

Final Submittal
(Blue Paper)

FINAL RO
WRITTEN EXAMINATION
AND REFERENCES

**H. B. ROBINSON STEAM ELECTRIC
GENERATING PLANT
05000261/2007301**

**FEBRUARY 5 - 9, 2007
JUNE 26, 2007
(WRITTEN RE-ADMINISTERED)**

U.S. Nuclear Regulatory Commission
Site-Specific RO Written Examination**Applicant Information**

Name:

Date: 6/26/07

Facility/Unit: H.B. ROBINSON UNIT 2

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. Examination papers will be collected 6 hours after the examination begins.

Applicant Certification

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

Applicant's Signature**Results**

Examination Value _____ Points

Applicant's Score _____ Points

Applicant's Grade _____ Percent

HLC-06 NRC Replacement Exam

1.

Given the following:

- The plant was operating at 100% RTP when a Reactor Trip and Main Steam Line Break on "A" SG inside the CV occurred.
- CV Pressure is presently reading:

PT-950: 10.8 psig	PT-951: 9.5 psig
PT-952: 9.7 psig	PT-953: 10.5 psig
PT-954: 10.5 psig	PT-955: 10.7 psig

Which ONE (1) of the following describes the RCP #1 seal leakoff flow path?

- A. Flow path is to the CV Sump.
- B. Flow path is to the PRT.
- C. Flow path is to the VCT.
- D. Flow path is to the RCDT.

HLC-06 NRC Replacement Exam

2.

Given the following:

- The plant is in Mode 3 at 547°F.
- APP-001-A2, SEAL WTR INJ FILTER HI DELTA P, alarms.
- IAO reports that seal injection flows are 5 GPM to each RCP and that Seal Injection Filter Delta P is 22 psid.

What actions are required to restore normal conditions for RCP operation IAW APP-001-A2 and OP-301?

- A. Place the standby seal injection filter in service and restore flow as stated in the precautions and limitations of OP-301 to 6-13 GPM.
- B. Place the standby seal injection filter in service and restore flow as stated in the precautions and limitations of OP-301 to 8-13 GPM.
- C. Bypass the seal injection filter and restore flow as stated in the precautions and limitations of OP-301 to 6-13 GPM.
- D. Bypass the seal injection filter and restore flow as stated in the precautions and limitations of OP-301 to 8-13 GPM.

HLC-06 NRC Replacement Exam

3.

Given the following:

- The Unit is at 100% RTP.
- VCT level transmitter, LT-115, fails HIGH.

Assuming no action by the crew, what impact will this failure have on the Pressurizer Level Control System?

- A. PZR level will be maintained at program level due to VCT Auto Makeup System.
- B. PZR level will decrease below the letdown isolation setpoint and valves LCV-460A and B will close.
- C. PZR level will decrease to the letdown isolation setpoint and valves LCV-460A and B will cycle to maintain that level.
- D. PZR level will be maintained at program level due to LCV-115B operation.

HLC-06 NRC Replacement Exam

4.

Given the following:

- The plant is in Mode 4.
- RHR Train "A" is in service.
- FCV-605 is set to maintain 3400 GPM.
- HCV-758 demand position set at 30%.
- The Instrument Air supply line to RHR Heat Exchanger Flow Control Valve HCV-758 becomes severed and is completely detached.
- No other air operated valves are impacted by the failure.

Which ONE (1) of the following describes the RHR system parameter changes from the initial steady state conditions?

	<u>RHR HX Outlet Temp.</u>	<u>Total RHR flow</u>
A.	Higher	Remains constant
B.	Higher	Lower
C.	Lower	Higher
D.	Lower	Remains constant

HLC-06 NRC Replacement Exam

5.

Initial Conditions:

- RCS at 380°F and 650 psig with a plant cooldown in progress IAW GP-007, Plant Cooldown from Hot Shutdown to Cold Shutdown.

Current Conditions:

- A LOCA has occurred.
- Safety Injection was manually initiated (pushbutton) by the RO.
- RCS pressure is 90 psig and lowering slowly.

Which ONE (1) of the following describes the status of operating ECCS equipment?

- A. SI Accumulator level is lowering;
RHR injection flow is zero.
- B. SI Accumulator level is stable;
RHR injection flow is increasing.
- C. SI Accumulator level is stable;
RHR injection flow is zero.
- D. SI Accumulator level is lowering;
RHR injection flow is increasing.

HLC-06 NRC Replacement Exam

6.

Given the following:

- The plant is at 100% RTP.
- "A" Charging Pump is inoperable.
- RCS leakage of 120 GPM has been identified from an increasing trend in PRT level.
- Letdown was isolated in accordance with AOP-016, Excessive Primary Plant Leakage.

What is the expected response of the following parameters or controllers due to this increase in leakage ?

