

U.S. Nuclear Regulatory Commission

Site-Specific SRO Written Examination

Applicant Information

Name:

Date: 07/22/2009

Facility/Unit: Browns Ferry

Region: I II III IV

Reactor Type: W CE BW GE

Start Time:

Finish Time:

Instructions

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. To pass the examination you must achieve a final grade of at least 80.00 percent overall, with 70.00 percent or better on the SRO-only items if given in conjunction with the RO exam; SRO-only exams given alone require a final grade of 80.00 percent to pass. You have 8 hours to complete the combined examination, and 3 hours if you are only taking the SRO portion.

Applicant Certification

All work done on this examination is my own. I have neither given nor received aid.

Applicant's Signature

Results

RO/SRO-Only/Total Examination Values _____ / _____ / _____ Points

Applicant's Scores _____ / _____ / _____ Points

Applicant's Grade _____ / _____ / _____ Percent

HLT 0801 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. A LOCA occurs on Unit 1 concurrent with a Loss of Offsite Power on **ALL** three Units.

A lockout occurs on Unit 1 / 2 Diesel Generator C due to a protective relay actuation.

Which **ONE** of the following identifies how the loss of power will affect the Unit 1 Low Pressure ECCS systems as reactor pressure lowers below their shutoff head?

There will be injection from **__(1)__** of Core Spray **AND** from **__(2)__** of RHR.

- A. **(1) BOTH** loops
(2) ONLY one loop
- B. **(1) ONLY** one loop
(2) ONLY one loop
- C. **(1) BOTH** loops
(2) BOTH loops
- D. **(1) ONLY** one loop
(2) BOTH loops

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3. Unit 2 is operating at 100% Reactor Power when the following alarm occurs:

- BAT BD 2 BKR TRIP/OUT/FUSE BLOWN OR GROUND, (2-9-8C, Window 7)

It has been determined that a ground of (-) 80 volts exists **AND** the Unit Supervisor has directed that the ground be located and isolated per 0-GOI-300-2, "Electrical."

Which ONE of the following is the reason why each breaker cycled during the ground isolation process must be left open for a specified period of time?

- A. This allows time for the ground indicator to indicate if the ground has cleared.
- B. This allows time to prevent an inadvertent overcurrent trip on the breaker that was cycled.
- C. Cycling an individual load breaker quickly could result in a trip of the battery charger due to large swings in current.
- D. Cycling an individual load breaker quickly could cause an initiation of the equipment being supplied.

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4. Which ONE of the following completes the statement?

The **ACTUAL** trip setpoint for the “RPS Turbine Control Valve Fast Closure Trip – Low Oil Pressure” on Unit 3 is set at **(1)** ; **AND** this ensures that the **(2)** Safety Limit is **NOT** exceeded.

- A. **(1)** 550 psig;
(2) Reactor Core - MCPR
- B. **(1)** 550 psig;
(2) Reactor Coolant System Pressure
- C. **(1)** 850 psig;
(2) Reactor Core - MCPR
- D. **(1)** 850 psig;
(2) Reactor Coolant System Pressure

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5. The following plant conditions exist:
- Reactor Feed Pump (RFP) 1A in AUTO
 - RFP 1B in AUTO
 - RFP 1C warming at 600 rpm

Unit 1 Scrams from 50% Reactor Power **AND** Reactor Water Level lowers to (-) 10 inches.

Based on the above conditions, which ONE of the following is the correct Feed Water Level Control response for RFPs 1A **AND** 1B?

- A. RFPs 1A **AND** 1B transfer to MANUAL **AND** runback to 600 rpm.
- B. RFPs 1A **AND** 1B remain in AUTO to control level, max speed 5600 rpm.
- C. RFP 1A remains in AUTO to control level, max speed 4100 rpm.
RFP 1B transfers to MANUAL **AND** runs back to 600 rpm.
- D. RFP 1A transfers to MANUAL **AND** runs back to 600 rpm.
RFP 1B remains in AUTO to control level, max speed 4100 rpm.

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6. Toxic gas has entered the Unit 2 Control Room, requiring it to be abandoned.

Which ONE of the following completes the statement?

Upon entry into 2-AOI-100-2, "Control Room Abandonment," the event is classified as a/an **(1)** **AND** the Unit **(2)** Unit Operator would be responsible for performing EPIP Appendix B, "Unit Operator Notifications."

- | | |
|-----------------------------------|----------------------------|
| A. <u> (1) </u>
Alert | <u> (2) </u>
1 |
| B. Alert | 3 |
| C. Site Area Emergency | 1 |
| D. Site Area Emergency | 3 |

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7. Unit 1 is operating at 100% Reactor Power, when RBCCW Pump 1A trips resulting in the following:
- RBCCW Pump discharge header pressure is 48 psig
 - RBCCW PUMP DISCH HDR PRESS LOW, (1-9-4C, Window 12), in alarm

Which ONE of the following system loads is still being cooled by RBCCW?

- A. Drywell Coolers.
- B. Fuel Pool Cooling heat exchangers.
- C. RWCU non-regenerative heat exchangers.
- D. RWCU Pump seal water and bearing oil coolers.

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8. Which ONE of the following completes the statement?

Following a complete loss of pneumatic supply to the ADS Safety Relief Valves, the accumulators are sized to ensure at least **__(1)__** valve actuations **OR** the valve(s) can be maintained open for at least **__(2)__**.

- A. **(1)** 5
(2) 30 minutes
- B. **(1)** 6
(2) 30 minutes
- C. **(1)** 5
(2) 45 minutes
- D. **(1)** 6
(2) 45 minutes

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9. 1/2/3-AOI-100-2, "Control Room Abandonment," has been entered on **ALL** Units.

The following conditions exist:

- Unit 1 Reactor Pressure is 40 psig, Shutdown Cooling (SDC) **NOT** yet established
- Unit 2 Reactor Pressure is 45 psig, Shutdown Cooling (SDC) **NOT** yet established
- Unit 3 has established SDC on Loop I, operating the RHR Pump 3A

Which **ONE** of the following describes the **PREFERRED** SDC alignment, in accordance with 2-AOI-100-2, that Unit 2 would use **AND** why?

- A. Loop I, by aligning **AND** starting RHR Pump 2A; provides minimum flow protection for the operating RHRSW pumps.
- B. Loop I, by aligning **AND** starting RHR Pump 2C; to prevent flow adjustments on Unit 2 from affecting Unit 3 cooldown rate.
- C. Loop II, by aligning **AND** starting RHR Pump 2B; to prevent flow adjustments on Unit 2 from affecting Unit 3 cooldown rate.
- D. Loop II, by aligning **AND** starting RHR Pump 2D; provides minimum flow protection for the operating RHRSW pumps.

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10. 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 100 cpm
- **ALL** Reactor Zone Radiation Monitor Channels are reading 75 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 is in service.
- B. **ALL** Standby Gas Treatment Systems are in service; **NO** CREV is 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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11. Which ONE of the following completes the statement?

In accordance with EOI-2, "Primary Containment Control," PC/P Leg, Drywell Spray is required to be initiated when **(1)** exceeds 12 psig **AND** is required to be secured when Suppression Pool Level **(2)**.

- A. **(1)** Drywell Pressure
(2) lowers below 11.5 feet.
- B. **(1)** Suppression Chamber Pressure
(2) lowers below 11.5 feet.
- C. **(1)** Drywell Pressure
(2) rises above 18 feet.
- D. **(1)** Suppression Chamber Pressure
(2) rises above 18 feet.

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12. Unit 1 was operating at 100% Reactor Power, when a spurious scram occurred with the resulting plant conditions:
- Hydraulic ATWS occurred and Reactor Power is currently 32%
 - Lowest Reactor Water Level was (-) 15 inches **AND** is currently (+) 30 inches and stable
 - Turbine Bypass Valves failed to operate
 - 13 SRVs initially lifted as designed **AND** 5 SRVs are currently open

Which ONE of the following identifies the current status of the Recirc Pumps?

- A. tripped.
- B. in service at 480 rpm.
- C. in service at 1130 rpm.
- D. in service with speed unchanged from prior to the transient.

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13. Which ONE of the following completes the statement?

1/2/3-OI-71, "Reactor Core Isolation Cooling," P&L states that "Suppression Pool Temperature should **NOT** exceed (1) without Suppression Pool Cooling in service..."

The reason for this precaution and the related P&L for the Unit Supervisor to evaluate the necessity for placing Suppression Pool Cooling in service prior to initiating any event which adds heat to the Suppression Pool is (2).

- A. (1) 90 °F
(2) because Tech Specs requires the Mode Switch to be placed in "Shutdown" **IMMEDIATELY** upon exceeding 105 °F in the Suppression Pool.
- B. (1) 95 °F
(2) because Tech Specs requires the Mode Switch to be placed in "Shutdown" **IMMEDIATELY** upon exceeding 105 °F in the Suppression Pool.
- C. (1) 90 °F
(2) due to the potential for developing thermal stagnation, "hot spots," in the Suppression Pool during testing.
- D. (1) 95 °F
(2) due to the potential for developing thermal stagnation, "hot spots," in the Suppression Pool during testing.

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14. A Reactor coolant leak in the Drywell has occurred on Unit 2 resulting in the following conditions:
- Drywell Pressure is 15 psig and rising slowly
 - Drywell Temperature is 305° F and steady
 - Emergency Depressurization has been performed and Reactor Pressure is 22 psig
 - **ALL** Secondary Containment temperatures are less than 100 °F
 - Normal Range Level indicates (+) 29 inches
 - Emergency Range Level indicates (+) 53 inches
 - Shutdown Floodup Range Level indicates (+) 25 inches
 - Post Accident Range Level indicates offscale high

Based upon the above conditions, which ONE of the following identifies the instrument(s) that are allowed to be used to determine or trend Reactor Water Level in accordance with EOIs?

