

HLT 0810 Written Exam

1. Unit 1 is recovering from a trip of Recirc Pump 1A **AND** while executing the actions of 1-AOI-68-1A, "Recirc Pump Trip/Core Flow Decrease OPRMs Operable," the Unit Operator (UO) has just reported that the RECIRC PUMP 1A DISCHARGE VALVE, 1-FCV-68-3, has been **MANUALLY** opened.

The Balance of Plant (BOP) Operator then reports that Recirc Pump 1B has tripped **AND** the Unit has entered Region I of the Power to Flow Map.

Which ONE of the following completes the statement?

For these conditions, the required action in accordance with 1-AOI-68-1A is to _____.

- A. insert a manual Reactor Scram
- B. commence a normal Reactor shutdown / cooldown
- C. close the Discharge Valve on the outlet of Recirc Pump 1B
- D. insert Control Rods on the "Shove Sheet" to exit Region I of the Power to Flow Map

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2. Which ONE of the following completes the statement?

480 Volt Load Shed Logic receives a Common Accident Signal generated from (1) **AND** is divisionalized on (2) in regards to which board loads will actually be shed.

- A. (1) RHR System instrumentation
(2) Unit 1
- B. (1) Core Spray System instrumentation
(2) Unit 1
- C. (1) RHR System instrumentation
(2) Unit 3
- D. (1) Core Spray System instrumentation
(2) Unit 3

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3. Unit 2 was operating at 100% Reactor Power.

A ground **AND** subsequent fire in Shutdown Board 250V DC Distribution Panel SB-B resulted in de-energization of the SB-B panel **AND** trip of 4kV Shutdown Board B Normal Feeder Breaker.

Which ONE of the following completes the statements?

480V Shutdown Board 2A is (1) .

4kV Shutdown Board B (2) automatically transfer to its alternate source.

- A. (1) energized
 (2) will
- B. (1) de-energized
 (2) will
- C. (1) energized
 (2) will **NOT**
- D. (1) de-energized
 (2) will **NOT**

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4. Unit 2 is operating at 100% Reactor Power when the following alarm **AND** indications occur:

- EHC HYD FLUID HDR PRESS LOW, (2-9-7B, Window 1)
- EHC Header Pressure is 1050 psig and lowering
- STANDBY EHC Pump is isolated and Red Tagged

Which ONE of the following completes the statements?

As a result of this transient, 4 kV Shutdown Board loads will be supplied by the (2).

- A. Main Transformer ~~Generator~~
- B. Emergency Diesel Generators
- C. Common Station Service Transformers
- D. Unit Station Service Transformers

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5. Unit 3 is operating at 100% power conditions with EHC in the **PREFERRED** mode of operation. The reactor scrams on low water level with the following timeline:
- The Scram report notes Reactor Pressure at 980 psig and lowering slowly
 - One minute after the scram, the operator reports Reactor Pressure has turned at a low of 955 psig and is now rising
 - Two minutes after the scram, the operator reports Reactor Pressure at 980 psig and rising at approximately 2 psi/sec

Which ONE of the following completes the statement?

EHC is in (1) Pressure Control **AND** the Main Turbine Bypass Valves (2) .

- A. (1) Header
 (2) have failed to operate at their setpoint
- B. (1) Reactor
 (2) have failed to operate at their setpoint
- C. (1) Header
 (2) will open once they reach their setpoint
- D. (1) Reactor
 (2) will open once they reach their setpoint

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6. Due to toxic gas intrusion, the Unit 1 Control Room is being abandoned in accordance with 1-AOI-100-2, "Control Room Abandonment." **ALL IMMEDIATE** Operator Actions have just been completed.

Which ONE of the following completes the statements?

UNTIL control is established at the Backup Control Panel, Reactor Pressure will be controlled by the (1) .

During depressurization / cooldown efforts at the Backup Control Panel, with Reactor Pressure at 58 psig the Operator will (2) .

- A. (1) SRVs in Safety Mode
 (2) monitor RCIC operation while injecting
- B. (1) Turbine Bypass Valves
 (2) monitor RCIC operation while injecting
- C. (1) SRVs in Safety Mode
 (2) verify that RCIC has automatically isolated
- D. (1) Turbine Bypass Valves
 (2) verify that RCIC has automatically isolated

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7. Unit 3 is operating at 100% Reactor Power. A grid disturbance results in a Loss of Offsite Power; **BUT**, power is quickly restored. The following conditions currently exist:
- Raw Cooling Water (RCW) can **NOT** be restored
 - **ONLY** Reactor Building Closed Cooling Water (RBCCW) Pump 3A could be started

Which ONE of the following identifies the reason Emergency Equipment Cooling Water (EECW) is cross-connected to RBCCW?

To provide cooling to the _____.

- A. RWCU Non-Regenerative Heat Exchanger to avoid resin damage
- B. Drywell Coolers to ensure Drywell Temperature limits are **NOT** exceeded
- C. RWCU Pump seal water and bearing oil coolers to maintain seal integrity
- D. Spent Fuel Pool Cooling Heat Exchanger to ensure adequate decay heat removal

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8. Given the following plant conditions:

- Unit 2 was at 100% Reactor Power when a transient occurred which resulted in a Reactor Scram
- After stabilizing the unit, the Scram signal is RESET
- **ALL** eight (8) Scram Solenoid Group lights are ON
- Approximately ten minutes later, the following conditions are present:
 - RCW DISCH HDR PRESS LOW, (2-9-20A, Window 34), in alarm
 - CRD ACCUM CHG WTR HDR PRESS HIGH, (2-9-5A, Window 10), in alarm
 - Outboard MSIVs are CLOSED
 - Inboard MSIVs are OPEN
 - Scram Discharge Volume (SDV) Vent **AND** Drain Valves are CLOSED
 - Scram Inlet **AND** Outlet Valves are OPEN

Which ONE of the following events explains the receipt of the above stated alarms / indications?

- A. Loss of Control Air
- B. Loss of Both RPS Buses
- C. Loss of Drywell Control Air
- D. Loss of 9-9 Cabinet 5, Unit Non-Preferred

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9. Unit 3 is in Mode 4 with the following conditions:

- Reactor Level band is (+) 70 to (+) 80 inches to support testing
- **ALL** Reactor Recirc **AND** RWCU Pumps are isolated and tagged
- RHR Loop I in Shutdown Cooling experiences an inadvertent Group 2 Isolation **AND** can **NOT** be restored

In accordance with 3-AOI-74-1, "Loss of Shutdown Cooling," which ONE of the following completes the statements?

Accurate Reactor Water Temperature (1) available.

If Reactor Coolant Stratification occurs, it is indicated by (2) .

- A. (1) is
(2) Feedwater Sparger temperature **GREATER THAN OR EQUAL TO** 200°F on any Vessel Feedwater Nozzle indication
- B. (1) is **NOT**
(2) Feedwater Sparger temperature **GREATER THAN OR EQUAL TO** 200°F on any Vessel Feedwater Nozzle indication
- C. (1) is
(2) Reactor pressure **GREATER THAN** 0 psig with any Reactor Coolant temperature indication **GREATER THAN** 212°F
- D. (1) is **NOT**
(2) Reactor pressure **GREATER THAN** 0 psig with any Reactor Coolant temperature indication **GREATER THAN** 212°F

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10. Unit 1 is in a Refueling Outage. The Refueling Supervisor reports that an **IRRADIATED** fuel assembly has been seated in the **WRONG** location in the core. The grapple remains engaged on the bundle.

The following conditions are then noted:

- Rising count rates on SRMs
- SRM Period lights illuminated
- Rising dose rates on the Refuel Floor

Which ONE of the following describes an **IMMEDIATE** Operator action to be taken?

- A. Verify Secondary Containment is intact.
- B. If any CRD Pump is in service stop the CRD Pump.
- C. Raise the fuel bundle from the core location **AND** traverse to the area of the cattle chute.
- D. If SLC is operable place SLC PUMP 1A/1B, 1-HS-63-6A control switch in START A **OR** START B.

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11. Which ONE of the following completes the statement?

The MAXIMUM Containment Pressure that Primary Containment Vent Valves can be opened **AND** closed is_____.

- A. 50 psig
- B. 55 psig
- C. 62 psig
- D. 65 psig

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12. Which ONE of the following completes the statements?

The Limiting Condition for Operation (LCO) statement for Unit 1 Safety Relief Valves (SRVs), LCO 3.4.3, requires operability of the safety function for __(1)__ SRVs in Modes 1, 2, and 3.

This ensures that the ASME Code Limit of __(2)__ is **NOT** exceeded following the Design Basis Event of simultaneous closure of **ALL** Main Steam Isolation Valves (MSIVs) at 100% Reactor Power.

- A. (1) 12
(2) 1250 psig
- B. (1) 12
(2) 1375 psig
- C. (1) 13
(2) 1375 psig
- D. (1) 13
(2) 1250 psig

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13. Unit 3 is currently testing Safety Relief Valves (SRVs) at 10% Reactor Power with the following plant conditions:
- Suppression Pool Selected Temperature Recorder/Indicator, 3-TR/TI-64-161, is indicating 112 °F
 - Suppression Pool Average Temperature is 96 °F

Which ONE of the following describes the required action relative to Suppression Pool (SP) Temperature?

- A. Suspend testing of the SRVs **IMMEDIATELY** in accordance with Tech Specs.
- B. Testing can continue **UNTIL** SP Average Temperature exceeds 110 °F in accordance with Tech Specs.
- C. Operate **ALL** available Suppression Pool Cooling as directed by 3-EOI-2, "Primary Containment Control."
- D. Enter 3-EOI-1, "RPV Control," from 3-EOI-2, "Primary Containment Control," **AND** SCRAM the reactor as directed by the EOIs.

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14. Unit 1 has scrammed from 100% Reactor Power with the following conditions:
- A small, high pressure steam leak in the Drywell has caused a Drywell Temperature of 280 °F and rising
 - Drywell Pressure is 15 psig and rising

Which ONE of the following completes the statement?

IMMEDIATELY following the initiation of Drywell Sprays under the superheated conditions listed above, the Drywell is expected to have a **(1)** pressure drop indicative of **(2)** cooling being the dominant mechanism of heat transfer.

- A. **(1)** slow, steady
 (2) convective
- B. **(1)** slow, steady
 (2) evaporative
- C. **(1)** rapid, large
 (2) convective
- D. **(1)** rapid, large
 (2) evaporative

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15. Unit 3 has experienced a LOCA **AND** the following conditions exist:

- Suppression Pool Level is (-) 5.5 inches
- Suppression Chamber Pressure is 5 psig
- Drywell Pressure is 10 psig
- Suppression Pool Temperature is 200° F
- RHR Pump 2A flow is 11,500 gpm
- Core Spray Loop II flow is 4,000 gpm *with Both Pumps Running*
- **NO** other ECCS Pumps are running

Based on the above conditions, which ONE of the following identifies the ECCS Pump(s), if any, that has (have) sufficient NPSH for continued operation?