PZR Level

- A. Cannot be maintained
- B. Cannot be maintained
- C. Can be maintained
- D. Can be maintained

VCT Level

- Cannot be maintained above swapover setpoint
- Can be maintained above swapover setpoint
- Cannot be maintained above swapover setpoint
- Can be maintained above swapover setpoint

HLC-06 NRC Replacement Exam

7.

Given the following:

- Unit in Mode 2.
- The crew is performing actions of AOP-014, Component Cooling Water System Malfunction, Section D, due to low CCW System flow and rising temperature.

Which ONE (1) of the following requires tripping the affected RCP?

- A. RCP **motor** bearing temperatures exceed 185°F.
- B. RCP **pump** bearing temperatures exceed 185°F.
- C. RCP **pump** bearing temperatures exceed 200°F.
- D. RCP **motor** bearing temperatures exceed 200°F.

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8.

Given the following:

- A loss of off-site power has occurred.
- The crew has entered PATH-1.
- Immediate actions of PATH-1 are complete.
- The following parameters are noted:
 - RCS pressure is 2110 psig.
 - SG pressures are all 910 psig and lowering slowly.
 - CV pressure is 0.7 psig and rising slowly.

Which ONE (1) of the following describes the CCW Pump indication in the control room?

- A. "B" and "C" CCW Pump control switch RED indicating lights are lit.
"A" CCW Pump control switch GREEN and RED indicating lights are extinguished.
- B. "A" and "C" CCW Pump control switch RED indicating lights are lit.
"B" CCW Pump control switch GREEN and RED indicating lights are extinguished.
- C. "B" and "C" CCW Pump control switch RED indicating lights are lit.
"A" CCW Pump control switch GREEN indicating light is lit.
- D. "A" and "C" CCW Pump control switch RED indicating lights are lit.
"B" CCW Pump control switch GREEN indicating light is lit.

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9.

Which ONE (1) of the following states the power supplies to the PZR PORVs PCV-455C and PCV-456 and their associated position indicating lights?

PORVs

PORV Indication

- | | |
|--------------------------------------|-----------------------------------|
| A. 120 VAC Instrument Busses 1 and 2 | 120 VAC Instrument Busses 1 and 2 |
| B. DC Distribution Panels A and B | 120 VAC Instrument Busses 1 and 2 |
| C. DC Distribution Panels A and B | DC Distribution Panels A and B |
| D. 120 VAC Instrument Busses 1 and 2 | DC Distribution Panels A and B |

10.

Given the following:

- The RCS is on RHR and solid.
- RCS pressure is 350 psig.
- Preparations to start the initial RCP are in progress.

Which ONE (1) of the following states the SG to RCS Delta T limit and basis for RCP start?

- A. 25°F; Violation of RCS LTOPP limits.
- B. 25°F; Rapid RCS depressurization.
- C. 50°F; Violation of RCS LTOPP limits.
- D. 50°F; Rapid RCS depressurization.

11.

Given the following:

- The plant is at 100% RTP.
- Instrument Bus #2 is on its alternate power supply.
- The crew is preparing to transfer Instrument Bus #2 to its normal power supply in accordance with OP-001, Reactor Control and Protection System.

Which ONE (1) of the following describes the plant response during and after the transfer of the power source?

The electrical transfer is.....

- A. make before break. The "B" Train safeguards sequencer will require manual reset to restore operability.
- B. make before break. Control Room Ventilation will remain in its present state of operation.
- C. break before make. The "B" Train safeguards sequencer will be momentarily inoperable.
- D. break before make. Control Room Ventilation will shift to the Pressurization Mode when the associated RMS rack is de-energized.

HLC-06 NRC Replacement Exam

12.

Given the following:

- The crew is currently in GP-005, Power Operation, and power has been stabilized at 8% with the turbine rolling at synchronous speed.
- Reactor power indicates the following:
 - IR N-35 - 2×10^{-5} amps.
 - IR N-36 - 2×10^{-5} amps.
 - PR N-41 - 8%.
 - PR N-42 - 7%.
 - PR N-43 - 7%.
 - PR N-44 - 7%.
- Inverter A output breaker trips open.

Which ONE (1) of the following describes the effect on the unit?

- A. A reactor trip due to the de-energization of Intermediate Range Channel N-36.
- B. Reactor does NOT trip; Power Range Rod Stop signal received on N-42.
- C. A reactor trip due to the de-energization of Intermediate Range Channel N-35.
- D. Reactor does NOT trip; Power Range Rod Stop signal received on N-41.

HLC-06 NRC Replacement Exam

13.

Which ONE (1) of the following describes the plant parameters required to initiate the Degraded Grid Protection scheme for the 480 Volt Emergency Busses?

- A. < 440 Volts for 10 seconds as sensed by 2/3 relays.
- B. < 440 Volts for 10 seconds as sensed by 1/2 relays.
- C. < 430 Volts for 10 seconds as sensed by 2/3 relays.
- D. < 430 Volts for 10 seconds as sensed by 1/2 relays.