[REFERENCE PROVIDED]

- A. Emergency Range **ONLY**.
- B. Normal **AND** Emergency Ranges **ONLY**.
- C. Normal, Emergency **AND** Shutdown Floodup Ranges.
- D. **NO** Reactor Water Level instrumentation may be used.

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15. The following plant conditions are noted on Unit 2, following a small break LOCA:
- Reactor Water Level is (-) 46 inches and rising slowly
 - Reactor Pressure 620 psig and stable
 - Suppression Chamber Pressure 10 psig and rising slowly
 - Suppression Pool Level 12.70 feet and lowering slowly
 - Suppression Pool Temperature is 150 °F and stable
 - Main Condenser Vacuum is 6 inches Hg

Which ONE of the following identifies the required Operator actions for Reactor Water Level control in accordance with 2-EOI-1, "RPV Control," **AND** 2-EOI-2, "Primary Containment Control?"

- A. Secure RCIC **AND** transition Reactor Water Level control to HPCI.
- B. Secure HPCI **AND** transition Reactor Water Level control to RCIC.
- C. Secure HPCI **AND** transition Reactor Water Level control to the Reactor Feed Pumps. RCIC may remain in operation.
- D. Secure RCIC **AND** transition Reactor Water Level control to the Reactor Feed Pumps. HPCI may remain in operation.

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16. 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 I Core Spray Pumps?

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

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17. Unit 2 was operating at 100% Reactor Power when the following sequence of events occurred:

- 0200 a spurious Group 1 Isolation resulted in an ATWS with Reactor Power at 16%
- 0205 SLC is initiated
- 0230 SLC Storage Tank Level is at 67%
- 0247 all control rods are fully inserted

Based on the conditions identified, which ONE of the following identifies the **EARLIEST** time when a cooldown can be commenced **AND** also identifies the **MAXIMUM** allowed cooldown rate in accordance with 2-EOI-1, "RPV Control," RC/P leg?

- A. 0230; Maintain cooldown rate below 90 °F/hr
- B. 0247; Maintain cooldown rate below 90 °F/hr
- C. 0230; Maintain cooldown rate below 100 °F/hr
- D. 0247; Maintain cooldown rate below 100 °F/hr

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18. A General Emergency is declared due to a valid Wide Range Gaseous Rad Monitor (WRGERMS) reading. The current meteorological data is:

- 91 meter wind direction: 120 degrees
- 46 meter wind direction: 115 degrees

Which ONE of the following identifies the correct data point to use for this release **AND** the wind direction?

- A. **(1)** 91
(2) wind is blowing from the Southeast
- B. **(1)** 46
(2) wind is blowing from the Southeast
- C. **(1)** 91
(2) wind is blowing from the Northwest
- D. **(1)** 46
(2) wind is blowing from the Northwest

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19. A fire has occurred in Unit 3 **AND** the Assistant Unit Operators (AUOs) assigned to Unit 3 have been notified to report to the Unit 3 Control Room.

Which ONE of the following identifies who is responsible for sounding the site fire alarm bell in accordance with EPIP-17, "Fire Emergency Procedure" **AND** the reason why extra AUOs (i.e. those not assigned to Unit 3) are directed to assemble in the Unit 2 Control Room in accordance with 0-AOI-26-1, "Fire Response?"

- A. The Unit 3 Control Room Unit Operator; personnel accountability.
- B. The Unit 1 Control Room Unit Operator; personnel accountability.
- C. The Unit 3 Control Room Unit Operator; in the event SSI actions are required.
- D. The Unit 1 Control Room Unit Operator; in the event SSI actions are required.

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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 530 kV system voltage being at 513 kV. The crew reaches the following step in the procedure:

"RAISE reactive power until voltage returns to 520 kV"

Which ONE of the following identifies how to raise reactive power **AND** the 161 kV Capacitor Bank Status that will restore the system voltage in accordance with 0-AOI-57-1E?

- A. Depress the EHC load set RAISE pushbutton, 3-HS-47-75C; Check the 161 kV Capacitor Banks are **IN** service.
- B. Depress the EHC load set RAISE 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 RAISE 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 RAISE position; check the 161 kV Capacitor Banks are **OUT** of service.

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21. Unit 1 is at 100% Reactor Power when a failure of the Reactor Feed Water Control System results in a Reactor Scram on Reactor Water Low Level.

Which ONE of the following completes the statement?

Immediately following the Scram, the **FIRST** signal that will cause the RWCU Pumps to trip is **__(1)__; AND** the RETURN ISOLATION VALVE, 1-FCV-69-12, will **__(2)__.**

- A. **(1)** System flow less than 56 gpm;
(2) remain OPEN.
- B. **(1)** System flow less than 56 gpm;
(2) AUTO-CLOSE.
- C. **(1)** Either ISOLATION VALVE, 1-FCV-69-1 **OR** 1-FCV-69-2 **NOT** full open;
(2) remain OPEN.
- D. **(1)** Either ISOLATION VALVE, 1-FCV-69-1 **OR** 1-FCV-69-2 **NOT** full open;
(2) AUTO-CLOSE.

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22. Given the following conditions on Unit 3:

- Reactor Water Level is currently (+) 28 inches and stable
- HPCI has just received a **VALID** initiation signal
- Reactor Power is currently 100%

Which ONE of the following identifies the required **IMMEDIATE** operator action(s)?

- A. Verify by two independent means that HPCI is **NOT** required for level control **AND** insert an Upper Power Runback to offset the impending power excursion. A manual Scram is **NOT** required.
- B. Depress Reactor Scram pushbuttons **AND** pause the REACTOR MODE SWITCH in the REFUEL position momentarily on the way to the SHUTDOWN position.
- C. Depress Reactor Scram pushbuttons **AND** pause the REACTOR MODE SWITCH in the START & HOT STBY position for five seconds, on the way to the SHUTDOWN position.
- D. Verify first that HPCI System has responded properly to the initiation signal **AND** then take prompt actions to place the HPCI FLOW CONTROLLER in MANUAL per OPDP-1, "Conduct of Operations." A manual Scram is **NOT** required.

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23. Which ONE of the following completes the statement?

In accordance with EOI Program Manual, the Drywell Spray Initiation Limit Curve is defined to be the highest Drywell temperature at which initiation of Drywell sprays will **NOT** result in an excessive **(1)** cooling pressure drop large enough to exceed the capacity of the **(2)**.

- A. **(1)** convective
(2) Drywell-to-Torus Vacuum Breakers.
- B. **(1)** evaporative
(2) Reactor Building-to-Torus Vacuum Breakers.
- C. **(1)** convective
(2) Reactor Building-to-Torus Vacuum Breakers.
- D. **(1)** evaporative
(2) Drywell-to-Torus Vacuum Breakers.

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24. Which ONE of the following completes the statements in accordance with the Radiological Emergency Plan (REP)?

An event in which releases are expected to exceed EPA Protective Action Guideline exposure levels beyond the site boundary is **REQUIRED** to be classified as a **__(1)___**.

IF the CECC is **NOT** operational **AND** Protective Action Recommendations (PARs) are required, THEN these must be recommended by the **__(2)___**.

- A. **(1)** Site Area Emergency.
(2) Site Emergency Director.
- B. **(1)** General Emergency.
(2) Site Emergency Director.
- C. **(1)** Site Area Emergency.
(2) Radiation Protection Manager.
- D. **(1)** General Emergency.
(2) Radiation Protection Manager.

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25. Unit 2 is operating at 100% Reactor Power when the running CRD pump trips **AND** actions to restore a CRD pump have **NOT** been successful. The following alarm is subsequently received during efforts to restore one CRD Pump:

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

Which ONE of the following identifies the setpoint for this alarm **AND** the required actions in accordance with 2-ARP-9-5A?

- A. 250 °F; declare the affected Control Rod(s) "SLOW"
- B. 250 °F; declare the affected Control Rod(s) "INOPERABLE"
- C. 350 °F; declare the affected Control Rod(s) "SLOW"
- D. 350 °F; declare the affected Control Rod(s) "INOPERABLE"

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26. During a Unit 2 startup, with power ascension at 20% Reactor Power, a rapid loss of condenser vacuum forces the crew to insert a manual Scram. The following plant conditions exist:

- Reactor Water Level initially lowered to 0 inches and is currently being controlled (+) 2 to (+) 51 inches with RCIC **AND** CRD
- The MSRVs are being used to control Reactor Pressure **AND** HPCI was started in pressure control mode
- Suppression Pool Water Level reaches (+) 7 inches

Which ONE of the following predicts the current status of RCIC **AND** the required operator action in accordance with 2-EOI-1, "RPV Control?"

RCIC Suction (1) **AND** the required operator action in accordance with 2-EOI-1, is to (2) .

- A. (1) is aligned to the CST
(2) continue RCIC operation in the current configuration.
- B. (1) is aligned to the CST
(2) manually swap RCIC suction path.
- C. (1) automatically swaps to the Suppression Pool
(2) continue RCIC operation in the current configuration.
- D. (1) automatically swaps to the Suppression Pool
(2) manually swap RCIC suction path.

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27. Which ONE of the following completes the statement?

Entry into 1-EOI-3, "Secondary Containment Control," is required at a **MINIMUM** RHR System I **PUMP** Area water level exceeding **__(1)___**.

Entry into 1-EOI-3 is also required at a **MINIMUM** RHR System I Pump Area radiation level of **__(2)___**.

- A. **(1)** 2 inches
(2) 72 mr/hr
- B. **(1)** 66 inches
(2) 72 mr/hr
- C. **(1)** 2 inches
(2) ARM Alarm Setpoint
- D. **(1)** 66 inches
(2) ARM Alarm Setpoint

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28. Given the following plant conditions on Unit 1:

- Reactor Water Level is (-) 170 inches
- Reactor Pressure is 55 psig
- Vessel injection is 4500 gpm from RHR

Based on the above conditions, which ONE of the following completes the statement in accordance with the EOI Program Manual?