[REFERENCE PROVIDED]

- A. **NONE**
- B. RHR Pump 2A **ONLY**
- C. Core Spray Loop II Pumps **ONLY**
- D. Core Spray Loop II Pumps **AND** RHR Pump 2A

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16. Which ONE of the following completes the statements?

In EOI C-5, "Level / Power Control," Reactor Water Level is lowered to less than (–) 50 inches to ___(1)___ thereby reducing reactor power. After Hot Shutdown Boron Weight is injected into the Reactor, level is raised in order to ___(2)___.

- A. (1) promote concentrating boron in the high power areas of the core
(2) promote mixing of the Boron throughout the core
- B. (1) reduce natural circulation driving head **AND** core flow
(2) promote mixing of the Boron throughout the core
- C. (1) promote concentrating boron in the high power areas of the core
(2) allow MSIVs to be reopened to commence a normal Cooldown
- D. (1) reduce natural circulation driving head **AND** core flow
(2) allow MSIVs to be reopened to commence a normal Cooldown

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17. Which ONE of the following completes the statements?

During Anticipated Transient Without Scram (ATWS) conditions on Unit 2, 2-EOI-1, "RPV Control" requires Standby Liquid Control (SLC) initiation (1) .

If the Squib Valves fail to actuate (fire) during execution of 2-EOI Appendix-3A, "SLC Injection," Sodium Pentaborate can be injected with CRD Pump (2) as directed by 2-EOI Appendix-3B, "Alternate SLC Injection."

- A. (1) **BEFORE** Suppression Pool Temperature rises to 110 °F **ONLY**
(2) 1B
- B. (1) **BEFORE** Suppression Pool Temperature rises to 110 °F **ONLY**
(2) 2A
- C. (1) **BEFORE** Suppression Pool Temperature rises to 110 °F **OR WHEN** APRM Peak-to-Peak Oscillations persist above 25%
(2) 1B
- D. (1) **BEFORE** Suppression Pool Temperature rises to 110 °F **OR WHEN** APRM Peak-to-Peak Oscillations persist above 25%
(2) 2A

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18. Unit 1 has been operating for one week with increasing amounts of fuel bundle leaks. Suppression efforts have been unsuccessful and the trigger point for shutting down the reactor on excessive Stack release rates is rapidly approaching when the following alarms are received:
- MAIN STEAM LINE RADIATION HIGH-HIGH 1-RA-90-135C, (1-9-3A, Window 27)
 - OG AVG ANNUAL RELEASE RATE EXCEEDED 1-RA-90-157C, (1-9-4C, Window 27)

Which ONE of the following completes the statements for this condition?

The requirement to insert a manual scram is directed by a valid (1) alarm.

Immediately following the scram, the ARP-specific **IF / THEN** directive to **CLOSE** MSIVs is based upon a determination that (2).

- A. (1) MAIN STEAM LINE RADIATION HIGH-HIGH 1-RA-90-135C
(2) releases are still in excess of Offsite Dose Calculation Manual limits
- B. (1) OG AVG ANNUAL RELEASE RATE EXCEEDED 1-RA-90-157C
(2) the reactor will remain subcritical without boron under all conditions
- C. (1) MAIN STEAM LINE RADIATION HIGH-HIGH 1-RA-90-135C
(2) the reactor will remain subcritical without boron under all conditions
- D. (1) OG AVG ANNUAL RELEASE RATE EXCEEDED 1-RA-90-157C
(2) releases are still in excess of Offsite Dose Calculation Manual limit

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19. The following plant conditions currently exist on Unit 3:

- A Seal Oil Skid fire has erupted **AND** the sprinkler system has been manually initiated
- Fire header pressure has been 115 psig for 25 seconds after actuation of the sprinkler system
- A small leak in the Drywell resulted in Drywell Pressure of 3 psig and steady
- Reactor Pressure is 750 psig and stable
- Reactor Level dropped to a low of (-) 20 inches **AND** is now being maintained at normal band

Which ONE of the following completes the statement?

Based on these conditions, the Diesel Fire Pump _____.

- A. **AND ALL THREE** Electric Fire Pumps are operating
- B. **AND ALL THREE** Electric Fire Pumps are in standby
- C. is in standby **AND ONE** Electric Fire Pump is operating
- D. is in standby **AND TWO** Electric Fire Pumps are operating

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20. Unit 3 is operating at 80% Reactor Power **AND** the crew has entered 0-AOI-57-1E, "Grid Instability," due to the 500 kV system voltage being at 541 kV. The crew reaches the following step in the procedure:

"Lower reactive power until system voltage returns to 530 kV"

Which ONE of the following identifies how to lower reactive power **AND** the required 161 kV Capacitor Bank Status in accordance with 0-AOI-57-1E?

- A. Depress the EHC Load Set LOWER pushbutton, 3-HS-47-75C; Check the 161 kV Capacitor Banks are **IN** service.
- B. Depress the EHC Load Set LOWER pushbutton, 3-HS-47-75C; Check the 161 kV Capacitor Banks are **OUT** of service.
- C. Place the Generator Field Voltage Auto Adjust (90P), 3-HS-57-26, to the LOWER position; check the 161 kV Capacitor Banks are **IN** service.
- D. Place the Generator Field Voltage Auto Adjust (90P), 3-HS-57-26, to the LOWER position; check the 161 kV Capacitor Banks are **OUT** of service.

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21. Unit 3 is operating at 38% Reactor power, when the following conditions are noted:
- Annunciator CONDENSER A, B, OR C VACUUM LOW, (3-9-7B, Window 17), in alarm
 - Hotwell Temp and Press, 3-XR-2-2, indicating (-) 24.0 inches Hg and lowering

If vacuum continues to lower, which ONE of the following **AUTOMATIC** protective actions will occur **FIRST**?

- A. MSIV closure
- B. Main Turbine trip
- C. Reactor Feed Pump Turbine trip
- D. Main Turbine Bypass Valve closure

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22. Unit 2 is in Mode 4 with the following conditions:

- Reactor Level is (+) 45 inches
- **ALL** Shutdown Cooling has been lost

Which ONE of the following identifies the reason that 2-AOI-74-1, "Loss of Shutdown Cooling," requires a HIGHER Reactor Water Level established **AND** maintained?

The HIGHER Reactor Water Level _____.

- A. provides additional mass of water in the Reactor Vessel to delay boiling
- B. floods the Moisture Separators which provides a path for natural circulation
- 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

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23. Unit 2 is at 75% Reactor Power when DRYWELL NORM OPERATING PRESS HIGH, (2-9-3B, Window 19) is received. Drywell Pressure is 1.6 psig **AND** slowly trending up.

Which ONE of the following completes the statements?

In attempting to determine whether the Technical Specification **UNIDENTIFIED** leakage rate was rising, the operator would evaluate pump-out **AND** fill-rates for the Drywell (1) Drain Sump.

If the sump fills faster than the preset allowable time, then the Fill-Rate Timer logic will feed directly into the respective alarm for (2) .

- A. (1) Floor
 (2) Excessive Sump Pump Operation
- B. (1) Equipment
 (2) Excessive Sump Pump Operation
- C. (1) Floor
 (2) Drain Sump Level Abnormal
- D. (1) Equipment
 (2) Drain Sump Level Abnormal

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24. Unit 2 is operating at 100% Reactor Power when the running CRD pump trips. The standby CRD pump has been placed in service. The following alarm is subsequently received:

- CONTROL ROD DRIVE UNIT HIGH TEMP, (2-9-5A, Window 17), is in alarm

Which ONE of the following identifies the required actions?

- A. Declare the affected Control Rod(s) "SLOW" **AND** raise CRD flow.
- B. Declare the affected Control Rod(s) "INOPERABLE" **AND** raise CRD flow.
- C. Declare the affected Control Rod(s) "SLOW" **AND** isolate the affected CRD HCU(s) from service.
- D. Declare the affected Control Rod(s) "INOPERABLE" **AND** isolate the affected CRD HCU(s) from service.

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25. In accordance with the EOI Program Manual, which ONE of the following completes the statements?

With the reactor operating at 100% power, a Suppression Pool Water Level that is continuously ___(1)___ will result in entry into the **Action Required** area of Curve 4, "SRV Tail Pipe Limit."

Eventually, a Manual Scram is directed from the Suppression Pool Level Control (SP/L) leg of EOI-2, "Primary Containment Control," with the purpose being to attempt to lower ___(2)___ relative to the curve.

- A. (1) rising **ONLY**
(2) Reactor Pressure
- B. (1) rising **ONLY**
(2) Suppression Chamber Pressure
- C. (1) rising **OR** lowering
(2) Reactor Pressure
- D. (1) rising **OR** lowering
(2) Suppression Chamber Pressure

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26. On Unit 3, a Refueling Accident has occurred resulting in the following conditions:

- **ALL** Refuel Zone Radiation Monitor Channels are reading 65 mr/hr
- Control Room Ventilation Rad Monitors 90-259A/B are reading 155 cpm
- **ALL** Reactor Zone Radiation Monitor Channels are reading 68 mr/hr

Based on these conditions, which ONE of the following identifies the status of plant systems?

- A. **NO** Standby Gas Treatment Systems are in service; **NO** CREV are in service.
- B. **ALL** Standby Gas Treatment Systems are in service; **NO** CREV are in service.
- C. **NO** Standby Gas Treatment Systems are in service; **ONLY** the selected CREV is in service.
- D. **ALL** Standby Gas Treatment Systems are in service; **ONLY** the selected CREV is in service

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27. A Condensate Transfer System leak spraying on Unit 1 Loop II Core Spray Room Cooler has resulted in the following:

- Loop II Core Spray Room Cooler has tripped **AND** will **NOT** reset
- CORE SPRAY LOOP II PUMP ROOM FLOOD LEVEL HIGH, (1-9-4C, Window 31), is in alarm

Which ONE of the following completes the statements?

Loop II Core Spray (1) operable.

Entry into 1-EOI-3, "Secondary Containment Control," (2) required.

- A. (1) is
(2) is
- B. (1) is
(2) is **NOT**
- C. (1) is **NOT**
(2) is
- D. (1) is **NOT**
(2) is **NOT**

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28. Given the following conditions:

- Unit 2 has experienced a Loss of Coolant Accident (LOCA)
- Drywell Sprays are required in accordance with "Primary Containment Control," 2-EOI-2

Which ONE of the following plant conditions must exist prior to opening **BOTH** the Residual Heat Removal (RHR) SYS I Inboard **AND** Outboard Drywell Spray Valves?

