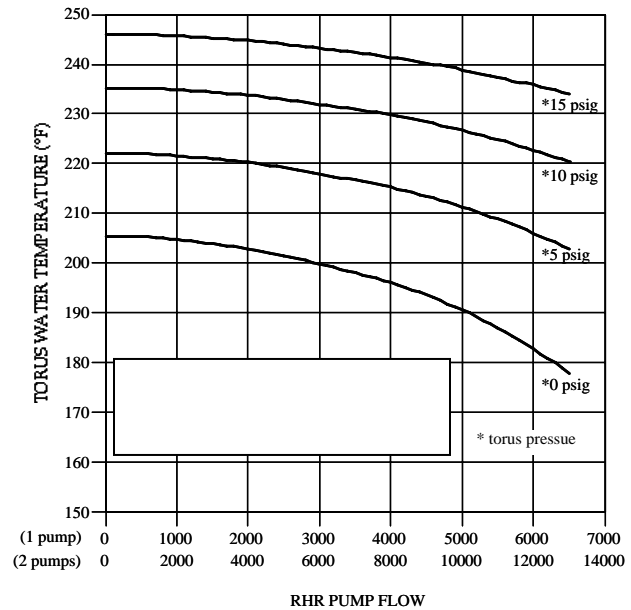
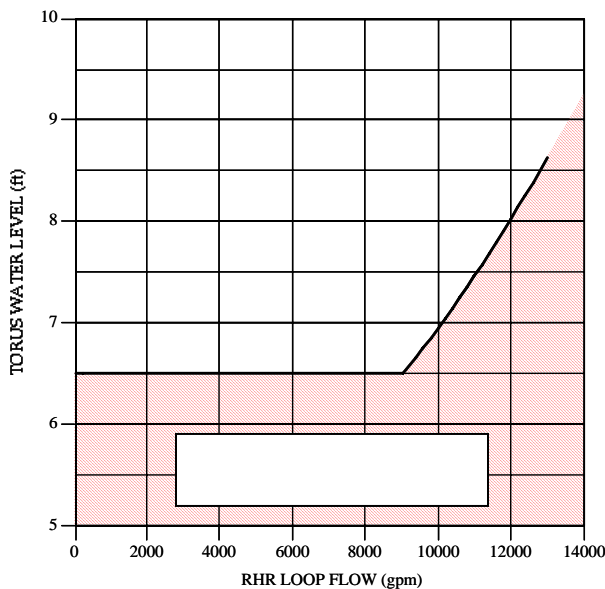


RO 1	K/A Number 203000	Statement K3.02	IR 3.5	Origin N	Source Question NA
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents EOP Bases Curves and Limits Rev 8		
RHR/LPCI: Injection Mode (Plant Specific) Knowledge of the effect that a loss or malfunction of the RHR/LPCI: INJECTION MODE (PLANT SPECIFIC) will have on following: Suppression pool level					

With the plant operating at 100% power, a Loss of Coolant Accident occurs, resulting in the following indications:

- RPV Water Level is -15 (minus 15) inches, stable.
- Torus Water Level is 6.5 feet.
- Torus Pressure is 6 psig.
- Torus Water Temperature is 190°F
- BOTH RHR Loops are injecting 11,000 gpm to maintain RPV Water Level.

Which ONE of the following describes the impact of these conditions on RHR LPCI mode and identifies the required actions?



- Vortex Limits are being violated. It is required to maintain RHR flow.
- Vortex Limits are being violated. It is required to reduce RHR flow.
- NPSH requirements are being violated. It is required to maintain RHR flow.
- NPSH requirements are being violated. It is required to reduce RHR flow.

Correct Answer: A application of data shows Vortex Limit violation, it is required to maintain RHR Flow since EOPs direct maximizing injection.

Plausible Distractors:

B is plausible: would be true if EOP execution did not require maximum injection.

C is plausible: NPSH curve is satisfied.

D is plausible: NPSH curve is satisfied. It is required to maximize injection.

Objective Link: None

RO 2	K/A Number 205000	Statement A4.07	IR 3.7	Origin N	Source Question NA
LOK H	10 CFR 55.41(b)	LOD (1-5)	Reference Documents TS Basis B3.4.9 Steam Table Required		
Shutdown Cooling System (RHR Shutdown Cooling Mode) Ability to manually operate and/or monitor in the control room: Reactor temperatures (moderator, vessel, flange)					

With RHR operating in the Shutdown Cooling Mode, the following parameters have been recorded:

<u>Parameter</u>	<u>Time</u>	
	1400	1430
• Reactor Pressure	75 psig	27 psig
• Recirc Loop A/B Temperature	335 °F	300 °F
• Rx Vessel Shell Temperature	345 °F	315 °F
• Bottom Head Drain Temperature	365 °F	350 °F

Which ONE of the following is the cooldown rate?

- 30 °F/hr
- 60 °F/hr
- 70 °F/hr
- 100 °F/hr

Correct Answer : D B3.4.9 specifies cooldown rate as rate of change of reactor coolant temperature. Reactor Coolant Temperature is T_{sat} for Reactor Pressure.

Plausible Distractors:

A is plausible: would be true if cooldown rate was monitored by Bottom Head Drain Temperature.

B is plausible: would be true if cooldown rate was monitored by Reactor Vessel Shell Temperature.

C is plausible: would be true if cooldown rate was monitored by Recirculation Loop Temperature.

Objective Link: 88.00.00.02c

RO	K/A Number	Statement	IR	Origin	Source Question
3	206000	K6.11	3.6	N	NA
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents HPCI SD and SD 880 Tech Spec Bases B3.3.5.1		
High Pressure Coolant Injection System Knowledge of the effect that a loss or malfunction of the following will have on the HIGH PRESSURE COOLANT INJECTION SYSTEM : Nuclear boiler instrumentation: BWR-2,3,4					

With High Pressure Coolant Injection in standby readiness, Narrow Range Barton Reactor Water Level Indicating Switch LIS-4592B fails LOW.

How will the High Pressure Coolant Injection (HPCI) system be affected?

- a. HPCI will have initiation logic partially actuated. If injecting, HPCI will automatically trip upon receipt of a valid High RPV Water Level signal.
- b. HPCI will have initiation logic partially actuated. If injecting, HPCI will NOT automatically trip upon receipt of a valid High RPV Water Level signal.
- c. HPCI will NOT have initiation logic partially actuated. If injecting, HPCI will automatically trip upon receipt of a valid High RPV Water Level signal.
- d. HPCI will NOT have initiation logic partially actuated. If injecting, HPCI will NOT automatically trip upon receipt of a valid High RPV Water Level signal.

Correct Answer : D. LIS 4592B and LIS 4592D are the two switches arranged in a two out of two logic for the high level trip of HPIC. With LIS 4592B failed LOW, this logic cannot be satisfied.

Plausible Distractors:

A is plausible: would be true for a low failure of LIS-4531, 4532, 4533, or 4534. (Wide Range Yarway Indicators)

B is plausible: would be true for a low failure of LIS-4531, 4532, 4533, or 4534 (Wide Range Yarway Indicators) concurrent with a low failure of LIS 4592 B or D (Narrow Range Barton Indicators).

C is plausible: would be true for a high failure of LIS 4592 B or D. (Narrow Range Barton Indicators).

Objective Link: None

RO 4	K/A Number 206000	Statement K3.02	IR 3.8	Origin B	Source Question 2005 Quad Cities NRC Exam
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents SD 152, HPCI SD 183.1, ADS		
Knowledge of the effect that a loss or malfunction of the HIGH PRESSURE COOLANT INJECTION SYSTEM will have on following: Reactor pressure control: BWR-2,3,4					

After 320 days of full power operation a group I isolation occurred. HPCI was started for pressure control in the CST to CST mode.

While monitoring the ECCS systems the ANSOE sees ALL four RHR pumps and BOTH Core Spray pumps automatically start on a VALID signal.

At the time of the low pressure ECCS pump start, conditions were as follows:

- RPV water level 200 inches and stable
- RPV pressure 890 psig and LOWERING at 1 psig per minute.

How will RPV Pressure change over the next several minutes?

RPV pressure will...

- continue to LOWER at the same rate due to HPCI CST to CST pressure control.
- LOWER then RAISE until a Turbine Bypass Valve opens.
- LOWER then RAISE until SRV's control pressure.
- LOWER QUICKLY due to FOUR Safety Relief Valves opening.

Correct Answer : C Core Spray/RHR Auto Start indicates High Drywell Pressure, Low Low Low RPV Water Level is excluded by level trend. HPCI will inject, resulting in an initial pressure reduction. At 211 inches, HPCI will trip, pressure will then depend on relief valve operation due to the MSIV closure.

Plausible Distractors:

A is plausible: would be true if HPCI did not inject due to High Drywell Pressure.

B is plausible: would be true if MSIVs were open.

D is plausible: would be true if RPV Water Level lowered causing an ADS actuation.

Objective Link: None

RO 5	K/A Number 215003	Statement K4.05	IR 2.9	Origin B	Source Question 2001 Dresden NRC Exam
LOK F	10CFR55.41(b)7	LOD (1-5)	Reference Documents OI-878.2 Rev 23		
Knowledge of IRM design feature(s) and/or interlocks which provide for the following: Changing detector position					

Per OI-878.2, Intermediate Range Monitors, which ONE of the following describes the operation of the DRIVE IN and DRIVE OUT pushbuttons?

To drive a fully withdrawn IRM detector completely into the core, the "DRIVE IN" pushbutton _____(1)_____ depressed; AND to withdraw a fully inserted IRM detector completely out of the core, the "DRIVE OUT" pushbutton _____(2)_____ depressed.

- | | | |
|----|--------------------------|--------------------------|
| a. | need ONLY be momentarily | need ONLY be momentarily |
| b. | need ONLY be momentarily | MUST be continuously |
| c. | MUST be continuously | need ONLY be momentarily |
| d. | MUST be continuously | MUST be continuously |

Correct Answer: B the DRIVE IN drive pushbutton seals in, and need ONLY be momentarily depressed, the DRIVE OUT pushbutton has no seal in and MUST be continuously depressed.

Plausible Distractors:

A is plausible: would be true if DRIVE OUT pushbutton sealed in.

C is plausible: would be true if DRIVE OUT pushbutton sealed in and DRIVE IN pushbutton did not seal in.

D is plausible: would be true if Shorting Links were removed.

Objective Link: None

RO 6	K/A Number 209001	Statement K5.05	IR 2.5	Origin N	Source Question NA
LOK H	10CFR55.41(b)5	LOD (1-5)	Reference Documents ARP 1C03A B-8, rev 44 Tech Spec Bases B3.5.1		
Knowledge of the operational implications of the following concepts as they apply to LOW PRESSURE CORE SPRAY SYSTEM : System venting					

With the plant operating at 100% power, the following alarm is received:

- 1C03A B-8, A CORE SPRAY DISCHARGE LINE LO PRESSURE

What is the impact of this condition on the Core Spray System?

- Core Spray Pump, 1P-211A may cause piping damage if started.
- Core Spray Pump, 1P-211A is incapable of producing an ADS Logic permissive signal, if started.
- Core Spray Inboard Inject Valve, MO-2117 will immediately OPEN if the Core Spray System Initiation Logic is actuated.
- Core Spray Inboard Inject Valve, MO-2117 can be OPENED while Core Spray Outboard Inject Valve, MO-2115 is OPEN.

Correct Answer: A Core Spray Discharge Pressure <47.5 psig causes the listed annunciator, indicating that piping may no longer be properly filled and vented. Voided piping may be damaged by starting the Core Spray Pump.

Plausible Distractors:

B is plausible: would be true if Core Spray Pump Discharge Pressure, PS 2107B (145 psig injection valve permissive) were failed low.

C is plausible: would be true if Reactor Pressure below 450 psig LPCI Loop Selector were failed low.

D is plausible: would be true if Reactor Pressure below 450 psig LPCI Loop Selector were failed low.

Objective Link: None

RO 7	K/A Number 262001	Statement 2.1.28	IR 3.2	Origin M	Source Question 1999 DAEC NRC Exam
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents AOP-301.1 Rev 36 Step 7 of Restoration of offsite power (p16 of 31)		
AC Electrical Distribution Conduct of Operations: Knowledge of the purpose and function of major system components and controls.					

The plant has been in Station Blackout conditions for 30 minutes. The American Transmission Company (ATC) Dispatcher calls to report that the grid has been restored at less than normal voltage. The operators at 1C08 determine that incoming voltage is 2800 VAC. There are no bus or transformer lockouts. All 4KV Bus Transfer switches have been placed in MANUAL at Panel 1C08.

Which of the following CORRECTLY describes the operation of the Degraded Voltage protection circuits and closing of breakers 1A301/302 and 1A401/402, the Standby/Startup Transformer Supplies to 1A3 and 1A4?

- Overriding and resetting Degraded Voltage relays is procedurally allowed and can be accomplished at this grid voltage.
- Overriding of Degraded Voltage relays is procedurally allowed, but Degraded Voltage protection would not reset at this grid voltage.
- Overriding and resetting Degraded Voltage relays is NOT procedurally allowed at this grid voltage. This would prevent closure of 1A301/302 and 1A401/402.
- Overriding and resetting Degraded Voltage relays is procedurally allowed and can be accomplished at this grid voltage. Closure of 1A301/302 and 1A401/402 would be prevented by breaker undervoltage protection.

Correct Answer:A With voltage above 2700 VAC, Overriding and resetting Degraded Voltage relays is procedurally allowed and can be accomplished.

Plausible Distractors:

B is plausible: would be true if 92.5% Degraded Voltage Relay remained active.

C is plausible: would be true if Grid Voltage were below 2700 VAC.

D is plausible: would be true if breaker undervoltage protection prevented closure in this condition.

Objective Link: None

Source Question:

The plant has been in Station Blackout conditions for 30 minutes. The System Dispatcher calls to report that the grid has been restored at less than normal voltage. The operators at 1C08 determine that incoming voltage is **2500 VAC. MODIFICATION** There are no bus or transformer lockouts. All 4KV Bus Transfer switches have been placed in MANUAL at Panel 1C08.

Which of the following CORRECTLY describes the operation of the Degraded Voltage protection circuits and closing of breakers 1A301/302 and 1A401/402, the Standby/Startup Transformer Supplies to 1A3 and 1A4?

- Bypassing and resetting Degraded Voltage relays is procedurally

allowed and can be accomplished at this grid voltage.

NEW CORRECT ANSWER

- B. Bypassing of Degraded Voltage relays is procedurally allowed, but Degraded Voltage protection would not reset at this grid voltage.
- C. Bypassing and resetting Degraded Voltage relays is NOT procedurally allowed at this grid voltage.
This would prevent closure of 1A301/302 and 1A401/402.
- D. Bypassing and resetting Degraded Voltage relays is procedurally allowed and can be accomplished at this grid voltage.
Closure of 1A301/302 and 1A401/402 would be prevented by breaker undervoltage protection. **OLD CORRECT ANSWER**

RO 8	K/A Number 211000	Statement A3.08	IR 4.2	Origin M	Source Question 1999 DAEC NRC Exam
LOK H	10CFR55.41(b)6	LOD (1-5)	Reference Documents OI 153 Rev 34		
Ability to monitor automatic operations of the STANDBY LIQUID CONTROL SYSTEM including: System initiation: Plant-Specific					

Which ONE of the following describes the normal indications following a SUCCESSFUL INITIATION of Standby Liquid Control System?

- Alarm 1C05A F-3, SBLC SQUIB VALVE CONTINUITY LOSS DOES NOT actuate and SBLC Pump Discharge Pressure is greater than 1350 psig.
- Alarm 1C05A F-3, SBLC SQUIB VALVE CONTINUITY LOSS DOES NOT actuate and SBLC Pump Discharge Pressure is less than 1350 psig.
- Alarm 1C05A F-3, SBLC SQUIB VALVE CONTINUITY LOSS actuates and SBLC Pump Discharge Pressure is greater than 1350 psig.
- Alarm 1C05A F-3, SBLC SQUIB VALVE CONTINUITY LOSS actuates and SBLC Pump Discharge Pressure is less than 1350 psig.

Correct Answer: D After the Squib Valve fires, squib continuity should be lost. Normal indication for injection is slightly above Reactor Pressure, 1020 psig.

Plausible Distractors:

A is plausible: this is the indication for Squib Valves unfired, the SBLC Pump Discharge Pressure will be at the Relief Valve setpoint of 1350 to 1400 psig.

B is plausible: this is the indication for a failed alarm function of Squib Valve Continuity.

C is plausible: this is the indication for a Manual Valve closed in the injection line.

Objective Link: None

RO 9	K/A Number 212000	Statement A4.15	IR 3.9	Origin B	Source Question DAEC Bank 51.00.00 04-2
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents SD 358, SD 264		
Reactor Protection System Ability to manually operate and/or monitor in the control room: Recirculation pump trip/EOC RPT					

With reactor power at 100% and core flow at 48 Mlbm/hr, a malfunction in the Turbine Stop Valve electronic circuitry results in closing Turbine Stop Valves number 1 AND 2.

How will the plant respond to this malfunction?

- a. The reactor scrams on High Pressure, the Recirculation Pumps trip.
- b. The reactor scrams on High Pressure, the Recirculation Pumps runback.
- c. The reactor scrams on Main Turbine Trip, the Recirculation Pumps trip.
- d. The reactor scrams on Main Turbine Trip, the Recirculation Pumps runback.

Correct Answer: A TSVs 1 AND 2 produce a ½ scram on RPS A and a complete EOC RPT Logic actuation.

Plausible Distractors:

B is plausible: would be true if TSV 1 AND 2 did not produce a complete EOC RPT actuation. Normal scram response is RR runback from Low FW flow.

C is plausible: would be true if TSVs 1 AND 2 produced a FULL scram.

D is plausible: would be true if TSVs 1 AND 2 produced a FULL scram and did not produce a complete EOC RPT actuation. Normal scram response is RR runback from Low FW flow.

Objective Link: 12.00.00.03c

RO 10	K/A Number 212000	Statement 2.4.2	IR 3.9	Origin N	Source Question NA
LOK H	10CFR55.41(b) 10	LOD (1-5)	Reference Documents ARP 1C05B A-1, Rev 77, EOP-1, EOP-2		
Reactor Protection System Emergency Procedures / Plan Knowledge of system setpoints, interlocks, and automatic actions associated with EOP entry conditions.					

The reactor is operating at 100% power. With RPV Water level at 195 inches, HPCI started due to a VALID signal.

Which ONE of the following describes the effect of this actuation on the plant and the required procedure entry?

- The reactor will scram when RPV Water Level rises to 211 inches, which requires entry into IPOI-5, Reactor Scram ONLY.
- The reactor will immediately scram; it is required to enter EOP-1, RPV Control AND EOP-2, Primary Containment Control.
- The reactor will immediately scram; it is required to enter EOP-1, RPV Control ONLY.
- The reactor will scram when APRM Power Level rises, which requires entry into EOP-1, RPV Control AND IPOI-5, Reactor Scram.

Correct Answer: B HPCI Auto Start with RPV Water Level at 195 inches implies Drywell Pressure > 2.0 psig. The reactor will immediately scram, EOP-1 and EOP-2 entry are required with Drywell Pressure > 2.0 psig.

Plausible Distractors:

A is plausible: would be true for a Manual HPCI Start resulting in overfeed.

C is plausible: would be true for Low RPV Water Level (119.5 inches) HPCI start signal, excluded by RPV Water Level at 195 inches.

D is plausible: would be true for a spurious HPCI start, reactivity addition would cause APRM Power to rise, excluded by valid HPCI start signal.