HLC-06 NRC Replacement Exam

14.

Given the following:

- The plant is operating at 100% RTP.
- Due to a loss of Containment HVAC, Containment temperature has risen from 97°F to 119°F.

If the temperature continues to rise in Containment, which ONE (1) of the following describes the effect on Pressurizer level indication and controls?

LT-459, PZR Level channel, will indicate.....

- A. lower than actual level and will cause charging pump speed to initially increase to restore indicated level to program.
- B. higher than actual level and will cause charging pump speed to initially decrease to restore indicated level to program.
- C. lower than actual level, which results in a continuous level deviation signal that drives the charging pump to maximum speed.
- D. higher than actual level, which results in a continuous level deviation signal that drives the charging pump to minimum speed.

15.

Given the following:

- The plant is at 100% RTP.
- CV Spray Pump "A" is being run for surveillance testing.
- The following alarm is received:

- APP-002-E1, CV SRY PMP COOL WTR LO FLOW

Which ONE (1) of the following describes the condition present, and the action required?

The alarm indicates that CCW flow to CV Spray Pumps is less than.....

- A. 7 GPM. Stop CV Spray Pump "A".
- B. 7 GPM. Identify the source of the problem by isolating CCW to each CV Spray Pump one at a time.
- C. 30 GPM. Stop CV Spray Pump "A".
- D. 30 GPM. Identify the source of the problem by isolating CCW to each CV Spray Pump one at a time.

16.

Given the following:

- The plant is at 100% RTP with all systems in normal alignments.
- The RO has recently performed a small dilution for Tavg control.
- The following indications are noted in the Control Room:
 - Power Range NIs are increasing.
 - Tavg is decreasing.
 - Steam flow and feed flow are slightly elevated.
 - Power Limit Warning alarm on ERFIS has been received.
 - Reactor power is 100.3% and rising slowly.

Which ONE (1) of the following describes the event in progress and the action required?

- A. Main steam line leak; reduce power by reducing turbine load as necessary.
- B. Inadvertent RCS dilution; reduce power by inserting control rods.
- C. Main steam line leak; trip the reactor and enter PATH-1, Reactor Trip Or Safety Injection.
- D. Inadvertent RCS dilution; trip the reactor and enter PATH-1, Reactor Trip Or Safety Injection.

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17.

Given the following:

- The plant is at 68% RTP.
- "A" Main Feedwater Pump trips.
- Condensate and Heater Drain Pumps are in a normal lineup.
- AOP-010, Main Feedwater / Condensate Malfunction, has been implemented.

Which ONE (1) of the following actions is required in accordance with AOP-010?

- A. Trip the reactor and enter PATH-1.
- B. Reduce turbine load at 1% to 5% per minute using Attachment 1 until reactor power is less than 60%.
- C. Reduce turbine load using load limiter until reactor power is less than 50%.
- D. Verify Feedwater Regulating valves respond as required and SG levels are maintained on program. Maintain power at 68%.

HLC-06 NRC Replacement Exam

18.

Given the following:

- The plant is at 30% RTP and stabilized for secondary chemistry requirements.
- OST-401-1 is in progress with "A" EDG loaded at 2500 KW.
- The running Main Feedwater Pump trips.
- SG NR levels are currently 36% in all SGs.

Which ONE (1) of the following describes the operation of the MDAFW Pumps?

- A. No MDAFW Pumps are running.
- B. "B" MDAFW Pump is running.
- C. "A" and "B" MDAFW Pumps are running.
- D. "A" MDAFW Pump is running.

HLC-06 NRC Replacement Exam

19.

Given the following:

- The plant is in Hot Standby (MODE 3).
- "A" MDAFW pump is running.
- A break occurs between valve FCV-1424, MDAFW PUMP "A" FLOW CONTROL VALVE, and AFW-V2-16B, AFW HEADER DISCH TO SG "B".
- The control board operator closes valve FCV-1424.
- A clearance is hung to isolate the break from all water sources.

Which ONE (1) of the following describes an outcome of this event?

AFW flow from the Steam Driven AFW pump will be available to (1) and MDAFW Pump "A" will be available to (2).

- A. (1) all S/Gs;
(2) "A" and "C" S/Gs ONLY.
- B. (1) "A" and "C" S/Gs ONLY;
(2) "A" and "C" S/Gs ONLY.
- C. (1) all S/Gs;
(2) NO S/Gs.
- D. (1) "A" and "C" S/Gs ONLY;
(2) NO S/Gs.

20.