- A. Reactor Level must be greater than (-) 155 inches (Emergency Range) with **ONLY** the CONT SPRAY VLV SEL SWITCH in SELECT.
- B. Reactor Level must be greater than (-) 162 inches (Post Accident Range) with **ONLY** the CONT SPRAY VLV SEL SWITCH in SELECT.
- C. Reactor Level is greater than (-) 183 inches (Post Accident Range) with **ONLY** the CONT SPRAY VLV SEL SWITCH in SELECT.
- D. Reactor Level is less than (-) 200 inches (Post Accident Range) with **ONLY** the 2/3 CORE HEIGHT KEYLOCK BYPASS SWITCH in BYPASS.

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29. Unit 1 was operating at 100% Reactor Power when a LOCA occurred resulting in the following:
- Reactor Pressure is 405 psig
 - Reactor Level is (-) 140 inches

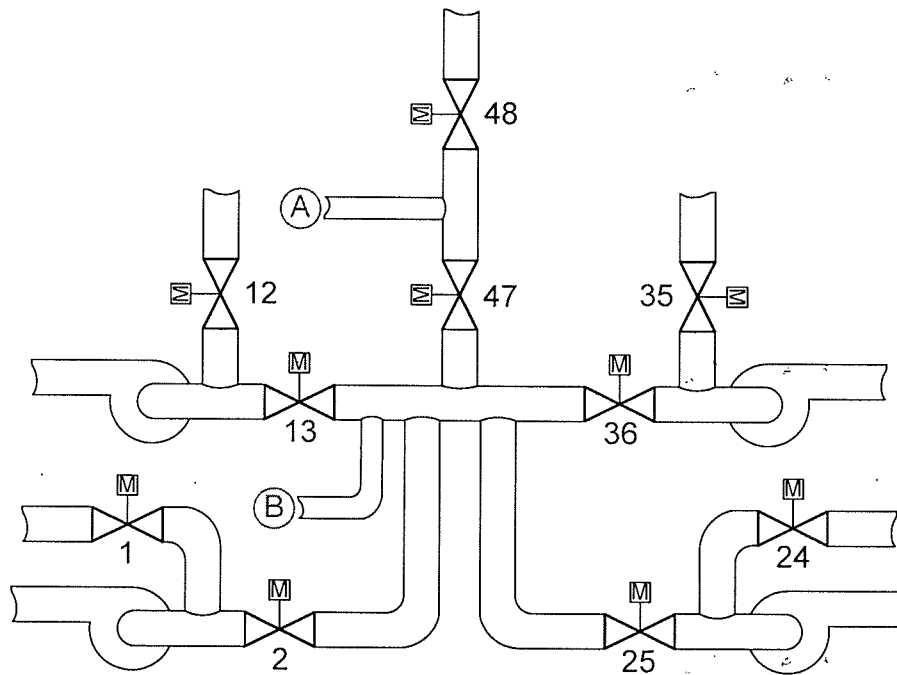
Which ONE of the following completes the statement?

The RHR SYS I LPCI OUTBD INJECT VALVE, 1-FCV-74-52, is (1) **AND** the RHR SYS I MIN FLOW VALVE, 1-FCV-74-7, is (2) .

- A. (1) OPEN
 (2) CLOSED
- B. (1) CLOSED
 (2) CLOSED
- C. (1) OPEN
 (2) OPEN
- D. (1) CLOSED
 (2) OPEN

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30. On Unit 3, RHR Pump 3C has been placed in Supplemental Fuel Pool Cooling in accordance with 3-OI-74, "Residual Heat Removal System," section 8.12, "Initiation of Supplemental Fuel Pool Cooling with RHR Pumps A or C(B or D)."



3-FCV-74-1 / 12 / 24 / 35 – SUPPR POOL SUCT VLVs

**ALL other valves associated with Shutdown Cooling

Which ONE of the following completes the statements?

Suction from Fuel Pool Cooling ties into RHR at point (1).

A subsequent Shutdown Cooling Isolation signal (2) result in **LOSS** of Supplemental Fuel Pool Cooling.

- A. (1) Ⓐ
(2) will
- B. (1) Ⓑ
(2) will
- C. (1) Ⓐ
(2) will **NOT**
- D. (1) Ⓑ
(2) will **NOT**

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31. Which ONE of the following completes the statement?

The power supply to the Unit 2 HPCI Aux Oil Pump is _____.

- A. 250 VDC RMOV BD 2A
- B. 250 VDC RMOV BD 2B
- C. 480 VAC RMOV BD 2A
- D. 480 VAC RMOV BD 2B

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32. Unit 2 has experienced a LOCA with the following plant conditions:

- Drywell Pressure is 3.5 psig and rising
- Reactor Water Level is (-) 120 inches and lowering
- Reactor Pressure is 105 psig and lowering
- 4kV Shutdown Board C is locked out

Which ONE of the following predicts the total injection flowrate for the Loop 2 Core Spray Pumps? (**Assume no operator actions**)

- A. 0 gpm
- B. 2400 gpm
- C. 6250 gpm
- D. 9100 gpm

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33. Unit 3 is executing 3-EOI-1, "RPV Control," due to a Scram **AND** an ATWS. The Unit Operator (UO) initiates Standby Liquid Control (SLC) per 3-EOI Appendix-3A, "SLC Injection." The following is observed **TEN** minutes later:

- SLC Storage Tank Level is 79%
- SLC Pump Discharge Pressure is 1100 psig and steady
- Reactor Pressure is 1000 psig

Based upon the **ABOVE** indications, which ONE of the following completes the statement?

The running SLC Pump is discharging (1) **AND** the blue SQUIB VALVE A and B CONTINUITY lights, on Panel 3-9-5, are expected to be (2) for this condition.

- A. (1) to the Reactor Vessel
 (2) illuminated
- B. (1) to the Reactor Vessel
 (2) extinguished
- C. (1) through a Relief Valve
 (2) illuminated
- D. (1) through a Relief Valve
 (2) extinguished

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34. Unit 2 has inserted a manual Reactor Scram. Several control rods failed to insert on the scram. Plant conditions are as follows:

- Reactor Power is 3%
- Reactor Pressure is 960 psig **AND** controlled by EHC
- Drywell Pressure is 2.5 psig
- Mode Switch is in Shutdown
- SCRAM DISCH VOLUME HI LEVEL BYPASS Switch is in NORMAL
- Reactor Water Level is (-) 55 inches

NOTE: 2-EOI Appendix 1F – Manual Scram
2-EOI Appendix 2 – Defeating ARI Logic Trips
2-EOI Appendix 12 – Primary Containment Venting

Which ONE of the following is/are the **MINIMUM** required action(s) to allow resetting **AND** recharging the Scram Air Header?

- A. Install jumpers per 2-EOI Appendix 1F **AND** Reset ARI.
- B. Install jumpers per 2-EOI Appendix 1F **AND** Defeat ARI per 2-EOI Appendix 2.
- C. Vent the Drywell per 2-EOI Appendix 12 until DRYWELL PRESSURE HIGH HALF SCRAM alarm (2-9-4A, Window 8) clears.
- D. Place the SDV Hi Hi Wtr Trip Bypass Keylock Switch to BYPASS until EAST / WEST CRD DISCH VOL WTR LVL HIGH HALF SCRAM, (2-9-4A, Windows 1/29) clear.

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35. Given the following plant conditions:

- Unit 3 Reactor startup preparations are in progress with NO rods withdrawn
- Instrument Mechanics (IM) are performing the Intermediate Range Monitor (IRM) Functional Surveillance
- NO IRMs are currently bypassed
- The IM has placed the "INOP / INHIBIT" toggle switch for the 'H' Channel IRM in the "INHIBIT" position

Which ONE of the following describes the IRM trip function that is bypassed as a result of this action?

- A. IRM "High Voltage Low" INOP TRIP
- B. IRM "Loss of ± 24 VDC" INOP TRIP
- C. IRM "Module Unplugged" INOP TRIP
- D. IRM "Mode Switch Out of Operate" INOP TRIP

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36. Unit 1 is in Mode 2 with the following conditions:

- Source Range Monitor (SRM) 'A' is reading 6.2×10^4 cps
- SRM 'D' mode switch (S-1) is in the STANDBY position
- Intermediate Range Monitor (IRM) 'D' is downscale on Range 1 (output has been lost)
- IRM 'C' is reading 85 of 125 scale on Range 8
- **ALL** other IRMs are reading mid scale on Range 8 **OR** 9

Based on the above indications, which ONE of the following has caused a Rod Block signal to be generated?

- A. IRM High
- B. SRM High
- C. IRM Downscale
- D. SRM Inoperable

HLT 0810 Written Exam

37. A plant start up on Unit 3 is in progress. A control rod block has occurred. The following nuclear instrument indications are noted:

	SRM A	SRM B	SRM C	SRM D
Position	Full in	Mid-position	Mid-position	Full in
Counts (CPS)	9.5×10^3	95	80	8.0×10^3

IRM A	IRM B	IRM C	IRM D	IRM E	IRM F	IRM G	IRM H
25/125	15/125	35/125	55/125	75/125	75/125	30/125	25/125
Range 3	Range 2	Range 3	Range 3	Range 2	Range 2	Range 3	Range 3

Which ONE of the following identifies the MINIMUM action needed to clear the ROD WITHDRAWAL BLOCK?

- A. Insert SRM B **ONLY**
- B. Insert SRM B **AND** SRM C
- C. Range up on IRM B **AND** IRM F to range 3
- D. Range up on IRM E **AND** IRM F to range 3

HLT 0810 Written Exam

38. Unit 2 APRMs have the following indications:

- APRM 1 - 106%
- APRM 2 - 104%
- APRM 3 - 104%
- APRM 4 - 105%
- Recirc Loop A flow 60%
- Recirc Loop B flow 64%

Which ONE of the following identifies the expected plant response to these conditions?

- A. Control Rod Withdrawal Block **ONLY**
- B. Half Scram **AND** Control Rod Withdrawal Block
- C. Full Scram **AND** Control Rod Withdrawal Block
- D. Flow Compare Inverse Video Alarm on ODA **ONLY**

HLT 0810 Written Exam

39. After a Reactor Scram on Unit 2, the following plant conditions exist:

- Main Turbine Bypass Valves failed closed
- HPCI **AND** RCIC have been MANUALLY started in CST to CST pressure control mode
- Subsequently, Condensate Storage Tank (CST) level dropped to 6500 gallons

Assuming **NO** operator action has been taken, which ONE of the following completes the statement?