Objective Link: None

RO 11	K/A Number 215003	Statement A3.04	IR 3.5	Origin B	Source Question 2003 Fermi-2 NRC Exam
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents ARP 1C05A B-3, Rev 59		
Ability to monitor automatic operations of the INTERMEDIATE RANGE MONITOR (IRM) SYSTEM including: Control rod block status					

A reactor startup is in progress. The reactor has been declared critical and the operator has established a 150 second period. All IRMs are on scale on range 4. The following indications occur simultaneously:

- 1C05A C-3, IRM UPSCALE alarm
- 1C05A B-3, IRM A, C, OR E UPSCALE TRIP OR INOP alarm
- 1C05A A-2, "A" RPS AUTO SCRAM alarm
- 1C05B A-6, ROD OUT BLOCK alarm

These indications were caused by which ONE of the following?

- a. IRM E power supply failure.
- b. IRM E being ranged to range 3.
- c. IRM E being ranged to range 5.
- d. IRM E being withdrawn from the core.

Correct Answer: B If power is on scale on IRM Range 4, and that channel is switched to range 3, and IRM Upscale condition will occur on one channel, which produces Upscale, Upscale Trip, and an associated Rod Block and Half Scram.

Plausible Distractors:

A is plausible: would be true if IRM UPSCALE alarm did not occur.

C is plausible: would be true if IRM DOWNSCALE and ROD OUT BLOCK alarm resulted with no other alarms.

D is plausible: would be true if IRM DOWNSCALE and ROD OUT BLOCK alarm resulted with no other alarms.

Objective Link: None

RO 12	K/A Number 215004	Statement K1.01	IR 3.6	Origin N	Source Question NA
LOK F	10CFR55.41(b)7	LOD (1-5)	Reference Documents SD 878.1 Rev 5		
Knowledge of the physical connections and/or cause- effect relationships between SOURCE RANGE MONITOR (SRM) SYSTEM and the following: Reactor protection system					

With the Reactor Mode Switch in STARTUP, which ONE of the following conditions will result in Source Range Monitors producing a Reactor Scram?

- SRM Channels A and B Mode Switches NOT in OPERATE.
- SRM Channel A and B indicating 5×10^5 counts per second.
- SRM Channel A indicating a 15 second period with 1C15 and 1C17 Shorting Links removed.
- SRM Channel A indicating 5×10^5 counts per second with 1C15 and 1C17 Shorting Links removed.

Correct Answer: D Shorting Link removal activates SRM Scram function.

Plausible Distractors:

- A is plausible: can produce a Rod Block ONLY
- B is plausible: can produce a Rod Block ONLY
- C is plausible: short period is an alarm only.

Objective Link: None

RO 13	K/A Number 215005	Statement K4.07	IR 3.7	Origin B	Source Question DAEC Bank 81.01.01.07-04
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents SD 878.3 Rev 9		
Knowledge of AVERAGE POWER RANGE MONITOR/LOCAL POWER RANGE MONITOR SYSTEM design feature(s) and/or interlocks which provide for the following: Flow biased trip setpoints					

The reactor is operating with both recirculation loops in operation, conditions are as follows:

- Reactor Power is 60%.
- Recirc Loop Flow is 61% per loop.
- Total Core Flow is 30 Mlbm/hr, equally divided between both loops.

With these conditions, which ONE of the following is the correct APRM Flow Biased SCRAM setpoint?

- 75%
- 82%
- 92%
- 99%

Correct Answer: D Scram = $0.55W + 65$ ($W=61$) $.55(61) + 65 = 99$

Plausible Distractors:

A is plausible: value miscalculated using $W=30$ and Single Loop equation (half actual Recirc Flow)

B is plausible: value miscalculated using $W=30$ (indicated Core Flow in Mlbm/hr)

C is plausible: value miscalculated using $W=61$ and Single Loop equation (indicated Reactor Power in %)

Objective Link: None

RO 14	K/A Number 217000	Statement A4.04	IR 3.6	Origin B	Source Question Clinton 2004 NRC Exam
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents OI 150 Rev 65		
Reactor Core Isolation Cooling Ability to manually operate and/or monitor in the control room: Manually initiated controls					

The plant was operating at power when a Main Steam leak occurred, resulting in the following conditions:

- The reactor has been scrammed.
- ALL MSIVs have been closed.
- RPV Water Level is 110 inches.

What is the RCIC system response if the operator depresses the “RCIC MANUAL ISOLATION IF RX LO LO LVL PRESENT” pushbutton?

- RCIC will continue to operate.
- MO 2400 RCIC INBD STEAM LINE ISOL and MO 2401 RCIC OUTBD STEAM LINE ISOL will close
- MO 2400 RCIC INBD STEAM LINE ISOL and MO 2405 TURBINE STOP VALVE will close
- MO 2401 RCIC OUTBD STEAM LINE ISOL and MO 2405 TURBINE STOP VALVE will close

Correct Answer: D RCIC Manual Isolation pushbutton will result in MO 2401 Outboard Steam Line Isolation closure – any isolation valve automatic closure will close MO 2405 Turbine Stop Valve.

Plausible Distractors:

A is plausible: would be true if level recovered above 119.5 inches and initiation signal were reset.

B is plausible: would be true for an AUTOMATIC isolation signal, both Inboard and Outboard Isolation Logic is actuated

C is plausible: would be true if MANUAL pushbutton actuated Inboard vice Outboard Isolation Logic.

Objective Link: None

RO 15	K/A Number 218000	Statement K4.04	IR 3.5	Origin N	Source Question NA
LOK F	10CFR55.41(b)8	LOD (1-5)	Reference Documents SD 183.1		
Knowledge of AUTOMATIC DEPRESSURIZATION SYSTEM design feature(s) and/or interlocks which provide for the following: Insures adequate air supply to ADS valves: Plant-Specific					

With CONTAINMENT N₂ SUPPLY ISOL CV-4371A failed SHUT, how are the Automatic Depressurization System Valves affected?

- a. ADS Valves WILL NOT operate if logic is actuated. It is required to use Alternate Depressurization systems, if required.
- b. ADS Valves WILL NOT operate if logic is actuated. It is required to defeat isolations and realign Nitrogen to the Drywell.
- c. ADS Valves WILL operate if logic is actuated. Accumulators inside the Drywell will provide a backup Nitrogen supply to the ADS Valves.
- d. ADS Valves WILL operate if logic is actuated. Accumulators outside the Drywell will provide a backup Nitrogen supply to the ADS Valves.

Correct Answer: C ADS valve Nitrogen Supply is backed up by Accumulators located inside the Drywell, assuring operation with an isolated Nitrogen Supply.

Plausible Distractors:

A is plausible: would be true for a complete loss of Nitrogen Supply with depleted Nitrogen Accumulators.

B is plausible: ADS valves will operate, CV-4371A isolates external Nitrogen Supply.

D is plausible: there are Accumulators external to the Drywell, but they are isolated from the Drywell by CV-4371A failed SHUT.

Objective Link: None

RO 16	K/A Number 218000	Statement K5.01	IR 3.8	Origin N	Source Question NA
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents OI 183.1 Rev 30		
ADS Knowledge of the operational implications of the following concepts as they apply to AUTOMATIC DEPRESSURIZATION SYSTEM : ADS logic operation					

Following a reactor scram, a loss of Feedwater occurs, resulting in steadily lowering RPV Water Level, resulting in the following:

<u>TIME</u>	<u>EVENT</u>
11:00	HPCI Turbine started and immediately TRIPPED.
11:20	Main Steam Isolation Valves CLOSE.
11:25	Core Spray and RHR Injection Valves OPEN.
11:26	Core Spray and RHR flow is indicated.

Based on these trends, ADS valves initially OPEN at what time?

- 11:02
- 11:22
- 11:27
- 11:28

Correct Answer : B Lo Lo Lo RPV Water Level is indicated by MSIV closure at 11:20, two minutes later, ADS valves OPEN

Plausible Distractors:

A is plausible: would be true if Lo Lo Level satisfied ADS Logic.

C is plausible: would be true if RHR / CS Injection valve position satisfied pump running interlock.

D is plausible: CS and RHR Flow are the expected result of ADS valve operation.

Objective Link: None

RO 17	K/A Number 223002	Statement A2.01	IR 3.2	Origin B	Source Question 2003 Fermi-2 NRC Exam
LOK H	10CFR55.41(b) 10	LOD (1-5)	Reference Documents AOP-358 Rev 26		

Ability to (a) predict the impacts of the following on the PRIMARY CONTAINMENT ISOLATION SYSTEM/NUCLEAR STEAM SUPPLY SHUT-OFF; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations. A.C. electrical distribution failures

The plant was operating in MODE 1 at 80% power when RPS "A" MG set fails, resulting in the following alarms:

- 1C05A A-8 PCIS CHANNEL "A" STEAM TUNNEL HI TEMP
- 1C05A B-8 PCIS CHANNEL "A" MAIN STEAM LINE HI FLOW
- 1C05A C-8 PCIS CHANNEL "A" MAIN STEAM LINE LO PRESSURE
- 1C05A D-8 PCIS CHANNEL "A" HI COND BACKPRESS OR TURB BLDG HI TEMP
- 1C05B A-8 PCIS GROUP "1" ISOLATION INITIATED
- 1C05B C-2 MAIN STEAM LINE HI HI RAD / INOP TRIP
- 1C05B C-3 MSIVs NOT FULLY OPEN TRIP

With these conditions, what is the affect on the Main Steam Isolation Valves and what actions are required?

- a. All MSIVs close. It is required to place the Mode Switch in SHUTDOWN.
- b. Inboard MSIVs close. It is required to place the Mode Switch in SHUTDOWN
- c. Outboard MSIVs close. It is required to transfer RPS to alternate and reset PCIS.
- d. All MSIVs remain open. It is required to transfer RPS to alternate and reset PCIS.

Correct Answer: D Loss of "A" RPS produces half isolation signal. MSIVs are held open by the unaffected DC solenoid. It is required by AOP-358, to transfer RPS to alternate and reset PCIS.

Plausible Distractors:

A is plausible: would be true for a full PCIS Group 1 isolation.

B is plausible: would be true if half PCIS logic resulted in partial PCIS Group 1 isolation.

C is plausible: would be true if half PCIS logic resulted in partial PCIS Group 1 isolation and Reactor Mode Switch was in STARTUP.

Objective Link: None

RO 18	K/A Number 239002	Statement K2.01	IR 2.8	Origin B	Source Question 2005 DAEC NRC Exam
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents SD-183.1, Rev 7		
Knowledge of electrical power supplies to the following: SRV solenoids					

Which of the following describes how power is provided to the solenoids on the Safety Relief Valves (SRVs)?

- All Safety Relief Valves (SRVs) solenoids can be supplied by either division of 125 VDC.
- ADS SRV solenoids can only be supplied by Division 1 125 VDC power and LLS SRV solenoids can only be supplied by Division 2 125 VDC power.
- LLS SRV solenoids can only be supplied by Division 1 125 VDC power and ADS SRV solenoids can only be supplied by Division 2 125 VDC power.
- Division 1 SRV solenoids can only be supplied by Division 1 125 VDC power and Division 2 SRV solenoids can only be supplied by Division 2 125 VDC power.

Correct Answer: A All ADS solenoids have a normal and backup power supply coming from each division of the 125 Vdc system. Only ADS logic "A" does not have a backup power supply.

Plausible Distractors:

B is plausible: would be true if PSV-4407 Lo Lo Set SRV was powered from 1D13.

C is plausible: would be true if 1D23 lost power

D is plausible: would be true if 1D23 lost power and PSV-4401 was powered from 1D23.

Objective Link: 08.01.01.02

RO	K/A Number	Statement	IR	Origin	Source Question
19	259002	K2.02	3.5	N	NA
LOK F	10CFR55.41(b)7	LOD (1-5)	Reference Documents ARP 1C03C C-9, Rev 38		
Knowledge of electrical power supplies to the following: Feedwater coolant injection (FWCI) initiation logic: FWCI/HPCI					

With HPCI in standby, a failure results in alarm 1C03C C-9, HPCI 125 VDC LOGIC POWER FAILURE. Investigation reveals that 125 VDC Relay Logic Power Bus A in 1C32 has been lost.

Which ONE of the following statements describes the HPCI system response if RPV drops to 100 inches?

- HPCI will auto start.
- HPCI will auto start but will run at minimum RPM.
- HPCI will trip and MO 2238, HPCI Inboard Steam Line Isolation will auto isolate.
- HPCI will trip and MO 2239, HPCI Outboard Steam Line isolation will auto isolate.

Correct Answer: A one set of level switches are deenergized, but the remaining level switches will cause HPCI to start at 119.5 inches.

Plausible Distractors:

B is plausible: would be true for HPCI Inverter Power Loss

C is plausible: would be true if INBD isolation was caused by loss of Logic Power Bus A

D is plausible: would be true if OTBD isolation was caused by loss of Logic Power Bus A

Objective Link: None

RO 20	K/A Number 261000	Statement A2.05	IR 3.0	Origin N	Source Question NA
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents SD 170		
Ability to (a) predict the impacts of the following on the STANDBY GAS TREATMENT SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Fan trips					

Standby Gas Treatment Train A is in service following an automatic initiation signal. Standby Gas Treatment Train B has been returned to STANDBY mode. SBTG Train A Exhaust Fan 1V-EF-15A tripped due to an overcurrent condition.

How will the Standby Gas Treatment System respond and what actions are required?

- a. Both Trains of SBTG will be inoperative; it is required to enter EOP-3 Secondary Containment Control
- b. "B" Train remains in STANDBY; it is required to MANUALLY start SBTG Train B.
- c. Isolation Lockout Relay LR 5830B will initiate an automatic start of SBTG Train B. It is required to verify SBTG Train B parameters.
- d. SBTG System Low Flow will initiate an automatic start of SBTG Train B. It is required to verify SBTG Train B parameters.

Correct Answer: D SBTG System Low Flow will result in SBTG Train B auto start.

Plausible Distractors:

A is plausible: would be true for a failure of "A" train (given) and if the student believes that taking a train of SBTG to STANDBY with an initiation signal makes INOP.

B is plausible: would be true if SBTG had to be manually restarted from STANDBY after Initiation signal.

C is plausible: would be true for the initial Train B start, prior to being placed in STANDBY.

Objective Link: None

RO 21	K/A Number 262001	Statement K1.03	IR 3.4	Origin N	Source Question NA
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents SD 304		
Knowledge of the physical connections and/or cause- effect relationships between A.C. ELECTRICAL DISTRIBUTION and the following: Off-site power sources					

With the plant operating at full power a lightning strike occurs in the switchyard resulting in the following events:

- Main Generator Primary Lockout Trip
- Switchyard 161kV Breakers M, J, and K trip and are locked out.

Which ONE of the following describes the effect of this failure on buses 1A1, 1A2, 1A3 and 1A4?

- 1A1 and 1A2 will be powered by Aux Transformer 1X2
1A3 and 1A4 will be powered by Startup Transformer 1X3
- 1A1 and 1A2 will be powered by Aux Transformer 1X2
1A3 and 1A4 will be powered by Standby Transformer 1X4
- 1A1 and 1A2 will be deenergized
1A3 will be powered by 1G-31
1A4 will be powered by 1G-21
- 1A1, 1A2, 1A3, and 1A4 will be powered by Startup Transformer 1X3

Correct Answer : C Loss of Offsite Power are produced by Gen Lockout (Aux Transformer), M (Standby Transformer), and J and K (Startup Transformer) Breaker trips. ONLY 1A3 and 1A4 will be powered by respective Diesel Generators.

Plausible Distractors:

A is plausible: would be true for Standby Transformer failure.

B is plausible: would be true for Startup Transformer failure.

D is plausible: would be true for Generator Lockout with no other failure.

Objective Link: None

RO 22	K/A Number 262002	Statement K3.10	IR 2.7	Origin N	Source Question NA
LOK F	10CFR55.41(b)7	LOD (1-5)	Reference Documents AOP 317 Rev 75		
Knowledge of the effect that a loss or malfunction of the UNINTERRUPTABLE POWER SUPPLY (A.C./D.C.) will have on following: Containment isolation: Plant-Specific					

With Instrument AC Power Panel 1Y11 deenergized, what is the effect on the Primary Containment Isolation System (PCIS)?

- a. Division 1 Group 2 valves will shut.
- b. Division 2 Group 2 valves will shut.
- c. Division 1 Group 3 valves will shut.
- d. Division 2 Group 3 valves will shut.

Correct Answer: C Division 1 Group 3 valves shut due to logic power loss. RB Vent shaft Rad monitor loses power, causes SBTG L/O, which gives the PCIS Grp III)

Plausible Distractors:

A is plausible: would be true for loss of RPS A 1Y30A

B is plausible: would be true for loss of RPS B 1Y30B

D is plausible: would be true for loss of 1Y21.

Objective Link: None

RO 23	K/A Number 263000	Statement K6.01	IR 3.2	Origin N	Source Question NA
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents SD-375 Rev 7		
Knowledge of the effect that a loss or malfunction of the following will have on the D.C. ELECTRICAL DISTRIBUTION : AC electrical distribution					

With the plant operating at 100% power and ALL electrical systems in their normal lineup, 4160 VAC Bus 1A4 experiences a BUS LOCKOUT.

Which ONE of the following describes the affect of this failure on 125 VDC Distribution?

- a. 125 VDC Bus 1D10 will be powered from ONLY the Battery until Charger 1D120 is manually aligned to Bus 1D10.
- b. 125 VDC Bus 1D20 will be powered from ONLY the Battery until Charger 1D120 is manually aligned to Bus 1D20.
- c. 125 VDC Bus 1D10 will be powered from ONLY the Battery until EDG 1G21 automatically reenergizes Bus 1A4.
- d. 125 VDC Bus 1D20 will be powered from ONLY the Battery until EDG 1G21 automatically reenergizes Bus 1A4.

Correct Answer: B 1D20 is normally powered from Charger 1D22, which receives AC power from 1B42. When 1A4 LOCKOUT occurs, 1B42 will remain deenergized. 125 VDC Bus 1D20 will be powered ONLY from the Battery until Charger 1D120 is manually aligned to Bus 1D20.

Plausible Distractors:

A is plausible: may be selected if candidate selects wrong power source.

C is plausible: may be selected if candidate selects wrong power source and does not understand affect of Bus Lockout blocking EDG start / load.

D is plausible: may be selected if candidate does not understand affect of Bus Lockout on EDG start / load..

Objective Link: None

RO 24	K/A Number 264000	Statement A1.03	IR 2.8	Origin N	Source Question NA
LOK H	10CFR55.41(b)5	LOD (1-5)	Reference Documents Include OI 324 Appendix 1 OI 324 Rev 82		
Ability to predict and/or monitor changes in parameters associated with operating the EMERGENCY GENERATORS (DIESEL/JET) controls including: Operating voltages, currents, and temperatures					

Standby Diesel Generator 1G-31 has just been paralleled to the grid for a load test. Diesel Generator 1G-31 is operating at maximum continuous load limit and 4160 VAC.

Which ONE of the following values of Diesel Generator current will produce operation at 0.9 power factor?

- a. 440 amps
- b. 460 amps
- c. 500 amps
- d. 520 amps

Correct Answer : A per Appendix 1, at 2850 KW, 440 amps will result in 0.9 power factor

Plausible Distractors:

B is plausible: would be true for 3000 KW, not the continuous load limit.
C is plausible: would be true for 2850 KW and 0.8 power factor.
D is plausible: would be true for 3000 KW 0.8 pf.

Objective Link: None

RO 25	K/A Number 300000	Statement A2.01	IR 2.9	Origin N	Source Question NA
LOK H	10CFR55.41(b)5	LOD (1-5)	Reference Documents AOP 518 Rev 29 ARP 1C07B (B-10)		
Ability to (a) predict the impacts of the following on the INSTRUMENT AIR SYSTEM and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal operation: Air dryer and filter malfunctions					

While operating at 100% power, the following alarms occur, due to a break in Instrument Air Dryer After Filter 1F 534A:

- 1C07B B-10 INSTRUMENT AIR DRYERS 1T 265A/B LO DISCH PRESSURE
- 1C07B C-10 INSTRUMENT AIR DRYERS 1T 265A/B HI ΔP
- 1C05A D-6 ROD DRIFT

Based on these indications, what is the status of the In-Service Instrument Air Dryer Chambers and what procedural actions are required?