Given the following:

- The plant is at 50% RTP.
- SDAFW Pump is OOS and will be returned to service in 48 hours.
- A loss of 480V Bus E-1 and a controller failure on "A" Feedwater Regulating valve causes a reactor trip.
- 480V Bus E-1 has a fault and cannot be energized.
- The crew is performing actions of PATH-1.
- SPDS has been reset.
- "B" MDAFW Pump has started but FCV-1425 has dual indication in the Control Room and local inspection reveals that the valve is physically bound at 20% open.
- "B" MDAFW Pump flow is 200 GPM.
- All SG NR levels are at 5% and lowering.

Which ONE (1) of the following describes the status of the Secondary Heat Sink CSF Status Tree and the actions that will establish Secondary Heat Sink?

- A. A Red Path exists on Secondary Heat Sink; AFW flow is NOT adequate to restore Secondary Heat Sink.
- B. A Red Path exists on Secondary Heat Sink; AFW flow is adequate to restore Secondary Heat Sink.
- C. A Red Path does NOT exist on Secondary Heat Sink; AFW flow is adequate to maintain Secondary Heat Sink.
- D. A Red Path does NOT exist on Secondary Heat Sink; AFW flow is NOT adequate to maintain Secondary Heat Sink.

HLC-06 NRC Replacement Exam

21.

Which ONE (1) of the following describes the 4160 Volt power supplies to the "A and "B" RCPs?

	<u>RCP "A"</u>	<u>RCP "B"</u>
A.	Bus 1	Bus 2
B.	Bus 2	Bus 4
C.	Bus 1	Bus 4
D.	Bus 2	Bus 1

22.

Given the following conditions:

- The unit is at 100% RTP.
- Battery Charger 'A' is supplying Battery 'A' and its associated DC Bus loads.
- Annunciator APP-036-D1 'BATT CHARGER A/A1 TROUBLE' has just alarmed.
- The AO reports the cause of the trouble is a ground on DC Bus 'A'.
- Based upon visual inspection, the AO believes the ground may be on Battery 'A'.
- Engineering recommends that Battery 'A' be disconnected from DC Bus 'A'.

Which ONE (1) of the following describes the appropriate action while attempting to isolate the ground IAW APP-036-D1?

- A. Supply the 'A' DC Bus with the 'A' Battery Charger because it is the preferred supply IAW OP-601, DC Supply System.
- B. Supply the 'A' DC Bus with the 'A-1' Battery Charger because it is the preferred supply IAW OP-601, DC Supply System.
- C. Supply the 'A' DC Bus with the 'A' Battery Charger because it has the capability to stand alone to supply DC Bus 'A' while disconnected from Battery 'A'.
- D. Supply the 'A' DC Bus with the 'A-1' Battery Charger because it has the capability to stand alone to supply DC Bus 'A' while disconnected from Battery 'A'.

HLC-06 NRC Replacement Exam

23.

Given the following:

- A reactor trip has occurred.
- The crew is performing IMMEDIATE ACTIONS of PATH-1.
- SI is actuated.
- 52/18B, 480V Bus E-1 Normal Supply Breaker, shows GREEN breaker indication.
- 60 seconds following SI actuation, the RO reports that Bus E-1, Instrument Bus 1 and MCC-5 are de-energized and the EDG "A" white START light is NOT lit.
- There is NO indication of a bus fault.

Which ONE (1) of the following describes the action required IAW PATH-1?

- A. Energize MCC-5 from the DS Bus IAW Foldout "A" to restore power for starting the EDG. All loads required for SI sequence will be automatically started in sequence when Bus E-1 is energized.
- B. Place Instrument Bus 1 on its alternate supply IAW Foldout "A" to restore power for starting the EDG. All loads required for SI sequence must be manually started.
- C. Start EDG "A" and close its output breaker. Instrument Bus 1 and MCC-5 will re-energize when Bus E-1 energizes. All loads required for SI sequence will be automatically started in sequence.
- D. Start EDG "A" and close its output breaker. Transfer Instrument Bus 1 to MCC-8 and MCC-5 to the DS Bus IAW Foldout 'A'. All loads required for SI sequence must be manually started.

24.

Given the following:

- The plant is at 100% RTP.
- An approved radioactive liquid waste release is in progress.

Which ONE (1) of the following correctly describes plant response if detector high voltage is lost to RMS Monitor R-18, Liquid Effluent Waste Disposal?

- A. APP-036-E7 "RAD MONITOR TROUBLE" actuates and the release automatically terminates.
- B. APP-036-E7 "RAD MONITOR TROUBLE" actuates and the release continues.
- C. Local Waste Disposal Panel alarm actuates and the release automatically terminates.
- D. Local Waste Disposal Panel alarm actuates and the release continues.

HLC-06 NRC Replacement Exam

25.

Given the following:

- A Reactor Trip has occurred.
- 30 seconds following the trip, Service Water pressure is 31 psig and slowly decreasing.
- 40 seconds following the decrease of Service Water pressure, Safety Injection actuates.

Which ONE (1) of the following describes the status of the Service Water System?

Service Water to the Turbine Building will isolate...