RCIC is __**(1)**__ with suction from the __**(2)**__.

- A. **(1)** operating at shutoff head
(2) CST
- B. **(1)** pumping to the CST
(2) CST
- C. **(1)** operating at shutoff head
(2) Suppression Pool
- D. **(1)** pumping to the CST
(2) Suppression Pool

HLT 0810 Written Exam

40. Unit 2 was operating at 100% Reactor Power with RHR Pump 2B tagged. A Loss of Coolant Accident with a subsequent Loss of Off Site Power has resulted in the following plant conditions:

- Reactor Water Level is (-)125 inches
- Drywell Pressure is 4.1 psig
- B **AND** D 4KV Shutdown Boards are de-energized
- RHR Pump 2A tripped

Which ONE of the following identifies the **MINIMUM** action, if any, that will prevent the Automatic Depressurization System (ADS) from an Auto-Initiation?

- A. **NO** action is required
- B. Place **ONLY** ADS Logic Inhibit Switch 'A' to INHIBIT
- C. Place **ONLY** ADS Logic Inhibit Switch 'B' to INHIBIT
- D. Place **BOTH** ADS Logic Inhibit Switches 'A' **AND** 'B' to INHIBIT

HLT 0810 Written Exam

41. A Recirculation Loop leak results in a Unit 2 Drywell Pressure of 2.5 psig.

Six minutes later, plant conditions are as follows:

- Reactor Water Level is (-) 110 inches
- Drywell Pressure is 5.1 psig
- Core Spray Pumps 2A **AND** 2D are being manually started
- **NO** other ECCS Pumps are available

Which ONE of the following identifies the status of ADS?

- A. ADS Valves will **NOT** Automatically actuate **BUT** can be opened **MANUALLY**.
- B. ADS Valves will open **IMMEDIATELY** if Reactor Water Level reaches Level 1.
- C. ADS Valves will open 95 seconds after the 2A **AND** 2D Core Spray Pumps started.
- D. ADS Valves will open **IMMEDIATELY** after the 2A **AND** 2D Core Spray Pumps started.

HLT 0810 Written Exam

42. Which ONE of the following will result in a HPCI Group 4 Isolation on Unit 2?
- A. Reactor Pressure of 108 psig
 - B. HPCI Pump Room Temperature of 170° F
 - C. HPCI Steam Line Flow at 150% of rated for 5 seconds
 - D. HPCI Pressure between Exhaust Rupture Discs of 12 psig

HLT 0810 Written Exam

43. Preparations are underway to place Unit 2 in Cold Shutdown following a Scram. When the operator started the 2B RHR Pump for Shutdown Cooling (SDC), Reactor Water Level lowered to 0 inches.

Which ONE of the following completes both of the following statements for using RHR Loop 1 LPCI to restore vessel level in accordance with 2-AOI-74-1, "Loss of Shutdown Cooling?"

The RHR SYS 1 SD CLG INBD INJECT ISOL RESET pushbutton, 2-XS-74-126, (1) to be depressed.

Following the start of Loop 1 RHR Pump, the operator is required to open (2) .

- A. (1) is required
(2) RHR SYS I OUTBD INJECT VALVE, 2-FCV-74-52
- B. (1) is required
(2) RHR SYS I INBD INJECT VALVE, 2-FCV-74-53
- C. (1) is **NOT** required
(2) RHR SYS I OUTBD INJECT VALVE, 2-FCV-74-52
- D. (1) is **NOT** required
(2) RHR SYS I INBD INJECT VALVE, 2-FCV-74-53

HLT 0810 Written Exam

44. Which ONE of the following completes the statements?

ALTERNATE electrical power for those Unit 3 Safety Relief Valve (SRV) Solenoids, where available, is supplied from 250 VDC (1).

Upon experiencing undervoltage conditions on the normal power supply, the transfer to SRV Solenoid alternate power supplies (2).

- A. (1) RMOV Boards **ONLY**
(2) occurs automatically
- B. (1) RMOV Boards **ONLY**
(2) **MUST** be performed manually
- C. (1) RMOV Boards **AND** Battery Boards
(2) occurs automatically
- D. (1) RMOV Boards **AND** Battery Boards
(2) **MUST** be performed manually

HLT 0810 Written Exam

45. The following conditions exist on Unit 1:

- Reactor Power is 28%
- NORMAL RANGE Level indicator, 1-LI-3-208D, is failed **HIGH** (> 60 inches)

The Unit Operator subsequently observes that NORMAL RANGE Level indicator, 1-LI-3-208A, is drifting upscale.

Which ONE of the following completes the statements?

Tech Spec 3.3.2.2, "Feedwater and Main Turbine High Water Level Trip Instrumentation," (1) applicable for the current plant conditions.

If 1-LI-3-208A reaches **FULL** scale, the running RFPTs (2) trip.

- A. (1) is
(2) will
- B. (1) is **NOT**
(2) will
- C. (1) is
(2) will **NOT**
- D. (1) is **NOT**
(2) will **NOT**

HLT 0810 Written Exam

46. Which ONE of the following completes the statements?

In accordance with 0-OI-65, "Standby Gas Treatment System," section 8.5, "SGT Decay Heat Removal," the Decay Heat Removal Dampers for the Standby Gas Treatment System (1) at a plenum temperature of 150°F.

While operating in this mode, SGT flow indication (2) be monitored in the Control Room.

- A. (1) automatically open
(2) can
- B. (1) automatically open
(2) can **NOT**
- C. (1) must be manually opened
(2) can **NOT**
- D. (1) must be manually opened
(2) can

HLT 0810 Written Exam

47. At panel 0-9-23-7, the following conditions exist for the "A" 4KV Shutdown Board:
- ALT FDR
- 0-25-211-A/24A, 4kV SD BD A^ABKR 1716 SYNC switch is ON
 - 0-43-211-A, 4kV SD BD A AUTO/LOCKOUT RESET switch is in the TRIPPED condition
 - Alt Supply Breaker is CLOSED
 - Norm Supply Breaker is OPEN

Which ONE of the following identifies how the 4KV system will respond if the Unit Operator places the 0-43-211-A switch to the RESET position?

The Shutdown Board will (1) Transfer **AND** will be supplied from (2) .

- A. (1) FAST
 (2) Shutdown Bus 1
- B. (1) FAST
 (2) Shutdown Bus 2
- C. (1) SLOW
 (2) Shutdown Bus 1
- D. (1) SLOW
 (2) Shutdown Bus 2

HLT 0810 Written Exam

48. Which ONE of the following completes the statements?

The Unit 2 **AND** Unit 3 Integrated Computer Systems (ICS) are fed from __(1)__ inverter(s).
If normal power (inverter output) is lost, the Unit 2 **AND** 3 ICS swap to alternate __(2)__.

- A. (1) a common
(2) without interruption
- B. (1) separate
(2) without interruption
- C. (1) a common
(2) after a 5 second time delay
- D. (1) separate
(2) after a 5 second time delay

HLT 0810 Written Exam

49. Which ONE of the following completes the statements relating to Battery Rooms 1, 2, and 3 HVAC Systems?

If these systems are **NOT** operating properly, the concern is that __(1)___.

Because of this, provisions are provided in plant procedures to utilize __(2)___.

- A. (1) lead-calcium batteries tend to release toxic gas into the atmosphere at temperatures above 90 °F
(2) an Emergency Exhaust Fan **ONLY**
- B. (1) the design limit for hydrogen concentration in the rooms may be reached during battery charging operations
(2) an Emergency Exhaust Fan **ONLY**
- C. (1) lead-calcium batteries tend to release toxic gas into the atmosphere at temperatures above 90 °F
(2) an Emergency Exhaust Fan **AND/OR** Portable Temporary Ventilation Equipment
- D. (1) the design limit for hydrogen concentration in the rooms may be reached during battery charging operations
(2) an Emergency Exhaust Fan **AND/OR** Portable Temporary Ventilation Equipment

HLT 0810 Written Exam

50. Which ONE of the following completes the statement in accordance with Tech Spec 3.8.1, "AC Sources - Operating?"

On a Loss of Offsite Power, simultaneous with an ECCS initiation signal on Unit 1, the **MAXIMUM** allowed time for Emergency Diesel Generators to energize their associated Shutdown Boards is _____ seconds.

- A. 4
- B. 7
- C. 10
- D. 14

HLT 0810 Written Exam

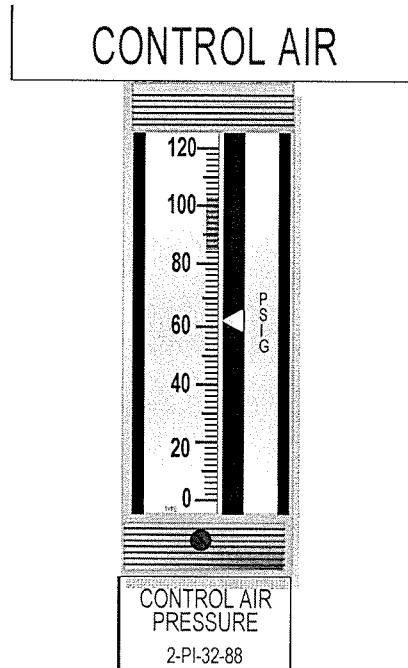
51. Emergency Diesel Generator (DG) 3EA was started for its Monthly Load Test Surveillance.

Which ONE of the following will occur if the DG's output breaker is closed with the DG Mode Selector Switch in the UNITS IN PARALLEL position?

- A. The zero droop governor advances the fuel supply to the diesel to raise output frequency to the governor's setpoint. This will cause the DG Output Breaker to trip on overload.
- B. The speed regulator lowers the fuel supply to the diesel to lower output voltage to the governor's setpoint. This will cause the DG Output Breaker to trip on undervoltage.
- C. The zero droop governor advances the fuel supply to the diesel to raise output frequency to the governor's setpoint. This will cause the DG to trip on overspeed.
- D. The speed regulator lowers the fuel supply to the diesel to lower output voltage to the governor's setpoint. This will cause the DG Output Breaker to trip on reverse power.

HLT 0810 Written Exam

52. Unit 2 is at 100% Reactor Power when a Control Air leak results in the following indication:



Based upon the **ABOVE** indications, which ONE of the following is correct?

- A. SERVICE AIR XTIE VLV, 0-FCV-33-1, is CLOSED
- B. CONDENSATE DEMIN BYPASS VALVE, 1-FCV-2-130, is OPEN
- C. Unit 2 OUTBOARD MAIN STEAM ISOLATION VALVES are CLOSED
- D. Unit 2 to Unit 3 CONTROL AIR CROSSTIE, 2-PCV-032-3901, is CLOSED

HLT 0810 Written Exam

53. The 4KV Shutdown Board A is being fed from its Diesel Generator.

With RHR Service Water (RHRSW) Pump A1 aligned to Emergency Equipment Cooling Water (EECW), Reactor Water Level subsequently drops to (-) 122 inches.