Adequate Core Cooling **__(1)___ AND** Clad temperatures are expected to **__(2)___**.

- A. **(1)** is met
(2) remain <1500 °F.
- B. **(1)** is **NOT** met
(2) remain <1500 °F.
- C. **(1)** is **NOT** met
(2) exceed 1800 °F.
- D. **(1)** is met
(2) remain between 1500 °F **AND** 1800 °F.

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29. Which ONE of the following completes the statement?

The power supply for RHR SYS II INBD INJECTION VLV, 2-FCV-74-67, is from 480 RMOV Board **(1)**.

The power supply for RHR SYS II MINIMUM FLOW VLV, 2-FCV-74-30, is from 480 RMOV Board **(2)**.

- A. **(1)** 2B.
(2) 2B.
- B. **(1)** 2B.
(2) 2E.
- C. **(1)** 2E.
(2) 2B.
- D. **(1)** 2E.
(2) 2E.

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30. 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 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 LPCI pump, then 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.

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31. Unit 2 HPCI auto initiated **AND** injected following a total loss of Feedwater, then subsequently tripped on High Reactor Water Level. The following conditions currently exist:
- Reactor Level is (+) 20 inches and lowering slowly
 - Drywell Pressure is 2.0 psig and rising slowly

Which ONE of the following completes the statement?

If the Unit Operator depresses the (1) pushbutton, then HPCI will (2).

- A. (1) HPCI AUTO-INIT RESET, 2-XS-73-59,
(2) re-start **AND** will inject.
- B. (1) HPCI AUTO-INIT RESET, 2-XS-73-59,
(2) re-start but will **NOT** inject.
- C. (1) HPCI TURBINE TRIP RX LVL HIGH RESET, 2-HS-73-18B,
(2) **NOT** re-start.
- D. (1) HPCI TURBINE TRIP RX LVL HIGH RESET, 2-HS-73-18B,
(2) re-start **AND** will inject.

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32. Which ONE of the following completes the statements?

Each Core Spray Loop has a Room Cooler which **__(1)__** required for Core Spray Operability.

The Room Cooler **__(2)__** when the associated Core Spray Loop is manually started.

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

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33. Unit 1 is executing 1-EOI-1, "RPV Control," due to a Scram and an ATWS. The Unit Operator (UO) is directed to inject Standby Liquid Control (SLC) per 1-EOI Appendix 3A, "SLC Injection."

The UO places the SLC Pump control switch in the 'Start-A' position.

Given the following plant conditions:

- SLC SQUIB VALVE CONTINUITY LOST, (1-9-5B, Window 20) **NOT** In Alarm
- SQUIB VALVE A and B CONTINUITY, blue lights on Panel 1-9-5 Illuminated
- SLC Pump 1A red light Illuminated

Which **ONE** of the following describes the status of SLC **AND** the required action(s) in accordance with 1-EOI Appendix 3A?

- A. **ONE** squib valve has **NOT** fired;
Place SLC Pump 1A in Stop, start the SLC Pump 1B, **AND** verify proper operation.
- B. **NEITHER** squib valve has fired;
Place SLC Pump 1A in Stop, start the SLC Pump 1B, **AND** verify proper operation.
- C. **ONE** squib valve has fired;
Verify proper system operation by observing the SLC tank level lowering by ~1% per minute.
- D. **BOTH** squib valves have fired;
Verify proper system operation by observing the SLC tank level lowering by ~1% per minute.

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34. Unit 2 is at 100% Reactor Power.

IF RPS MG Set A trips, which ONE of the following identifies the expected status?

- A. Half of the SSPVs are de-energized;
NONE of the Backup Scram Valves are energized.
- B. Half of the SSPVs are de-energized;
Half of the Backup Scram Valves are energized.
- C. **ONE** Scram Discharge Volume Vent Valve is CLOSED;
NONE of the Backup Scram Valves are energized.
- D. **ALL** Scram Discharge Volume Vent & Drain Valves remain OPEN;
ONLY ONE of the Backup Scram Valves is energized.

Per phonecon with Bruno Caballero time 0845 (7/22/09), wrote on board the spelled out Acronym for SSPV – “Scram Solenoid Pilot Valve.” Provided to ALL Candidates.

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35. Unit 3 is starting up in Mode 2. IRM 'B' is indicating 34 on Range 7.

Which ONE of the following would result if IRM 'B' range select switch is placed to Range 6?

- A. A Reactor Scram occurs.
- B. A Half Reactor Scram occurs.
- C. A Control Rod Withdraw Block occurs.
- D. **NEITHER** a Control Rod Block **NOR** a Scram occurs.

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36. The following plant conditions exist on Unit 2:

- Reactor Mode Switch is in STARTUP
- **ALL** Intermediate Range Monitors (IRMs) are on Range 3 or 4
- Source Range Monitor (SRM) 'A' is retracted **AND** reading 0.5 cps
- SRMs 'B' **AND** 'C' are reading 5.3×10^4 cps
- SRM 'D' mode switch (S-1) is in the STANDBY position

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

- A. An SRM High.
- B. An SRM **NOT** Full-In.
- C. An SRM Inoperable.
- D. An SRM Downscale.

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37. Unit 1 is at 85% Reactor Power **AND** 75% Core Flow with a centrally located rod selected.

Which **ONE** of the following identifies the expected alarm(s) if **ONE** of the 1A Recirc Loop Flow Transmitters, providing input to an APRM, fails to zero output?

- A. **ONLY** APRM UPSCALE, (1-9-5A, Window 11).
- B. **ONLY** APRM FLOW BIAS OFF NORMAL, (1-9-5A, Window 32).
- C. APRM UPSCALE, (1-9-5A, Window 11), **AND** OPRM TRIP ENABLED, (1-9-5A, Window 30).
- D. APRM FLOW BIAS OFF NORMAL, (1-9-5A, Window 32), **AND** OPRM TRIP ENABLED, (1-9-5A, Window 30).

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38. Unit 2 RCIC is in pressure control in accordance with 2-EOI Appendix 11B, "Alternate RPV Pressure Control System RCIC Test Mode."

A leak in the Drywell results in Drywell Pressure of 2.5 psig and rising slowly.

Which ONE of the following identifies the impact of the High Drywell Pressure on the RCIC Pressure Control lineup?

- A. **NOT** affected.
- B. RCIC PUMP CST TEST VLV, 2-FCV-71-38, closes.
- C. HPCI / RCIC CST TEST VLV, 2-FCV-73-36, closes.
- D. RCIC TURB EXH VAC REL SOV, 2-FCV-71-59, closes.

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39. Unit 3 has the following conditions:

- Reactor Level is (-) 30 inches and stable with RCIC injecting at 600 gpm
- Reactor Pressure is 970 psig with MSIVs closed and MSRVs being used to control pressure
- **NO** other High Pressure Injection systems are available
- **ALL** Low Pressure ECCS are available

With a subsequent loss of the Division I ECCS Inverter, which ONE of the following completes the statements?

Upon losing the Inverter, RCIC will **(1)** .

Given these current conditions, **(2)** .

- A. **(1)** continue injecting to the reactor at greater than 600 gpm.
(2) RCIC alone will ensure adequate core cooling.
- B. **(1)** continue injecting with flow controller failed at current output.
(2) RCIC alone will ensure adequate core cooling.
- C. **(1)** continue injecting with flow controller failed at current output.
(2) RCIC alone will **NOT** ensure adequate core cooling.
- D. **(1)** stop injecting to the reactor as the controller fails downscale.
(2) Emergency Depressurization is required to ensure adequate core cooling.

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

Six minutes later, plant conditions are as follows:

- Reactor water level is (-) 110 inches and lowering slowly
- Drywell pressure is 5.1 psig
- A Unit Operator manually starts Core Spray Pumps 2A **AND** 2C

Which ONE of the following identifies the current status of ADS?

- A. ADS 95-second timer is still reset (i.e., has **NOT** yet started).
- B. ADS Valves will open **IMMEDIATELY** after the Core Spray Pumps starts.
- C. ADS Valves are closed but will open 95 seconds after the Core Spray Pumps start.
- D. ADS Valves are closed but will open **IMMEDIATELY** when Reactor Level reaches Level 1.

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41. Unit 1 is operating at 100% Reactor Power when a Loss of Offsite Power results in the following plant conditions:
- Reactor Level lowered to (-) 20 inches and is now at (+) 20 inches and stable
 - Drywell pressure rose to 2.7 psig and is now 1.2 psig and steady
 - Reactor Building and Refuel Building Ventilation tripped and was subsequently restarted in accordance with 1-EOI Appendix 8F, "Restoring Refueling Zone Ventilation Fans Following Group 6 Isolation," and 1-EOI Appendix 8E, "Bypassing RPV Low Level and High Drywell Pressure Isolation Interlocks"

Which ONE of the following conditions would cause the Reactor Zone Ventilation to re-isolate?

- A. Drywell Pressure rises above 2.45 psig.
- B. Reactor Water Level lowers to less than (+) 2 inches.
- C. Reactor Zone Exhaust Radiation rises above 72 mr/hr.
- D. Refuel Floor Zone Exhaust Radiation rises above 72 mr/hr.

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42. Which ONE of the following identifies the required sequence to **RESET** Unit 1 Traversing Incore Probe (TIP) Isolation Logic?
- A. Rotate **BOTH** PCIS Div I **AND** Div II RESET to the **LEFT and RIGHT** on Panel 1-9-4. **THEN**, depress TIP ISOLATION RESET pushbutton on Panel 1-9-13.
 - B. Rotate **EITHER** PCIS Div I **OR** Div II RESET to the **LEFT and RIGHT** on Panel 1-9-4. **THEN**, depress TIP ISOLATION RESET pushbutton on Panel 1-9-13.
 - C. Depress TIP ISOLATION RESET pushbutton on Panel 1-9-13. **THEN**, rotate **BOTH** PCIS Div I **AND** Div II RESET to the **LEFT and RIGHT** on Panel 1-9-4.
 - D. Depress TIP ISOLATION RESET pushbutton on Panel 1-9-13. **THEN**, rotate **EITHER** PCIS Div I **OR** Div II RESET to the **LEFT and RIGHT** on Panel 1-9-4.