- A. 60 seconds after the Reactor Trip.
- B. 60 seconds after Service Water pressure decreases below 31 psig.
- C. immediately upon Service Water pressure decreasing below 31 psig.
- D. immediately upon the Safety Injection actuation.

HLC-06 NRC Replacement Exam

26.

Upon a loss of Instrument Air, what is the expected response of the MSIVs ?

- A. The MSIVs will remain open due to the Nitrogen backup source that is automatically provided to the MSIVs upon a loss of Instrument Air.
- B. The MSIVs will remain open due to the check valves in the Instrument Air lines and valve accumulators that ensure an extended air source to each MSIV.
- C. The MSIVs will close once Instrument Air system header pressure decays to 80 psig.
- D. The MSIVs will close once Instrument Air system header pressure decays to 60 psig.

27.

Given the following:

- Mode 1 at 100% RTP.
- APP-002-B7, CV NAR RANGE HI/LO PRESS illuminates.
- CV Pressure indicates - 0.4 psig and lowering slowly.

Which ONE (1) of the following describes the action necessary to clear the alarm IAW OP-921, Containment Air Handling?

- A. Open Containment Pressure Relief Valves V12-10 and V12-11 until pressure is restored.
- B. Stop HVH-1 and HVH-3 to increase CV pressure gradually.
- C. Open Containment Vacuum Relief Valves V12-12 and V12-13 until pressure is restored.
- D. Start CV Purge to equalize the CV pressure with atmospheric pressure.

28.

Given the following conditions:

- Mode 1 at 100% RTP.
- PLP-118, Hot Weather Operations, is in effect.
- CV temperature is 118°F and has been rising over the past several days.
- CV Purge has been initiated and you have been instructed to open the normal suction dampers on the HVH units to assist in controlling CV temperature rise.

What controls are available to reposition the normal suction dampers to the HVH units IAW OP-921, Containment Air Handling?

- A. HVH Unit normal suction dampers are controlled by placing the HVH unit Local / Remote control switch to LOCAL.
- B. HVH Unit normal suction dampers are controlled by key switches mounted on the Auxiliary Relay Racks.
- C. Removing and re-installing the HVH Unit breaker control power fuses will open the normal suction dampers.
- D. Starting the HVH Unit will cause the normal suction dampers to open.

HLC-06 NRC Replacement Exam

29.

- Unit has been reduced to 75% RTP due to N-41 inoperable from a power supply failure.
- N-41 has been removed from service IAW OWP-011, NI-1.
- All remaining controls are in Automatic.
- The operator inadvertently adds 30 gallons of boric acid to the RCS instead of 3.0 gallons as he intended.

What effect will this have on the Rod Control system?

- A. Rods will step out to maintain Tave within 1°F of Tref.
- B. Rods will NOT step out due to procedural actions taken for N-41 being inoperable.
- C. Rods will step out initially due to the rate circuit seeing a step change in power.
- D. Rods will NOT step out due to defeat of the AUTO rod withdrawal circuitry.

HLC-06 NRC Replacement Exam

30.

During a power increase in accordance with GP-005, Power Range NIs and Calorimetric power indicate 28% power.

Which ONE (1) of the following is the expected RCS Core Delta T for the indicated power level ?

- A. 8.1°F
- B. 8.7°F
- C. 16.1°F
- D. 21°F

31.

Given the following:

- Mode 1 at 100% RTP.
- PZR level transmitter LT-459 fails LOW and has been removed from service IAW OWP-030, PLT-1.
- PZR level channel selector switch LM-459 is selected to "461 REPL 459".

Which ONE (1) of the following describes the function provided by PZR level transmitter LT-461 with the level channel selector switch LM-459 selected to "461 REPL 459"?

- A. Provides control input for PZR low level letdown isolation to allow letdown restoration and prevent isolation at 14.4% PZR level.
- B. Provides control function to de-energize the Backup Group heaters upon 5% level deviation.
- C. Provides control input for PZR low level letdown isolation to allow letdown restoration to prevent exceeding 63.3% PZR level.
- D. Provides control function to energize the Control Group heaters upon 5% level deviation.

32.

Which ONE (1) of the following describes the effect of depressing the Rod Control START-UP pushbutton on the RTGB?

Resets...

- A. Group Step Counters and P-A Converter ONLY.
- B. Group Step Counters and Bank Overlap Unit ONLY.
- C. Bank Overlap Unit and P-A Converter ONLY.
- D. Group Step Counters, Bank Overlap Unit, and P-A Converter.

HLC-06 NRC Replacement Exam

33.

Which ONE (1) of the following describes an alternate location for reading Core Exit Thermocouple temperatures IAW GP-008?

- A. Charging Pump Room Dedicated Shutdown Panel meter indication.
- B. Charging Pump Room Dedicated Shutdown Panel via M&TE connections in panel.
- C. Rod Control Room meter indication.
- D. Rod Control Room via M&TE connections in panel.

