pressure will rise and action to lower power requires a reduction to 90% (75% is for an MSIV closure)
Incorrect	B	Reactor pressure remains constant is incorrect and maintaining power greater than 90% is not correct (this would be correct for a regulator failure)
Incorrect	D	Reducing Power to below 25% is incorrect

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	4	N	Y (b)(5)	Y (b)(5)

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank	
	<input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank	
Reference(s):	OT-102, step 3.5 T.S. 3.2.3.b	
Learning Objective:	LLOT0590.02a	
Knowledge/Ability K/A	241000 A2.04	Importance: RO / SRO 3.7 / 3.8
(Description of K&A, from catalog) Ability to predict the impact of the following on the Reactor/Turbine Pressure Regulating System; and based on those predictions, use procedures to correct, control or mitigate the consequences of those abnormal conditions or operations: Failed open/closed control valve		

Required Materials:

OT-102, remove last page

Notes and Comments

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NRC Question Data Sheet

91 Unit 1 Plant conditions are as follows:

- 95% power
- "1C" RHR pump has been INOP for 19 days
- HPCI speed cannot be raised above 2250 RPM during a full flow test

WHICH ONE of the following describes the required Tech Spec actions?

- A. Be in STARTUP in 6 hours, HOT SHUTDOWN in the following 6 hours and COLD SHUTDOWN in the subsequent 24 hours
- B. Restore the "1C" RHR Pump to operable within the next 11 days or be in HOT SHUTDOWN within the next 12 hours and in COLD SHUTDOWN in the next 24 hours
- C. Restore the "1C" RHR pump or the HPCI system to operable within 8 hours or be in HOT SHUTDOWN in the next 12 hours and in COLD SHUTDOWN in the next 12 hours
- D. Restore the HPCI system to operable within 14 days or be in at least HOT SHUTDOWN within the next 12 hours and reduce reactor steam dome pressure to ≤ 200 psig within the following 24

Answer Key		
Question ID# 091 SRO Only		
Choice	Basis or Justification	
Correct:	C	Tech Spec 3.5.1 – with HPCI system INOP and one ECCS Subsystem INOP – Restore one of them to OPERABLE within the next 8 hours
Incorrect:	A	This is a Tech Spec 3.0.3 action applicable only when LLCO's cannot be met
Incorrect	B	This would be the correct action if HPCI were operable.
Incorrect	D	This would be correct if "1C" RHR were operable with HPCI INOP

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	3.0	4	Y	N	Y (b)(2)(5)

Source Documentation		
Source:	<input type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input checked="" type="checkbox"/> Other Exam Bank (LOR modified) <input type="checkbox"/> ILT Exam Bank	
Reference(s):	T. S. 3.5.1.b and 3.5.1.c.2	
Learning Objective:	LLOT0340.16	
Knowledge/Ability K/A	206000 2.1.12	Importance: RO / SRO 2.9 / 4.0
(Description of K&A, from catalog) Ability to apply technical specifications for a system		

Required Materials:

Notes and Comments

Prepared By:

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NRC Question Data Sheet

ATTACHMENT: EAL Matrix Provided

92 LGS Units 1 and 2 are at 100%

- A cold weather front is passing through the Pottstown area accompanied by severe thunderstorms and hail. A tornado watch is in effect, with wind gusts currently at 70 MPH
- The outside EO reports that a Tornado has damaged the Kemper Building.

WHICH ONE of the following is the correct event classification and EAL Threshold value per the LGS Radiological Emergency Plan Annex for the given conditions?

- A. HU5 – Threshold 2
- B. HU5 – Threshold 3
- C. HA5 – Threshold 2
- D. HA5 – Threshold 3

Answer Key		
Question ID# 092 SRO Only		
Choice	Basis or Justification	
Correct:	A	Report of a Tornado Strike in the protected area is a HU5 Threshold 2
Incorrect:	B	This is incorrect as wind speed must be greater than 75 mph for 15 minutes for HU5, Threshold 3
Incorrect	C	This is incorrect as damage to vital structure has not occurred
Incorrect	D	This is incorrect as damage to vital structure has not occurred

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	3.0	3	Y	Y (b) 11	Y (b)(5)

Source Documentation		
Source:	<input type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank	
	<input type="checkbox"/> Previous NRC Exam <input checked="" type="checkbox"/> Other Exam Bank (LOR modified)	
Reference(s):	Emergency Action Level Matrix (Table 3-1)	
Learning Objective:	Emergency Preparedness module G-16, Objective 8	
Knowledge/Ability K/A	2.4.41	Importance: RO / SRO 2.3 / 4.1
(Description of K&A, from catalog) Knowledge of the emergency action level thresholds and classifications.		