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43. Unit 1 is operating at 100% Reactor Power when the following annunciator alarms:
- MAIN STEAM RELIEF VALVES OPEN, (1-9-3C, Window 24)

Which ONE of the following completes the statements?

The annunciator is **DIRECTLY** triggered by the **__(1)__** .

A MSRVL leaking can be verified by observing the **__(2)__**.

- A. **(1)** tail pipe acoustic monitor.
(2) light indication above the control switch at Panel 1-9-3.
- B. **(1)** tail pipe acoustic monitor.
(2) Temperature Recorder 1-TR-1-1 on Panel 1-9-47.
- C. **(1)** Temperature Recorder 1-TR-1-1 on Panel 1-9-47.
(2) SPDS Display, Main Steam / SRV Status.
- D. **(1)** Temperature Recorder 1-TR-1-1 on Panel 1-9-47.
(2) tail pipe acoustic monitor.

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44. Unit 3 is operating at 100% when the following alarms / indications are observed:

- RFPT B ABNORMAL, (3-9-6C, Window 8)
- RFPT TRIP, (3-9-6C, Window 29)
- RFP DISCH FLOW LOW, (3-9-6C, Window 32)
- REACTOR WATER LEVEL ABNORMAL, (3-9-5A, Window 8)
- Reactor Water Level is currently (+) 26 inches

Which ONE of the following completes the statements?

In accordance with 3-AOI-3-1, "Loss of Reactor Feedwater or Reactor Water Level High/Low," the crew is required to **(1)** .

Unit 3 Reactor Feed Pump speeds are limited to \leq **(2)** in accordance with 3-OI-3, "Reactor Feedwater System."

- A. **(1)** Verify Automatic Runback of Reactor Recirculation Pumps.
(2) 5050 rpm
- B. **(1)** Reduce Core Flow to 50% to 60%; then, manually Scram the Reactor.
(2) 5050 rpm
- C. **(1)** Verify Automatic Runback of Reactor Recirculation Pumps.
(2) 5850 rpm
- D. **(1)** Reduce Core Flow to 50% to 60%; then, manually Scram the Reactor.
(2) 5850 rpm

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45. Which ONE of the following completes the statement?

With Unit 1 RPS in its normal line up, a loss of RPS Motor Generator set 1A will result in (1) Standby Gas Treatment Trains in operation **AND** isolation of Reactor Zone Ventilation on (2) .

- A. (1) **NO**
(2) Unit 1 **ONLY**.
- B. (1) **NO**
(2) **ALL** three Units.
- C. (1) **ALL** three
(2) Unit 1 **ONLY**.
- D. (1) **ALL** three
(2) **ALL** three Units.

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46. Unit 3 was operating at 100% Reactor Power when a total Loss of Offsite Power occurs in conjunction with a LOCA.

Which ONE of the following completes the statements?

After the Unit 3 Diesel Generator Output Breakers close, then the first Core Spray Pump will start **(1)** seconds later.

RHRWS Pumps assigned to EECW Automatic will start **(2)** seconds after the Unit 3 Diesel Generator Output Breakers close.

- A. **(1)** 0
(2) 14
- B. **(1)** 7
(2) 14
- C. **(1)** 0
(2) 28
- D. **(1)** 7
(2) 28

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47. Unit 3 is operating in Mode 1, when a loss of 480V RMOV Board 3E occurs.

Which ONE of the following identifies the MINIMUM required actions in accordance with Tech Spec 3.8.7, "Distribution Systems-Operating?"

A.

REQUIRED ACTION	COMPLETION TIME
Declare RHR Loop I Inoperable.	IMMEDIATELY

B.

REQUIRED ACTION	COMPLETION TIME
Declare RHR Loop II Inoperable.	IMMEDIATELY

C.

REQUIRED ACTION	COMPLETION TIME
Declare RHR Loop I Inoperable.	1 HOUR

D.

REQUIRED ACTION	COMPLETION TIME
Declare RHR Loop II Inoperable.	1 HOUR

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48. Which ONE of the following completes the statements?

The Plant Preferred Motor Generator (MG) **NORMAL** power supply is from **(1)** .

A complete loss of the AC Plant Preferred power supplies **AND** a subsequent failure of the Plant Preferred MG would result in the CO₂ Master Solenoid 1, (0-FCV-39-11) **AND** CO₂ Master Solenoid 2, (0-FCV-39-4) failing **(2)** .

- A. **(1)** Battery Board 4
(2) CLOSED
- B. **(1)** Battery Board 4
(2) OPEN
- C. **(1)** 480 V SD Board 2A
(2) CLOSED
- D. **(1)** 480 V SD Board 2A
(2) OPEN

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49. The Unit 1 Unit Preferred Inverter output fails.

Which ONE of the following completes the statements?

If **ONLY** the Unit Preferred Inverter output failed, the Reactor Feedwater Level Control PDS indication **__(1)___** .

When the Unit Preferred Inverter output is restored, the Unit Preferred Static Switch will **__(2)___** to the NORMAL Unit Preferred Inverter power supply.

- A. **(1)** was **NOT** lost.
(2) automatically return
- B. **(1)** was lost.
(2) automatically return
- C. **(1)** was **NOT** lost.
(2) **NOT** automatically return
- D. **(1)** was lost.
(2) **NOT** automatically return

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50. Unit 2 is operating at 100% Reactor Power when a ground is detected on 250 VDC RMOV Board 2A. Ground Isolation steps indicate the ground is in the normal power supply feeder breaker.

The affected board has been transferred to its alternate power supply.

In accordance with 0-OI-57D, "DC Electrical System," which ONE of the following identifies the alternate supply to the RMOV Board; **AND** when is a DC MOV allowed to be operated while its battery is supplying any RMOV Board alternate supply?

- A. Battery Board 1; to comply with Tech Spec LCO Actions.
- B. Battery Board 3; to comply with Tech Spec LCO Actions.
- C. Battery Board 1; to perform Tech Spec Surveillance Testing.
- D. Battery Board 3; to perform Tech Spec Surveillance Testing.

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51. Unit 3 is Operating at 100% Reactor Power, with the following conditions:

- Diesel Generator (D/G) 3C is running unloaded to support testing
- Preparations are being made, at Panel 3-9-23, to parallel **AND** load the diesel with its Shutdown Board
- The synchroscope is rotating slow-in-the-clockwise direction

Which ONE of the following completes the statement?

~~To maintain the D/G within limits, the Diesel Generator Mode Selector Switch must be in the ___(1)___ position prior to paralleling. The reason for this is to prevent the D/G from overloading due to Speed Droop being set at ___(2)___.~~

To maintain the D/G within limits, the Diesel Generator Mode Selector Switch must be in the ___(1)___ position prior to paralleling, to ensure the Speed Droop setting is ___(2)___.

- A. (1) 'UNITS IN PARALLEL'
(2) 5%.
- B. (1) 'UNITS IN PARALLEL'
(2) 0%.
- C. (1) 'PARALLEL WITH SYSTEM'
(2) 5%.
- D. (1) 'PARALLEL WITH SYSTEM'
(2) 0%.

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52. **ALL** three Units are operating at 100% Reactor Power, when an undervoltage condition occurs on 480V Shutdown Board 1B.

(Assume **ALL** Air Compressors are operating in a normal alignment.)

Which ONE of the following describes the impact of this board loss on the Air System?

A. Control Air Compressors 'B' **AND** 'C' will trip.

B. Service Air Compressors 'E' **AND** 'F' will trip.

C. Control Air Compressor 'G' will trip.

D. Control Air Compressor 'A' will trip.

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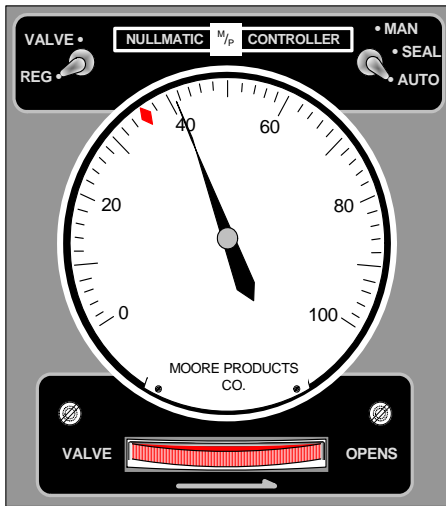
53. At 10:00 a.m., the Unit 2 RBCCW Temperature Control Valve (TCV), (2-TIC-24-80(85)) was placed in Manual as follows:

- REG was selected
- MAN was selected

Before transferring from Manual back to Automatic, in order to NULL the controller, the RBAUO is required to place the **__(1)___** **AND** adjust the thumbwheel until the RED pointer lines up with the BLACK pointer.

At 11:00 a.m., the controller was transferred to auto. If the RBAUO observes the following indications after the controller was transferred back to auto, this means that the TCV will modulate to a more **__(2)___**.

After Transfer:



- A. **(1)** Transfer Switch to SEAL.
(2) open position.
- B. **(1)** Selector Switch to VALVE.
(2) closed position.
- C. **(1)** Transfer Switch to SEAL.
(2) closed position.
- D. **(1)** Selector Switch to VALVE.
(2) open position.

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54. Unit 2 was operating at 100% Reactor Power when a loss of **BOTH** RPS MG sets occurred.

Which ONE of the following describes the effects on the Control Rod Drive Hydraulic (CRDH) System during this transient?

FLOW CONTROL VALVE, 1-FCV-85-11A (B), travels **__(1)__** due to **__(2)__** Water header.