Which ONE of the following completes the statement?

RHRSW Pump A1 will _____.

- A. **NOT** trip
- B. trip **AND NOT** restart
- C. trip **AND** then restart after 14 seconds
- D. trip **AND** then restart after 28 seconds

HLT 0810 Written Exam

54. Unit 3 is at 88% Reactor Power with the "Control Rod Exercise Test for Withdrawn Control Rods," 3-SR-3.1.3.3, in progress when the following indications are received:

- APRM DOWNSCALE / OPRM INOP, (3-9-5A, Window 4) is in alarm
- APRM 1 indicates 0%

Which ONE of the following completes the statement?

This condition will result in a Control Rod (1) requiring (2) to continue the surveillance.

- A. (1) withdrawal block **ONLY**
(2) bypassing APRM 1
- B. (1) withdrawal block **ONLY**
(2) placing APRM 1 Mode Switch to INOP
- C. (1) withdrawal **AND** insert block
(2) bypassing APRM 1
- D. (1) withdrawal **AND** insert block
(2) placing APRM 1 Mode Switch to INOP

HLT 0810 Written Exam

55. Unit 2 is at 75% Reactor Power with a Control Rod sequence exchange in progress when the following alarm is received:

- RBM HIGH / INOP, (2-9-5A, Window 24)

Which ONE of the following completes the statement?

The setpoint for this annunciator is __**(1)**__ **AND** the power level displayed on the RBM recorder is determined using the mid-level LPRMs **AND** __**(2)**__ level LPRMs.

- A. **(1)** 117%
(2) A
- B. **(1)** 117%
(2) D
- C. **(1)** 121.8%
(2) A
- D. **(1)** 121.8%
(2) D

HLT 0810 Written Exam

56. Unit 1 is at 100% Reactor Power. Normal Range Level Transmitter, 1-LT-3-60 is removed from service for maintenance with its input to Feedwater Level Control (FWLC) System bypassed.

During retest of 1-LT-3-60, Instrument Mechanics inadvertently equalize the Normal Range Level Transmitter, 1-LT-3-53.

Which ONE of the following completes the statement?

Indicated Reactor Water Level on Panel 1-9-5 RX WTR LEVEL NORMAL RANGE, 1-LI-3-53 will be (1) **AND** the input into the FWLC System from 1-LT-3-53 (2) be automatically bypassed.

- A. (1) downscale
 (2) will
- B. (1) downscale
 (2) will **NOT**
- C. (1) upscale
 (2) will
- D. (1) upscale
 (2) will **NOT**

HLT 0810 Written Exam

57. Unit 1 RHR Loop I is started in Suppression Pool Spray Mode.

Which ONE of the following completes the statement?

RHR SYSTEM I MIN FLOW VALVE, 1-FCV-74-7, will automatically close if flow is _____.

- A. 2600 gpm for 10 seconds
- B. 5800 gpm for 10 seconds
- C. 2600 gpm with **NO** time delay
- D. 5800 gpm with **NO** time delay

HLT 0810 Written Exam

58. Which ONE of the following completes the statement for requirements detailed in 2-OI-74, "Residual Heat Removal System?"

The power supply to the pump(s) used for the **PREFERRED** method for Supplemental Fuel Pool Cooling is a _____.

- A. 4 kV Shutdown Board
- B. 4 kV Common Board
- C. 480 V Shutdown Board
- D. 480 V Reactor Building Vent Board

HLT 0810 Written Exam

59. On Unit 3, 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** 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** protective actions

HLT 0810 Written Exam

60. Unit 3 is at 100% Reactor Power with the EHC system in Header Pressure Control.

Which ONE of the following would be the result if the output of one of the two header pressure transmitters fails **UPSCALE**?

- A. The Reactor Scrams on MSIV Closure.
- B. The Reactor Scrams on High Reactor Power.
- C. The Reactor Scrams on High Reactor Pressure.
- D. The other header pressure transmitter maintains Reactor Pressure.

HLT 0810 Written Exam

61. Unit 2 Turbine Building Floor Drain Sump Pump 'A' has automatically started on high sump level. A subsequent failure of Floor Drain Collector Tank Level Transmitter 0-LT-77-28 results in the following alarm:

- FD COLLECTOR TANK LEVEL HIGH, (0-25-17B, Window 17)

Which ONE of the following identifies how the level transmitter failure affects the Turbine Building Floor Drain Sump Pump 'A'?

Turbine Building Floor Drain Sump Pump 'A' _____.

- A. trips **IMMEDIATELY**
- B. continues to run with **NO** discharge flow path
- C. continues to pump to the Floor Drain Collector Tank
- D. continues to pump with discharge aligned to the Waste Collector Tank

HLT 0810 Written Exam

62. Which ONE of the following completes the statements?

MAIN STEAM LINE RAD HIGH-HIGH / INOP, (1-9-3A, Window 27), alarms at __**(1)**__ Normal Full Power Background radiation level

AND

BOTH Vacuum Pump Suction Valves, 1-FCV-66-36 **AND** 1-FCV-66-40, __**(2)**__ **AUTOMATICALLY** isolate.

- A. **(1)** 1.5 times
(2) will
- B. **(1)** 1.5 times
(2) will **NOT**
- C. **(1)** 3 times
(2) will
- D. **(1)** 3 times
(2) will **NOT**

HLT 0810 Written Exam

63. Which ONE of the following completes the statement for the MINIMUM requirements for High Pressure Fire Pumps in accordance with Fire Protection Report Volume 1?

The High Pressure Fire Protection System shall be operable at **ALL** times with _____ aligned to the fire suppression header.

- A. ONE Diesel Fire Pump
- B. ONE Electric Fire Pump
- C. TWO Electric Fire Pumps
- D. ONE Diesel Fire Pump **AND** ONE Electric Fire Pump

HLT 0810 Written Exam

64. Which ONE of the following completes the statements?

When **BOTH** CREV trains are operable, the preferred position for CREV UNIT PRIMARY SELECTOR, 0-XSW-031-7214, is in __(1)___.

If the **SELECTED** CREV Train AUTO-INITIATE / TEST switch is placed to the INITIATE / TEST position the initiation sequence starts __(2)___.

- A. (1) TRAIN "A"
(2) immediately
- B. (1) TRAIN "B"
(2) immediately
- C. (1) TRAIN "A"
(2) after 30 seconds
- D. (1) TRAIN "B"
(2) after 30 seconds

HLT 0810 Written Exam

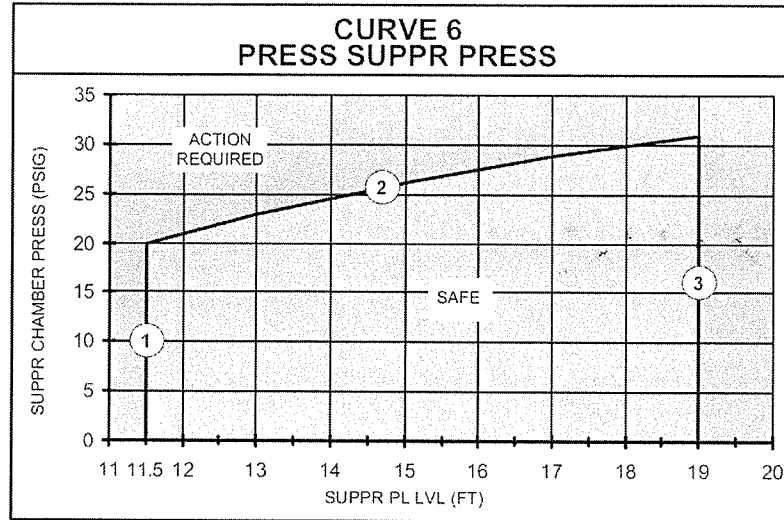
65. Which ONE of the following completes the statement?

The Standby Liquid Control (SLC) System Injection Sparger's (1) provides for sodium pentaborate injection (2) the Reactor Core Plate.

- A. (1) inner tube
(2) above
- B. (1) inner tube
(2) below
- C. (1) outer tube
(2) above
- D. (1) outer tube
(2) below

HLT 0810 Written Exam

66.



Which ONE of the following completes the statement?

In accordance with the EOI Program Manual derivation, Line ① on Curve 6, "Pressure Suppression Pressure," above, corresponds to the Suppression Pool Water Level at which the _____.

- A. Downcomer Vents become uncovered
- B. HPCI Turbine Exhaust opening becomes uncovered
- C. Safety Relief Valve (SRV) Tailpipe openings become uncovered
- D. Control Room Suppression Pool Water Narrow Range Level Indication goes off scale low

HLT 0810 Written Exam

67. Which ONE of the following completes the statement?

In accordance with 10CFR50.46, "Acceptance Criteria for Emergency Core Cooling Systems (ECCS) For Light-Water Nuclear Power Reactors," all of the following are design functions of Browns Ferry ECCS with the **EXCEPTION** of _____.

- A. maintaining peak cladding temperature less than or equal to 2600 °F
- B. maintaining core geometry such that the core remains amenable to cooling
- C. minimizing total cladding oxidation to less than or equal to 17% of the total cladding thickness prior to oxidation
- D. minimizing total hydrogen generation to less than or equal to 1% of the hypothetical amount possible if all of the cladding were to react chemically with water or steam

HLT 0810 Written Exam

68. Unit 2 is operating at 90% Reactor Power, when a power reduction is required to be performed locally at the VFD.

Communications and coordination have been established between the operator at the VFD and the Unit Operator in the Control Room.

In accordance with 2-OI-68, "Reactor Recirculation System," which ONE of the following is the **MINIMUM** personnel requirement **at the VFD** to perform Speed Control manipulations?

- A. Reactor Operator **ONLY**
- B. Reactor Operator **AND** a second Reactor Operator for peer checking
- C. Reactor Operator **AND** a Senior Reactor Operator for oversight
- D. Assistant Unit Operator **AND** a Reactor Operator directly supervising

HLT 0810 Written Exam

69. Which ONE of the following completes the statement?

In accordance with Unit 2 Tech Spec 3.4.1, "Recirculation Loops Operating," Recirculation Loop Jet Pump flow mismatch with **BOTH** Recirculation Loops in operation must be **LESS THAN OR EQUAL TO** (1) of rated core flow when operating at **LESS THAN** 70% rated core (2).

