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

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

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**

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

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

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

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

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

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

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.

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

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

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.

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

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

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 tc __(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

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

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

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

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.

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

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

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

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.

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

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

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**

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.

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)**__.

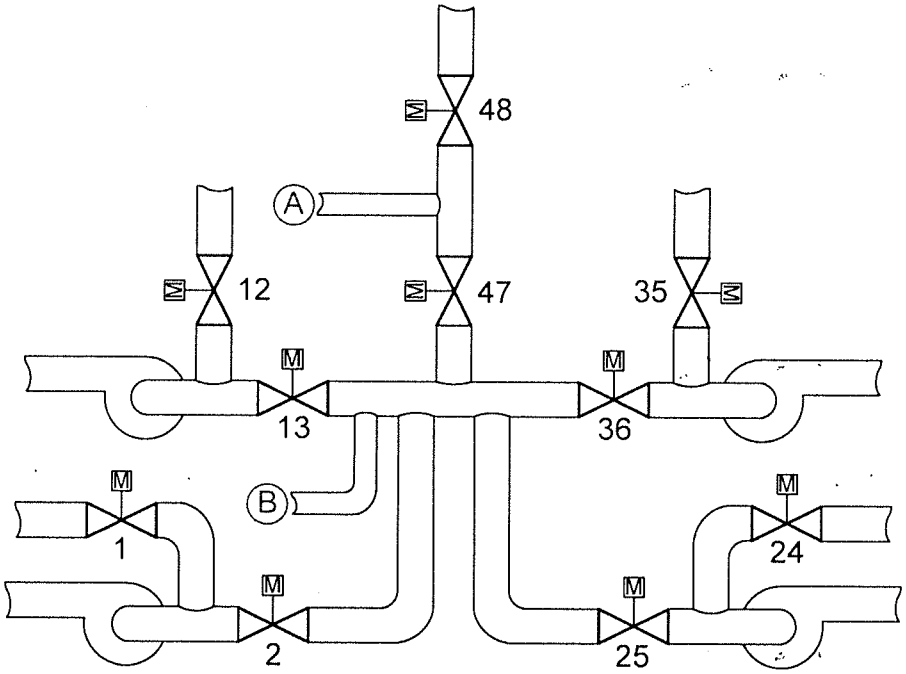
A. **(1)** OPEN
(2) CLOSED

B. **(1)** CLOSED
(2) CLOSED

C. **(1)** OPEN
(2) OPEN

D. **(1)** CLOSED
(2) OPEN

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**

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

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

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

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.

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

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

- Source Range Monitor (SRM) 'A' is reading 6.2 x 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

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

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**

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

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

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.

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

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

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

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**

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

47. At panel 0-9-23-7, the following conditions exist for the "A" 4KV Shutdown Board:

- 0-25-211-A/24A, 4kV SD BD A ALT FDR BKR 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

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

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

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

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?

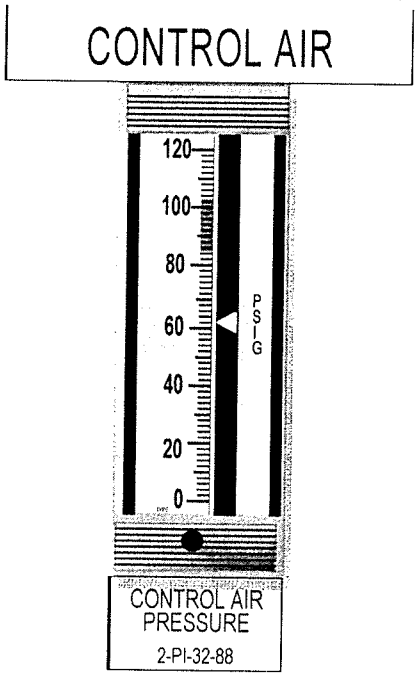
A. The zero droop governor advances the fuel supply to the diesel to raise output frequency to the governor's setpoint. This will cause the DG Output Breaker to trip on overload.

B. The speed regulator lowers the fuel supply to the diesel to lower output voltage to the governor's setpoint. The 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.

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

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

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

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

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**

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

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 Poc 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

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

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.

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 ir 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

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**

63. Which ONE of the following completes the statement for the MIMIMUM 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

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

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.

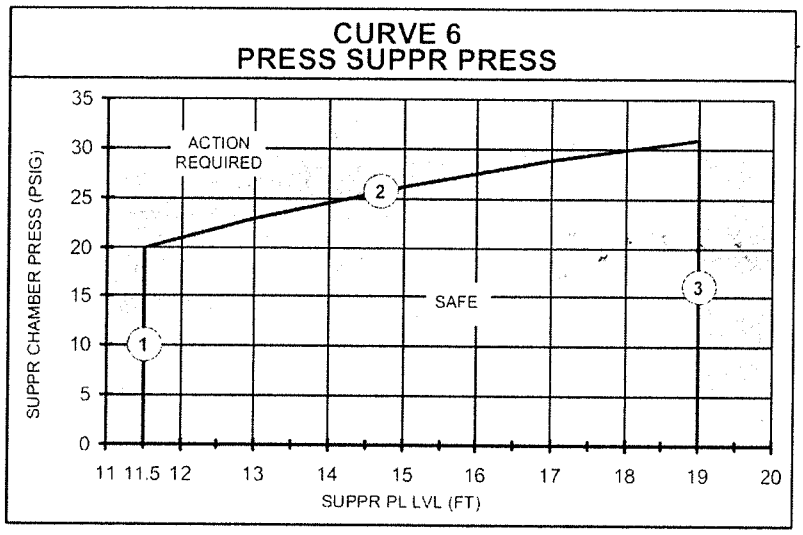
A. **(1)** inner tube
(2) above

B. **(1)** inner tube
(2) below

C. **(1)** outer tube
(2) above

D. **(1)** outer tube
(2) below

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

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

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

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

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

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

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

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.

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.

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

BFN 0810 RO WRITTEN TEST ANSWERS

1	**A**	26	**A**	51	**A**
2	**D**	27	**C**	52	**D**
3	**D**	28	**C**	53	**C**
4	**D**	29	**C**	54	**A**
5	**B**	30	**D**	55	**B**
6	**B**	31	**A**	56	**C**
7	**B**	32	**A**	57	**B**
8	**A**	33	**B**	58	**D**
9	**B**	34	**B**	59	**A**
10	**C**	35	**D**	60	**A**
11	**B**	36	**D**	61	**C**
12	**B**	37	**B**	62	**C**
13	**C**	38	**A**	63	**D**
14	**D**	39	**A**	64	**A**
15	**C**	40	**A**	65	**B**
16	**B**	41	**A**	66	**A**
17	**C**	42	**D**	67	**A**
18	**C**	43	**B**	68	**C**
19	**D**	44	**C**	69	**B**
20	**D**	45	**C**	70	**C**
21	**B**	46	**D**	71	**C**
22	**B**	47	**C**	72	**C**
23	**A**	48	**B**	73	**A**
24	**A**	49	**D**	74	**A**
25	**A**	50	**C**	75	**B**

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)