- A. **(1)** OPEN
(2) increased flow on the Charging
- B. **(1)** OPEN
(2) increased flow on the Exhaust
- C. **(1)** CLOSED
(2) increased flow on the Charging
- D. **(1)** CLOSED
(2) increased flow on the Exhaust

HLT 0801 Written Exam

55. Unit 1 is operating in Mode 1, with the following conditions:

- Traversing Incore Probe (TIP) testing is in progress
- TIP Channel 'E' is currently located at the 'Top of Core' position

Which ONE of the following completes the statement?

IF a Group 8 Isolation signal were to occur, TIP 'E' Ball Valve will automatically close as soon as the TIP retracts to the **__(1)__; AND** the N2 Purge Valve **__(2)__**.

- A. **(1)** 'IN-SHIELD' position;
(2) remains open.
- B. **(1)** 'INDEXER' position;
(2) remains open.
- C. **(1)** 'IN-SHIELD' position;
(2) will AUTOMATICALLY close.
- D. **(1)** 'INDEXER' position;
(2) will AUTOMATICALLY close.

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56. Which ONE of the following describes the Rod Block Monitoring System?
- A. Uses inputs from **SELECTED** LPRMs to generate a Control Rod block;
RBM 'A' AND RBM 'B' **BOTH** receive flow inputs from **ALL** 4 APRM channels.
 - B. Uses inputs from **ALL** LPRMs to generate a Control Rod block;
RBM 'A' AND RBM 'B' **BOTH** receive flow inputs from **ALL** 4 APRM channels.
 - C. Uses inputs from **ALL** LPRMs to generate a Control Rod block;
RBM 'B' receives flow inputs from **ONLY** APRM 1, 3, 4.
 - D. Uses inputs from **SELECTED** LPRMs to generate a Control Rod block;
RBM 'A' receives flow inputs from **ONLY** APRM 1, 3, 4.

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57. Which ONE of the following completes the statement?

The power supply for RHR Pump 1B is from 4 kV Shutdown Board **(1)** **AND** its associated RHR SYS II SUPPR POOL CLG/TEST VLV, 1-FCV-74-73, is from 480 RMOV Board **(2)**.

- A. **(1)** B
(2) 1E.
- B. **(1)** B
(2) 1B.
- C. **(1)** C
(2) 1E.
- D. **(1)** C
(2) 1B.

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58. Which ONE of the following identifies the MSIV Leakage Control flowpath **AND** the reason for this flowpath?
- A. Main Steam Lines **ONLY** (**NO** MSL Drain Piping);
Facilitates the increased allowable leakage limit for each MSIV.
 - B. Main Steam Lines **AND** MSL Drain Piping to the Main Condenser;
Facilitates the increased allowable leakage limit for each MSIV.
 - C. Main Steam Lines **ONLY** (**NO** MSL Drain Piping);
Ensures that equalization of the MSIVs can be performed prior to re-opening.
 - D. Main Steam Lines **AND** MSL Drain Piping to the Main Condenser;
Ensures that equalization of the MSIVs can be performed prior to re-opening.

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59. Unit 3 is at 93% Reactor Power.

Which ONE of the following completes the statements?

For this power level, EHC Pressure Set is nominally set to **__(1)__** psig.

IF **ONE** Turbine Control Valve were to fail OPEN, then Reactor Pressure, upon stabilizing, would be **__(2)__**.

- A. **(1)** 955
(2) lower
- B. **(1)** 1036
(2) lower
- C. **(1)** 955
(2) the same
- D. **(1)** 1036
(2) the same

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60. Unit 3 is operating at 100% Reactor Power. Generator parameters are as follows:

- Generator Load is 1153 MWe
- Generator Reactive Load is (+) 150 MVARs
- Generator Hydrogen Pressure is 45 psig

Which ONE of the following identifies actions that will place the Unit within the safe area of the Estimated Reactive Capability Curve?

[REFERENCE PROVIDED]

- A. Lower MWe **AND** Raise MVARs.
- B. Raise Generator Gas pressure **AND** Raise MVARs.
- C. Raise Generator Gas pressure **OR** Lower MWe.
- D. Raise Generator Gas Pressure **OR** Raise MVARs.

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61. Unit 2 is conducting a shutdown, with the following conditions:

- Reactor Power is 50%
- Condensate Booster Pump 2A has just been shut down

Which ONE of the following completes the statements?

In accordance with 2-OI-2, "Condensate System," maintain SJAE/OG CNDR CNDS FLOW, 2-FI-2-42, between **(1)** mlbm/hr.

As Reactor Power is lowered, flow adjustments will be required from **(2)**.

- A. **(1)** 2 and 3
(2) Panel 2-9-7.
- B. **(1)** 1 and 4
(2) Panel 2-9-7.
- C. **(1)** 1 and 4
(2) Panel 2-9-6.
- D. **(1)** 2 and 3
(2) Panel 2-9-6.

HLT 0801 Written Exam

62. Which ONE of the following completes the statements related to Control Panel indications for the Steam Packing Exhauster (SPE) System?

Prior to starting the **FIRST** SPE Blower, **__(1)___**.

Once the SPE Blower is started, IF the STEAM PACKING EXHAUSTER VACUUM LOW, (1-9-7A, Window 12) alarm is received, then **__(2)___**.

- A. **(1) BOTH** blowers **AND** the discharge valves have GREEN lights illuminated.
(2) the Standby fan AUTOMATICALLY starts after a 10 second time delay **AND** the operating fan is then MANUALLY stopped.
- B. **(1) BOTH** blowers **AND** the discharge valves have GREEN lights illuminated.
(2) the Standby fan AUTOMATICALLY starts after a 10 second time delay **AND** the operating fan AUTOMATICALLY stops.
- C. **(1) NEITHER** blower has a light illuminated **AND** the discharge valves have GREEN lights illuminated.
(2) the Standby fan AUTOMATICALLY starts after a 5 second time delay **AND** the operating fan AUTOMATICALLY stops.
- D. **(1) NEITHER** of the blowers **NOR** the discharge valves have any lights illuminated.
(2) the Standby fan AUTOMATICALLY starts after a 5 second time delay **AND** the operating fan is MANUALLY stopped.

HLT 0801 Written Exam

63. **ALL** units are operating at 100% Reactor Power. Weather predictions indicate that Outside Ambient Air Temperature will reach 20 °F for an overnight low, **AND** is **NOT** expected to rise above 32 °F for the next 48 hours.

Which ONE of the following completes the statement?

In accordance with 0-GOI-200-1, "Freeze Protection Inspection," for the above weather prediction, the required action is to verify that _____.

- A. the Hot Water Generator is in service to heat the Control Bay.
- B. **EACH** unit has its respective Hot Water Generator in service to heat the Diesel Generator Buildings.
- C. a **MINIMUM** of **TWO** Auxiliary Boilers are in operation to supply hot water to the Diesel Generator Buildings.
- D. **EACH** unit has its respective Turbine Building **AND** Reactor Building Air Wash Systems in operation.

HLT 0801 Written Exam

64. Given the following plant conditions:

- Unit 2 is at 100% power
- A rupture of the Spent Fuel Pool has resulted in lowering level
- **ALL** Reactor **AND** Refuel Zone radiation monitors trip on high radiation
- **NO** Standby Gas Treatment (SGT) train can be started

Which ONE of the following completes the statements?

Secondary Containment pressure (1) equalize with atmospheric pressure.

2-EOI-3, "Secondary Containment Control" (2) restarting of the Reactor Zone and Refuel Zone Ventilation Systems.

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

HLT 0801 Written Exam

65. Which ONE of the following completes the statement?

HPCI injects into Feedwater Line **(1)** **AND** the purpose of the sparger thermal sleeve is to **(2)**.

- A. **(1)** "A"
(2) prevent excessive thermal stress in the Feedwater nozzles.
- B. **(1)** "A"
(2) assist in avoiding cold water impingement on the vessel wall.
- C. **(1)** "B"
(2) prevent excessive thermal stress in the Feedwater nozzles.
- D. **(1)** "B"
(2) assist in avoiding cold water impingement on the vessel wall.

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66. The following conditions exist on Unit 3:

- 3-GOI-100-1A, "Unit Startup," is in progress
- Single notch withdrawal of Control Rods is required during the approach to criticality

Following a notch withdrawal of Control Rod 30-31, the Operator observes a Reactor Period of 50 seconds.

Which ONE of the following describes the required action(s) to take based on the above conditions?

- A. Shut down the Reactor until a thorough assessment has been performed.
- B. Re-insert the last Control Rod pulled to achieve a stable period of greater than 60 seconds.
- C. Insert Control Rods until the reactor is Subcritical. **ALL** Control Rods do **NOT** have to be inserted.
- D. Stop Control Rod withdrawal **AND** monitor conditions, allowing power to decay to greater than 100 seconds before proceeding. Control Rod insertion is **NOT** required.

HLT 0801 Written Exam

67. Which ONE of the following completes the statements in accordance with OPDP-1, "Conduct of Operations?"

Peer Checks **__(1)__** required during the performance of AOI Immediate Operator Actions. "Abnormal Annunciator Response" is allowed following entry into **__(2)__** .

- A. **(1)** are **NOT**
(2) abnormal **OR** emergency procedures.
- B. **(1)** are **NOT**
(2) **ONLY** emergency procedures.
- C. **(1)** are
(2) abnormal **OR** emergency procedures.
- D. **(1)** are
(2) **ONLY** emergency procedures.

HLT 0801 Written Exam

68. Which ONE of the following completes the following statements regarding the thawing process for a freeze plug in accordance with SPP-10.2, Appendix E, "Special Requirements For Mechanical Clearances?"

During the time that the freeze plug is being thawed, the clearance is required to be **__(1)___**
AND the vents/drains are required to be verified **__(2)___**.