- A. (1) 5%
(2) flow
- B. (1) 10%
(2) flow
- C. (1) 5%
(2) power
- D. (1) 10%
(2) power

HLT 0810 Written Exam

70. Which ONE of the following combinations of Reactor Power **AND** Reactor Pressure on Unit 1 constitute a Safety Limit violation?

	Reactor Power	Reactor Pressure
A.	15%	750 psig
B.	24%	770 psig
C.	28%	775 psig
D.	32%	810 psig

HLT 0810 Written Exam

71. Which ONE of the following completes the statement?

In accordance with OI-3, "Reactor Feedwater System," a **MAXIMUM** RFPT control speed of 5850 rpm is established for Units (1) , based on (2) .

- A. (1) 1 **AND** 2 **ONLY**
 (2) original design power capability
- B. (1) 2 **AND** 3 **ONLY**,
 (2) original design power capability
- C. (1) 1 **AND** 2 **ONLY**
 (2) extended power uprate capability
- D. (1) 2 **AND** 3 **ONLY**
 (2) extended power uprate capability

HLT 0810 Written Exam

72. Unit 1 was at 35% Reactor Power when the Hydrogen Injection System was placed in service in Automatic / Power Determined mode in accordance with 1-OI-4, "Hydrogen Water Chemistry System."

- Power is raised from 35% Reactor Power to 100% Reactor Power
- At 100% Reactor Power hydrogen flow rate indicates 20 scfm

Which ONE of the following completes the statements?

In accordance with 1-OI-4, hydrogen injection flow rate is (1) the normal 100% Reactor Power flow rate.

Radiation levels in the Condenser Bay will stabilize (2) expected normal full power radiation levels.

- A. (1) above
 (2) at
- B. (1) below
 (2) at
- C. (1) above
 (2) above
- D. (1) below
 (2) below

HLT 0810 Written Exam

73. RX & REFUEL ZONE EXH CH B RAD MON RTMR, 2-RM-90-141/143, went into an alarm status 30 minutes ago. Conditions have changed such that the monitor is now below the trip setpoint.

Which ONE of the following describes the NUMAC display?

- A. A normal video 'TRIP' indication is displayed.
- B. An inverse video 'TRIP' indication is displayed.
- C. A normal video 'RESET' indication is displayed.
- D. An inverse video 'RESET' indication is displayed.

HLT 0810 Written Exam

74. In accordance with 1-EOI-1, "RPV Control," NOTE #1, which ONE of the following indications confirms that the **Unit 1** reactor will remain subcritical under **ALL** conditions without boron?
- A. **ALL** control rods are at position 02.
 - B. **ALL** control rods full-in **EXCEPT** 2 at position 30.
 - C. Reactor Power is on range 7 of the IRMs **AND** lowering.
 - D. **ALL** control rods full-in **EXCEPT** 1 at position 02 **AND** 1 at position 48.

HLT 0810 Written Exam

75. Which ONE of the following describes the meaning of a WHITE magnetic border being installed on a Main Control Room panel annunciator?

This type of border indicates that the annunciator _____.

- A. has ONE **OR** more alarm inputs disabled
- B. is associated with ongoing testing **OR** maintenance
- C. is "NOT ABNORMAL" for current plant conditions
- D. window is being relocated to a different window location

HLT 0810 Written Exam

76. With Unit 2 operating at 100% Reactor Power, a Normal Supply Breaker has tripped open **AND** suffered damage due to arcing. In addition to RHR **AND** Core Spray logic alarms, the following significant alarms result:

- HPCI LOGIC POWER FAILURE, (2-9-8A, Window 7)
- HPCI 120 VAC POWER FAILURE, (2-9-8A, Window 7)
- ADS BLOWDOWN POWER FAILURE, (2-9-3C, Window 32)

Which ONE of the following completes the statements?

The 250 VDC RMOV Board (1) has been lost.

After manually transferring the 250 VDC RMOV Bd, the Board is considered (2) in accordance with Tech Spec 3.8.7, "Distribution Systems – Operating."

- A. (1) 2A
(2) inoperable
- B. (1) 2B
(2) inoperable
- C. (1) 2A
(2) operable
- D. (1) 2B
(2) operable

HLT 0810 Written Exam

77. Unit 2 was operating at 100% Reactor Power when the following series of events occurred:
- At 0200 an **AIR LINE** rupture in the Drywell results in a High Drywell Pressure Scram
 - At 0205 Unit 2 Control Room evacuation is initiated due to a fire in the Control Bay
 - At 0230 the Backup Control Panel, 2-25-32, is manned.

Which ONE of the following completes the statements?

In accordance with EPIP-1, "Emergency Plan Implementing Procedure," the **HIGHEST** emergency action level classification that is required for these conditions is a (an) **(1)** .

In implementing 2-AOI-100-2, "Control Room Abandonment," HPCI will cycle, upon demand, between the initiation **AND** high level trip setpoint until **(2)** .

[REFERENCE PROVIDED]

- A. **(1)** Alert
(2) it is secured in accordance with the Subsequent Actions
- B. **(1)** Alert
(2) HPCI flow control is established at the Backup Control Panel
- C. **(1)** Site Area Emergency
(2) it is secured in accordance with the Subsequent Actions
- D. **(1)** Site Area Emergency
(2) HPCI flow control is established at the Backup Control Panel

HLT 0810 Written Exam

78. Unit 1 is operating at 100% Reactor Power. The following conditions were noted following a trip of RHRSW Pump C3:

- RHRSW Pump A3 is Red Tagged
- RHRSW Pump B3 is Running
- RHRSW Pump C3 is Tripped
- RHRSW Pump D3 is Running
- RHRSW Pump A1 is **NOT** yet Aligned for EECW
- RHRSW Pump B1 is aligned for RHRSW
- RHRSW Pump C1 is aligned for RHRSW
- RHRSW Pump D1 is aligned for RHRSW

If NO Operator actions are taken, which ONE of the following components has lost **ALL** EECW cooling water **AND** what, if any, actions are required in accordance with Unit 1 Tech Spec 3.7.2, "EECW System and UHS?"

[REFERENCE PROVIDED]

- A. Control Air Compressor B backup supply;
There are **NO** required Tech Spec actions
- B. Control Air Compressor B backup supply;
Restore ONE EECW Pump within 7 days
- C. Spare RBCCW Heat Exchanger;
There are **NO** required Tech Spec actions
- D. Spare RBCCW Heat Exchanger;
Restore ONE EECW Pump within 7 days

HLT 0810 Written Exam

79. Unit 1 is shutting down for a refuel outage. The Drywell Equipment Hatch is open.

- At T=12:00, Reactor Temperature is 153 °F

Then, a complete loss of Shutdown Cooling occurs.

After 20 minutes, the operators determine that Reactor Coolant Temperature is rising at 16 °F every 10 minutes.

- At T= 12:20 Reactor Coolant Temperature is 186 °F

Which ONE of the following completes the statements?

If the heatup continues at the rate indicated above, a mode change would occur at __(1)__.

At T=12:45, __(2)__ in accordance with EPIP-1, "Emergency Plan Implementing Procedure,".

[REFERENCE PROVIDED]

- A. (1) T=12:28
(2) Emergency Action Levels for an Alert is met
- B. (1) T=12:37
(2) Emergency Action Levels for an Alert is met
- C. (1) T=12:28
(2) **NO** Emergency Action Levels are exceeded
- D. (1) T=12:37
(2) **NO** Emergency Action Levels are exceeded

HLT 0810 Written Exam

80. Which ONE of the following identifies the 2-EOI-3, "Secondary Containment Control," **MAXIMUM NORMAL** operating radiation setpoint for the refuel floor area rad monitors **AND** the required approval prior to resuming any fuel transfer operations following fuel damage during refueling in accordance with 2-AOI-79-1, "Fuel Damage During Refueling?"
- A. 72 mr/hr; Plant Manager
 - B. 72 mr/hr; Reactor Engineer
 - C. FUEL POOL FLOOR AREA RADIATION HIGH, (2-9-3A, Window 1), alarm setpoint; Plant Manager
 - D. FUEL POOL FLOOR AREA RADIATION HIGH, (2-9-3A, Window 1), alarm setpoint; Reactor Engineer

HLT 0810 Written Exam

81. Unit 2 is in Mode 4 preparing to go to Mode 2. An air leak in the Drywell result in Drywell Pressure of 2.5 psig. The following indications are observed on the Containment Isolation Status System (CISS) on Panel 2-9-4:

- Groups 2 **AND** 6 PCIS Logic Success Lights are illuminated
- Groups 1, 3, 4, 5 **AND** 8 PCIS Logic Success Lights are **NOT** illuminated

The leak is subsequently isolated **AND** Drywell Pressure restored to normal.

Based on these indications, which ONE of the following completes the statements?

The Unit Supervisor must direct (1) valves be closed.

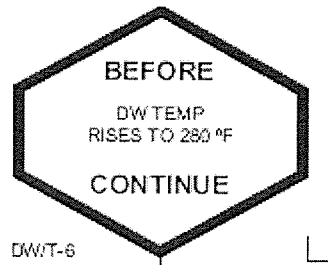
In accordance with Tech Specs, Unit 2 (2) permitted to change Modes to Mode 2.

[REFERENCE PROVIDED]

- A. (1) Traversing Incore Probe Ball **AND** Purge
(2) is
- B. (1) Reactor Water Cleanup (RWCU) suction isolation **AND** return isolation
(2) is
- C. (1) Traversing Incore Probe Ball **AND** Purge
(2) is **NOT**
- D. (1) Reactor Water Cleanup (RWCU) suction isolation **AND** return isolation
(2) is **NOT**

HLT 0810 Written Exam

82. A loss of drywell cooling has occurred on Unit 2. The Unit Supervisor reaches the following step in the 2-EOI-2, "Primary Containment Control," flowchart drywell temperature leg:



Which ONE of the following completes the statement?