- BOTH Instrument Air Dryer Chambers are aligned to provide flow, CV-3026 Instrument Air Dryer Bypass is SHUT; it is required to isolate Instrument Air Dryer After Filter, 1F-534A.
- BOTH Instrument Air Dryer Chambers are aligned to provide flow, CV-3026 Instrument Air Dryer Bypass is OPEN, it is required to manually scram the reactor.
- BOTH Instrument Air Dryer Chambers are isolated, CV-3026 Instrument Air Dryer Bypass is SHUT; it is required to isolate Instrument Air Dryer After Filter, 1F-534A.
- BOTH Instrument Air Dryer Chambers are isolated, CV-3026 Instrument Air Dryer Bypass is OPEN; it is required to manually scram the reactor.

Correct Answer : B Both Dryers align for full flow, CV-3026 auto opens, when Rod Drift alarm is in, a manual scram is required.

Plausible Distractors:

A is plausible: Potential misconception for CV-3026 leak response. With Rod Drift condition, scram is required.

C is plausible: Potential misconception for Dryer isolation leak response. With Rod Drift condition, scram is required.

D is plausible: Potential misconception for Dryer isolation leak response.

Objective Link: None

RO 26	K/A Number 400000	Statement A1.04	IR 2.8	Origin N	Source Question NA
LOK H	10CFR55.41(b)	LOD (1-5)	Reference Documents ARP 1C06B D-2 Rev 42		
Ability to predict and / or monitor changes in parameters associated with operating the CCWS controls including: Surge Tank Level					

With the plant operating at 30% power, RWCU was removed from service to repair Non Regenerative Heat Exchanger, 1E-215A. Following the repair, while returning RWCU Filter Demineralizers to service, a 2 gpm leak develops in the tubes of the RWCU Non Regenerative Heat Exchanger.

Which ONE of the following indications will result?

- a. Rising RWCU F/D Conductivity
- b. Rising RBCCW Surge Tank Level
- c. Lowering RBCCW Surge Tank Level
- d. RWCU High Differential Flow Trip

Correct Answer : B Reactor Pressure will be higher than RBCCW, flow into the RBCCW system will result in Surge Tank Level rising.

Plausible Distractors:

A is plausible: would be true in Cold Shutdown. RBCCW has corrosion inhibiting chemicals.

C is plausible: would be true in Cold Shutdown, RBCCW Pressure would exceed Reactor Pressure.

D is plausible: would be true for a leak > 40 gpm.

Objective Link: None

RO 27	K/A Number 259001	Statement A3.04	IR 3.8	Origin B	Source Question DAEC Bank 45.05.01.05-03
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents SD-644 Rev 8		
Ability to monitor automatic operations of the REACTOR FEEDWATER SYSTEM including: Reactor water level					

The plant is operating at 90% power when one of the Feedwater Flow transmitter inputs fails LOW.

What will be the affect on RPV water level?

- a. There will be no effect on RPV water level.
- b. RPV water level will decrease because FWLC will initially throttle the Feed Regulating Valves closed. RPV level will stabilize at a new lower value
- c. RPV water level will initially decrease because steam flow is higher than feed flow; however, the Feed Regulating Valves will bring level back to level setpoint.
- d. RPV water level will increase because FWLC will open the Feed Regulating Valves due to steam flow being higher than feed flow. RFPs may trip on high water level.

Correct Answer: D RPV water level will increase because FWLC will open the Feed Regulating Valves due to steam flow being higher than feed flow. RFPs may trip on high water level. Three element control is the normal mode for 90% power

Plausible Distractors:

A is plausible: would be true in single element.

B is plausible: would be true for one Main Steam Line flow instrument failing low

D is plausible: would be true for a trip of an operating Reactor Feed Pump.

Objective Link: 45.05.01.05

RO 28	K/A Number 201006	Statement 2.1.33	IR 3.4	Origin N	Source Question NA
LOK F	10CFR55.41(b) 10	LOD (1-5)	Reference Documents IPOI-2, P&L 24 TS LCO 3.2.1.1 C.2.2 Amendment 223		
Rod Worth Minimizer Conduct of Operations: Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.					

A reactor startup is in progress, with power at Range 4 of the Intermediate Range Monitors. The Rod Worth Minimizer experiences a critical self test failure.

In this condition, what is the impact of this failure?

- a. The Rod Worth Minimizer is not required OPERABLE, in this condition a Control Rod Drop Accident cannot cause fuel damage.
- b. The Rod Worth Minimizer is required OPERABLE, this startup may NOT continue, the only permissible rod motion is by reactor scram.
- c. The Rod Worth Minimizer is required OPERABLE, this startup may continue, if a second licensed operator verifies rod movements.
- d. The Rod Worth Minimizer is not required OPERABLE, but must be restored OPERABLE prior to exceeding 30% reactor power.

Correct Answer: C RWM required OPERABLE < 10% power. LCO 3.2.1.1 C.2.2 allows startup to continue if rod movements are verified by a second licensed operator.

Plausible Distractors:

A is plausible: would be true for reactor power above 10%.

B is plausible: would be true if RWM could not be bypassed.

D is plausible: would be true for Rod Block Monitor inoperable.

Objective Link: None

RO 29	K/A Number 202002	Statement K1.03	IR 3.7	Origin B	Source Question 2002 DAEC NRC Exam
LOK F	10CFR55.41(b)	LOD (1-5)	Reference Documents SD 264		
Knowledge of the physical connections and/or cause- effect relationships between RECIRCULATION FLOW CONTROL SYSTEM and the following: Reactor core flow					

Both Reactor Recirculation pumps were running at 70% speed when an internal component failure in the "B" MG SET SPEED CONTROL caused the controller speed demand output signal to instantaneously fail to the MAXIMUM value.

Which ONE of the following CORRECTLY describes the expected affect of this failure on core flow?

Core flow will rise until:

- the "B" Recirc Scoop Tube Positioner reaches its ELECTRICAL STOP.
- the "B" Recirc Scoop Tube Positioner reaches its MECHANICAL STOP.
- a "B" Recirc Scoop Tube Positioner LOCK-UP occurs due to high milliamp output signal from the Controller.
- a "B" Recirc Scoop Tube Positioner LOCK-UP occurs due to high deviation between the Controller speed demand and the Positioner position.

Correct Answer: D With an instantaneous change in demand, a high deviation signal will be generated, resulting in Scoop Tube Positioner Lock Up.

Plausible Distractors:

- A is plausible: would be true for a slow signal failure upscale.
- B is plausible: would be true for a scoop tube positioner failure
- C is plausible: speed demand deviation generates the lockup.

Objective Link: None

RO 30	K/A Number 204000	Statement K5.04	IR 2.7	Origin N	Source Question NA
LOK H	10CFR55.41(b)5	LOD (1-5)	Reference Documents ARP 1C04B C-8, Rev 65		
Knowledge of the operational implications of the following concepts as they apply to REACTOR WATER CLEANUP SYSTEM : Heat exchanger operation					

With the plant operating at full power, RBCCW flow is lost to the RWCU system. Which ONE of the following signals caused by the loss of RBCCW flow will **DIRECTLY** trip the operating RWCU Pump?

- RWCU Pump Low Flow
- RWCU Pump Cooling Water High Temperature
- RWCU Filter / Demin Inlet Water High High Temperature
- MO 2700 Inboard Cleanup Suction Isolation valve closed

Correct Answer: B. Loss of RBCCW will cause cooling water high temperature, which directly trips the pump with a setpoint of 140F

Plausible Distractors:

A is plausible: Pump is tripped by temperature signal prior to low flow condition.

C is plausible : F/D Inlet High High temperature will cause the outboard isolation, which will cause the pump trip INDIRECTLY.

D is plausible: Only outboard valves close due to high high cooling water temperature.

Pump is directly tripped by F/D Inlet high high temperature.

Objective Link: None

RO 31	K/A Number 203000	Statement A1.01	IR 4.2	Origin M	Source Question Fermi-2 2004 NRC Exam
LOK H	10CFR55.41(b)5	LOD (1-5)	Reference Documents SD 149 Rev 10		
RHR/LPCI: Injection Mode (Plant Specific) Ability to predict and/or monitor changes in parameters associated with operating the RHR/LPCI: INJECTION MODE (PLANT SPECIFIC) controls including: Reactor water level					

The plant has experienced a transient resulting in the following conditions:

RPV Water Level is 55 inches, lowering.
 RPV Pressure is 225 psig, lowering.
 Drywell Pressure is 1.5 psig, stable.
 Standby Diesel Generator 1G-21 did NOT start.
 BOTH Reactor Recirc MG sets have TRIPPED.
 MO-4627, A RECIRC PUMP DISCHARGE VALVE is SHUT.

What is the current status of the RHR system?

- NO RHR pumps are running.
- ALL RHR pumps are running, injecting into Loop A.
- ALL RHR pumps are running, and are NOT injecting.
- ONLY RHR pumps A and C are running and are injecting into Loop A.

Correct Answer: B With RPV Level below 64 inches, ALL RHR Pumps start. MO-4627 SHUT indicates Loop Selection is complete. RPV Pressure below 450 psig indicates injection is occurring .

Plausible Distractors:

A is plausible: would be true with RPV Level above 64 inches.
 C is plausible: would be true with RPV Pressure above 450 psig.
 D is plausible: would be true with a concurrent Loss of Offsite Power.

Objective Link: None

Source Question:

The plant has experienced a LOCA with the following conditions:

EDG.....13 not running
 RPV Level.....25 inches
 RPV Pressure.....425 psig
 Drywell Pressure.....2.5 psig **MODIFICATION, now < LOCA signal**
 Torus Water Temperature.....128F
 A Reactor Recirc MG set.....tripped
 B Reactor Recirc MG set.....tripped

B3105-F031A, Recirc Loop A discharge isolation valve, is shut.

What is the current status of the RHR system?

A All RHR pumps are running and not injecting **OLD CORRECT ANSWER**

B All RHR pumps are running, injecting into Loop A **NEW CORRECT ANSWER**

C RHR pumps A, C & D are running and not injecting **MODIFICATION**

D RHR pumps A, C & D are running, injecting into Loop A

RO 32	K/A Number 216000	Statement K3.16	IR 3.0	Origin N	Source Question NA
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents 1C07A A-2, Rev 31 1C06B C-3, Rev 42		
Knowledge of the effect that a loss or malfunction of the NUCLEAR BOILER Instrumentation will have on following: Main turbine					

With the plant operating at 100% power, a catastrophic reference leg break occurs affecting TWO Narrow Range GEMAC Reactor Water Level instruments.

Which ONE of the following describes the impact of this failure?

- a. RFP flow will decrease, producing a Low RPV Water Level Reactor Scram immediately.
- b. RFP flow will increase, resulting in a High RPV Water Level Main Turbine Trip.
- c. Main Turbine and RFP High RPV Water Level Trips are disabled.
- d. Main Turbine and RFP High RPV Water Level Trips will immediately occur.

Correct Answer: D 2 of 3 GEMAC instruments failing high produce a Turbine and RFP trip.

Plausible Distractors:

A is plausible: would be true for a single channel reference leg failure affecting FW Level Control.

B is plausible: would be true for a single channel variable leg affecting FW Level Control.

C is plausible: would be true for two channel variable leg break preventing High Level RFP and Main Turbine trips.

Objective Link: None

RO 33	K/A Number 202002	Statement A2.06	IR 3.3	Origin N	Source Question NA
LOK H	10CFR55.41(b)5	LOD (1-5)	Reference Documents ARP 1C04A D-2 and 8 Rev 50		

Ability to (a) predict the impacts of the following on the RECIRCULATION FLOW CONTROL SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations:
Low reactor water level: Plant-Specific

With the plant operating at 60% power, a Reactor Feed Pump trip resulted in the following:

- 1C04A D-2, "A" RECIRC MG 20% OR 45% FLOW LIMITER IN EFFECT alarms.
- 1C04A D-8, "B" RECIRC MG 20% OR 45% FLOW LIMITER IN EFFECT alarms.
- RPV Water Level lowered to 180 inches and recovered.
- Recirculation Pump Speeds are 62% and LOWERING.

Which ONE of the following actions are required?

- a. Take MANUAL control of BOTH Feedwater Regulating Valves.
- b. Place BOTH SCOOP TUBE CONTROL Switches in the LOCKED position.
- c. When power has stabilized, DEPRESS BOTH 45% Runback Speed Limiter RESET pushbutton provided on Panel 1C04.
- d. When power has stabilized, MATCH the MG Set Speed Controllers PERCENT SPEED and PERCENT SPEED DEMAND signals.

Correct Answer: D Following a RUNBACK, ARP 1C04A D-2 and 8 require nulling Recirculation MG Set Speed controllers SPEED and DEMAND signals to prevent an uncontrolled increase in power when limiters are RESET.

Plausible Distractors:

A is plausible: would be true for a Feedwater Level Control system malfunction initiated abnormal RPV Water Level condition. This is excluded by "recovered"

B is plausible; would be true for a Recirculation Flow Controller malfunction. This is excluded by providing valid conditions for initiation of a 45% Limiter Runback.

C is plausible: would be true ONLY AFTER MG Set Speed Controllers have been NULLED.

Objective Link: None

RO 34	K/A Number 233000	Statement K2.02	IR 2.8	Origin N	Source Question NA
LOK F	10CFR55.41(b)7	LOD (1-5)	Reference Documents OI 149 Rev 102 SD 149		
Knowledge of electrical power supplies to the following: RHR pumps					

With the PREFERRED loop of RHR operating in the Shutdown Cooling Mode, which ONE of the following buses provides power to the operating RHR Pump?

- a. 1A3
- b. 1A4
- c. 1B32
- d. 1B42

Correct Answer: B B Loop is preferred. B Loop RHR Pumps (1P-229 B or D) are powered from 1A4.

Plausible Distractors:

A is plausible: would be true for non-preferred loop.

B is plausible: would be true for ESW Pumps for A Loop.

D is plausible: would be true for ESW Pumps for B Loop.

Objective Link: None

RO 35	K/A Number 234000	Statement K4.02	IR 3.3	Origin B	Source Question 2002 Clinton NRC Exam
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents SD 281, Rev 4		
Knowledge of FUEL HANDLING EQUIPMENT design feature(s) and/or interlocks which provide for the following: Prevention of control rod movement during core alterations					

The Mode Switch is in REFUEL and all control rods are inserted. The Refueling Bridge operator grappled a fuel bundle, raised the grapple, and commenced moving the bundle towards the core.

Which ONE of the following describes what will result as the Refueling Bridge moves towards the core?

The Refueling Bridge:

- a. continues over the core AND initiates a control rod block.
- b. continues over the core AND causes NO other protective actions.
- c. stops before it reaches the core AND initiates a control rod block.
- d. stops before it reaches the core AND causes NO other protective actions.

Correct Answer: A With a loaded grapple, a rod block is generated when the Refueling Bridge is over the core.

Plausible Distractors:

B is plausible: would be true with unloaded grapple.

C is plausible: would be true with one rod withdrawn and second rod selection attempted.

D is plausible: would be true with one rod withdrawn.

Objective Link: None

RO 36	K/A Number 245000	Statement K6.06	IR 3.0	Origin N	Source Question NA
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents ARP 1C07A A-1 Rev 31		
Knowledge of the effect that a loss or malfunction of the following will have on the MAIN TURBINE GENERATOR AND AUXILIARY SYSTEMS : Electrical distribution					

With the plant operating at full power, 1C07A A-1, EHC 24 VDC POWER FAILURE alarms due to loss of BOTH +24 VDC power supplies to EHC.

Which ONE of the following describes the affect, if any, of this event on the Turbine Generator?

- a. The Turbine Generator will continue to operate at full load.
- b. The Turbine Generator load will lower due to an automatic runback of Load Set.
- c. The Turbine Generator will immediately TRIP and Bypass Valves will OPEN to control Reactor Pressure.
- d. The Turbine Generator will immediately TRIP and Bypass Valves will NOT OPEN to control Reactor Pressure.

Correct Answer: C With a loss of BOTH +24 VDC power supplies to EHC, the Turbine Generator will immediately TRIP and Bypass Valves will OPEN to control Reactor Pressure.

Plausible Distractors:

A is plausible: would be true for loss of ONLY ONE +24 VDC power supplies.

C is plausible: would be true for a loss of Stator Cooling Water.

D is plausible: would be true for a complete loss of EHC Hydraulic Pressure.

Objective Link: None

RO 37	K/A Number 288000	Statement A4.02	IR 2.8	Origin N	Source Question NA
LOK F	10CFR55.41(b)9	LOD (1-5)	Reference Documents ARP 1C04B B-4 Rev 65		
Plant ventilation: Ability to manually operate and/or monitor in the control room: Area temperature					

With the plant operating at 100% power, the following occurs:

- 1C04B B-4 STEAM LEAK DET AMBIENT HI TEMP alarms.
- Torus Catwalk Ambient Air Temperature is 155°F, stable.

With these conditions, which ONE of the following actions will result?

- RCIC will isolate with a 3 second time delay
- HPCI will isolate with a 3 second time delay
- RCIC will isolate with a 15 minute time delay
- HPCI will isolate with a 15 minute time delay

Correct Answer: D HPCI will isolate with a 15 minute time delay. TS 2526A-D >150°F (inc)

Plausible Distractors:

A is plausible: would be true for RCIC Emergency Cooler Ambient > 175°F.

B is plausible: would be true for HPCI Emergency Cooler Ambient > 175°F

C is plausible: would be true with a 30 minute delay.

Objective Link: None

RO 38	K/A Number 290003	Statement 2.4.10	IR 3.0	Origin N	Source Question NA
LOK F	10CFR55.41(b) 10	LOD (1-5)	Reference Documents ARP 1C26A C-2 Rev 45		
Control Room HVAC		Emergency Procedures / Plan	Knowledge of annunciator response procedures.		

Annunciator 1C26A C-2, CONTROL BLDG INTAKE AIR RAD MON RIM 6101A HI / TROUBLE alarms with RIM 6101A reading 5 mr / hr.

Which ONE of the following is the required response to these indications?

It is required to verify that:

- a. the Battery Room Exhaust Fans 1V-EF-30A starts.
- b. the Control Building Air Conditioning units shift into fresh air mode.
- c. the Control Building Chiller has shifted to the 75 horsepower mode of operation.
- d. the Standby Filter Unit lockout relays trip isolating the Control Building Intake and Exhaust Dampers.

Correct Answer: D SFU Lockout Relays trip isolating Intake and Exhaust Dampers.

Plausible Distractors:

A is plausible: would be true for 1V-EF-30B or C, which start, 1V EF-30A trips.

B is plausible: would be true for radiation < 3.5 mr/hr, normal fresh air mode.

C is plausible: would be true for ST and SU Transformer Feeder breakers open to 1A3 and 1A4.

Objective Link: None

RO 39	K/A Number 295001	Statement AA1.05	IR 3.3	Origin B	Source Question DAEC Bank RO-93.10.03.01-01
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents AOP 255.2 Rev 28 Provide Power to Flow Map		
Partial or Complete Loss of Forced Core Flow Circulation / 1 & 4 Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF FORCED CORE FLOW CIRCULATION : Recirc Flow Control System					

Following a trip of a single Recirc Pump during a startup, the following parameters exist:

Reactor Power (APRM) is 35% and stable.

Core Flow as determined by core plate D/P is 19.0 Mlb/hr and stable.

Which ONE of the following is correct, concerning continued operation?

- Continued operation is NOT ALLOWED and a Reactor Scram must be inserted.
- A SOLOMON stability monitor case is to be evaluated to determine if continued operation is allowed.
- The buffer zone has been entered and must be exited by WITHDRAWING control rods or RAISING Recirc flow.
- The exclusion zone has been entered and must be exited by WITHDRAWING control rods or RAISING Recirc flow.

Correct Answer: B. Data is in buffer region, and AOP 255.2 allows operation while NOT showing instability while running SOLOMON case..

Plausible Distractors:

A is plausible: scram is not required if power is stable.