- A. **(1)** Released but tags still on boundary valves
(2) OPEN
- B. **(1)** Released but tags still on boundary valves
(2) CLOSED
- C. **(1)** Actively Issued (held) all tags in place
(2) OPEN
- D. **(1)** Actively Issued (held) all tags in place
(2) CLOSED

HLT 0801 Written Exam

69. Given the following conditions on Unit 2:

- Reactor Power is 75%
- **TOTAL** RCS Leakage is 5.1 gpm
- Unidentified Leakage is 2.6 gpm
- Unidentified Leakage has increased 2.1 gpm within the previous 24 hour period

Which ONE of the following describes RCS Leakage in accordance with Tech Spec 3.4.4, "Operational Leakage?"

- A. **ALL** RCS Leakage is within TS limits.
- B. **TOTAL** RCS Leakage **EXCEEDS** the TS limit.
- C. The **INCREASE** in Unidentified Leakage within the previous 24 hour period is within TS limits; however, **TOTAL** Unidentified Leakage **EXCEEDS** the TS limit.
- D. **TOTAL** Unidentified Leakage is within TS limits; however, the **INCREASE** in Unidentified Leakage within the previous 24 hour period **EXCEEDS** the TS limit.

HLT 0801 Written Exam

70. Which ONE of the following processes will eventually (long term) result in **LOWER** Main Steam Line radiation levels during power operations?
- A. Injecting Zinc.
 - B. Injecting Oxygen.
 - C. Application of Noble Metals.
 - D. Hydrogen Water Chemistry operation.

HLT 0801 Written Exam

71. The following 4 volunteers have agreed to receive an Emergency Exposure to save a life. The female is **NOT** pregnant **AND** is capable of reproduction.

<u>Individual</u>	<u>Lifetime Exposure</u>	<u>Previous Emergency Exposure</u>	<u>Age</u>	<u>Gender</u>
1	38 Rem	2 Rem	39	F
2	21 Rem	0 Rem	25	M
3	35 Rem	5 Rem	28	M
4	40 Rem	0 Rem	38	M

In accordance with EPIP-15, "Emergency Exposures," which ONE of the above individuals should be selected **FIRST**?

- A. Individual 1.
- B. Individual 2.
- C. Individual 3.
- D. Individual 4.

HLT 0801 Written Exam

72. Three operators are in the Unit 1 RHR Loop II Pump Room performing the Quarterly Pump Surveillance. The operator monitoring pump suction pressure receives a Dose **RATE** Alarm **ONLY** on his Electronic Dosimeter (ED).

Which **ONE** of the following identifies the required actions in accordance with RCI-9.1, "Radiation Work Permits," as a result of the Dose Rate Alarm **ONLY**?

- A. **ONLY** the Individual who received the alarm must leave the area **AND** he **CANNOT** return until dose rates are evaluated by RP.
- B. **ONLY** the Individual who received the alarm must leave the area **AND** he must meet with the RP Manager prior to returning to the RCA.
- C. **ALL** work activities are stopped; **ALL** personnel must leave the area **AND CANNOT** return until dose rates are evaluated by RP.
- D. **ALL** work activities are stopped; **ALL** personnel must leave the area **AND** the individual who received the alarm must meet with the RP Manager prior to returning to the RCA.

HLT 0801 Written Exam

73. EOI-1, "RPV Control," includes the following override step RC/L-3.

IF Primary Containment Water Level **CANNOT** be maintained below _____, **THEN** STOP injection to the RPV from sources external to the PC not required for adequate core cooling.

In accordance with the EOI Program Manual, which ONE of the following choices completes the override **AND** identifies the basis for this override?

- A. 70 feet; prevent covering the MSRVS solenoids.
- B. 70 feet; prevent covering the primary containment vent.
- C. 105 feet; prevent covering the MSRVS solenoids.
- D. 105 feet; prevent covering the primary containment vent.

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74. In accordance with 0-AOI-26-1, "Fire Response," which ONE of the following identifies whether the Standby Gas Treatment System (SBGTS) can be used for smoke removal **AND**, if so, any consequences?
- A. **CANNOT** be used.
 - B. **CAN** be used / SBGTS Remains OPERABLE.
 - C. **CAN** be used / SBGTS is INOPERABLE due to clogging of HEPA Filters.
 - D. **CAN** be used / SBGTS is INOPERABLE due to hydrocarbon loading on the charcoal beds.

HLT 0801 Written Exam

75. An ATWS has occurred on Unit 2 with the following plant conditions:

- Reactor Water Level is currently being controlled (+) 2 to (+) 51 inches with CRD
- Suppression Pool Temperature 92° F and stable
- **ALL** APRM downscale lights are illuminated
- 19 Control Rods failed to insert
- **ALL** SRVs are closed

Which ONE of the following completes the statement?

In accordance with EOI-1, "RPV Control," Reactor Recirc Pumps **__(1)__** required to be tripped **AND** the SLC Pumps **__(2)__** required to be started.

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

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76. Unit 1 is operating at 100% Reactor Power, when the following alarms are received:

- CONTROL ROD WITHDRAWAL BLOCK, 1-9-5A, (Window 7)
- RPIS INOPERATIVE, 1-9-5A, (Window 35)
- CONTROL ROD OVERTRAVEL, 1-9-5A, (Window 14)
- **ALL** Control Rod position indication has been lost

Which ONE of the following completes the statement?

Based on the above conditions, entry into **__(1)__** is required **AND** the loss of **ALL** control rod position indication will require the operating crew to **__(2)__** .

[REFERENCE PROVIDED]

- A. **(1)** 0-AOI-57-3, "Loss of Plant Preferred,"
(2) insert **ALL** control rods in 3 hours **AND** disarm the associated CRDs in 4 hours.
- B. **(1)** 0-AOI-57-3, "Loss of Plant Preferred,"
(2) be in Mode 3 in 12 hours
- C. **(1)** 1-AOI-57-4, "Loss of Unit Preferred,"
(2) insert **ALL** control rods in 3 hours **AND** disarm the associated CRDs in 4 hours.
- D. **(1)** 1-AOI-57-4, "Loss of Unit Preferred,"
(2) be in Mode 3 in 12 hours

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77. Unit 2 is operating at 100% Reactor Power, when the following condition is observed:
- Unit Operator reports that RX WATER LEVEL A, 2-LI-3-46A, on Panel 2-25-32 is reading off-scale low

Which ONE of the following identifies the **MINIMUM** required Tech Spec Action(s), if any?

- A. **NO** Tech Spec entry is required.
- B. **ONLY** entry into Tech Spec 3.3.3.2, "Backup Panel Instrumentation," is required.
- C. **ONLY** entry into Tech Spec 3.3.3.1, "Post Accident Monitoring (PAM) Instrumentation," is required.
- D. Entry into Tech Specs 3.3.3.1, "PAM Instrumentation," **AND** 3.3.3.2, "Backup Panel Instrumentation," are required.

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78. Unit 1 is operating at 100% Reactor Power when the following alarms are received:

- RECIRC PUMP MTR 1A TEMP HIGH, (1-9-4A, Window 13)
- RECIRC PUMP 1A COOLING WATER FLOW LOW, (1-9-4A, Window 34)

Which ONE of the following identifies the lowest #1 Seal Cavity Temperature that requires the Recirc Pump to be shut down **AND** the corresponding Alarm Response Procedure that directs the pump to be shut down?

- A. 200 °F; RECIRC PUMP MTR 1A TEMP HIGH, (1-9-4A, Window 13)
- B. 212 °F; RECIRC PUMP MTR 1A TEMP HIGH, (1-9-4A, Window 13)
- C. 200 °F; RECIRC PUMP 1A COOLING WATER FLOW LOW, (1-9-4A, Window 34)
- D. 212 °F; RECIRC PUMP 1A COOLING WATER FLOW LOW, (1-9-4A, Window 34)

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79. In accordance with 2-EOI-3, "Secondary Containment Control" **AND** 2-AOI-79-1, "Fuel Damage During Refueling," which ONE of the following identifies the 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?
- A. 500 mr/hr;
Plant Manager
 - B. 500 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

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80. A Scram occurred on Unit 2 with the following conditions:

- Reactor Water Level initially lowered to (-) 125 inches and is now stable at (-) 75 inches
- Four SRVs remain OPEN at their setpoint(s)
- There is **NO** indication of a steam line break
- Standby Liquid Control (SLC) is injecting with tank level at 83% and lowering
- Drywell Pressure is 1.9 psig and rising slowly
- Suppression Pool Level is 17 feet and rising slowly

Which ONE of the following identifies the required procedure legs for reactor level and pressure, respectively, in accordance with the EOs?

[REFERENCE PROVIDED]

- A. 2-C-5, "Level / Power Control" **AND** 2-C-2, "Emergency RPV Depressurization."
- B. 2-EOI-1, "RPV Control" RC/L **AND** 2-C-2, "Emergency RPV Depressurization"
- C. 2-C-5, "Level / Power Control" **AND** 2-EOI-1, "RPV Control" RC/P
- D. 2-EOI-1 "RPV Control" RC/L **AND** 2-EOI-1, "RPV Control" RC/P

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81. Which ONE of the following completes **BOTH** of the following statements concerning high Drywell (DW) temperature?

In accordance with Tech Spec Bases, the highest initial DW average air temperature which ensures that the peak DW temperature of 336 °F will **NOT** be reached following a DBA LOCA is **(1)** .

In accordance with EOI-2, "Primary Containment Control," DW/T leg, a manual reactor scram is first required before DW temperature rises to **(2)** .

- A. **(1)** 150 °F
(2) 200 °F
- B. **(1)** 150 °F
(2) 280 °F
- C. **(1)** 160 °F
(2) 200 °F
- D. **(1)** 160 °F
(2) 280 °F

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82. Unit 1 is shut down for a Refueling Outage. Unit 2 is shut down for a Forced Outage. Unit 3 is operating at 85% Reactor Power. An electrical grid disturbance results in the following plant conditions:

- Grid Frequency is 60.2 Hz and stable
- 500 kV System Voltage is 520 kV
- 161 kV System is **NOT** available
- Unit 3 remains on line

Which ONE of the following completes the statements?