Required Materials:

EAL Matrix

Notes and Comments

Prepared By:
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NRC Question Data Sheet

ATTACHMENT: T-228, Partial Provided

93 Unit 1 plant conditions are as follows:

- A LOCA occurred 24 hours ago
- T-101 and T-102 have been implemented
- T-102 has directed inerting/purging the Drywell
- Suppression Pool level is 24 Feet
- Drywell Pressure 2 psig

The following containment parameters exists:

- DW H₂ 5% and increasing
- DW O₂ 4% and increasing
- SP H₂ 3% and increasing
- SP O₂ 2% and increasing

WHICH ONE of the following identifies the preferred method of Drywell inerting/purging, if any?

- A. Drywell purge with air
- B. Drywell inerting with nitrogen (Low Flow Mode)
- C. Drywell inerting with nitrogen (High Flow Mode)
- D. Drywell purging is not required until Drywell O₂ exceeds 5%

Answer Key		
Question ID# 093 SRO Only		
Choice	Basis or Justification	
Correct:	B	Per T-228, Drywell inerting with Low Flow and High Flow are allowed given the conditions. Low Flow is the preferred flowpath per the note in section 4.3 and Table 1. per T-228
Incorrect:	A	Not allowed due to high drywell pressure (>.75 psig)
Incorrect	C	Allowed but not preferred per the note in section 4.3 and Table 1 of T-228
Incorrect	D	Does not apply to the given conditions

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	4	Y	N	Y (b) (4)

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	T-228 section 4.3, 4.5 and 4.6	
Learning Objective:	LLOT1561.03	
Knowledge/Ability K/A	2.3.9	Importance: RO / SRO 2.5 / 3.4
(Description of K&A, from catalog) Knowledge of the process for performing a containment purge		

Required Materials:

T-228 Assessment Table, and section first pages

Notes and Comments

Prepared By:
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NRC Question Data Sheet

94 Unit 1 plant conditions are as follows:

- 96% power
- Control Rod Scram time testing is in progress per ST-6-107-790-1
- Control Rod 30-31 is at position 48

The following sequence of events occur

13:00:00 – RDCS INOP (108 E4) Annunciator is in alarm

13:00:02 – Control Rod HCU Toggle Switches ‘A’ and ‘B’ for Rod 30-31 are taken to “TEST”

13:00:08 – Control Rod 30-31 is at Position “00”

WHICH ONE of the following describes the status of the Full Core Display indication for Control Rod 30-31 and the reason for the indication?

	<u>Blue SCRAM Light</u>	<u>Reason for Indication</u>
A.	On	Control Rod at position “00”
B.	On	Scram Inlet and Outlet valves are OPEN
C.	Off	The Full Core Display will NOT update
D.	Off	Scram Inlet and Outlet valves are CLOSED

Answer Key		
Question ID# 094 SRO Only		
Choice	Basis or Justification	
Correct:	C	With an RDCS INOP, the Full Core Display will not update, therefore, although the Blue SCRAM light would normally be lit with the rod scrambled, it will not be due to the RDCS INOP
Incorrect:	A	The light will <u>not</u> be lit and the blue SCRAM light does not look at rod position.
Incorrect	B	The light will not be lit due to the RDCS INOP, but this would be the correct indication and reason fi not for the RDCS INOP
Incorrect	D	This indication and reason are right for normal operation but the reason the SCRAM light is off is due to the RDCS INOP

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	3	N	Y (b)(10)	Y (b)(2)

Source Documentation	
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank
Reference(s):	ARC-MCR-108-E4
Learning Objective:	LLOT0080.04
Knowledge/Ability K/A	201002 2.1.32
	Importance: RO / SRO 3.4 / 3.8
(Description of K&A, from catalog) Ability to explain and apply system limits and precautions.	