HLC-06 NRC Replacement Exam

34.

Which ONE (1) of the following lists the correct power supplies for HVE-3 and HVE-4, CV Iodine Removal Unit fans?

- A. MCC-2 and MCC-3.
- B. MCC-10 and MCC-9.
- C. MCC-5 and MCC-6.
- D. 480V Bus 2B and 3.

35.

Given the following:

- Mode 1 at 100% RTP.
- LT-496, Steam Generator "C" Narrow Range Level transmitter, fails LOW.

Which ONE (1) of the following provides the plant response to this failure if no operator actions are taken?

- A. "C" FRV will OPEN and a turbine trip will occur at 60% S/G level.
- B. "C" FRV will OPEN and a turbine trip will occur at 75% S/G level.
- C. "C" FRV will CLOSE and a reactor trip will occur at 30% S/G level.
- D. "C" FRV will CLOSE and a reactor trip will occur at 16% S/G level.

HLC-06 NRC Replacement Exam

36.

Which ONE (1) of the following describes the MINIMUM condition(s) required to initiate CV Ventilation Isolation?

Note: - R-2, Containment radiation monitor.
- R-11, Containment Particulate radiation monitor.
- R-12, Containment Noble Gas radiation monitor.
- R-14C, Main Vent Stack (Low Range Noble Gas) radiation monitor.

- A. R-2 OR R-14C in ALARM status.
- B. R-2 AND R-14C in ALARM status.
- C. R-11 OR R-12 in ALARM status.
- D. R-11 AND R-12 in ALARM status.

37.

Given the following:

- The plant is at 62% power during a load increase.
- The following alarm is received:
 - APP-007-A2, COND PMP B MOTOR OVLD/TRIP
- The BOP operator determines that "B" Condensate Pump has tripped.
- "A" Condensate Pump is running.
- "A" and "B" Main Feed Pumps are running.
- Feed Pump suction pressure is approximately 350 psig and lowering slowly.
- The crew enters AOP-010, Main Feedwater/Condensate Malfunction.

Which ONE (1) of the following describes the actions required in accordance with AOP-010?

- A. Trip the reactor and enter PATH-1.
- B. Maintain power stable and check that SG level is at or trending to program.
- C. Trip ONE (1) Main Feed Pump and then initiate a plant load reduction to less than 50% power.
- D. Trip ONE (1) Main Feed Pump and then initiate a plant load reduction to less than 60% power.

38.

Given the following:

- The plant is operating at 100% RTP.
- The following radiation monitors go into alarm:
 - R-15, Condenser Air Ejector Gas Monitor
 - R-19A, SG Sample Radiation Monitor
 - R-37, Condensate Polisher Waste Effluent Monitor
- All other Radiation Monitors are normal.

Which ONE (1) of the following describes the plant response to these indications?

- A. FCV-1933A and B, SG A Blowdown Sample Isolation Valves, CLOSE.
RCV-10549, Condensate Polisher Discharge to storm drains, CLOSES.
- B. Condensate Polishing Building sump pumps TRIP.
V1-31, Blowdown Isolation Valve to catch basin, CLOSES.
- C. V1-31, Blowdown Isolation Valve to catch basin, CLOSES.
RCV-10549, Condensate Polisher Discharge to storm drains, CLOSES.
- D. FCV-1933A and B, SG A Blowdown Sample Isolation Valves, CLOSE.
Condensate Polishing Building sump pumps TRIP.

39.

Given the following:

- SI actuated due to a LOCA.
- "A" and "C" SI Pumps are TRIPPED.
- RCS pressure is 1250 psig.
- CV pressure is 13 psig.
- All other equipment is operating per design.
- The crew is performing actions of PATH-1.

Which ONE (1) of the following describes the required action and reason for the action with respect to the RCPs?

- A. Leave all RCPs running to prevent phase separation of RCS liquid.
- B. Stop all RCPs to minimize fluid mass loss out of the break.
- C. Leave all RCPs running to provide forced cooling flow of the RCS.
- D. Stop all RCPs to prevent mechanical damage to the pump and motor.

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40.

Given the following:

- A loss of off-site power occurred 15 minutes ago.
- The crew is performing EPP-4, Reactor Trip Response.
- The crew is verifying Natural Circulation in accordance with Supplement E.
 - RCS pressure is 2100 psig and stable.
 - SG pressures are all at 1000 psig and stable.
 - RCS Thot is 586°F and trending down.
 - RCS Tcold is 552°F and trending down.
 - Core Exit Thermocouple temperature is 591°F and trending down.

Which ONE (1) of the following describes the status of Natural Circulation verification, and the trend of RCS temperature over the next 60 minutes?

The Natural Circulation criteria in Supplement E is ...