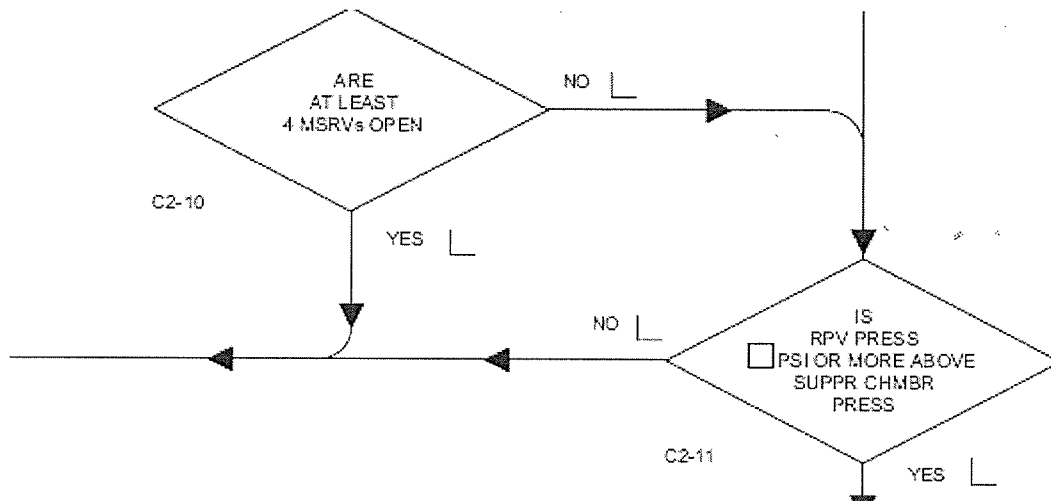
The above step in 2-EOI-2 refers to the temperature of the (1) air space.

The Tech Spec bases for the Drywell Air Temperature LCO, TS 3.6.1.4, is to ensure that during a Design Basis Accident, the resultant peak drywell temperature is maintained **BELOW** (2) .

- A. (1) Drywell **ONLY**
 (2) 336° F
- B. (1) Drywell **ONLY**
 (2) 390° F
- C. (1) Drywell **AND** Torus
 (2) 336° F
- D. (1) Drywell **AND** Torus
 (2) 390° F

HLT 0810 Written Exam

83. Following a Drywell Leak on Unit 3, Emergency Depressurization is required due to inability to maintain Suppression Chamber Pressure in the safe area of the Pressure Suppression Pressure Curve. The Unit Supervisor has answered NO to ARE AT LEAST 4 MSRVS OPEN.



Which ONE of the following is the correct pressure when the Reactor is required to be rapidly depressurized, including the procedure that directs this action?

- A. 70 psig **OR** more above Suppression Chamber Pressure;
3-C-2, "Emergency RPV Depressurization."
- B. 70 psig **OR** more above Suppression Chamber Pressure;
3-EOI Appendix 11A, "Alternate RPV Pressure Control Systems MSRVS."
- C. 90 psig **OR** more above Suppression Chamber Pressure;
3-C-2, "Emergency RPV Depressurization."
- D. 90 psig **OR** more above Suppression Chamber Pressure;
3-EOI Appendix 11A, "Alternate RPV Pressure Control Systems MSRVS."

HLT 0810 Written Exam

84. Unit 2 is starting up **AND** Reactor Power is 16%. The Unit Operator is pulling control rods to achieve adequate bypass valve position to roll the turbine.

Due to a previous rod being difficult to move, the CRD drive water pressure had been temporarily raised to 300 psid **AND NOT** re-adjusted back down to a normal pressure. When the operator placed the rod movement control switch to the single notch out position for the next control rod, the rod quickly moved from position 16 to 24 (intended position **AND** withdraw limit is 18).

Which ONE of the following completes the statements?

Entry into 2-AOI-85-7, "Mispositioned Control Rod," __ (1) __ required. Tech Spec 3.1.6, "Rod Pattern Control," __ (2) __ a Required Action Statement applicable to these plant conditions.

- A. (1) is
(2) contains
- B. (1) is
(2) does **NOT** contain
- C. (1) is **NOT**
(2) contains
- D. (1) is **NOT**
(2) does **NOT** contain

HLT 0810 Written Exam

85. Unit 2 is in a refueling outage with the following plant conditions:

- A Refuel Floor overhead crane failure has led to dropping a loaded Multi Purpose Canister (MPC) into the Unit 2 fuel pool during a core off-load
- RA-90-1A, Fuel Pool Floor Radiation Monitor, is in alarm **AND** reading 1000 mr/hr
- **NO** TVA Emergency Response Facilities are activated

Based on the above conditions, which ONE of the following describes the **HIGHEST** required Emergency Action Level **AND** the action required to continue assessing plant conditions?

[REFERENCE PROVIDED]

- A. Alert, Direct CECC EPIP-8, "Dose Assessment Staff Activities During Nuclear Plant Radiological Emergencies," be performed.
- B. Alert, Direct EPIP-13, "Dose Assessment," be performed.
- C. Site Area Emergency, Direct CECC EPIP-8, "Dose Assessment Staff Activities During Nuclear Plant Radiological Emergencies," be performed.
- D. Site Area Emergency, Direct EPIP-13, "Dose Assessment," be performed.

HLT 0810 Written Exam

86. Unit 3 is operating at 100% Reactor Power. Core Spray Pump 3A was tagged out for planned maintenance at 0600 on 1/13/10.

The In Service Testing (IST) Engineer contacts the Unit Supervisor at 1300 on 1/13/10 to report a calculation error on the RHR Pump 3C Flow Test completed 0300 on 1/13/10. Based on the corrected calculation, RHR Pump 3C will **NOT** develop the required LPCI flow rate to meet SR 3.5.1.6.

Which ONE of the following identifies the **EARLIEST** time that Unit 3 must be in Mode 3 in accordance with Tech Spec 3.5.1, "ECCS-Operating?"

[REFERENCE PROVIDED]

- A. 1600 on 1/13/10
- B. 1900 on 1/13/10
- C. 0100 on 1/14/10
- D. 0200 on 1/14/10

HLT 0810 Written Exam

87. Following a manual Scram on Unit 3 due to a Loss-of-Coolant-Accident inside the Drywell, the following plant conditions are noted:
- Eighteen (18) Control Rods remain at position 02
 - **ALL** other Control Rods are Full-IN
 - DRYWELL / SUPPR CHAMBER RADIATION HIGH 3-RA-90-272, (3-9-7C, Window 15) is lit due to radiation levels above the setpoint(s)

Which ONE of the following completes the statements in accordance with listed procedures?

For these conditions, Standby Liquid Control (SLC) must be injected (1) .

The RC/P **AND** (2) legs of 3-EOI-1, "RPV Control," will require **EXECUTION** until such time as EOI-1 itself can be exited.

- A. (1) within the next 2 hours in accordance with the referenced Alarm Response Procedure.
(2) RC/L
- B. (1) within the next 2 hours in accordance with the referenced Alarm Response Procedure.
(2) RC/Q
- C. (1) before Suppression Pool Temperature rises to 110 °F in accordance with the 3-EOI-1.
(2) RC/L
- D. (1) before Suppression Pool Temperature rises to 110 °F in accordance with the 3-EOI-1.
(2) RC/Q

HLT 0810 Written Exam

88. Given the following plant conditions:

- Unit 1 **AND** Unit 2 are at 100% Reactor Power
- Unit 3 is in Mode 5 with an Operation with Potential to Drain the Vessel (OPDRV) in progress

The Unit 3 Unit Supervisor directs starting of **ALL** Standby Gas Treatment Subsystems (SGTS).

Which ONE of the following completes the statements?

The **PREFERRED** location in accordance with 0-OI-65, "Standby Gas Treatments System," is to start SGTS from the **(1)** Control Room.

SGTS 'A' trips following manual start. In accordance with Tech Spec 3.6.4.3, "Standby Gas Treatment System," **(2)** .

[REFERENCE PROVIDED]

- A. **(1)** Unit 1 **OR** Unit 2
 (2) the OPDRV must be suspended immediately
- B. **(1)** Unit 1 **OR** Unit 2
 (2) SGTS 'A' must be restored to operable within 7 days
- C. **(1)** Unit 3
 (2) the OPDRV must be suspended immediately
- D. **(1)** Unit 3
 (2) SGTS 'A' must be restored to operable within 7 days

HLT 0810 Written Exam

89. Unit 3 is operating at 100% Reactor Power.

A Maintenance Electrician reports that the 250V Shutdown Board 3EB Battery pilot cell specific gravity is 1.198 (corrected for electrolyte temperature and level), the average of all connected cells is 1.208 **AND** the specific gravity of one of the cells is 1.187.

Which ONE of the following Required Actions is the Unit Supervisor required to perform?

[REFERENCE PROVIDED]

- A. Declare the 250V Shutdown Board 3EB Battery inoperable immediately.
- B. Verify battery cell parameters meet Table 3.8.6-1 Category C limits within 1 hour and once per 7 days thereafter, and restore battery cell parameters to Category A and B limits of Table 3.8.6-1 within 31 days.
- C. Verify battery cell parameters meet Table 3.8.6-1 Category C limits within 24 hours and once per 7 days thereafter, and restore battery cell parameters to Category A and B limits of Table 3.8.6-1 within 31 days.
- D. Verify pilot cell's electrolyte level and float voltage is within the Table 3.8.6-1 Category C limits within 1 hour and verify battery cell parameters meet Table 3.8.6-1 Category C limits within 24 hours and once per 7 days thereafter, and restore battery cell parameters to Category A and B limits of Table 3.8.6-1 within 31 days.

HLT 0810 Written Exam

90. Unit 1 is Mode 5 with vessel reassembly in progress to the point of installing the Dryer. RHR Pump 1A is operating in Shutdown Cooling.

- RBCCW Pump 1B has tripped
- RBCCW PUMP SUCTION HDR TEMP has increased to 106°F
- Spare RBCCW Pump is UNAVAILABLE

RWCU System **AND** the Fuel Pool Cooling System have been shutdown as directed by 1-AOI-70-1, "Loss of Reactor Building Closed Cooling Water."

NOTE: 1-OI-70, Reactor Building Closed Cooling Water
1-OI-74, Residual Heat Removal System

Which ONE of the following completes the statement?

In order to maintain Fuel Pool temperature below the **MAXIMUM** allowed temperature of ___(1)___, as established in 1-AOI-78-1, "Fuel Pool Cleanup System Failure," the Unit Supervisor is required to enter ___(2)___.

- A. (1) 125°F
(2) Section 8.14 Initiation of Supplemental Fuel Pool Cooling with RHR Drain Pump B per 1-OI-74
- B. (1) 125°F
(2) Section 8.8 Placing EECW in Service to the RBCCW Heat Exchangers per 1-OI-70
- C. (1) 150°F
(2) Section 8.14 Initiation of Supplemental Fuel Pool Cooling with RHR Drain Pump B per 1-OI-74
- D. (1) 150°F
(2) Section 8.8 Placing EECW in Service to the RBCCW Heat Exchangers per 1-OI-70

HLT 0810 Written Exam

91. The Reactor Operator is performing backpanel checks **AND** reports the following indications on the Unit 2 Traversing Incore Probe (TIP) "A" **AND** "B" subsystem panel:

- Squib Monitor lights- **BOTH** illuminated
- Shear Valve Monitor lights- **BOTH** extinguished
- Ball Valve "Open" lights- **BOTH** extinguished
- Ball Valve "Closed" lights- **BOTH** illuminated

Which ONE of the following is the status of the "A" **AND** "B" TIP shear valves **AND** primary containment integrity?