C is plausible: not required if SOLOMON allows continued operation.

D is plausible: not in the exclusion zone.

Objective Link: 93.10.03.01

RO 40	K/A Number 295003	Statement AA1.02	IR 4.2	Origin B	Source Question DAEC Bank 15.05.01.03-01
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents SD 304 ARP 1C08B, A-11, Rev 73		
Partial or Complete Loss of AC / Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER : Emergency generators					

The plant is at 100% power. 1A3 and 1A4 are being supplied from the Standby Transformer. The Startup Transformer has just been reenergized and is available.

Which ONE of the following describes the actions that will occur if a Standby Transformer lockout occurs?

- a. No scram occurs. The essential buses fast transfer to the Startup Transformer.
- b. An immediate reactor scram occurs. The essential buses slow transfer to the Startup Transformer.
- c. An immediate reactor scram occurs. The Standby Diesel Generators will reenergize the essential buses.
- d. The reactor scrams on Low RPV Level due to loss of non-essential buses. The Standby Diesel Generators will reenergize the essential buses.

Correct Answer: C immediate Reactor Scram results from RPS loss, Diesels reenergize essential buses.

Plausible Distractors:

A is plausible: would be true if the Startup Transformer fast transferred on loss of voltage.
 B is plausible: would be true if the Startup Transformer slow transferred on loss of voltage.
 D is plausible: the reactor scrams on loss of RPS, prior to Low RPV Water Level.

Objective Link: 15.05.01.03

RO 41	K/A Number 295004	Statement 2.2.25	IR 2.5	Origin M	Source Question 1999 DAEC NRC Exam
LOK H	10CFR55.41(b) 10	LOD (1-5)	Reference Documents AOP 302.1 Rev 44		
Partial or Total Loss of DC Pwr / 6 Equipment Control Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.					

The plant is operating in a normal full power lineup when annunciator 1C08, A-9, 125 VDC SYSTEM 1 TROUBLE activates concurrently with a number of other annunciators which confirm a loss of DC power.

As the BOP operator at 1C08 you identify that 4KV breaker control power has been lost to busses 1A1 and 1A3.

Which ONE of the following correctly describes the affected bus and the status of the 125 VDC subsystem?

- 1D10 has been deenergized. Division 1 125 VDC Distribution subsystem is INOPERABLE.
- 1D10 has been deenergized. Division 1 125 VDC Distribution subsystem is OPERABLE, because the Swing Charger can be aligned to the affected bus.
- 1D11 has been deenergized. Division 1 125 VDC Distribution subsystem is INOPERABLE.
- 1D11 has been deenergized. Division 1 125 VDC Distribution subsystem is OPERABLE, because the Swing Charger can be aligned to the affected bus.

Correct Answer: A Loss of 1D10 causes loss of 1A3 AND 1A4 control power. With one division of 125 VDC inoperable, a single failure may result in loss of the remaining division of 125 VDC power – DBA LOCA cannot be mitigated with no 125 VDC power.

Plausible Distractors:

B is plausible: The Swing Charger may be aligned, but bus is still INOPERABLE while deenergized.

C is plausible: 1D11 loss would result in loss of 1A1 control power ONLY.

D is plausible: 1D11 loss would result in loss of 1A1 control power ONLY. The Swing Charger may be aligned, but bus is still INOPERABLE while deenergized.

Objective Link: None

Source Question:

The plant is operating in a normal full power lineup when annunciator 1C08, A-9, 125 VDC SYSTEM 1 TROUBLE activates concurrently with a number of other annunciators which confirm a loss of DC power.

As the BOP operator at 1C08 you identify that 4KV breaker control power has been lost to busses 1A1 and 1A3.

The loss of which one of the following 125 VDC busses would account for this indication? (Modification)

- 1D10 (Modification)
- 1D11 (Modification)

C 1D13 (Modification)

D 1D14 (Modification)

RO 42	K/A Number 295005	Statement AK2.02	IR 2.9	Origin M	Source Question 2003 Columbia Generating NRC Exam
LOK H	10CFR55.41(b)5	LOD (1-5)	Reference Documents IPOI 4, Rev 86		
Main Turbine Generator Trip Knowledge of the interrelations between MAIN TURBINE GENERATOR TRIP and the following: Feedwater temperature					

The plant is operating at 18% power, 100 MWe, when a failure causes a Main Turbine trip.

Which ONE of the following describes the affect of this transient on Reactor Power?

- Reactor Power will immediately lower due to a Reactor Scram.
- Reactor Power will immediately rise due to void collapse, resulting in a Reactor Scram.
- Reactor Power will rise over a period of time due to lower Feedwater Temperature.
- Reactor Power will lower over a period of time due to RR MG Speed reduction.

Correct Answer: C

Plausible Distractors:

A is plausible: would be true if power were >26%.

B is plausible: would be true if with concurrent Bypass Valve failure.

D is plausible: would be true if RRMGs were above minimum speed and Low Feedwater Flow runback were 15% vice 20%.

Objective Link: None

Source Question:

The plant is operating at 24% power when a failure causes a main turbine trip.

Which of the following is correct for this condition?

- Reactor power goes up due to a decrease in feedwater temperature.
- The reactor scrams from the main turbine trip.
- Feedwater temperature remains constant. (Modification)
- Reactor power goes down due to an increase in feedwater temperature.(Modification)

RO 43	K/A Number 295006	Statement AK1.01	IR 3.7	Origin B	Source Question 2003 LaSalle NRC Exam
LOK H	10CFR55.41(b)9	LOD (1-5)	Reference Documents SD 959-1 Rev 7		
SCRAM Knowledge of the operational implications of the following concepts as they apply to SCRAM : Decay heat generation and removal					

A reactor startup is in progress with power at 14%. A failure causes ALL Turbine Control Valves to fail OPEN, resulting in an automatic scram. Plant parameters are as follows:

- RPV Water Level reached a minimum of 177 inches, and stabilized at 195 inches.
- Reactor Pressure reached a minimum of 830 psig and is rising.

With NO operator action, which ONE of the following lists the decay heat removal methods which are immediately available?

- a. Safety Relief Valves and Reactor Water Cleanup ONLY.
- b. Safety Relief Valves, Reactor Water Cleanup, and Main Steam Line Drain Valves ONLY.
- c. Safety Relief Valves, Main Steam Line Drain Valves, and Main Turbine Bypass Valves ONLY.
- d. Safety Relief Valves, Reactor Water Cleanup, Main Steam Line Drain Valves, and Main Turbine Bypass Valves.

Correct Answer : A TCVs failing OPEN results in Low MSL Pressure Group 1 Isolation (850 psig in RUN) . With MSIVs shut, ONLY RWCU and SRVs are available.

Plausible Distractors:

B is plausible: would be true for EHC hydraulic failure, making BPVs unavailable.

C is plausible: would be true for RWCU isolation signal 119.5 inches RPV Level.

D is plausible: would be true if Reactor Mode Switch were taken to SHUTDOWN prior to SCRAM.

Objective Link: None

RO 44	K/A Number 295016	Statement AA1.03	IR 3.0	Origin N	Source Question NA
LOK F	10CFR55.41(b)7	LOD (1-5)	Reference Documents AOP 915 Rev 35		
Control Room Abandonment Ability to operate and/or monitor the following as they apply to CONTROL ROOM ABANDONMENT : RPIS					

While executing AOP 915, Shutdown Outside Control Room, BOTH Manual Scram Pushbuttons have been depressed. The Full Core Display shows that 85 Control Rods FULL IN lights are ON and 4 Control Rods FULL IN lights are OFF.

In accordance with AOP 915, what other method can be used to verify control rod insertion?

- a. Requesting a Rod Log
- b. Check SPDS for ALL RODS IN
- c. Use of Refuel One Rod Selected Permissive
- d. Check the rods are at position 00 on the Four Rod Display

Correct Answer: C use of the Refuel One Rod Selected Permissive function is included in AOP 915.

Plausible Distractors:

A is plausible: can be used to determine rod status, not specified by AOP 915.

B is plausible: can be used to determine rod status, not specified by AOP 915.

D is plausible: can be used to determine rod status, not specified by AOP 915.

Objective Link: None

RO 45	K/A Number 295018	Statement AK1.01	IR 3.5	Origin B	Source Question DAEC Bank 26.01.01.14-03
LOK H	10CFR55.41(b)9	LOD (1-5)	Reference Documents OI 408 P&L 3 Rev 71		
Knowledge of the operational implications of the following concepts as they apply to PARTIAL OR COMPLETE LOSS OF COMPONENT COOLING WATER : Effects on component/system operations					

The reactor is at 100% power with two Well Water pumps running.

“C” Well flow rate is 400 gpm.

“D” Well flow rate is 900 gpm.

Which ONE of the following will occur if the “D” Well Water pump tripped?

- a. Main Plant Intake Coils Bypass Valve, CV-4464 opens.
- b. Control Building Chillers Bypass Valve, MO-2039C opens.
- c. Condenser Area Air Cooling Coils, 1V-AC-21 AND 1V-AC-22 isolate.
- d. Drywell Cooling Loops Well Water Supply and Return Valves, CV-5718A AND CV-5704A close.

Correct Answer : A Main Plant Intake Coil bypass is part of the Well Water Isolation which occurs when total Well flow drops below 750 gpm when Well Water Logic Control Switch is in the FLOW position. This switch is normally in FLOW.

Plausible Distractors:

B is plausible: would be true only if MO-2039A or B shut.

C is plausible: ONLY the selected cooling coil isolates, not BOTH.

D is plausible: would be true for PCIS Group 7, RPV Water Level < 64 inches.

Objective Link: 26.01.01.14

RO 46	K/A Number 295019	Statement 2.1.32	IR 3.4	Origin N	Source Question NA
LOK H	10CFR55.41(b) 10	LOD (1-5)	Reference Documents AOP 518 Rev 29		
295019 Partial or Total Loss of Inst. Air Conduct of Operations: Ability to explain and apply all system limits and precautions.					

Due to lowering Instrument Air Pressure, AOP-518, FAILURE OF INSTRUMENT AND SERVICE AIR is being executed.

1C05A, F-1, "A" or "B" FEED REG VALVE POSITION LOCKED is activated.

If Instrument Air pressure cannot be restored, how are Feedwater Regulating Valves, CV-1579 and CV-1621, affected; and what procedural action(s) is (are) required?

Feedwater Regulating Valves will fail:

- a. SHUT; it is required to reduce Reactor Power to control RPV Water Level.
- b. SHUT; it is required to use the FEEDWATER STARTUP CONTROL VALVE, CV-1622 to control RPV Water Level.
- c. OPEN; it is required to THROTTLE A AND B FEEDLINE BLOCK Valves, MO-1592 and MO-1636 to control RPV Water Level.
- d. OPEN; it is required to completely SHUT A FEEDLINE BLOCK Valve, MO-1592, OR B FEEDLINE BLOCK Valve, MO-1636, to control RPV Water Level

Correct Answer: C AOP 518 states FWRVs will fail OPEN and requires THROTTLING Feedline Block Valves, and contains a warning against SHUTTING Feedline Block Valves.

Plausible Distractors:

A is plausible: would be true for failures which lower RPV Water Level.

B is plausible: would be true for failures which lower RPV Water Level.

D is plausible: AOP 518 contains a warning against fully shutting Feedline Block Valves.

Objective Link: None

RO 47	K/A Number 295021	Statement AK3.05	IR 3.6	Origin N	Source Question NA
LOK F	10CFR55.41(b)5	LOD (1-5)	Reference Documents AOP 149 Rev 25		
Loss of Shutdown Cooling Knowledge of the reasons for the following responses as they apply to LOSS OF SHUTDOWN COOLING : Establishing alternate heat removal flow paths.					

What is the reason that AOP 149, LOSS OF SHUTDOWN COOLING requires a HIGHER RPV Water Level established and maintained?

The HIGHER RPV Water Level:

- a. floods the Moisture Separators which provides a path for natural circulation.
- b. provides additional mass of water in the Reactor Vessel which will delay boiling.
- c. allows the Main Steam Line Drains to provide a drain path for feed and bleed.
- d. provides greater Net Positive Suction Head for the Reactor Water Cleanup Pumps.

Correct Answer: A when the Moisture Separators are flooded, a path is provided for natural circulation.

Plausible Distractors:

B is plausible: true, but not the stated reason.

C is plausible: Steam Lines are not flooded 214 inches RPV Water Level.

D is plausible: true, but this is not a limitation.

Objective Link: None

RO 48	K/A Number 295023	Statement AA2.05	IR 3.2	Origin N	Source Question NA
LOK F	10CFR55.41(b) 10	LOD (1-5)	Reference Documents AOP 981 Rev 4 EOP 3 Rev 19		
Ability to determine and/or interpret the following as they apply to REFUELING ACCIDENTS : Entry conditions of emergency plan					

The plant is at 100% power. Spent fuel movements are in progress in the Spent Fuel Pool. While moving spent fuel, a fuel assembly is being lowered into a storage rack. Bubbles rise from the fuel assembly to the Fuel Pool surface.

Refueling Pool Exhaust Radiation, RIS-4131A and B, indicate 15 mr/hr.

With these conditions, which ONE of the following lists the correct procedure(s) which is (are) required to be entered?

- a. AOP-981 Fuel Handling Event ONLY
- b. EOP-3, Secondary Containment Control AND
EOP-4, Radioactivity Release
- c. AOP-981, Fuel Handling Event AND
EOP-3, Secondary Containment Control
- d. AOP-981, Fuel Handling Event AND
EOP-4, Radioactivity Release

Correct Answer : C AOP-981 is required to be entered because spent fuel is involved. EOP-3 is required to be entered because Refueling Pool Exhaust Radiation > 8 mr/hr.

Plausible Distractors:

A is plausible: would be true with Refueling Pool Exhaust Radiation below 8 mr/hr

B is plausible: would be true if NOT due to a spent fuel bundle and if ALERT EAL RA-1 were exceeded.

D is plausible: would be true if ALERT EAL RA-1 were exceeded.

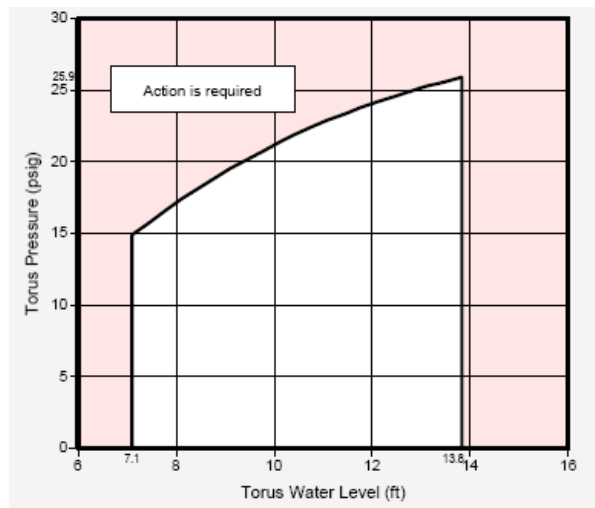
Objective Link: None

RO 49	K/A Number 295024	Statement EA2.03	IR 3.8	Origin N	Source Question NA
LOK H	10CFR55.41(b) 10	LOD (1-5)	Reference Documents EOP-2 Bases PSP Graph 5 provided without title		
High Drywell Pressure Ability to determine and/or interpret the following as they apply to HIGH DRYWELL PRESSURE: Suppression pool level					

Following a transient, the following conditions exist:

- Drywell Pressure is 23 psig.
- Torus Pressure is 21 psig.
- Torus Water Level is 9 feet.

What is the hazard associated with these conditions?



- Cavitation may occur in Core Spray Pumps.
- Evaporative cooling may result in containment failure.
- Inability to quench steam may result in containment failure.
- Chugging at the downcomers may result in damage to the Torus.

Correct Answer: C Pressure Suppression Curve violation is shown. Curve is based on preventing exceeding Containment Design Pressure from steam released from the RPV or SRVs.

Plausible Distractors:

- A is plausible: would be true for Net Positive Suction Head violation.
 B is plausible: would be true for Drywell Spray Initiation Limit violation.
 D is plausible: would be true for Torus Spray Initiation Pressure violation.

Objective Link: None

RO 50	K/A Number 295025	Statement EK3.03	IR 3.8	Origin N	Source Question NA
LOK F	10CFR55.41(b)5	LOD (1-5)	Reference Documents EOP-1 RPV Control Rev 14 EOP-1 Bases, Rev 12		
Knowledge of the reasons for the following responses as they apply to HIGH REACTOR PRESSURE : HPCI operation: Plant-Specific					

Following a Loss of Offsite Power, the following conditions exist:

- HPCI is maintaining RPV Water Level 170 to 211 inches.
- RPV Pressure is 1000 psig, with manual SRV operation controlling pressure.
- Following SRV opening, HPCI TRIPS due to RPV Water Level.

Which ONE of the following actions are permitted by EOP-1, RPV Control, to stabilize HPCI operation?

- LOWER Reactor Pressure to 700 psig.
- LOWER RPV Water Level to +15 to +211 inches.
- LOWER RPV Water Level to -25 to +211 inches.
- RAPIDLY LOWER Reactor Pressure by opening FOUR SRVs and use Low Pressure systems.

Correct Answer: A With SRV operation at High Reactor Pressure producing swell to +211 inches, EOP-1 permits lowering Reactor Pressure to 700 psig to stabilize HPCI operation.

Plausible Distractors:

B is plausible: would be true Normal and Preferred Injection Systems CANNOT maintain +170 to +211 inches.

B is plausible: would be true if ATWS conditions existed and RPV Water Level were intentionally lowered.

D is plausible: would be true if ED were required

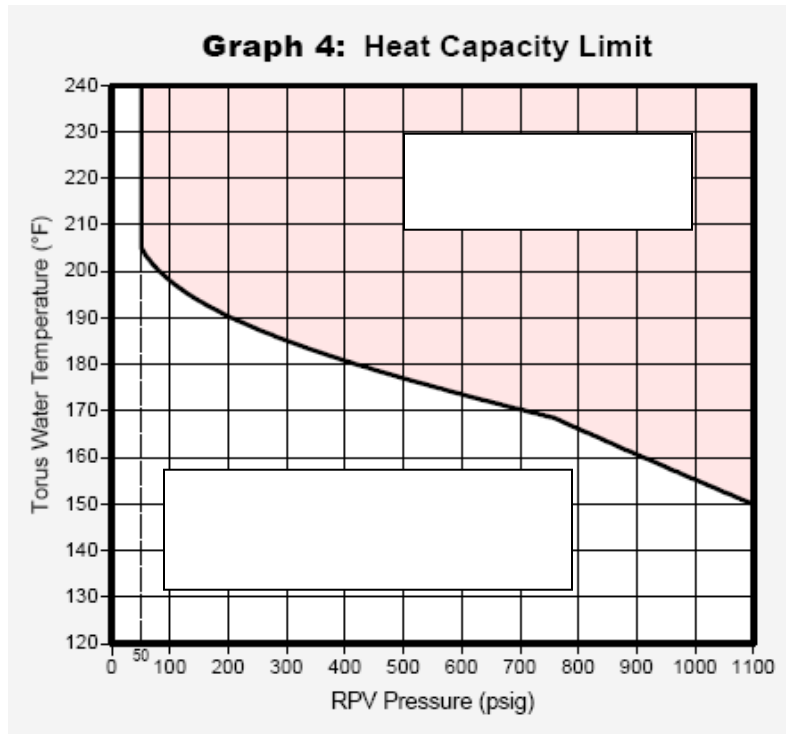
Objective Link: None

RO 51	K/A Number 295026	Statement EA2.03	IR 3.9	Origin N	Source Question NA
LOK H	10CFR55.41(b) 10	LOD (1-5)	Reference Documents EOP-1 Bases Rev 12		
Ability to determine and/or interpret the following as they apply to SUPPRESSION POOL HIGH WATER TEMPERATURE: Reactor pressure					

Following a transient, conditions are as follows:

- MSIVs are closed
- RPV Pressure is 1000 psig
- Torus Water Temperature is 150°F
- Torus Water Level is 10.4 feet
- Drywell pressure is 2.7 psig

Which ONE of the following actions are required?