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

ATTACHMENT: ON-122 Provided

95 Unit 2 plant conditions are as follows:

- Reactor Power is 100%
- 1PP02 125 VDC DIST PANEL UNDERVOLTAGE (125 A-4) Annunciator is in Alarm

An EO Reports 1PPO2 is DEENERGIZED

WHICH ONE of the following identifies the required operator actions

- A. Enter T-101 and T-103
- B. Enter T-102
- C. Enter T-103
- D. Enter T-101 and T-102

Answer Key		
Question ID# 095 SRO Only		
Choice	Basis or Justification	
Correct:	C	A Loss of 1PP01 impacts ANN Panels that contain T-103 entry requiring entry into T-103
Incorrect:	A	Entry into T-101 is not required as no scram will occur
Incorrect	B	Entry into T-102 is not required due to a loss of annunciator
Incorrect	D	Entry into T-101 and T-102 is not required due to a loss of annunciators

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.5	4	N	Y (b)(10)	Y (b)(5)

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	ON-122, Page 2, Step 2.5	
Learning Objective:	LLOT1550.03	
Knowledge/Ability K/A	2.4.32	Importance: RO / SRO 3.3 / 3.5
(Description of K&A, from catalog) Knowledge of Operator response to loss of all annunciators		

Required Materials:

ON-122

Notes and Comments

Prepared By:

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Limerick Regulatory Exam Author

NRC Question Data Sheet

- 96 WHICH ONE of the following Identifies Work Execution Center/Work Control Center Supervisor Staffing requirements?
- A. May be credited as Shift Technical Advisor (STA) and Incident Assessor (IA) Simultaneously
 - B. May be credited as Incident Assessor (IA) and NRC Communicator Simultaneously
 - C. If credited as Shift Technical Advisor (STA) then Incident Assessor function is not required.
 - D. If credited as Incident Assessor (IA) then Shift Technical Advisor (STA) function is not required

Answer Key		
Question ID# 096 SRO Only		
Choice	Basis or Justification	
Correct:	C	If WCS is STA then IA function is not required (OP-AA-101-111, 4.5.2)
Incorrect:	A	WCS cannot be both STA and IA (OP-LG-101-111, Attachment 3)
Incorrect	B	WCS cannot be both IA and NRC Communicator (OP-LG-101-111, Attachment 3)
Incorrect	D	If WCS is the IA, they support the STA function, the STA is still required

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	2.0	3	N	N	Y (b)(2)

Source Documentation	
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank
Reference(s):	OP-AA-101-111, page 5, step 4.5 OP-LG-101-111, page 11 #3
Learning Objective:	LLOT1574.01a
Knowledge/Ability K/A	2.1.4 Importance: RO / SRO 2.3 / 3.4
(Description of K&A, from catalog) Knowledge of Shift Staffing requirements	

Required Materials:

Notes and Comments

Prepared By:
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NRC Question Data Sheet

ATTACHMENT: ON-115 Provided

97 Plant Conditions are as follows:

- Unit 1 is at 100% power
- Unit 2 is in OPCON 5 for refueling
- Outside Air Temperature is 77°F

A piping rupture in the Control Enclosure Chilled Water system results in the following conditions.

- Main Control Room (MCR) temperature is 79 °F and rising
- MCR humidity is 60% and rising
- Aux Equipment Room (AER) temperature is 74 °F and steady
- AER humidity is 52% and steady

WHICH ONE of the following describes the potential consequence of these conditions and the action required to prevent it?

<u>Consequence</u>	<u>Action</u>
A. Spurious Activation of Equipment	Purge the MCR
B. Spurious Activation of Equipment	Purge the AER
C. Exceeding Tech Spec temperature limit	Purge the MCR
D. Exceeding Tech Spec temperature limit	Purge the AER

Answer Key		
Question ID# 097 SRO Only		
Choice	Basis or Justification	
Correct:	C	Main Control room temperature >78 ° F and > outside air temperature requires a purge of the MCR. The limit of 78 ° F is based on not exceeding the Tech Spec limit of 85 ° F effective
Incorrect:	A	Action is correct. Consequence is the basis if AER temperature is >78 ° F
Incorrect	B	IF AER temperature were >78 ° F, this would be correct
Incorrect	D	AER does not require purge (<78 ° F). There is no Tech Spec temperature limit for the AER

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	4	N	N	Y (b)(2)

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> ILT Exam Bank <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Other Exam Bank	
Reference(s):	On-115, Tech Spec 3.7.2	
Learning Objective:	LLOT0450.05	
Knowledge/Ability K/A	290003 A2.02	Importance: RO / SRO 3.1 / 3.4
(Description of K&A, from catalog) Ability to predict the impact of the following on the Control Room HVAC, and based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Extreme Environmental conditions		

Required Materials:

ON-115

Notes and Comments

Prepared By:
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NRC Question Data Sheet