[Refer to the attached figure TP-10]

- A. The TIP Shear Valves are operable **AND** primary containment integrity is met.
- B. The TIP Shear Valves are inoperable **AND** primary containment integrity is met.
- C. The TIP Shear Valves are operable **AND** primary containment integrity is **NOT** met.
- D. The TIP Shear Valves are inoperable **AND** Primary containment integrity is **NOT** met.

HLT 0810 Written Exam

92. A scram has occurred on Unit 1. Core Spray System II is required for injection to the Reactor Vessel in order to restore Reactor Level.

A loss of power prevents Core Spray System II Inboard Injection Valve, 1-FCV-75-53, from being electrically opened due to loss of ability for the valve control circuit to sense reactor pressure.

Which ONE of the following completes the statement?

__(1)__ is lost; the Unit Supervisor would direct defeating the reactor low pressure interlock in accordance with __(2)__.

- A. (1) I&C Bus B
(2) 1-OI-75, "Core Spray System"
- B. (1) I&C Bus B
(2) 1-EOI Appendix-6E, "Injection Subsystems Lineup Core Spray System II"
- C. (1) Division II ECCS ATU Panel
(2) 1-OI-75, "Core Spray System"
- D. (1) Division II ECCS ATU Panel
(2) 1-EOI Appendix-6E, "Injection Subsystems Lineup Core Spray System II"

HLT 0810 Written Exam

93. An ATWS has occurred on Unit 2 **AND** the following plant conditions exist:
- RHR Loop I is tagged
 - RHR Loop II can **NOT** be placed in Suppression Pool Cooling due to a valve failure
 - Suppression Pool Temperature is 180° F
 - HPCI is required to be secured in accordance with 2-EOI-2, "Primary Containment Control," due to low Suppression Pool Level
 - Reactor Power is 6%
 - Reactor Level is (-) 170 inches
 - Reactor Pressure is 1000 psig

Which ONE of the following identifies the **HIGHEST** emergency classification required **AND** the **MAXIMUM** amount of time allowed to make the initial notification to the State of Alabama once a formal declaration of the event is made?

[REFERENCE PROVIDED]

- A. Site Area Emergency;
15 minutes
- B. Site Area Emergency;
30 minutes
- C. General Emergency;
15 minutes
- D. General Emergency;
30 minutes

HLT 0810 Written Exam

94. With Unit 2 in Mode 5, a non-spiral, routine fuel shuffle is in progress and the following plant conditions exist:

- SRM B is inoperable
- The next fuel bundle to be moved is designated for reactor cavity position 09-42
- The fuel bundle to be moved is currently located in the Spent Fuel Pool
- As the fuel bundle in question is grappled, SRM D fails downscale and is declared inoperable
- **ALL** other SRMs are **OPERABLE**

As the Refuel Floor Senior Reactor Operator (SRO), which ONE of the following actions regarding the next fuel bundle move is required, including the bases for this action?

[REFERENCE PROVIDED – CORE MAP]

- A. Continue the fuel bundle move; it can be completed since the SRM in the **AFFECTED** core quadrant is **OPERABLE**.
- B. Continue the fuel bundle move; it can be completed since the SRM in the **ADJACENT** core quadrant is **OPERABLE**.
- C. Suspend the fuel bundle move; it **CANNOT** be completed since the SRM in the **AFFECTED** core quadrant is **INOPERABLE**.
- D. Suspend the fuel bundle move; it **CANNOT** be completed since the SRM in the **ADJACENT** core quadrant is **INOPERABLE**.

HLT 0810 Written Exam

95. Unit 1 is operating at 100% Reactor Power.

- At 1200 ADS Initiation Timer 'A' is declared inoperable
- At 1400 Engineering reports **BOTH** ADS Initiation Timers are inoperable due to common cause

Which ONE of the following completes the statement?

In accordance with TS 3.3.5.1, "Emergency Core Cooling System (ECCS) Instrumentation," **ALL** ADS Valves must be declared inoperable no later than (1) **AND** a (2) report to the NRC is required in accordance with SPP-3.5, "Regulatory Reporting Requirements."

- A. (1) 1300
 (2) 1 hour
- B. (1) 1300
 (2) 4 hour
- C. (1) 1500
 (2) 1 hour
- D. (1) 1500
 (2) 4 hour

HLT 0810 Written Exam

96. Which ONE of the following completes the statements in accordance with OPDP-4, "Annunciator Disablement?"

A Nuisance Annunciator that has its leads lifted will be identified with a border which is labeled (1).

If an Annunciator input is specifically allowed or directed to be disabled **AND** restored by step text in an approved plant procedure, THEN, a separate 10CFR50.59 review and/or Technical Evaluation (2) required to be completed.

- A. (1) Out-of-Service
(2) is still
- B. (1) Disabled Alarm Input
(2) is still
- C. (1) Out-of-Service
(2) is **NOT**
- D. (1) Disabled Alarm Input
(2) is **NOT**

HLT 0810 Written Exam

97. Unit 3 was operating at 100% Reactor Power, when a coolant leak in the Drywell caused a Reactor Scram. The following conditions are noted:

- **ALL** Control Rods fully inserted
- Drywell Pressure is 23.4 psig and lowering slowly
- Suppression Chamber Pressure is 22 psig and lowering slowly
- Suppression Pool Level is 15 feet
- MSIVs are OPEN
- Reactor has been Emergency Depressurized
- Reactor Water Level lowered to (-) 180 inches and is now (-) 170 inches and rising

Given these conditions, which ONE of the following completes the statement?

In accordance with the EOLs, venting the Primary Containment is required to be performed using _____.

- A. 3-EOI APPENDIX-12, "Primary Containment Venting," irrespective of radioactive release rates
- B. 3-EOI-APPENDIX-15, "RPV Venting for Primary Containment Flooding," irrespective of radioactive release rates
- C. 3-EOI APPENDIX-12, "Primary Containment Venting," **ONLY** if radioactive release rates can be maintained below ODCM limits
- D. 3-EOI-APPENDIX-15, "RPV Venting for Primary Containment Flooding," **ONLY** if radioactive release rates can be maintained below ODCM limits

HLT 0810 Written Exam

98. Which ONE of the following completes the statements in accordance with 1-GOI-200-2, "Primary Containment Initial Entry and Closeout," **AND** RCI-17, "Control of High Radiation Areas and Very High Radiation Areas?"

Initial Drywell Entry with the Reactor at Power must be approved by the (1) .

The (2) that **ALL** keys are accounted for.

- A. (1) Shift Manager **ONLY**
(2) Shift Manager **AND** Rad Protection Shift Supervisor shall verify **DAILY**
- B. (1) Shift Manager **AND** Plant Manager
(2) Shift Manager **OR** designee shall verify **SHIFTLY**
- C. (1) Shift Manager **ONLY**
(2) Shift Manager **OR** designee shall verify **SHIFTLY**
- D. (1) Shift Manager **AND** Plant Manager
(2) Shift Manager **AND** Rad Protection Shift Supervisor shall verify **DAILY**

HLT 0810 Written Exam

99. The Shift Manager / Site Emergency Director (SM/SED) has declared a General Emergency. The Central Emergency Control Center (CECC) is **NOT** staffed.

Besides classification, which ONE of the following duties can **NOT** be delegated to another emergency team member by the SM/SED?

- A. Make notifications to the state.
- B. Direct the shutdown of the plant.
- C. Conduct site accountability actions.
- D. Determine Protective Action Recommendations.

HLT 0810 Written Exam

100. The following alarms **AND** indications exist on Unit 3:

- DRYWELL PRESS HIGH, (3-9-3B, Window 23), is in alarm
- Reactor Level is (-) 130 inches and lowering slowly
- DRYWELL EQPT DR SUMP PUMP EXCESSIVE OPRN, (3-9-4B, Window 11), is in alarm
- Drywell Floor Drain Leakage is calculated at 100 gpm
- Reactor Coolant Sample yields a result of 310 $\mu\text{Ci/gm}$ Iodine-131
- Group 1 PCIS Logic A Success light is **NOT** illuminated

Which ONE of the following completes the statement?

These alarms **AND** indications establish that _____.

- A. a loss of the Fuel Clad Barrier **ONLY** exists
- B. a loss of the Reactor Coolant System Barrier **ONLY** exists
- C. a loss of the Containment Barrier **AND** Fuel Clad Barrier **ONLY** exists
- D. a loss of the Reactor Coolant System Barrier **AND** Fuel Clad Barrier **ONLY** exists

BFN SRO 0810 WRITTEN TEST ANSWERS

1	A	26	A	51	A	76	A
2	D	27	C	52	D	77	C
3	D	28	C	53	C	78	B
4	D	29	C	54	A	79	B
5	B	30	D	55	B	80	C
6	B	31	A	56	C	81	A
7	B	32	A	57	B	82	A
8	A	33	B	58	D	83	A
9	B	34	B	59	A	84	B
10	C	35	D	60	A	85	B
11	B	36	D	61	C	86	D
12	B	37	B	62	C	87	A
13	C	38	A	63	D	88	B
14	D	39	A	64	A	89	A
15	C	40	A	65	B	90	A
16	B	41	A	66	A	91	B
17	C	42	D	67	A	92	C
18	C	43	B	68	C	93	C
19	D	44	C	69	B	94	D
20	D	45	C	70	C	95	D
21	B	46	D	71	C	96	D
22	B	47	C	72	C	97	C
23	A	48	B	73	A	98	B
24	A	49	D	74	A	99	D
25	A	50	C	75	B	100	D

0810 NRC WRITTEN EXAM REFERENCES PROVIDED

- 15 3-EOI-1, Curve 1 CS and Curve 2 RHR NPSH Limit Curves
- 66 EOI Curve 6 – Pressure Suppression Pressure (Embedded in Question)
- 77 EPIP-1 Event Classification Matrix, Section 2 and Section 6
- 78 Unit 1 Tech Spec 3.7.2, “EECW System and UHS”
- 79 EPIP-1 Event Classification Matrix, Section 1
- 81 TIP Drive Control Unit Drawer schematic, TP-11 from OPL171.023r6
- 85 EPIP-1 Event Classification Matrix, Section 3
- 86 Unit 3 TS 3.5.1, “ECCS – Operating”
- 88 Unit 3 TS 3.6.4.3 “SGT System”
- 89 Unit 3 TS 3.8.6 “Battery Cell Parameters”
- 93 EPIP-1 Event Classification Matrix, Section 1
- 94 Core Map – Marked Up