- RAISE Torus Water Level per EOP-2 to raise heat absorption capacity of torus.
- LOWER Reactor Pressure to maintain margin to HCTL curve
- PERFORM an Emergency Depressurization using SRVs since the HCTL has been exceeded.
- ANTICIPATE Emergency Depressurization using Bypass Valves to maintain margin to HCTL curve.

Correct Answer: B RC/P CRS-4 in EOP-1 requires an attempt to maintain Reactor Pressure below the HCL Curve.

Plausible Distractors:

A is plausible: adding water from the CST will lower Torus Temperature, but with Torus Level given at the High Limit, EOPs do NOT PERMIT raising Torus Level.

C is plausible: and is required if initial action does NOT restore compliance with HCL.

D is plausible: and is required if the Main Condenser is available and initial action does NOT restore compliance with HCL.

Objective Link: None

RO 52	K/A Number 295004	Statement AK2.03	IR 3.3	Origin B	Source Question 1999 DAEC NRC Exam
LOK F	10CFR55.41(b)7	LOD (1-5)	Reference Documents AOP-388 Rev 18		
Knowledge of the interrelations between PARTIAL OR TOTAL LOSS OF DC PWR and the following: DC Bus loads					

A fire has severely damaged 250 VDC Bus 1D40, which will not be available for at least a week.

Under these conditions, which ONE of the following groups of systems is available for a safe plant shutdown from the Control Room?

- a. Core Spray and HPCI
- b. Core Spray and RHR LPCI Mode
- c. HPCI and RHR Shutdown Cooling Mode
- d. RCIC and RHR Shutdown Cooling Mode

Correct Answer: B Core Spray and RHR LPCI Mode are available. 1D40 deenergized results in 1D41 (HPCI Loads) and 1D42 (RHR Shutdown Cooling Isolation Valve MO-1909) losing power.

Plausible Distractors:

A is plausible: would be true if HPCI Loads had power.

C is plausible: would be true if HPCI Loads had power.

D is plausible: would be true if RHR Shutdown Cooling Isolation Valve MO-1909 had power.

Objective Link: None

RO 53	K/A Number 295028	Statement EK2.02	IR 3.2	Origin N	Source Question NA
LOK F	10CFR55.41(b)7	LOD (1-5)	Reference Documents EOP-2 Bases Document, Rev 12		
Knowledge of the interrelations between HIGH DRYWELL TEMPERATURE and the following: Components internal to the drywell					

A loss of coolant accident with concurrent loss of Well Water pumps has occurred while at power. Operators are attempting to restore Well Water and Drywell Cooling.

The CRS orders that an Emergency Depressurization be initiated due to inability to restore and maintain Drywell Temperature below a maximum temperature.

Which ONE of the following is a basis for this action?

Emergency Depressurization is performed at this point in order to ensure:

- a. that indications from the RPV water level instruments will remain valid after the blowdown.
- b. that water hammer will not occur in the Well Water System when Drywell Cooling loop flow is restored.
- c. that the blowdown is performed before exceeding the environmental qualification limits of the ADS SRVs.
- d. that the energy within the reactor is directed to the torus before exceeding the Torus Heat Capacity Limit.

Correct Answer: C environmental qualification of ADS SRVs is considered in the maximum Drywell Temperature 280° to 340°F.

Plausible Distractors:

A is plausible: High Drywell Temperatures challenge RPV Level Instruments, but the ED criteria is NOT based on this concern.

B is plausible: water hammer is a concern with High Drywell Temperatures, but the ED criteria is NOT based on this concern.

D is plausible: ED is required when HCL is exceeded, but HCL is not dependent on Drywell Temperature. HCL is based on Reactor Pressure and Torus Temperature.

Objective Link: None

RO 54	K/A Number 295030	Statement EK3.07	IR 3.5	Origin B	Source Question DAEC Bank
LOK L	10CFR55.41(b)5	LOD (1-5)	Reference Documents EOP Cautions Bases, Rev 8		
Knowledge of the reasons for the following responses as they apply to LOW SUPPRESSION POOL WATER LEVEL: NPSH considerations for ECCS pumps					

The plant was operating at 93% thermal power when a transient occurred. Current plant conditions are as follows:

- ALL Control Rods are inserted.
- RPV Water Level is 130 inches and stable.
- Reactor Pressure is 55 psig and stable.
- Drywell Pressure is 4 psig and slowly lowering.
- Drywell Temperature is 145°F and stable.
- Torus Pressure is 3 psig and slowly lowering.
- Torus Water Temperature is 190°F and stable.
- Torus Water Level is 10.1 feet and lowering.
- Torus and Drywell Sprays are in operation.
- Torus Cooling is maximized with the remaining RHR flow.
- "A" and "B" Core Spray pumps are injecting into the RPV at full flow.

With these conditions, which ONE of the following represents a potential concern?

- a. Introduction of air into the containment.
- b. Structural damage to the SRV tailpipes.
- c. Failure of the Torus to Drywell vacuum breakers.
- d. Low Pressure ECCS pumps could lose NPSH and cavitate.

Correct Answer: D Low Torus Water Level, High Torus Water Temperature, and Lowering Torus Pressure violate the NPSH Curve which subjects the operating ECCS Pumps to degradation from cavitation.

Plausible Distractors:

A is plausible: would be true for negative Torus Pressure.

B is plausible: would be true for high Torus Water Level.

D is plausible: would be true for high Torus Water Level.

Objective Link: 95.00.00.17

RO 55	K/A Number 295031	Statement EK3.03	IR 4.1	Origin N	Source Question NA
LOK F	10CFR55.41(b)5	LOD (1-5)	Reference Documents EOP Bases Document Rev 8 Flow Chart Use & Logic section		
Knowledge of the reasons for the following responses as they apply to REACTOR LOW WATER LEVEL : Spray cooling					

Following a Loss of Coolant Accident, which ONE of the following conditions provides Adequate Core Cooling, as defined in the EOP Bases?

- a. RHR Pumps are injecting 5000 gpm.
RPV Water Level is stable at -30 (minus 30) inches.
- b. A Core Spray Pump is injecting 3200 gpm.
B Core Spray Pump is available.
RPV Water Level is stable at -35 (minus 35) inches.
- c. A Core Spray Pump is injecting at 2900 gpm.
B Core Spray Pump is injecting at 2800 gpm.
RPV Water Level is stable at -35 (minus 35) inches.
- d. RHR Pumps are injecting 5000 gpm.
A Core Spray Pump is injecting at 2900 gpm.
B Core Spray Pump is injecting at 2800 gpm.
RPV Water Level is stable at -30 (minus 30) inches.

Correct Answer : B Below -25 inches, either Spray Cooling must be established or transition to Severe Accident Management Guidelines is required. ONE Core Spray Pump above 3000 gpm is adequate core cooling if RPV Water Level is maintained above -39 (minus 39 inches). If this flow is divided by two Core Spray Pumps, the spray pattern may not assure Adequate Core Cooling.

Plausible Distractors:

A is plausible: would be true with Core Spray injection > 3000 gpm.

B is plausible: would be true if either Core Spray Pump were > 3000 gpm.

D is plausible: would be true if either Core Spray Pump were > 3000 gpm.

Objective Link: None

RO 56	K/A Number 295037	Statement EK1.02	IR 4.1	Origin B	Source Question 2002 DAEC NRC Exam
LOK H	10CFR55.41(b) 10	LOD (1-5)	Reference Documents EOP ATWS RPV Control Rev 16		
Knowledge of the operational implications of the following concepts as they apply to SCRAM CONDITION PRESENT AND REACTOR POWER ABOVE APRM DOWNSCALE OR UNKNOWN: Reactor water level effects on reactor power					

A Group 1 isolation and ATWS have occurred from full power.
Reactor Power was 15% after the Recirc Pumps were tripped.
LLS is controlling RPV pressure.
RPV injection was Terminated and Prevented for Level / Power Control.

The following parameters are reported to the CRS:

- RPV level is at 150 inches.
- Reactor power is at 2%.

The CRS directs reestablishing injection with feedwater.

Is this direction correct? (YES or NO)

If YES, identify the reason it is correct.

If NO, identify the additional considerations necessary to reestablish injection.

- NO; Injection must remain terminated until RPV Level lowers to +87 inches.
- NO; Injection must remain terminated until RPV Level lowers to +119.5 inches.
- YES; Injection may be reestablished when power lowers to <5% and RPV Level lowers to +158 inches.
- YES; Injection may be reestablished when power lowers to <5%. There is no restriction on RPV level.

Correct Answer: A Terminate and Prevent requires lowering level to at least +87 inches.

Plausible Distractors:

B is plausible: RPV Level must lower to at least +87 inches.

C is plausible: would be true if control rods were fully inserted.

D is plausible: would be true if control rods were fully inserted.

Objective Link: None

RO	K/A Number	Statement	IR	Origin	Source Question
57	295038	2.1.32	3.4	N	NA
LOK F	10CFR55.41(b) 10	LOD (1-5)	Reference Documents EOP 4 Bases Rev 8		
High Off-site Release Rate Conduct of Operations: Ability to explain and apply all system limits and precautions.					

Why does EOP-4, Radioactivity Release Control, require restarting Turbine Building Exhaust Fans?

Restarting Turbine Building Ventilation will:

- a. ensure air is monitored and elevated prior to release to the environment.
- b. provide additional air flow to dilute radioactivity prior to release to the environment.
- c. provide cooling to promote condensation of steam leaks to minimize radioactivity release.
- d. maintain a positive pressure in the Turbine Building to minimize leakage from the Reactor Building.

Correct Answer: A Exhaust Fans are restarted to ensure air is monitored and elevated prior to release to the environment.

Plausible Distractors:

B is plausible: air flow will dilute effluent, but is not the reason stated in the EOP Bases.

C is plausible: would be true if Supply Fans were restarted.

D is plausible: would be true if Supply Fans were restarted.

Objective Link: None

RO 58	K/A Number 600000	Statement 2.1.20	IR 4.3	Origin N	Source Question NA
LOK H	10CFR55.41(b) 10	LOD (1-5)	Reference Documents AOP 913 Rev 49		
Plant Fire On-site Conduct of Operations: Ability to execute procedure steps					

A plant startup in progress. Reactor is at 70% power. The in plant operator notifies the Control Room Operator that there is a fire in the area of the "A" Reactor Feed Pump.

In accordance with AOP-913, FIRE, what are the MINIMUM actions required?

- a. Reduce Recirc MG Set speed to minimum.
- b. Reduce Recirc Flow to 27 Mlbm/hr, scram the reactor, enter IPOI 5, and secure the "A" Reactor Feed Pump
- c. Reduce power to less than 60% in accordance with IPOI 4, Fast Power Reduction and secure the "A" Reactor Feed Pump.
- d. Reduce power to less than 60% in accordance with the Control Rod Withdrawal Sequence pull sheet and secure the "A" Reactor Feed Pump.

Correct Answer: C AOP 913 directs for ONE RFP affected by fire, lower power to <60% by IPOI 4, Fast Power Reduction and secure the affected RFP.

Plausible Distractors:

A is plausible: would be true if MG Set was on fire.

B is plausible: would be true if BOTH RFPs were on fire (with the exception of securing only one RFP)

D is plausible: would be true for a slower power reduction.

Objective Link: None

RO 59	K/A Number 295012	Statement AA1.01	IR 3.5	Origin N	Source Question NA
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents OI 760 Rev 25		
Ability to operate and/or monitor the following as they apply to HIGH DRYWELL TEMPERATURE : Drywell ventilation system					

With the plant operating at full power with a normal Drywell Cooling lineup, a leak caused Drywell Pressure and Temperature to increase. Drywell Sprays have been initiated to control Drywell Temperature.

With the Drywell Spray valves open and Drywell Pressure currently at 3.8 psig. What is the status of the Drywell Fans?

All of the Drywell Fans will be:

- a. TRIPPED, with Well Water flow aligned to the coolers.
- b. TRIPPED, with Well Water flow isolated from the coolers.
- c. operating in SLOW speed, with Well Water flow aligned to the coolers.
- d. operating in SLOW speed, with Well Water flow isolated from the coolers.

Correct Answer: A Drywell Spray will cause All Drywell Fans to be TRIPPED, with Well Water flow aligned to the coolers.

Plausible Distractors:

B is plausible: would be true for Low Low Low RPV Water Level condition.

C is plausible: would be true with Drywell Sprays NOT initiated.

D is plausible: would be true with Drywell Sprays NOT initiated and Low Low Low RPV Water Level.

Objective Link: None

RO 60	K/A Number 295013	Statement AK1.04	IR 2.9	Origin N	Source Question NA
LOK F	10CFR55.41(b)8	LOD (1-5)	Reference Documents TS Bases 3.6.2.1 Amendment 223		
Knowledge of the operational implications of the following concepts as they apply to HIGH SUPPRESSION POOL TEMPERATURE : Complete condensation					

With the plant operating at full power, a Safety Relief Valve fails OPEN. To ensure that complete condensation at the downcomers limits containment loads following a Loss of Coolant Accident, it is required to immediately SHUTDOWN the reactor if Suppression Pool Temperature approaches:

- a. 95°F
- b. 105°F
- c. 110°F
- d. 120°F

Correct Answer: C 110°F ensures complete condensation at the downcomers.

Plausible Distractors:

A is plausible: 95°F is the LCO in MODES 1,2,and 3 and requires restoration within 24 hours.

B is plausible: 105°F is the LCO in MODES 1,2,and 3 if testing that adds heat to the Suppression Pool is in progress and requires suspending testing.

D is plausible: 120°F is the Mode 3 LCO and requires depressurizing.

Objective Link: None

RO 61	K/A Number 295014	Statement AA2.03	IR 4.0	Origin B	Source Question 1999 DAEC NRC Exam
LOK H	10CFR55.41(b) 10	LOD (1-5)	Reference Documents AOP 255.2 Rev 28		
Ability to determine and/or interpret the following as they apply to INADVERTENT REACTIVITY ADDITION : Cause of reactivity addition					

Plant conditions are as follows:

- Reactor Power is 65% and stable.
- RPV Water Level is 189 inches and stable.
- Generator Output is 350 Mwe and stable.

Due to a transient, the following indications are observed:

- Reactor Power is rising steadily.
- RPV Water Level is 180 inches, lowering slowly.
- Generator Output is rising steadily.

Which ONE of the following caused these indications?

- The reactor has just experienced a Control Rod Drop accident.
- The EHC system is malfunctioning, raising Reactor Pressure.
- One or both of the Feed Regulating Valves is failing, raising Feed Flow.
- One or both of the Recirc controllers is failing, raising Reactor Recirculation Flow.

Correct Answer: D One or both of the Recirc controllers is failing, raising Reactor Recirculation Flow.

Plausible Distractors:

A is plausible: would be true for a step increase in Reactor Power, associated core voiding causes an increase in RPV Water Level.

B is plausible: would cause a lowering Generator Output.

C is plausible: would cause rising RPV Water Level.

Objective Link: None

RO 62	K/A Number 295015	Statement AA2.01	IR 4.1	Origin N	Source Question NA
LOK H	10CFR55.41(b) 10	LOD (1-5)	Reference Documents EOP ATWS Bases Rev 11		
Ability to determine and/or interpret the following as they apply to INCOMPLETE SCRAM : Reactor power					

Following a reactor scram, the following conditions exist:

- The Reactor Mode Switch is in SHUTDOWN.
- NINE control rods are at position 48.
- EIGHTY control rods are inserted to position 00.
- Reactor Power is 20/40 on IRM Range 5.
- Standby Liquid has NOT been injected.
- BOTH Recirculation Pumps are operating at minimum speed.

Given these conditions, which ONE of the following describes the appropriate method of lowering reactor power?

- a. Inject Standby Liquid Control
- b. Trip Reactor Recirculation Pumps
- c. Insert Control Rods per the Rod Insertion Procedures
- d. Terminate and Prevent Injection to lower RPV Water Level

Correct Answer: C With the reactor shutdown (< POAH) with no boron injected, it is required to exit ATWS /Q, enter IPOI 5 and insert rods with the RIPs.

Plausible Distractors:

A is plausible: would be true for power >POAH per ATWS /Q-8.

B is plausible: would be true for power >POAH per ATWS /Q-4.

D is plausible: would be true for power >5% per 2nd CRS in ATWS /L Leg.

Objective Link: None

RO 63	K/A Number 295017	Statement AK3.01	IR 3.6	Origin N	Source Question NA
LOK F	10CFR55.41(b)5	LOD (1-5)	Reference Documents Tech Specs Bases 3.3.6.1		
Knowledge of the reasons for the following responses as they apply to HIGH OFF-SITE RELEASE RATE : System isolations					

The is plant shutdown after a transient. Annunciator 1C03A (A-4), OFFGAS VENT PIPE RM-4116A/B HI-HI RAD, activates.

What is the response of the plant and why?

- a. The Offgas system isolates to secure the release.
- b. The Mechanical Vacuum pump trips to ensure that all releases are monitored.
- c. The Offgas Charcoal Absorbers shift into TREAT to ensure Offgas release is treated.
- d. A Group 3 isolation occurs that ensures containment isolation before the maximum allowable 10CFR20 release occurred.

Correct Answer: D Per the system description

Plausible Distractors:

A is plausible: Would if this was an Offgas isolation

B is plausible: Group one isolation provided this function

C is plausible: this function is provided by Pretreat HI Rad not Offgas vent pipe HI-HI RAD

Objective Link: None

RO 64	K/A Number 295035	Statement 2.4.31	IR 3.3	Origin N	Source Question NA
LOK F	10CFR55.41(b) 10	LOD (1-5)	Reference Documents ARP 1C23C Rev 44		
Secondary Containment High Differential Pressure Emergency Procedures / Plan Knowledge of annunciators alarms and indications, and use of the response instructions.					

With the plant operating at full power, 1C23C A-6, MAIN PLANT EXHAUST PLENUM HI PRESSURE alarms.

Which ONE of the following actuations results from this condition?

- a. The Reactor Building Supply fans TRIP.
- b. The Reactor Building Exhaust Fans START.
- c. The Standby Gas Treatment Trains START.
- d. The Main Plant Exhaust Fans SHIFT to High Speed.

Correct Answer: A The Reactor Building Supply fans TRIP when Exhaust Plenum reaches - .25 inches water gauge.

Plausible Distractors:

B is plausible: RB Exhaust Fans may be manually started to lower plenum pressure.

C is plausible: SBTG Train may be manually started to maintain D/P.

D is plausible: flow modulation occurs by dampers which will be OPEN.

Objective Link: None

RO 65	K/A Number 295036	Statement EK2.03	IR 2.8	Origin N	Source Question NA
LOK H	10CFR55.41(b)7	LOD (1-5)	Reference Documents ARP 1C14A B-4 and EOP-3, Secondary Containment Control Rev 19		
Knowledge of the interrelations between SECONDARY CONTAINMENT HIGH SUMP/AREA WATER LEVEL and the following: Radwaste					

While operating at full power, 1C14A B-4 AREA WATER LEVELS ABOVE MAX NORMAL, alarms. LI-3769 indicates RCIC Room Water Level is 4 inches.

With these indications, what is the source of the leakage, and what actions are required?

The source of the leakage is the:

- a. Suppression Pool; it is required to enter EOP-2, Primary Containment Control and SHUT RCIC Torus Suction Valves MO-2516 and 2517.
- b. Suppression Pool; it is required to enter EOP-3, Secondary Containment Control and verify area Sump Pumps are operating.
- c. Condensate Storage Tank; it is required to enter EOP-3, Secondary Containment Control, and commence a Reactor Shutdown.
- d. Condensate Storage Tank; it is required to enter EOP-3, Secondary Containment Control and verify area Sump Pumps are operating.

Correct Answer: D Normal RCIC source is CST, High Area Water Level requires EOP-3 entry, it is first required to verify area sump pumps are operating.