- 98 Which one of the following Procedure revisions would required a Station Qualified Reviewer (SQR) review?
- A. Changes to references in a Surveillance Test
 - B. Editorial changes to an Operations T&RM
 - C. Addition of clarifying information in the form of a list of required tools in a Systems Procedure
 - D. Changes to activates in an Off-Normal Procedure

Answer Key		
Question ID# 098 SRO Only		
Choice	Basis or Justification	
Correct:	D	Changes to activates in a procedure requires a SQR review
Incorrect:	A	Changes to reference are excluded from requiring SQR review
Incorrect	B	Editorial change are excluded from requiring SQR review
Incorrect	C	Addition of clarifying information is excluded from requiring SQR review

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
Low	2.5	4	N	N	Y (b)(b)

Source Documentation			
Source:	<input type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input checked="" type="checkbox"/> Modified NRC Bank Item <input type="checkbox"/> Other Exam Bank extensively modified ILT exam bank item <input type="checkbox"/> ILT Exam Bank		
Reference(s):	AD-AA-101, Page 3, step 4.3.5		
Learning Objective:	LLOT1570.013		
Knowledge/Ability K/A	2.2.6 <table border="0" style="float: right;"> <tr> <td>Importance: RO / SRO</td> </tr> <tr> <td>2.3 / 3.3</td> </tr> </table>	Importance: RO / SRO	2.3 / 3.3
Importance: RO / SRO			
2.3 / 3.3			
(Description of K&A, from catalog) Knowledge of the process for making changes in procedures as described in the safety analysis report.			

Required Materials:

Notes and Comments

Prepared By:

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NRC Question Data Sheet

99 Fuel is being loaded into the core on Unit 1, with the following conditions:

- "1A" SRM count rate is 3.5 cps and has a signal-to-noise ratio of 2.0
- "1B" SRM was declared inoperable last shift due to spiking
- "1C" SRM count rate is 2.0 cps and has a signal-to-noise ratio of 1.5
- "1D" SRM count rate is 2.5 cps and has a signal-to-noise ratio of 2.0

WHICH ONE of the following describes the ability to continue loading fuel into the core?

- A. Fuel may be loaded into any quadrant
- B. All fuel loading must be suspended immediately
- C. Fuel may be loaded into "A" or "D" core quadrants ONLY
- D. Fuel may be loaded into "A", "C" or "D" core quadrants ONLY

Answer Key		
Question ID# 099 SRO Only		
Choice	Basis or Justification	
Correct:	C	"B" and "C" SRM's are inoperable ("C" due to inadequate signal/noise ratio, per T.S. fig 3.3.6-1) Therefore, Fuel movement is only permitted in quadrants "A" and "D" per T.S. 3.9.2
Incorrect:	A	See above
Incorrect	B	See above
Incorrect	D	Fuel cannot be loaded into quadrant "C" because its SRM is inoperable.

Psychometrics					
Level of Knowledge	Difficulty	Time Allowance (minutes)	PRA	RO 10CFR55.41	SRO 10CFR55.43
High	3.0	4	N		

Source Documentation		
Source:	<input checked="" type="checkbox"/> New Exam Item <input type="checkbox"/> Previous NRC Exam <input type="checkbox"/> Modified Bank Item <input type="checkbox"/> Other Exam Bank <input type="checkbox"/> ILT Exam Bank	
Reference(s):	T.S. 3.9.2 and Figure 3.3.6-1	
Learning Objective:	LLOT0240.10	
Knowledge/Ability K/A	2.2.28	Importance: RO / SRO 2.6 / 3.5
(Description of K&A, from catalog) Knowledge of new and spent fuel movement procedures.		

Required Materials:

Notes and Comments

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NRC Question Data Sheet

100 Unit 1 is at 100% power when the follows occurs:

At 0100, Chemistry reports the following results of a Reactor Water Sample:

- Conductivity is 2.5 mmho/cm
- pH is 5.4
- Chlorides is 0.1 ppm

The RO reports a rising trend in Main Steam Line radiation.

WHICH ONE of the following describes the required action(s)?

- A. Check RWCU and Condensate Deep Bed Demin Effluent Conductivity to identify the source and maximize RWCU flow
- B. Reduce power per GP-5, Appendix 2 and sequentially remove Circulating Water system loops from service to identify the source
- C. Begin a GP-3 shutdown by 0200 and place reactor in at least HOT SHUTDOWN within 12 hours and in Cold shutdown within the next 24 hours
- E. Perform an Engineering evaluation to determine the effects of any out-of-limit conditions on the structural integrity of the Reactor Coolant System.