Based on current conditions, the operating crew must **__(1)__** Reactor Power in accordance with 0-AOI-57-1E, "Grid Instability."

Unit **3** LCO 3.8.1, "AC Sources-Operating," requirements are **__(2)__**.

- A. **(1)** raise
(2) NOT Met
- B. **(1)** lower
(2) NOT Met
- C. **(1)** raise
(2) Met
- D. **(1)** lower
(2) Met

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83. A LOCA has occurred on Unit 1 and the Unit Supervisor has determined that Drywell Sprays are required to be initiated using Fire Protection System.

Which ONE of the following identifies a local operator action that must be performed **AND** the procedure used to spray the Drywell using Fire Protection?

Note: 1-FCV-74-101 is the Units 1 and 2 Discharge Cross Tie.

- A. Locally OPEN the 480 V breaker for 1-FCV-74-101; 1-EOI Appendix 7K, "Alternate RPV Injection System Lineup Fire System."
- B. Locally OPEN the 480 V breaker for 1-FCV-74-101; 1-EOI Appendix 17B, "RHR System Operation Drywell Spray."
- C. Locally CLOSE the 480 V breaker for 1-FCV-74-101;" 1-EOI Appendix 7K, "Alternate RPV Injection System Lineup Fire System."
- D. Locally CLOSE the 480 V breaker for 1-FCV-74-101; 1-EOI Appendix 17B, "RHR System Operation Drywell Spray."

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84. Unit 2 is operating at 100% Reactor Power, when MSR/V, 2-PCV-1-4, inadvertently OPENS. The following conditions currently exist:

- Suppression Pool Bulk Average Temperature is 89 °F
- Suppression Pool Single Element, "Bay 2, TE-64-162A," is 96 °F
- Suppression Pool Level is 15 feet

Based on these conditions, which ONE of the following completes the statement?

If the MSR/V remains open, there is a potential (1) ; **AND** at this moment, the Unit Supervisor will direct placing Suppression Pool Cooling into service in accordance with (2) .

- A. **(1)** that the MSR/V tailpipe will break due to excessive clearing loads;
(2) 2-OI-74, "Residual Heat Removal System."
- B. **(1)** for localized boiling in Suppression Chamber Bay 2;
(2) 2-OI-74, "Residual Heat Removal System."
- C. **(1)** that the MSR/V tailpipe will break due to excessive clearing loads;
(2) 2-EOI APPENDIX-17A, "RHR System Operation Suppression Pool Cooling."
- D. **(1)** for localized boiling in Suppression Chamber Bay 2;
(2) 2-EOI APPENDIX-17A, "RHR System Operation Suppression Pool Cooling."

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85. Unit 1 was operating at 100% Reactor Power when an inadvertent Reactor Scram occurred.

Following the Scram a primary system began discharging into Secondary Containment, with the following alarms and indications:

- RX BLDG AREA RADIATION HIGH, (1-9-3A, Window 22)
- RX BLDG, TURB BLDG, RF ZONE EXH RADIATION HIGH, (1-9-3A, Window 4)
- Elevation 565 East ARM meter indicating off-scale high
- Elevation 565 Northeast ARM meter indicating 600 mr/hr and stable

Which ONE of the following completes the statement?

In accordance with 1-EOI-3, "Secondary Containment Control," the crew is required to enter (1); **AND** a potential isolation source is (2).

- | | |
|--|--------------------------------|
| A. <u>(1)</u>
1-EOI-1, "RPV Control;" | <u>(2)</u>
FCV 69-1, 2, 12. |
| B. 0-EOI-4, "Radioactivity Release Control;" | FCV 69-1, 2, 12. |
| C. 1-EOI-1, "RPV Control;" | SDV vents and drains. |
| D. 0-EOI-4, "Radioactivity Release Control;" | SDV vents and drains. |

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86. Unit 1 is at 100% Reactor Power.

- At 0647 on 5/14/09 ECCS HIGH DRYWELL PRESSURE INSTRUMENT, 1-PIS-64-58A (Logic Relay 14A-K5B), was removed from service for a calibration surveillance
- At 0720 on 5/14/09 ECCS HIGH DRYWELL PRESSURE INSTRUMENT, 1-PIS-64-58B (Logic Relay 14A-K5A), failed downscale

Which ONE of the following completes the statement for required actions associated with the failed pressure channel **AND** HPCI in accordance with TS 3.3.5.1, "ECCS Instrumentation"?

NOTE: Limit analysis choice to HPCI applicability ONLY.

ECCS HIGH DRYWELL PRESSURE INSTRUMENT, 1-PIS-64-58B, must be placed in trip no later than _____.

[REFERENCE PROVIDED]

- A. 0647 on 5/15/09. HPCI remains operable.
- B. 0720 on 5/15/09. HPCI remains operable.
- C. 0647 on 5/15/09 **AND** declare HPCI inoperable no later than 0820 on 5/14/09.
- D. 0720 on 5/15/09 **AND** declare HPCI inoperable no later than 0820 on 5/14/09.

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87. Following a Reactor Scram on Unit 1 from 100% Reactor Power, the following conditions are observed:

- Reactor Power is 22%
- Reactor Level is (-) 100 inches and stable
- Control Air Header Pressure is 0 psig
- Control Rods can **NOT** be selected
- Suppression Pool Temperature is 155 °F and rising
- Suppression Pool Level 15 feet
- Reactor Pressure 950 psig

Which ONE of the following completes the statement?

The Unit Supervisor is required to implement 1-EOI **(1)** to insert Control Rods.

The **HIGHEST** required declaration is **(2)** in accordance with EPIP-1, "Emergency Classification Procedure."

[REFERENCE PROVIDED]

- A. **(1)** Appendix 1F, "Manual Scram."
(2) General Emergency
- B. **(1)** Appendix 1F, "Manual Scram."
(2) Site Area Emergency
- C. **(1)** Appendix 1E, "Manual Insertion of Control Rods By Venting The Over Piston Area."
(2) General Emergency
- D. **(1)** Appendix 1E, "Manual Insertion of Control Rods By Venting The Over Piston Area."
(2) Site Area Emergency

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88. An unisolable RCIC steam leak has occurred on Unit 2, with the following conditions currently existing:

- The Reactor is shutdown with **ALL** Control Rods inserted
- Reactor Water Level is normal and being maintained by HPCI
- Reactor Pressure is 850 psig and slowly lowering
- RCIC Steam Supply Area, 2-TE-71-41B, is indicating 250 °F and steady
- CS/RCIC Room, 2-RA-90-26A, is indicating 800 mr/hr and steady

Which ONE of the following identifies whether Emergency Depressurization (ED) is required **AND** the HIGHEST required Emergency Declaration, in accordance with 2-EOI-3, "Secondary Containment Control," **AND** EPIP-1, "Emergency Classification Procedure," respectively?

[REFERENCE PROVIDED]

- A. ED is required; Alert.
- B. ED is **NOT** required; Alert.
- C. ED is required; Site Area Emergency.
- D. ED is **NOT** required; Site Area Emergency.

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89. Unit 1 was operating at 100% Reactor Power, when a small coolant leak in the Drywell occurred. The following conditions currently exist:

- **ALL** Control Rods are inserted
- Reactor Pressure is 940 psig and stable
- DRYWELL CONTROL AIR PRESSURE LOW, (1-9-3E, Window 35), is in alarm
- 250V REACTOR MOV BD 1C UV, (1-9-8C, Window 18), is in alarm

The Unit Supervisor now determines that Emergency Depressurization is required.

Which ONE of the following identifies the MAXIMUM number of ADS MSRVs that will electrically OPEN using panel 1-9-3 control switches **AND** the required procedure in accordance with 1-C-2, "Emergency RPV Depressurization?"

Note; 1-EOI-APPENDIX-11B, "Alternate RPV Pressure Control Systems, RCIC TEST Mode."

1-EOI-APPENDIX-17D, "RHR Systems Operation Shutdown Cooling."

- A. 6 valves;
1-EOI-APPENDIX-11B.
- B. 6 valves;
1-EOI-APPENDIX-17D.
- C. **ONLY** 4 valves;
1-EOI-APPENDIX-11B.
- D. **ONLY** 4 valves;
1-EOI-APPENDIX-17D.

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90. The following conditions exist:

- Units 1 **AND** 3 are at 100% Reactor Power
- Unit 2 is in Mode 3, with cooldown to mode 4 in progress
- Standby Gas Treatment System 'A' was removed from service at 1000 on 3/2/09 for planned maintenance

At 1300 on 3/3/09 a coolant leak in the Drywell on Unit 2 results in the following plant conditions:

- Drywell Pressure is 2.85 psig
- Reactor Water Level is being controlled (+) 2 to (+) 51 inches with RCIC
- Standby Gas Treatment 'B' Blower tripped immediately upon initiation **AND** cannot be repaired for two weeks

Standby Gas Treatment System 'A' is restored to Operable at 1500 on 3/3/09.

Which ONE of the following identifies the latest time / date that Units 1 **AND** Unit 3 must be in Mode 3?

[REFERENCE PROVIDED]

- A. 0200 on 3/4/09.
- B. 2200 on 3/9/09.
- C. 2200 on 3/10/09.
- D. 0100 on 3/11/09.

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91. Unit 1 Reactor Recirculation Pump 1A was removed from service due to the following indications:

- Number 2 Pump Seal Pressure, 1-PI-68-63A, is indicating 800 psig and rising slowly
- Recirculation Pump 1A Controlled Leakage is 1.4 gpm and rising slowly

Which ONE of the following completes the statements?

Recirculation Pump 1A parameters indicate **(1)**.