Plausible Distractors:

A is plausible: if RCIC were aligned to Torus, Low Torus Water Level condition would require EOP-2 entry.

B is plausible: would be true if RCIC were normally aligned to the Torus.

C is plausible: would be true with two or more Area Water Levels above Max Safe.

Objective Link: None

RO 66	K/A Number Generic	Statement 2.1.8	IR 3.8	Origin N	Source Question NA
LOK F	10CFR55.41(b) 10	LOD (1-5)	Reference Documents OI-264 Rev 99		
Ability to coordinate personnel activities outside the control room.					

Per OI 264, Reactor Recirculation System, which ONE of the following describes the MINIMUM qualification and coordination requirements for local operation of a Recirculation MG Set Scoop Tube?

- a. A qualified Nuclear Station Plant Equipment Operator may perform scoop tube position adjustment with a Licensed Reactor Operator supervising at the Recirculation MG Set.
- b. A qualified Nuclear Station Plant Equipment Operator in communication with the Main Control Room may perform scoop tube position adjustment
- c. A Licensed Reactor Operator may perform scoop tube position adjustment with a Senior Reactor Operator supervising at the Recirculation MG Set.
- d. A Licensed Reactor Operator in communication with the Main Control Room may perform scoop tube position adjustment.

Correct Answer: D a Licensed Reactor Operator is the minimum qualification, with Main Control Room communications established.

Plausible Distractors:

A is plausible: would be true if communications were established and the NSPEO were enrolled in a License Training Program.

B is plausible: would be true if supervised by a Licensed Operator and the NSPEO were enrolled in a License Training Program.

C is plausible: would be true if communications were established.

Objective Link: None

RO 67	K/A Number Generic	Statement 2.1.2	IR 3.0	Origin N	Source Question NA
LOK F	10CFR55.41(b) 10	LOD (1-5)	Reference Documents OI-149 Rev 102		
Knowledge of operator responsibilities during all modes of plant operation.					

The reactor is in HOT SHUTDOWN. "B" Loop of RHR is being placed in the Shutdown Cooling Mode.

Which ONE of the following describes how the RHR system is operated during pump starting?

After the first RHR Pump is started, the:

- a. Min Flow Bypass Valve, MO-1935, will be MANUALLY opened until loop flow exceeds 2000 gpm.
- b. Min Flow Bypass Valve, MO-1935, will AUTOMATICALLY open until loop flow exceeds 2000 gpm.
- c. Inboard Inject Valve, MO-1905, will be MANUALLY throttled open until loop flow exceeds 4000 gpm.
- d. Heat Exchanger Bypass, MO-1940, will be MANUALLY throttled open until loop flow exceeds 4000 gpm.

Correct Answer: D The Heat Exchanger Bypass, MO-1940 is manually throttled open until loop flow exceeds 4000 gpm.

Plausible Distractors:

A is plausible: Minimum Flow Bypass, MO-1935 is shut and deactivated as an initial condition, therefore cannot be manually opened.

B is plausible: Minimum Flow Bypass, MO-1935 is shut and deactivated as an initial condition, therefore cannot be automatically opened.

C is plausible: Inboard Inject Valve is fully open prior to RHR Pump start.

Objective Link: None

RO 68	K/A Number Generic	Statement 2.1.20	IR 4.3	Origin N	Source Question NA
LOK F	10CFR55.41(b) 10	LOD (1-5)	Reference Documents ARP 1C05A D-6 Rev 59		
Ability to execute procedure steps.					

With the plant operating at 100% power, 1C05A D-6, ROD DRIFT alarms.
TWO Control Rods are observed moving outward. Reactor Power is rising.

Which ONE of the following actions is required?

- a. Maintain Reactor Power at 100% by LOWERING speed of BOTH Recirc MGs.
- b. Manually Scram the reactor and place the Reactor Mode Switch in SHUTDOWN.
- c. Place individual Scram Test Switches for the malfunctioning Control Rods in TEST.
- d. Select a moving Control Rod and place C11A-S3, Emerg In / Notch Override Select Switch in the EMERG ROD IN position.

Correct Answer: B Manually Scram the reactor and place the Reactor Mode Switch in SHUTDOWN.

Plausible Distractors:

B is plausible: would be true for other Reactivity Addition transients.

C is plausible: would be true for Control Rod Insertion while executing ATWS RPV Control.

D is plausible: would be true for ONE Rod Drift.

Objective Link: None

RO 69	K/A Number Generic	Statement 2.2.28	IR 2.6	Origin B	Source Question DAEC Bank 98.02.01.02-01
LOK F	10CFR55.41(b) 10	LOD (1-5)	Reference Documents RFP 403 Rev 29		
Knowledge of new and spent fuel movement procedures.					

With the reactor shutdown, vessel head removed and flooded up and fuel in the vessel, which ONE of the following is considered as a "CORE ALTERATION"?

- a. Replacement of a control rod, with no fuel in the cell.
- b. Withdrawing a control rod between 00 and 48, with fuel in the cell.
- c. Movement of irradiated fuel within the fuel pool, with no activities in the vessel.
- d. Replacement of LPRM detectors, with no movement of fuel bundles or control rods.

Correct Answer: B Withdrawing a control rod in a fueled cell is a Core Alteration.

Plausible Distractors:

A is plausible: Control Rod move NOT considered a Core Alteration.

C is plausible: Fuel move NOT considered a Core Alteration.

D is plausible: Special Nuclear Material move NOT considered a Core Alteration.

Objective Link: 98.02.01.02

RO 70	K/A Number Generic	Statement 2.2.34	IR 2.8	Origin B	Source Question 2005 Hope Creek NRC Exam
LOK F	10CFR55.41(b)1	LOD (1-5)	Reference Documents GFE Chapter 6, Fission Product Poisons		
Knowledge of the process for determining the internal and external effects on core reactivity.					

A Reactor startup from Cold Shutdown is in progress.

The Estimated Critical Position was calculated based upon the following assumptions:

- Reactor Coolant Temperature at 140°F
- Total Core Flow at 12 Mlbm/hr
- At time of criticality, the reactor will have been shutdown for 40 hours
- Feedwater Temperature 120°F

Which ONE of the below condition will result in criticality occurring later in the rod pull sequence than the Reactor Engineer's calculated Estimated Critical Position?

- a. Feedwater Temperature drops to 100°F.
- b. Criticality occurs 30 hours after shutdown.
- c. Total Core Flow is increased to 15 Mlbm/hr.
- d. Reactor Coolant Temperature drops to 125°F.

Correct Answer: B Criticality occurs 30 hours after shutdown. Xenon concentration will be higher, which will require additional rod withdrawal to achieve criticality.

Plausible Distractors:

A is plausible: adds positive reactivity and would cause criticality to occur sooner.

C is plausible: has no effect due to zero void fraction.

D is plausible: adds positive reactivity and would cause criticality to occur sooner.

Objective Link: None

RO 71	K/A Number Generic	Statement 2.2.26	IR 2.5	Origin N	Source Question NA
LOK H	10CFR55.41(b) 10	LOD (1-5)	Reference Documents RFP 403 Rev 29 page 8		
Knowledge of refueling administrative requirements.					

During a Refueling Outage with Core Alterations in progress, preparations are being made to completely defuel a reactor cell.

When a cell is completely DEFUELED, the cell must either have a Blade Guide installed OR the associated:

- a. Control Rod Blade must be REMOVED with its HCU charged.
- b. Control Rod must be FULLY WITHDRAWN with its HCU charged.
- c. Control Rod must be FULLY INSERTED with its HCU deactivated.
- d. Control Rod must be FULLY WITHDRAWN with its HCU deactivated.

Correct Answer: D When a cell is completely DEFUELED, the Control Rod Blade is laterally unsupported. With the Control Rod Withdrawn, the CRD Housing will provide lateral support, deactivating the HCU will maintain the mechanism withdrawn.

Plausible Distractors:

A is plausible: the Control Rod Blade may NOT be removed when its HCU is charged.

B is plausible: the HCU may NOT remain charged.

C is plausible: the Control Rod Blade would be laterally unsupported in this condition.

Objective Link: None

RO 72	K/A Number Generic	Statement 2.3.1	IR 2.6	Origin N	Source Question NA
LOK F	10CFR55.41(b) 12	LOD (1-5)	Reference Documents ACP 1411.3 Control of LHRA Rev 21		
Knowledge of 10 CFR: 20 and related facility radiation control requirements					

An area of the Radwaste Building is set aside to store some highly radioactive material. It is determined that the entrance into this area could result in personnel receiving **6 REM** in one hour 30 centimeters from the radiation source.

Which ONE of the following is the correct posting for this area?

- a. Radiation Area
- b. High Radiation Area
- c. Locked High Radiation Area
- d. Very High Radiation Area

Correct Answer: C Locked High Radiation > 1 Rem/hr
Choices are listed least to greatest severity instead of shortest to longest.

Plausible Distractors:

A is plausible: would be true for 60 mR/hr
B is plausible: would be true for 600 mR/hr
D is plausible: would be true for 600 R/hr.

Objective Link: None

RO 73	K/A Number Generic	Statement 2.3.10	IR 2.9	Origin N	Source Question NA
LOK F	10CFR55.41(b) 10	LOD (1-5)	Reference Documents Tech Spec Bases B3.7.8		
Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.					

The MINIMUM water level in the Spent Fuel Pool is based on which ONE of the following considerations?

The MINIMUM water level in the Spent Fuel Pool ensures:

- a. NPSH for Fuel Pool Cooling pumps.
- b. adequate water inventory to delay boiling in the Spent Fuel Pool following a loss of Fuel Pool Cooling.
- c. absorption of water soluble fission product gasses and transport delays of soluble and insoluble fission product gasses.
- d. adequate water inventory to delay evaporation of soluble Iodine in the Spent Fuel Pool following a loss of Fuel Pool Cooling.

Correct Answer: C Per tech spec 3.7.8 bases for Fuel Pool Level.

Plausible Distractors:

A is plausible: tank level is related for NPSH however the FPC pumps get NPSH from the Skimmer surge tanks that are filled from fuel pool overflow

B is plausible: water does delay boiling.

D is plausible: water does delay Iodine evaporation.

Objective Link: None

RO 74	K/A Number Generic	Statement 2.4.39	IR 3.3	Origin B	Source Question 1999 DAEC NRC Exam
LOK F	10CFR55.41(b) 10	LOD (1-5)	Reference Documents EPIP 2.5 Rev 17		
Knowledge of the RO's responsibilities in emergency plan implementation.					

You are a licensed Reactor Operator on dayshift, working on outage tagouts in the Work Control Center. You do not have assigned responsibilities in the Emergency Response Organization (ERO). A transient occurs that results in the declaration of an ALERT Emergency and activation of the Evacuation Alarm.

To which ONE of the following locations do you report?

- a. The Control Room
- b. The Warehouse Assembly Area
- c. The Technical Support Center (TSC)
- d. The Offsite Relocation and Assembly Location (ORAL)

Correct Answer : A operations personnel report to the Control Room

Plausible Distractors:

B is plausible: would be true for non ERO assigned members in the Protected Area.

C is plausible: would be true for all personnel assigned ERO positions in the TSC.

D is plausible: would be true for non ERO assigned members during Site Evacuation.

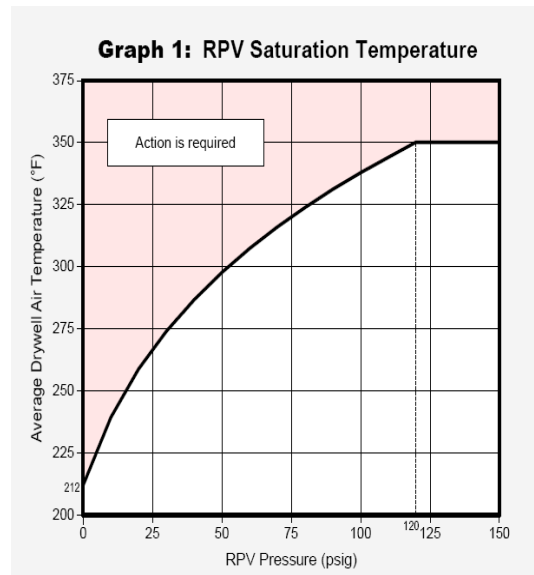
Objective Link: None

RO 75	K/A Number Generic	Statement 2.4.20	IR 3.3	Origin B	Source Question DAEC Bank 95.80.01.03-01
LOK H	10CFR55.41(b) 10	LOD (1-5)	Reference Documents EOP Caution 1 Rev 14		
Provide Saturation Curve					
Knowledge of operational implications of EOP warnings, cautions, and notes.					

Following Emergency Depressurization, the following conditions exist:
 Reactor pressure is 75 psig and lowering.
 Drywell temperature is 350°F and steady.
 Boiling in the instrument reference legs is suspected.

Determine RPV level given the following instrument readings:

- LI 4539 (Wide Range Yarway): 145 inches and steady
- LI-4559 (Narrow Range GEMAC): Downscale
- LI-4541 (Floodup): 180 inches and steady
- LI-4565C (Fuel Zone): 180 inches and steady



- 122 inches
- 135 inches
- 157 inches
- 180 inches

Correct Answer: C when exceeding Saturation Curve, Fuel Zone may be used with minus 23 inch offset. $180 - 23 = 157$ inches

Plausible Distractors:

A is plausible: Wide Range Yarways CANNOT be used due to rapid depressurization below 500 psig per EOP Caution 2. This answer may be incorrectly selected if the candidate offsets WR Yarway reading by -23 inches.

B is plausible: Narrow Range is DOWNSCALE at +158 inches and CANNOT be used.

This answer may be incorrectly selected if the candidate offsets NR reading by -23 inches.

D is plausible: would be true if not exceeding Saturation Curve, Fuel Zone would be read directly.

Objective Link: 95.80.01.03

SRO 76	K/A Number 295005	Statement 2.4.11	IR 3.6	Origin N	Source Question NA
LOK H	10CFR55.43(b)5	LOD (1-5)	Reference Documents AOP 693 Rev 10		
Main Turbine Generator Trip		Knowledge of abnormal condition procedures.			

With the plant operating at full power, the following occur:

- 1C07A A-7, TURBINE LUBE OIL BEARING HEADER LO PRESSURE alarms.
- 1C07A C-1, MOTOR SUCTION PUMP 1P-96 RUNNING alarms.
- 1C07A D-6, TURBINE LUBE OIL TANK 1T-1 LO LEVEL alarms.
- Lube Oil Bearing Header Pressure is 5 psig.
- The Main Turbine Generator is still on line.

Which ONE of the following actions are required?

- a. Enter IPOI-4, lower recirc flow to 27 Mlbm/hr and Trip the Main Turbine.
- b. Enter IPOI-5 and manually scram the reactor, TRIP the Main Turbine, and cool down with SRVs, HPCI, or RCIC.
- c. Enter IPOI-5 and manually scram the reactor, TRIP the Main Turbine, and cool down with Main Turbine Bypass Valves.
- d. Enter IPOI-4 and perform a Fast Power Reduction, START the Emergency Bearing Oil Pump and fill the Lube Oil Reservoir.

Correct Answer: B With Bearing Header Pressure < 8 psig, the Turbine should have already tripped, enter IPOI-5 and manually scram, Trip the Main Turbine and close the MSIVs – this requires cool down with SRVs per IPOI-4.

Plausible Distractors:

A is plausible: scram is required before turbine trip per AOP-693.

C is plausible: would be true if AOP 693 didn't require MSIV closure.

D is plausible: would be true for lowering lube oil pressure with a low reservoir level with no leak indicated.

Objective Link: None

SRO 77	K/A Number 295006	Statement 2.4.4	IR 4.3	Origin B	Source Question LaSalle 2003 NRC Exam
LOK H	10CFR55.43(b)5	LOD (1-5)	Reference Documents EOP-2 Rev 14 ATWS RPV Control Rev 16		
SCRAM Emergency Procedures / Plan Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.					

The plant has scrammed and the following conditions are present:

- 5 Control Rods remain at notch position 24.
- All APRM's are downscale.
- The Reactor Mode Switch has been placed in SHUTDOWN.
- RPV Water Level dropped to 180 inches and then recovered.
- HPCI, RHR, and Core Spray Pumps have automatically started.

Which ONE of the following describes procedures that are to be used?

- a. IPOI-5, Reactor Scram ONLY
- b. ATWS RPV Control and EOP-2, Primary Containment Control
- c. EOP-1, RPV Control, and EOP-2, Primary Containment Control
- d. IPOI-5, Reactor Scram and RIP 103.3, Manually Drive Control Rods

Correct Answer: B ECCS Auto Start implies Drywell Pressure is > 2.0 psig which requires EOP-2 entry, 5 rods out with Reactor Mode Switch in SHUTDOWN requires ATWS RPV Control.

Plausible Distractors:

A is plausible: would be true with all Control Rods in and Drywell Pressure < 2.0 psig.

C is plausible: would be true with all Control Rods in, RPV Level lowering to 170 inches and Drywell Pressure < 2.0 psig.

D is plausible: would be true with 1 Control Rod out and Drywell Pressure < 2.0 psig.

Objective Link: None

SRO 78	K/A Number 295016	Statement AA2.04	IR 4.1	Origin N	Source Question NA
LOK H	10CFR55.43(b)5	LOD (1-5)	Reference Documents EOP-2 Rev 14 AOP 915 Rev 35		
Ability to determine and/or interpret the following as they apply to CONTROL ROOM ABANDONMENT : Suppression pool temperature					

The Main Control Room has been evacuated due to a fire.

Torus Water Temperature is 106°F.

Where can Torus Water Temperature be obtained, and what action is required due to Torus Water Temperature?

Torus Water Temperature is obtained at:

- a. Remote Shutdown Panel, 1C-388; it is required to maximize Torus Cooling with B RHR Loop IAW AOP-915, Shutdown Outside Control Room.
- b. Remote Shutdown Panel, 1C-388; it is required to maximize Torus Cooling with B RHR Loop IAW OI-149, Residual Heat Removal System.
- c. Remote Shutdown Panel, 1C-392; it is required to maximize Torus Cooling with B RHR Loop IAW AOP-915, Shutdown Outside Control Room.
- d. Remote Shutdown Panel, 1C-392; it is required to maximize Torus Cooling with B RHR Loop IAW OI-149, Residual Heat Removal System.

Correct Answer: A Indication is available at 1C-388; it is required to start Torus Cooling with RHR Loop B per AOP-915

Plausible Distractors:

B is plausible: wrong procedure, Torus Cooling operation is directed by AOP-915.

C is plausible: would be true location TRANSFER Switch for TI-4325A.

D is plausible: would be true location TRANSFER Switch for TI-4325A and the procedure is incorrect, Torus Cooling operation is directed by AOP-915.

Objective Link: None

SRO 79	K/A Number 295021	Statement AA2.07	IR 3.1	Origin N	Source Question NA
LOK H	10CFR55.43(b)5	LOD (1-5)	Reference Documents TS LCO 3.4.8 Amendment 223, 234		
Ability to determine and/or interpret the following as they apply to LOSS OF SHUTDOWN COOLING : Reactor recirculation flow					

The reactor is in Mode 4, COLD SHUTDOWN, with the following conditions:

- BOTH Recirculation Loops are shutdown.
- RPV Water Level is 190 inches.
- Reactor Coolant Temperature is 140°F.
- RHR Loop B is operating in Shutdown Cooling Mode.

A leak developed in RHR Loop B piping, causing RPV Water Level to lower until an automatic isolation stabilized RPV Water Level.

What is the status of RHR, and what action satisfies Technical Specification requirements?

- a. ONLY RHR Loop B is affected by isolation valve closure; starting a Reactor Recirculation Pump will satisfy Technical Specifications.
- b. BOTH RHR Loops are affected by isolation valve closure; starting a Reactor Recirculation Pump will satisfy Technical Specifications.
- c. ONLY RHR Loop B is affected by isolation valve closure; starting RHR Pumps in RHR Loop B will satisfy Technical Specifications.
- d. BOTH RHR Loops are affected by isolation valve closure; raising RPV Water Level to the Main Steam Lines will satisfy Technical Specifications.