- A. met; RCS Core Delta T will lower as decay heat load is reduced.
- B. met; RCS Core Delta T will continue to rise, providing additional driving head for Natural Circulation flow.
- C. NOT met; RCS Core Delta T will lower as decay heat load is reduced.
- D. NOT met; RCS Core Delta T will continue to rise as Natural Circulation is established.

41.

Given the following:

- Unit 2 is at 100% RTP.
- All control systems are in normal alignments.
- Charging flow has been rising and is currently at 50 GPM.
- Letdown temperature downstream of the Regenerative Heat Exchanger has lowered slightly from its steady state value.
- VCT level is lowering.
- RCS temperature is stable.

Which ONE (1) of the following describes the location of the RCS leak and the action required by AOP-016, Excessive Primary Plant Leakage?

- A. RCS leak is from the charging line downstream of the Regenerative Heat Exchanger. Isolation of charging is NOT required to isolate the leak.
- B. RCS leak is from the charging line downstream of the Regenerative Heat Exchanger. Isolation of charging is required to isolate the leak.
- C. RCS leak is from the charging line upstream of the Regenerative Heat Exchanger. Isolation of charging is required to isolate the leak.
- D. RCS leak is from the charging line upstream of the Regenerative Heat Exchanger. Isolation of charging is NOT required to isolate the leak.

42.

Given the following:

- The plant is in Mode 5.
- "A" RHR Pump is in service.
- Reduced Inventory operations are in progress.
- RCS level has been slowly lowering and indicates -74 inches.
- RHR flow and "A" RHR Pump discharge pressure begins oscillating.
- The crew enters AOP-020, Loss of Residual Heat Removal.

Which ONE (1) of the following describes the FIRST action required in accordance with AOP-020?

- A. Stop "A" RHR Pump.
- B. Isolate Letdown.
- C. Start all available Charging pumps.
- D. Allow "A" RHR Pump to continue to run, but decrease RHR flow to stabilize oscillations.

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43.

Which ONE (1) of the following describes the indication that will exist if there is a tube leak in the Non-Regenerative Heat Exchanger?

- A. Letdown flow will increase.
- B. TCV-143, VCT/Demineralizer Diversion valve, will automatically divert to the VCT.
- C. PCV-145, LETDOWN, will open to maintain letdown pressure.
- D. Letdown flow will decrease.

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44.

Which ONE (1) of the following Pressurizer Pressure Control System malfunctions will cause Pressurizer Saturation Temperature to RISE?

- A. PZR Pressure transmitter, PT-444, fails HIGH.
- B. PZR Master Pressure Controller (PC-444J) setpoint fails LOW.
- C. PZR Master Pressure Controller (PC-444J) output fails LOW.
- D. PZR Pressure transmitter, PT-445, fails HIGH.

45.

Given the following:

- An ATWS has occurred.
- Actions of FRP-S.1 are in progress.
- The RO is inserting control rods.

Which ONE (1) of the following describes a subset of local actions required by procedure FRP-S.1?

- A. Open Reactor Trip Breakers in the South Cable Vault.
Open Rod Drive MG Set supply breakers in the South Cable Vault.
- B. Open Reactor Trip Breakers in the 4160V Switchgear Room.
Open Rod Drive MG Set supply breakers in the 4160V Switchgear Room.
- C. Open Reactor Trip Breakers in the South Cable Vault.
Open Rod Drive MG Set supply breakers in the 4160V Switchgear Room.
- D. Open Reactor Trip Breakers in the 4160V Switchgear Room.
Open Rod Drive MG Set supply breakers in the South Cable Vault.

46.

Given the following:

- The crew is performing actions of FRP-H.1, Response to Loss of Secondary Heat Sink.
- RCS bleed and feed is in progress.
- Auxiliary Feedwater capability is restored.
- All SGs indicate approximately 8% Wide Range level and approximately 50 psig.

Which ONE (1) of the following describes the strategy used to re-establish feed under these conditions?

Feed at least ONE (1) SG to....

- A. ensure RCS cooldown rates are established within Technical Specification limits.
- B. establish a heat sink to allow subsequent termination of RCS bleed and feed when subcooling requirements are met.
- C. minimize thermal shock to SG components.
- D. allow termination of RCS bleed and feed due to RWST Inventory concerns.

47.

Given the following:

- A Station Blackout has occurred.
- The crew is performing actions of EPP-1, Loss of All AC Power.
- The CRSS has directed performance of OP-603 Section 8.4.2, "Restoration of Normal Power After Loss of All A.C. Power and Turbine Trip with DSDG Operating."
- STARTUP TRANSF ENERGIZED White light on RTGB is illuminated.

Which ONE (1) of the following describes the relay(s) that must be RESET by the crew prior to re-energizing the plant electrical busses, in accordance with OP-603?