The APRM Flow Biased Simulated Thermal Power – HIGH setpoint is required to be adjusted to Single Loop allowable value within **(2)** in accordance with T.S. 3.4.1, "Recirculation Loops Operating."

- A. **(1)** a degraded Number 2 Seal
(2) 12 hours
- B. **(1)** a degraded Number 1 Seal
(2) 24 hours
- C. **(1)** a plugged Number 2 Restricting Orifice
(2) 12 hours
- D. **(1)** a plugged Number 1 Restricting Orifice
(2) 24 hours

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92. Unit 3 is at 75% Reactor Power for a sequence exchange. Control Rod 30-31 is being withdrawn from position 00 to 48 when the following annunciators are received:

- RBM HI/INOP, (3-9-5A, Window 24)
- CONTROL ROD WITHDRAW BLOCK, (3-9-5A, Window 7)

Which ONE of the following completes the following statements?

At this power level, the Rod Block Monitor, (RBM), Upscale setpoint is (1) .

If further investigation reveals that RBM 'A' is Inoperable, then an action statement in (2) must be entered.

Note: T.S.3.3.2.1, "Control Rod Block Instrumentation"
TR 3.3.4, "Control Rod Block Instrumentation"

- A. (1) 111%
(2) **ONLY** T.S.3.3.2.1
- B. (1) 111%
(2) **BOTH** T.S. 3.3.2.1 **AND** TR 3.3.4
- C. (1) 117%
(2) **ONLY** T.S.3.3.2.1
- D. (1) 117%
(2) **BOTH** T.S. 3.3.2.1 **AND** TR 3.3.4

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93. Unit 1 is starting up following a Refueling Outage with the following conditions existing:

- Reactor Power is 57%
- Fuel Pool Hx 1A Outlet, 1-TR-74-80, temperature is 126 °F and rising slowly
- RHR/FPC HX OUTLET TEMP HI, (1-9-3E, Window 18), is in alarm

Which ONE of the following identifies a local Operator action **AND** the required attachment to be implemented in accordance with 1-AOI-78-1, "Fuel Pool Cleanup System Failure?"

- A. OPEN F/D BYPASS VALVE, 1-FCV-78-66(65), using local control switch; Attachment 1, "SFP Heatup rate at Normal Fuel Pool Level."
- B. OPEN F/D BYPASS VALVE, 1-FCV-78-66(65), using local control switch; Attachment 2, "Aligning Emergency EECW Makeup to Unit 1 SFP."
- C. CLOSE F/D BYPASS VALVE, 1-FCV-78-66(65), using local control switch; Attachment 1, "SFP Heatup rate at Normal Fuel Pool Level."
- D. CLOSE F/D BYPASS VALVE, 1-FCV-78-66(65), using local control switch; Attachment 2, "Aligning Emergency EECW Makeup to Unit 1 SFP."

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94. Which ONE of the following completes the statements in accordance with SPP-1.2, "Fitness For Duty?"

ALL individuals are expected to **NOT** consume alcohol for a MINIMUM of at least **__(1)__** prior to reporting for scheduled work.

For UNSCHEDULED work, this abstinence period may be waived **ONLY** if **__(2)__**.

- A. **(1)** 5 hours;
(2) the individual has been called by the Emergency Response Center automated electronic paging system.
- B. **(1)** 6 hours;
(2) the individual has been called by the Emergency Response Center automated electronic paging system.
- C. **(1)** 5 hours;
(2) a determination of fitness for duty is made using a saliva test **IMMEDIATELY** upon arrival while still OUTSIDE the Protected Area.
- D. **(1)** 6 hours;
(2) a determination of fitness for duty is made using a saliva test **IMMEDIATELY** upon arrival while still OUTSIDE the Protected Area.

HLT 0801 Written Exam

95. In accordance with OPDP-10, "License Status Maintenance, Reactivation and Proficiency for Non-Licensed Operators," which ONE of the following completes the statements for License Reactivation requirements?

Licensee requalification training must be verified current **(1)** the 40 hours of shift functions under instruction.

After **ALL** Reactivation requirements are met, the Licensed individual must be authorized to return to licensed duties **ONLY** by the **(2)**.

- A. **(1)** prior to standing
(2) Plant Manager
- B. **(1)** prior to standing
(2) Site Licensing Manager
- C. **(1)** any time during
(2) Plant Manager
- D. **(1)** any time during
(2) Site Licensing Manager

HLT 0801 Written Exam

96. Which ONE of the following choices completes the following statements in accordance with SPP-6.1, "Work Order Process Initiation?"

Work Orders shall be evaluated **AND** prioritized within a MAXIMUM time of **__(1)___**.

Work Orders created for material procurement purposes **__(2)___** be reviewed by the Supervisor **OR** Operations.

- A. **(1)** 16 hours.
(2) MUST
- B. **(1)** 16 hours.
(2) are **NOT** required to
- C. **(1)** 24 hours.
(2) MUST
- D. **(1)** 24 hours.
(2) are **NOT** required to

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97. Unit 3 is operating at 10% Reactor Power, with power ascension in progress following a Refueling outage.

The following discoveries were made by the Reactor Engineer:

- Control Rod 30-31 Scram time to position 06 was 3.37 seconds
- Control Rod 26-27 Scram time to position 46 was 0.47 seconds
- Control Rod 34-23 Scram time to position 06 was 7.1 seconds

Which ONE of the following identifies the MINIMUM Tech Spec required action(s) for these conditions?

[REFERENCE PROVIDED]

- A. Be in Mode 3 within 12 hours in accordance with T.S. 3.1.4.
- B. **ALL** three Control Rods are SLOW in accordance with T.S. 3.1.4; however, **NONE** of the Control Rods are Inoperable in accordance with T.S. 3.1.3.
- C. Control Rods 26-27 **AND** 30-31 are SLOW in accordance with T.S. 3.1.4; an INFORMATION ONLY LCO is required for Control Rod 34-23 in accordance with T.S. 3.1.3.
- D. Control Rods 26-27 **AND** 30-31 are SLOW in accordance with T.S. 3.1.4; an ACTIVE LCO is required for Control Rod 34-23 in accordance with T.S. 3.1.3.

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98. 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

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

Venting the Primary Containment is required to be performed using _____.

- A. 3-EOI APPENDIX-12, "Primary Containment Venting," **ONLY** if radioactive release rates can be maintained below ODCM limits.
- B. 3-EOI APPENDIX-12, "Primary Containment Venting," irrespective of radioactive release rates.
- C. 3-EOI-APPENDIX-13, "Emergency Venting Primary Containment," **ONLY** if radioactive release rates can be maintained below ODCM limits.
- D. 3-EOI-APPENDIX-13, "Emergency Venting Primary Containment," irrespective of radioactive release rates.

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99. In accordance with RCDP-3, "Administration of Radiation Work Permits," for normal and emergency situations, which ONE of the following completes the statements?

During NORMAL situations, RADPRO Supervision **__(1)__** authorize short term deviation from RWP requirements (for example, verbally requiring additional protective clothing), without revising the RWP.

If the Shift Manager authorizes IMMEDIATE entry into a radiation area during emergency situations, then RADPRO escort **__(2)__**.

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

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100. Unit 1 was operating in Mode 1 when an inadvertent Scram occurred. 1-EOI-1, "RPV Control," **AND** 1-C-5, "Level / Power Control," are currently being executed.

The following conditions exist:

- 1-EOI APPENDIX -1D, "Insert Control Rods Using Reactor Manual Control System," is being executed
- Reactor Water Level **AND** Pressure control are still being established
- Drywell Pressure is 4 psig and rising slowly
- MSIVs are closed
- Boron Injection is required **AND** Standby Liquid Control Pump 1A is operating
- DRYWELL RADIATION HIGH, (1-9-7C, Window 15), is alarming **AND** verified valid

The Unit Operator now reports that **ALL** Control Rods are inserted to position 00.

Based on the above conditions, which ONE of the following describes the correct set of actions that are now required to be executed?

- A. Stop Boron injection,
Exit 1-EOI-1, **AND**
Enter 1-AOI-100-1, "Reactor Scram."
- B. Continue Boron injection,
Exit **ONLY** the RC/Q leg of 1-EOI-1, **AND**
Enter 1-AOI-100-1, "Reactor Scram."
- C. Continue Boron injection,
Remain in **ALL** legs of 1-EOI-1, **AND**
Do **NOT** enter 1-AOI-100-1, "Reactor Scram."
- D. Stop Boron injection,
Exit **ONLY** the RC/Q leg of 1-EOI-1, **AND**
Do **NOT** enter 1-AOI-100-1, "Reactor Scram."

0801 NRC WRITTEN EXAM REFERENCES PROVIDED

- 14 2-EOI-1-Cautions, Caution #1
2-EOI Curve 8 - RPV Saturation Temp
2-EOI Table 6 – Secondary Contmt Instrument Runs
- 60 3-OI-47 Illustration 6 - Estimated Reactivity Capability Curve
- 76 U1 TS 3.1.3 (NO Bases / SRs)
- 80 2-EOI-1 Curve 4 – SRV Tail Pipe Lvl Limit
- 86 U1 TS 3.3.5.1 (NO Bases / SRs)
HPCI Initiation Logic Diagram
- 87 EPIP-1 Emergency Classification Matrix
Section 1, “REACTOR,” including HCTL curves
- 88 EPIP-1 Emergency Classification Matrix
Section 3, “SECONDARY CONTAINMENT,” including
MAXIMUM SAFE OPERATING AREA TEMPERATURE LIMITS, Table 3.1
- 89 U2 TS 3.4.3 / 3.5.1 (NO Bases / SRs)
- 90 U1/U2/U3 TS 3.6.4.3 (NO Bases / SRs)
- 97 U3 TS 3.1.3 / 3.1.4 (NO Bases / SRs)
3-OI-85 Illustration 3