Correct Answer: B RHR SDC suction line will isolate, which affects BOTH RHR Loops. Starting a Recirculation Pump is required.

Plausible Distractors:

A is plausible: would be true if RHR Loop were manually isolated, prior to PCIS actuation.
C is plausible: would be true if RHR Loop were manually isolated, prior to PCIS actuation.
D is plausible: raising level to the Main Steam Lines will establish alternate feed and bleed Decay Heat Removal path, but does not reestablish core circulation.

Objective Link: None

SRO 80	K/A Number 295024	Statement EA2.04	IR 3.9	Origin B	Source Question 2002 Limerick NRC Exam
LOK H	10CFR55.43(b)5	LOD (1-5)	Reference Documents EOP-2 Rev 14, EOP-2 Bases, Rev 12 PROVIDE EOP-2 GRAPH 5		
Ability to determine and/or interpret the following as they apply to HIGH DRYWELL PRESSURE: Suppression chamber pressure: Plant-Specific					

Plant conditions are as follows:

- A Loss of Coolant Accident is in progress.
- Drywell Pressure is 29 psig and rising.
- Torus Pressure is 28 psig and rising.
- Torus Water Level is 13 feet and stable.
- Torus Water Temperature is 82°F and stable.
- Containment Spray is inoperable.
- RPV level is being maintained with RHR and Core Spray.

Which ONE of the following describes the required actions and the reason based on the above conditions?

- a. Perform a normal cooldown because ECCS NPSH and Vortex Limits are being exceeded.
- b. Perform a normal cooldown because steam is bypassing the Drywell to Torus downcomers.
- c. Perform an Emergency Depressurization because ECCS NPSH and Vortex Limits are being exceeded.
- d. Perform an Emergency Depressurization because steam is bypassing the Drywell to Torus downcomers.

Correct Answer: D Due to exceeding Pressure Suppression Pressure, it is required to perform an Emergency Depression. Pressure Suppression Pressure violation indicates steam is bypassing the downcomers.

Plausible Distractors:

A is plausible: would be true for low Torus Level and low Torus Pressure.

B is plausible: would be true if Pressure Suppression Pressure limit were not exceeded.

C is plausible: would be true for low Torus Level.

Objective Link: None

SRO 81	K/A Number 295031	Statement EA2.02	IR 4.2	Origin N	Source Question NA
LOK H	10CFR55.43(b)5	LOD (1-5)	Reference Documents ARP 1C06B C-3 Rev 42		
Ability to determine and/or interpret the following as they apply to REACTOR LOW WATER LEVEL : Reactor power					

With the plant operating at 100% power, the following alarms occurred sequentially:

- 1C06B C-3 "A" RX FEED PUMP 1P-1A TRIP OR MOTOR OVERLOAD
- 1C05A D-1 REACTOR VESSEL HI/LO LEVEL RECORDER ALARM

What effect will this have on reactor power, and what actions are required?

Reactor Power initially lowered due to an automatic:

- Reactor Scram; it is required to enter IPOI-5 and verify a Main Turbine Trip.
- Recirc Runback; it is required to manually SCRAM the reactor and enter IPOI-5.
- Reactor Scram; it is required to enter IPOI-5 and verify PCIS Group 2, 3, and 4 isolations.
- Recirc Runback; it is required to stabilize RPV Water Level and evaluate current conditions per the Power/Flow Map.

Correct Answer: B concurrent RFP Trip and RPV Low Water Level will cause RR MG 45% Speed Limiter to lower core flow. With initial Reactor Power >75%, a manual scram is procedurally directed.

Plausible Distractors:

A is plausible: would be true for a HIGH RPV Level condition, excluded by sequence of alarms.

C is plausible: would be true for trip of BOTH RFPs.

D is plausible: would be true for initial power < 75%.

Objective Link: None

SRO 82	K/A Number 295037	Statement 2.4.7	IR 3.8	Origin N	Source Question NA
LOK H	10CFR55.43(b)5	LOD (1-5)	Reference Documents EOP ATWS Bases Rev 11		
SCRAM Condition Present and Power Above APRM Downscale or Unknown Emergency Procedures / Plan: Knowledge of event based EOP mitigation strategies					

Following a transient, the following conditions exist:

- 20 Control Rods are at position 00.
- 69 Control Rods are not fully inserted.
- Reactor Power is 6% on APRMs.
- RPV Water Level has been lowered to the lowest permissible band.
- Emergency Depressurization is required due to Primary Containment conditions.

With these conditions, which ONE of the following RPV Water Level strategies is required to be directed?

- a. Terminate and Prevent Injection per ATWS-RPV Control.
- b. Slowly inject into the RPV as soon as RPV pressure equals low pressure ECCS pump shutoff head.
- c. Maintain RPV Water Level ABOVE +15 inches per EOP-1, RPV Control.
- d. Maintain RPV Water Level BETWEEN -25 inches to +15 inches per ATWS-RPV Control.

Correct Answer: A Emergency Depressurization in an ATWS condition requires Terminating and Preventing Injection. Step L-11 of ATWS-RPV Control contains the steps for Terminating and Preventing Injection. ED requires completing step L-11 in ATWS-RPV Control.

Plausible Distractors:

B is plausible: Slowly inject does not happen until after RPV pressure is significantly below the ECCS pump shutoff head.

C is plausible: would be true if Control Rods were inserted.

D is plausible: would be true if it were not required to Terminate and Prevent Injection prior to ED.

Objective Link: None

SRO	K/A Number	Statement	IR	Origin	Source Question
83	295017	AA2.03	3.9	N	NA
LOK H	10CFR55.43(b)5	LOD (1-5)	Reference Documents EOP-4 Rev 19 PROVIDE EOP-3 Temperature Table and EOP-3 Table 6 ONLY for Temperatures		
Provide Reference EPIP Form EAL 01					
Ability to determine and/or interpret the following as they apply to HIGH OFF-SITE RELEASE RATE : Radiation levels: Plant-Specific					

Following a plant transient, a steam leak from Main Steam Drain Line has occurred in the Turbine Building. RPV Water Level lowered to 120 inches and recovered. Efforts to isolate the leak have not been successful. The following conditions exist:

- Turbine Building Heater Bay Area Temperature is 185°F.
- Turbine Building Kaman 1/2 indicates $3E-1$ (3.0×10^{-1}) $\mu\text{Ci/ml}$, rising.
- Reactor Building Kaman 3/4 indicates $2E-2$ (2.0×10^{-2}) $\mu\text{Ci/ml}$, rising.
- Reactor Building Kaman 5/6 indicates $4E-2$ (4.0×10^{-2}) $\mu\text{Ci/ml}$, rising.
- Reactor Building Kaman 7/8 indicates $3E-2$ (3.0×10^{-2}) $\mu\text{Ci/ml}$, rising.

With these indications, it is required to:

- a. Enter EOP-3 Secondary Containment Control and restart Reactor Building Ventilation.
- b. Enter EOP-3 Secondary Containment Control and verify Standby Gas Treatment Trains have started.
- c. Enter EOP-4, Radiation Release Control and perform an Emergency Depressurization.
- d. Enter EOP-4, Radiation Release Control and commence a normal plant shutdown per IPOI-4, Shutdown.

Correct Answer: C Turbine Building Kaman 1/2 is approaching EAL RG1 which requires Emergency Depressurization.

Plausible Distractors:

A is plausible: would be true for Group 3 actuation with no radiological concerns in RB ventilation

B is plausible: would be true for a Steam Leak in the Reactor Building.

D is plausible: would be true for EAL RA1 criteria with no approach to EAL RG1 imminent.

Objective Link: None

SRO 84	K/A Number 295033	Statement EA2.01	IR 3.9	Origin N	Source Question NA
LOK H	10CFR55.43(b)5	LOD (1-5)	Reference Documents EOP-3 Rev 19		
Ability to determine and/or interpret the following as they apply to HIGH SECONDARY CONTAINMENT AREA RADIATION LEVELS : Area radiation levels.					

The plant is operating at full power, when the following conditions occur:

- RWCU Pump Room Radiation, RI-9156, is 1500 mr/hr.
- RWCU Pump Room Temperature is 125°F, rising.
- Fuel Pool Exhaust Radiation is 10 mr/hr.
- NO actuations have occurred.

Which ONE of the following actions is required FIRST?

- a. Enter EOP-1, RPV Control and SCRAM the reactor.
- b. Enter EOP-3, Secondary Containment Control and START SBTG.
- c. Enter EOP-3, Secondary Containment Control and ISOLATE RWCU.
- d. Enter Emergency Depressurization and OPEN 4 Safety Relief Valves.

Correct Answer: B with Fuel Pool Exhaust above 8 mr/hr it is required to Enter EOP-3, Secondary Containment Control and START SBTG.
(EOP-3 1st Continuous Recheck Statement).

Plausible Distractors:

A is plausible: it is FIRST required to START SBTG and Isolate leaks.

C is plausible: would be required FIRST if Fuel Building Exhaust Radiation remained below 8 mr/hr.

D is plausible: would be true for reactor is discharging into the Secondary Containment, and TWO Max Safes of the same parameter are reached.

Objective Link: None

SRO 85	K/A Number 295036	Statement 2.4.4	IR 4.3	Origin N	Source Question NA
LOK H	10CFR55.43(b)5	LOD (1-5)	Reference Documents EOP-3 Rev 19		
Secondary Containment High Sump/Area Water Level Emergency Procedures / Plan Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.					

With the plant operating at 100% power, a fire was discovered in the Reactor Building.

The fire was extinguished with the deluge system, resulting in these conditions:

- HPCI Room Temperature is 160°F.
- HPCI Room Water Level is 3 inches.

It is required to direct which ONE of the following actions?

It is required to:

- a. enter IPOI-5, Reactor Scram and perform a Plant Shutdown.
- b. enter Emergency Depressurization and open 4 Safety Relief Valves.
- c. enter EOP-3, Secondary Containment Control, and isolate the deluge system
- d. enter EOP-1, RPV Control, and anticipate Emergency Depressurization.

Correct Answer: C Max Normal values have been exceeded for Water Level, it is required to enter EOP-3

Plausible Distractors:

B is plausible: would be true with TWO Max Safes exceeded

C is plausible: would be true if Primary System were discharging and TWO Max Safes exceeded.

D is plausible: would be true if Primary System were discharging and NO Max Safes were exceeded.

Objective Link: None

SRO 86	K/A Number 206000	Statement A2.07	IR 3.6	Origin N	Source Question NA
LOK H	10CFR55.43(b)5	LOD (1-5)	Reference Documents EOP-2 Rev 14		
Ability to (a) predict the impacts of the following on the HIGH PRESSURE COOLANT INJECTION SYSTEM (HPCI) ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Low suppression pool level					

A loss of coolant accident with a total loss of feed water is in progress. HPCI is injecting at rated flow into the RPV maintaining level in the normal band. An unisolable leak develops in the torus resulting in torus level lowering one inch per minute.

Which one of the following describes the actions that must be taken as a result of the lowering torus level regarding the HPCI system?

- a. At 7.1 feet the HPCI system must be secured REGARDLESS of Adequate Core Cooling.
- b. At 5.8 feet the HPCI system must be secured UNLESS required for Adequate Core Cooling.
- c. At 7.1 feet, the RPV must be emergency depressurized causing HPCI to isolate on low steam line pressure.
- d. At 4.5 feet HPCI must be secured due to exceeding the Heat Capacity Temperature Limit curve.

Correct Answer: C At 7.1 feet, EOP-2 (T/L-5) states ED is required. HPCI will shortly isolate on Low Pressure. Between 7.1 feet and 5.8 feet, 1.3 feet of Torus Level drop will occur. This equates to 15.6 inches. At 1 inches per minute, about 15.6 minutes will elapse between 7.1 feet and 5.8 feet. Completion of Emergency Depressurization doesn't take that much time.

Plausible Distractors:

A is plausible: This action is actually at 5.8 feet torus level..

B is plausible: At 5.8 feet torus level, HPCI must be secured regardless of ACC.

D is plausible: Lowering torus level affects HCTL, 4.5 feet is the bottom of the downcomers.

Objective Link: None

SRO 87	K/A Number 215003	Statement A2.03	IR 3.1	Origin N	Source Question NA
LOK H	10CFR55.43(b)2	LOD (1-5)	Reference Documents LCO 3.3.1.1 Amendment 243		
Ability to (a) predict the impacts of the following on the INTERMEDIATE RANGE MONITOR (IRM) SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Stuck detector					

Preparations are being made for a reactor startup per IPOI-1, Startup Checklist. While performing STP NS780103, SRM/IRM Detector Not In Startup Position Functional Test, it is noted that Intermediate Range Detectors B and D will NOT drive to the FULL IN position.

Which ONE of the following describes the impact of this condition on transitioning from MODE 4, COLD SHUTDOWN, to MODE 2, STARTUP per IPOI-1, Startup Checklist and Technical Specifications?

- LCO 3.3.1.1, RPS Instrumentation requirements are satisfied to transition to MODE 2. The IRM Rod Block CAN be BYPASSED.
- LCO 3.3.1.1, RPS Instrumentation requirements are satisfied to transition to MODE 2, but the IRM Rod Block CANNOT be BYPASSED until ONE IRM is restored OPERABLE.
- LCO 3.3.1.1, RPS Instrumentation requirements are NOT satisfied. As a MINIMUM, it is required to restore BOTH IRMs OPERABLE to transition to MODE 2, STARTUP.
- LCO 3.3.1.1, RPS Instrumentation requirements are NOT satisfied. As a MINIMUM, it is required to restore ONE IRM OPERABLE to transition to MODE 2, STARTUP.

Correct Answer: D LCO 3.3.1.1 requirements of 2 Channels per Trip System is required to transition to MODE 2. As a MINIMUM, EITHER IRM is required to be restored.

Plausible Distractors:

A is plausible: TWO IRMs are required per TRIP SYSTEM.

B is plausible: TWO IRMs are required per TRIP SYSTEM.

C is plausible: NOT THE MINIMUM, restoring ONE IRM is required.

Objective Link: None

SRO 88	K/A Number 217000	Statement 2.4.4	IR 4.3	Origin N	Source Question NA
LOK H	10CFR55.43(b)5	LOD (1-5)	Reference Documents EOP-1 Rev 14 AOP-301.1 Rev 36		
RCIC Knowledge of how the event-based emergency/abnormal operating procedures are used in conjunction with the symptom-based EOPs. (EOP-1 and SBO AOP-301.1)					

With a Station Blackout in progress, Reactor Core Isolation Cooling was manually started. Conditions are as follows:

- HPCI is NOT available.
- RPV Water Level reached a minimum of 160 inches and is lowering.
- Reactor Pressure is 200 psig.
- Torus Water Temperature is 130°F, rising.
- Torus Water Level is 10.5 feet.
- Drywell Pressure is 1.8 psig.
- RCIC Room Temperature is 170°F, rising.

Which ONE of the following describes the ACTIONS taken in accordance with AOP-301.1, which will preserve RCIC operation under these conditions?

- a. DEFEAT 1 will be installed to BYPASS the RCIC Low RPV Pressure Isolation. DEFEAT 2 will be installed to BYPASS RCIC Suction Transfer to the Torus.
- b. DEFEAT 1 will be installed to BYPASS the RCIC Low RPV Pressure Isolation. DEFEAT 18 will be installed to BYPASS RCIC High Temperature Isolations.
- c. DEFEAT 2 will be installed to BYPASS RCIC Suction Transfer to the Torus. LOWER RPV Pressure to below 150 psig, to reduce load on the RCIC Turbine.
- d. DEFEAT 18 will be installed to BYPASS RCIC High Temperature Isolations. LOWER RPV Pressure to below 150 psig, to reduce load on the RCIC Turbine.

Correct Answer: B AOP-301.1, SBO, includes actions to install BOTH DEFEAT 1 (step 5.b) and DEFEAT 18 (Immediate Action 3.a through d).

Procedure selection is based on selecting ACTIONS contained in either EOP-1 or AOP-301.1. All DEFEATS are contained in these procedures and actions to cooldown below 150 psig are in EOP-1 (RC/P-5). KA requires AOP use in conjunction w/EOP.

Plausible Distractors:

A is plausible: DEFEAT 2 is authorized by EOP-1 to keep HPCI Suction aligned to the CST. With HPCI unavailable, this will NOT preserve RCIC operation.

C is plausible: DEFEAT 2 is authorized by EOP-1 to keep HPCI Suction aligned to the CST. With HPCI unavailable, this will NOT preserve RCIC operation.. AOP-301.1 requires RPV Pressure to be maintained ABOVE 150 psig to preserve RCIC operation.

D is plausible: AOP-301.1 requires RPV Pressure to be maintained ABOVE 150 psig to preserve RCIC operation.

Objective Link: None

SRO 89	K/A Number 218000	Statement 2.1.33	IR 4.0	Origin N	Source Question NA
LOK H	10CFR55.43(b)2	LOD (1-5)	Reference Documents TS 3.3.5.1 Amendment 245 ARP 1C03A B-6 and B-7 Rev 44		
ADS: Conduct of Operations: Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.					

The plant is in MODE 3 at 600 psig. Core Spray Pump A full flow testing is in progress. The Assistant Nuclear Station Operating Engineer (ANSOE) reports that 1C03A B-6, ADS CORE SPRAY OR RHR PUMP RUNNING PERMISSIVE alarm does NOT actuate with Core Spray Pump A operating. ALL OTHER expected alarms actuated.

- Core Spray Pump A Discharge Pressure is 160 psig.
- Core Spray Pump A Flow is 3200 gpm.

Which ONE of the following describes the Technical Specifications impact of this condition?

- “A” Core Spray pump is INOPERABLE due to developing sufficient flow
- “A” Core Spray pump is INOPERABLE due to developing insufficient discharge pressure.
- “A” ADS logic is INOPERABLE due to failure of the “A” Core Spray pump discharge pressure switch.
- “A” and “B” ADS logic are INOPERABLE due to failure of the “A” Core Spray pump discharge pressure switch.

Correct Answer: C ADS Logic A is INOPERABLE due to missing ONE of TWO required signals. 1C03A B-7 is the redundant signal, and all other expected alarms actuated.

Plausible Distractors:

A is plausible: would be true if 1C03B B-6 alarms and Core Spray Pump A flow is < 2718 gpm.

B is plausible: would be true if 1C03B B-6 alarms and Core Spray Pump A pressure is < 113 psig.

D is plausible: would be true if 1C03B B-7 also failed to alarm.

Objective Link: None

SRO 90	K/A Number 261000	Statement A2.10	IR 3.2	Origin N	Source Question NA
LOK H	10CFR55.43(b)5	LOD (1-5)	Reference Documents AOP-644, Rev 3 EOP-1, Rev 14, ARP 1C05A (C-1) Rev 59		
Ability to (a) predict the impacts of the following on the STANDBY GAS TREATMENT SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Low reactor water level: Plant-Specific					

With the plant operating at full power, an electrical failure resulted in these alarms:

- 1C08A A-1 AUX XFMR TO 1A1 BREAKER 1A101 TRIP
- 1C08A A-3 S/U XFMR TO 1A1 BREAKER 1A102 TRIP

Which ONE of the following describes the affect of these events on the Standby Gas Treatment System (SBGT), and what actions are required?

- RPV Low Water Level will start BOTH SBGT Trains; it is required to enter EOP-1, RPV Control and verify proper SBGT operation.
- RPV Low Water Level will start ONE SBGT Train; it is required to enter EOP-1, RPV Control and verify proper SBGT operation.
- Loss of Radiation Monitor power will initiate BOTH SBGT Trains; it is required to enter AOP 317, Loss of 120 VAC Instrument Control Power and secure one SBGT Train.
- Loss of Radiation Monitor power will initiate ONE SBGT Train; it is required to enter AOP 317, Loss of 120 VAC Instrument Control Power and verify proper SBGT operation.

Correct Answer: A Bus 1A1 Lockout is indicated. Loss of half Condensate and Feedwater Pumps require a manual scram. RPV Low Water Level 170 inches will start BOTH SGTS Trains. This will required entry into EOP-1 RPV Control.

Plausible Distractors:

B is plausible: would be true if Bus 1A3 were also affected.

C is plausible: would be true if 1Y11 and 1Y21 were affected.

D is plausible: would be true if Bus 1A3 and 1Y21 were affected.

Objective Link: None

SRO 91	K/A Number 204000	Statement A2.01	IR 3.4	Origin N	Source Question NA
LOK H	10CFR55.43(b)5	LOD (1-5)	Reference Documents ARP 1C06B D-3, Rev 42 ARP 1C04B D-9, Rev 65		
Ability to (a) predict the impacts of the following on the REACTOR WATER CLEANUP SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Loss of component cooling water.					

The plant is operating at full power when the following occurs:

- 1C06B D-3, RBCCW PUMP DISCH HEADER LO PRESSURE alarms.
- 1C04B A-9, RWCU PUMP LO FLOW alarms.
- 1C04B C-9, RWCU FILTER/DEMIN INLET WATER HI TEMP alarms.
- 1C04B D-9, RWCU FILTER/DEMIN INLET WATER HI HI TEMP alarms.
- NO RBCCW Pumps are operating.
- 480V Bus 1B4 Breaker 1B402 feed to MCC 1B43 has tripped due to a fault.
- RBCCW Pump 1P-81A WILL NOT start.

WHICH ONE of the following describes the status of the RWCU system TEN MINUTES later and the required procedural action?

<u>STATUS of RWCU</u>	<u>REQUIRED PROCEDURAL ACTION</u>
a. RWCU Filter Demineralizers will be IN HOLD and RWCU WILL NOT be ISOLATED.	OPEN MO-2723, CLEANUP DEMIN BYPASS valve and restart RWCU Pumps per ARP 1C04B A-9, RWCU PUMP LO FLOW.
b. RWCU Filter Demineralizers will be IN HOLD and RWCU WILL be ISOLATED.	VERIFY a complete PCIS Group 5 Isolation per ARP 1C04B D-9, RWCU FILTER/DEMIN INLET WATER HI-HI TEMP.
c. RWCU Filter Demineralizers will be IN HOLD and RWCU WILL be ISOLATED.	SCRAM the reactor per ARP 1C06B D-3, RBCCW PUMP DISCH HEADER LO PRESSURE.
d. RWCU Filter Demineralizers will be IN SERVICE and RWCU WILL NOT be ISOLATED.	OPEN MO-2723, CLEANUP DEMIN BYPASS valve to protect RWCU Filter Demineralizers per ARP 1C04B C-9, RWCU FILTER/DEMIN INLET WATER HI TEMP.

Correct Answer: C a complete loss of RBCCW is indicated – RWCU Filter Demineralizers will be in HOLD and RWCU will be ISOLATED. This choice appears twice, candidate must then discriminate between VERIFYING a complete PCIS Group 5 (wrong) and inserting a SCRAM per ARP 1C06B D-3, because Recirculation Pump operation is limited to 10 minutes without RBCCW.

Plausible Distractors:

A is plausible; RWCU Outboard Valves will be isolated. CANNOT restart RWCU because Outboard Valves are CLOSED.

B is plausible: NOT a complete PCIS Group 5, ONLY MO-2701 OUTBD CLEANUP SUCT ISOL and MO 2740 CLEANUP OUTBD RETURN ISOL will close.

D is plausible: would be true for rising temperature, below alarm setpoints..

Objective Link: None

SRO 92	K/A Number 241000	Statement A2.16	IR 3.4	Origin N	Source Question NA
LOK H	10CFR55.43(b)5	LOD (1-5)	Reference Documents AOP-262 Rev 0		
Provide EHC Logic Diagram (attached)					
Ability to (a) predict the impacts of the following on the REACTOR/TURBINE PRESSURE REGULATING SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Low turbine inlet pressure (loss of pressure signal)					

With the plant operating at 100% power, the pressure sensing line to Steam Throttle Pressure A transmitter ruptures resulting in 0 psig input to Pressure Regulator Channel A.

Which ONE of the following will result from this failure, and what actions are required?

- a. Reactor Pressure will RISE 5 psig. It is required to enter AOP-262, Loss of Reactor Pressure Control and verify Core Thermal Limits.
- b. Reactor Pressure will LOWER 5 psig. It is required to enter AOP-262, Loss of Reactor Pressure Control and verify Core Thermal Limits.
- c. Reactor Pressure will RISE resulting in a Reactor Scram. It is required to enter EOP-1, RPV Control and verify all control rods are inserted.
- d. Reactor Pressure will LOWER resulting in a Group 1 Isolation and a Reactor Scram. It is required to enter EOP-1, RPV Control and verify all control rods are inserted.

Correct Answer: B Reactor Pressure will RISE 5 psig. It is required to enter AOP-262, Loss of Reactor Pressure Control and verify Core Thermal Limits.

With 0 psig input, A summer output goes to a large negative value, the HVG swaps over to the B regulator, which controls 5 psig lower due to the bias signal.

Plausible Distractors:

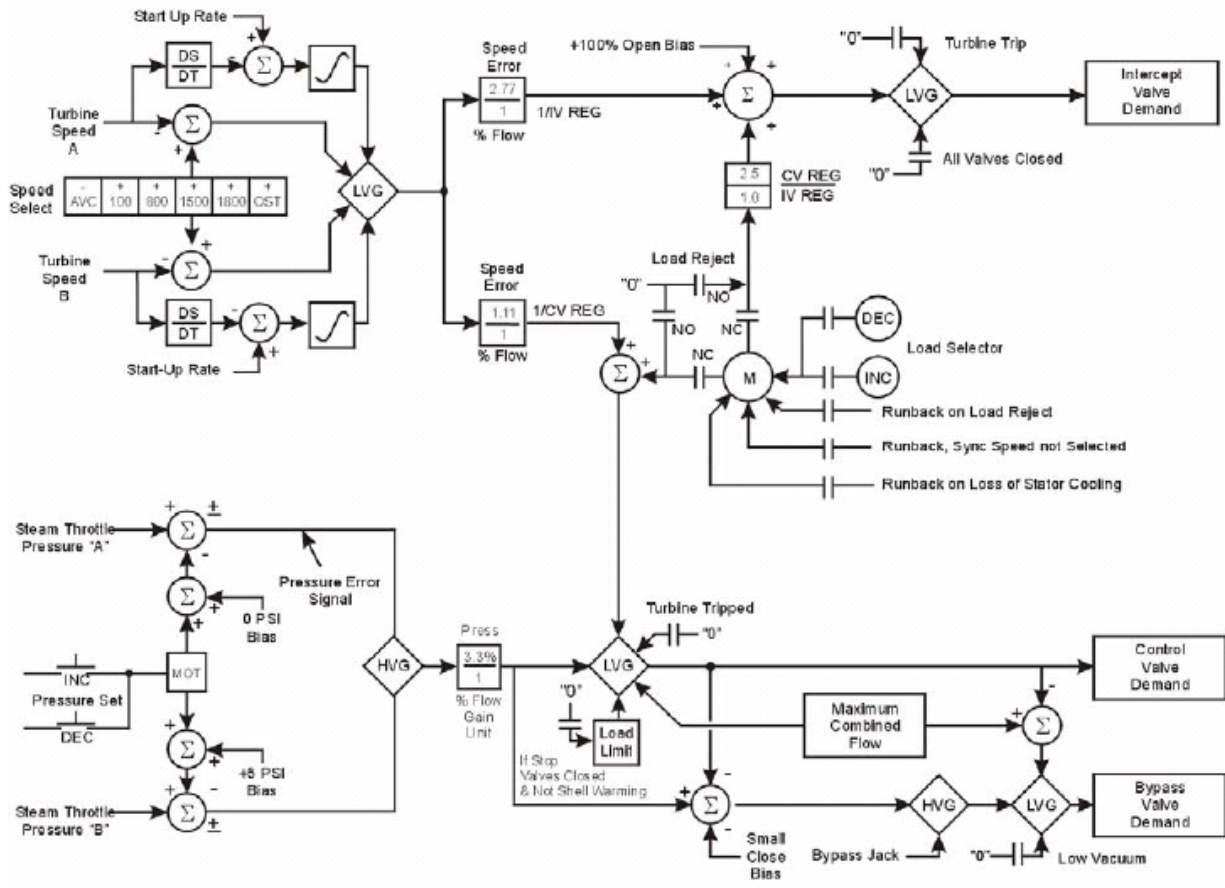
A is plausible: identifies misconception that bias channel results in 5 psig decrease.

C is plausible: would be true if BOTH A and B sensing taps ruptured.

D is plausible: would be true if either Pressure Regulator output failed HIGH.

Objective Link: 52.01.01.02

EHC Logic Control System



SRO 93	K/A Number 245000	Statement 2.4.45	IR 3.6	Origin N	Source Question NA
LOK H	10CFR55.43(b)5	LOD (1-5)	Reference Documents ARP 1C83B A-2 Rev 33		
Provide Generator Capability Curve					
Main Turbine Gen. / Aux. Ability to prioritize and interpret the significance of each annunciator or alarm.					

The plant is operating at full power, the following 1C08C D-4, H2/STATOR COOLING PANEL 1C-83 TROUBLE alarms. After dispatching the Turbine Building Operator, the following indications are noted:

- Main Generator Load is 600 Mwe.
- Main Generator Reactive Power is 260 MVARs lagging.
- Generator Hydrogen Pressure is 38 psig and lowering 1 psig every 15 minutes.
- NSPEO reports 1C83B A-1, Machine Gas Pressure High-Low is alarming.

Which ONE of the following actions is required?

- Lower Main Generator Load 120 MWe by reducing reactor power per IPOI-3, Power Operations.
- Lower Reactive Power 100 MVAR by RAISING the Voltage Regulator setting per ARP 1C83B A-1.
- Lower Reactive Power 100 MVAR by LOWERING the Voltage Regulator setting per ARP 1C83B A-1.
- Manually Scram the reactor per IPOI-5, Reactor Scram and shutdown the Main Generator per OI-698, Main Generator System.

Correct Answer: D Manually Scram the reactor per IPOI-5, Reactor Scram and shutdown the Main Generator per OI-698, Main Generator System due to low Generator Hydrogen Purity.

Plausible Distractors:

A is plausible: would be true if Hydrogen Pressure were 35 psig and purity were above 90 %.

B is plausible: would be true if Hydrogen Pressure were 35 psig and purity were above 90 % and Reactive Power was 260 MVARs IN.

D is plausible: would be true if Hydrogen Pressure were 35 psig and purity were above 90 %.

Objective Link: 54.01.01.01

SRO 94	K/A Number Generic	Statement 2.1.7	IR 4.4	Origin B	Source Question 2005 DAEC NRC Exam
LOK H	10CFR55.43(b)5	LOD (1-5)	Reference Documents ATWS RPV Control, Rev 16 ATWS EOP Bases, Rev 11		
Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.					

The plant was operating at 93% power. The only equipment problem was a failed FULL-IN reed switch on one control rod.

From the above condition, there was a COMPLETE LOSS OF UNINTERRUPTIBLE AC POWER that resulted in a reactor scram.

EOP-1, RPV Control, has been entered due to RPV low level during the initial transient:

- All 8 RPS Scram Group A and B white lights are OFF.
- The 1C05 operator has reported that he cannot confirm that all rods are fully inserted.
- On the 1C05 Full Core Display, all LPRM downscale lights are ON.
- All IRMs are fully inserted, on Range 3 or 4, reading midscale, and lowering on all available indications.
- RPV pressure is 900 psig and lowering slowly with all available Main Steam Lines Drains open.
- Standby Liquid Control (SBLC) was NOT injected.
- There are no challenges to Containment.

Which of the following correctly describes how the CRS shall utilize the IPOI-5, "Reactor Scram", EOP-1, and the ATWS EOP procedures when directing further operator actions in this situation?

- a. ALL operator actions will be directed from EOP-1 and IPOI-5.
NO operator actions will be directed from the ATWS EOP.
- b. Operator actions for reactivity control will be directed from the ATWS EOP. Operator actions for RPV level and pressure will be directed from EOP-1.
- c. Operator actions for reactivity control will be directed from IPOI-5.
Operator actions for RPV Pressure and Level will be directed from the ATWS EOP.
- d. NO operator actions will be directed from either EOP-1 or IPOI-5.
ALL operator actions will be directed from the ATWS EOP.

Correct Answer: C Operator actions for reactivity control will be directed from IPOI-5.
Operator actions for RPV Pressure and Level will be directed from the ATWS EOP.
ATWS Subcritical without Boron, Exit POWER Leg ONLY, remain in PRESSURE and LEVEL Leg.

Plausible Distractors:

A is plausible: would be true if believed to be SD under all conditions per EOP-1 1st Recheck Statement. IPOI-5 is performed concurrently per EOP-1 RC-2.

B is plausible: would be true if ATWS is entered but the POWER Leg 1st Recheck Statement is misapplied.

D is plausible: would be true if the POWER Leg 1st Recheck Statement is not observed or the definition of shutdown is not understood.

Objective Link: None

SRO 95	K/A Number Generic	Statement 2.1.10	IR 3.9	Origin B	Source Question Fermi-2 2003 NRC Exam
LOK F	10CFR55.43(b)2	LOD (1-5)	Reference Documents Safety Limit 2.1.1.3 Amendment 243		
Knowledge of conditions and limitations in facility license					

Which ONE of the following results in a violation of the Reactor Core Safety Limits?

- During an RFO, with the core completely off loaded and the FP gates installed, the RPV is inadvertently drained to +10 inches.
- While at 100% power, the hourly 3D edit shows MFLCPR at 1.08.
- While in Mode 2 with RPV pressure at 575 psig, an ARPM HIGH FLUX SCRAM occurs at 28% power.
- While in Mode 1, a full Group I isolation occurs, a reactor scram occurs due to high RPV pressure at 1055 psig.

Correct Answer: C Fuel Cladding Integrity – With the reactor steam dome pressure <785 psig or core flow <10% rated core flow: THERMAL POWER shall be \leq 21.7% RTP.

Plausible Distractors:

A is plausible: would be true if fuel were in the RPV.

B is plausible: would be true if 1.10 were given vice 1.08.

D is plausible: would be true if >1335.

Objective Link: None

SRO 96	K/A Number Generic	Statement 2.2.21	IR 3.5	Origin N	Source Question NA
LOK F	10CFR55.43(b)2	LOD (1-5)	Reference Documents Tech Spec L3.6.4.2 and B3.6.4.2 Amendment 237		
Knowledge of pre- and post-maintenance operability requirements.					

The plant is operating at 95% power. A Secondary Containment penetration flowpath with an INOPERABLE automatic damper has been isolated by closing and isolating the air supply to the damper. Maintenance has been completed and Post Maintenance Testing requires the damper to be reopened and automatically close upon the receipt of a Group 3 isolation signal.

Which ONE of the following actions is required?

It is required to:

- a. complete this Post Maintenance Test within a 2 hour time period.
- b. be in HOT SHUTDOWN to perform this test Post Maintenance Test.
- c. be in COLD SHUTDOWN to perform this test Post Maintenance Test.
- d. station a dedicated operator in continuous communication with the control room at the damper to perform this test Post Maintenance Test.

Correct Answer: D Note 1 in L3.6.4.2 Penetration flow paths may be unisolated intermittently under administrative controls.

Plausible Distractors:

A is plausible: not required by L3.6.4.2

B is plausible: not required by L3.6.4.2

C is plausible: not required by L3.6.4.2

Objective Link: None

SRO 97	K/A Number Generic	Statement 2.3.8	IR 3.2	Origin B	Source Question 2002 DAEC NRC Exam
LOK F	10CFR55.43(b)4	LOD (1-5)	Reference Documents SEP 301.1 Rev 6		
Knowledge of the process for performing a planned gaseous radioactive release.					

Which of the following can be used during venting the containment irrespective of radiation release but does NOT require plant entry?

- a. SEP 301.1, Torus Vent Via SBGT
- b. SEP 301.3, Torus Vent Via Hardpipe Vent
- c. SEP 303.1, Air Purge for H₂ Control in SAGs
- d. SEP 303.2, N₂ Purge for H₂ Control in SAGs

Correct Answer: A SEP 301.1, Torus Vent Via SBGT does NOT require plant entry.

Plausible Distractors:

B is plausible: requires locally isolating Steam Packing Exhausters.

C is plausible: requires locally aligning air purge above Drywell Airlock.

D is plausible: requires locally aligning N₂ in Recombiner Room.

Objective Link: None

SRO 98	K/A Number Generic	Statement 2.3.2	IR 2.9	Origin N	Source Question NA
LOK F	10CFR55.43(b)4	LOD (1-5)	Reference Documents HPP 3102.03, Rev 16		
Knowledge of facility ALARA program					

Which ONE of the following is the LOWEST expected exposure that REQUIRES an ALARA RWP Review?

- a. 0.05 man Rem
- b. 1.0 man Rem
- c. 2.0 man Rem
- d. 5.0 man Rem

Correct Answer: B for exposures \geq 500 millirem, an ALARA RWP Review is required.

Plausible Distractors:

A is plausible: not required

C is plausible: not the lowest

D is plausible: not the lowest

Objective Link: None

SRO 99	K/A Number Generic	Statement 2.4.10	IR 3.1	Origin B	Source Question DAEC BANK 96.06.06.04
LOK F	10CFR55.43(b)5	LOD (1-5)	Reference Documents ACP 1410.1 Rev 56 page 13		
Knowledge of annunciator response procedures.					

Radiography is in progress near the CRD accumulators on the south end. During the radiography, 1C04 A-6, REACTOR BLDG. ARM HI RAD annunciator alarms. An operator checks the ARM readings and informs the CRS that RI-9169, South CRD Area Module Area ARM is reading 200 mr/hr.”

Which ONE of the following is the correct response to this condition?

- a. EOP-3 must NOT be entered, since the evolution was preplanned and this was a possible condition that could occur.
- b. EOP-3 must be entered and actions must be taken until RI-9169, South CRD Area Module Area High Radiation ARM reading is clear.
- c. EOP-3 must be entered due to RI-9169, South CRD Area Module Area High Radiation ARM alarming. EOP-3 can be exited if no emergency exists. No other actions are required.
- d. EOP-3 must be entered due to RI-9169, South CRD Area Module Area High Radiation ARM alarming. EOP-3 can be exited if no emergency exists. The EOP entry and exit must be logged into CRS Logs.

Correct Answer: D per ACP 1410.1,

Plausible Distractors:

A is plausible: but incorrect per ACP 1410.1

B is plausible: but incorrect per ACP 1410.1

C is plausible: but incorrect per ACP 1410.1

Objective Link: 96.06.06.04

SRO 100	K/A Number Generic	Statement 2.4.27	IR 3.7	Origin B	Source Question DAEC BANK 05.24.04.04-01
LOK F	10CFR55.43(b)5	LOD (1-5)	Reference Documents AOP-913 Rev 49		
Knowledge of fire in the plant procedure.					

The plant is operating at 95% power when the following occurs:

- At 0930, the in plant operator notifies the control room that there is a fire in the High Pressure Coolant Injection (HPCI) room.
- At 0933, 1C40 C-2, HPCI ROOM DELUGE NO. 2 INITIATED illuminates. This is a red alarm window.
- At 0940, the Fire Brigade informs the control room that they are on the scene fighting the fire.
- At 0948, the Fire Brigade reports to the control room that the fire is out.

By what time must the Control Room Supervisor (CRS) have determined the appropriate Emergency Action Level (EAL)?

- 0945
- 0948
- 0955
- 1003

Correct Answer: A 0930 + 15 minutes = 0945 a fire burning for 15 minutes requires declaring an Emergency Action Level.

Plausible Distractors:

B is plausible: would be true if time was based on Fire Protection System actuation.

C is plausible: would be true if time was based on Fire Brigade arriving at the scene.

D is plausible: would be true if time was based on Fire extinguishment.

Objective Link: None