- A. 115 KV Span Bus Lockout Relays.
- B. Main Generator Primary and Backup Lockout Relays.
- C. Station Service Transformer to 480V Bus E-2 Overcurrent Relay.
- D. Startup Transformer to 4160V Bus 2 Breaker Overcurrent Relay.

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48.

Initial Plant Conditions:

- The plant was at 100% RTP.
- "A" IAC was running in MANUAL, with "B" IAC in Standby.
- "D" IAC and the Primary Air Compressor are UNAVAILABLE.

Current Plant Conditions:

- A loss of off-site power has occurred.
- All equipment has responded as designed.
- NO actions have been taken by the operating crew.

Which ONE (1) of the following is the setpoint for operation of the in-service air compressor, and the indication currently observed on PI-1702, Instrument Air Header Pressure?

	<u>Loading/Unloading Setpoints</u>	<u>Current Pressure</u>
A.	98 -102 psig	Decreasing
B.	98 -102 psig	Stable
C.	90 -105 psig	Decreasing
D.	90 -105 psig	Stable

49.

Given the following:

- The plant is at 75% RTP.
- A loss of Instrument Bus #1 has occurred.
- The crew is responding in accordance with AOP-024, Loss of Instrument Bus.
- A fault on the transfer switch prevents IB #1 from being transferred to its alternate power source.

Which ONE (1) of the following describes the effect on Pressurizer Pressure Control, and the action required?

- A. Pressurizer Backup Group Heater control is lost. Backup Heaters cannot be operated from remote or local control stations.
- B. Pressurizer Backup Group Heater control is lost. Backup Heaters can be operated from the local control stations.
- C. The Pressurizer Pressure Controller, PC-444J, fails HIGH. Close RC-536 block valve to isolate the open PZR PORV.
- D. The Pressurizer Pressure Controller, PC-444J, fails HIGH. PZR Pressure Control must be established by manual operation of PZR heaters and spray valves.

50.

Given the following:

- The Unit is in Mode 1 in a normal electrical lineup.
- The following alarms are received:
 - APP-036-D2, BATT CHARGER B/B-1 TROUBLE
 - APP-036-D3, BATT A/B LO VOLT
- DC Bus "B" voltage is 120V DC and decreasing slowly.

Which ONE (1) of the following describes the status of the DC Bus and Battery Charger "B" ?

Battery Charger "B" has.....

- A. tripped. Battery Charger "B-1" will be placed in service with the float / equalize switch set in the float position.
- B. tripped. Battery Charger "B-1" will be placed in service with the float / equalize switch set in the equalize position.
- C. **not** tripped. Operator will adjust Battery Charger "B" potentiometer equalize setting to raise voltage.
- D. **not** tripped. Operator will adjust Battery Charger "B" potentiometer float setting to raise voltage.

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51.

Given the following:

- The plant was at 100% RTP when a Loss of Service Water occurred.
- A reactor trip was initiated due to loss of all Service Water Pumps.
- While performing PATH-1, the following conditions are observed:
 - RCS pressure is 1700 psig and lowering.
 - Pressurizer level is 6% and lowering.
 - Containment pressure is 0.4 psig and stable.
 - SG pressures are 700 psig and lowering.
 - SWBP suction pressure is 12 psig.
 - The crew takes all required actions.

Which ONE (1) of the following describes the status of the Service Water Booster Pumps (SWBPs) based on these conditions?

- A. SWBPs start but then trip because of low suction pressure.
- B. SWBPs start and remain running.
- C. SWBPs receive a start signal but do not start because of low suction pressure.
- D. SWBPs do not start because they do not receive a start signal.

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52.

The unit is in Mode 1 at 100% RTP.

During a complete loss of Instrument Air pressure, which ONE(1) of the following will be the FIRST to reach its RPS trip setpoint?

- A. PZR Level
- B. SG Level
- C. PZR Pressure
- D. Turbine Trip

53.

Given the following:

- A LOCA outside containment has occurred.
- The crew is performing the actions in EPP-20, LOCA Outside Containment.
- Auxiliary Building radiation levels are lowering.
- Safety Injection flow is 80 GPM and decreasing.
- PZR level is off scale LOW.
- RCS pressure is 1450 psig and rising.

Which ONE (1) of the following criteria dictates the leak status IAW EPP-20?

The leak is.....

- A. isolated because RCS pressure is increasing.
- B. isolated because Auxiliary Building radiation levels are lowering.
- C. **NOT** isolated because SI pump flow still exists.
- D. **NOT** isolated because PZR level is not on scale.

54.

Given the following:

- A loss of BOTH Main Feedwater Pumps has resulted in a reactor trip.
- A blockage in the AFW supply line from the CST has lead to all 3 AFW Pumps being disabled.
- The crew is performing actions of FRP-H.1, Loss of Secondary Heat Sink.
- PCV-1716, INSTRUMENT AIR ISO TO CV, has failed closed and will not open.
- Wide Range SG levels are at 25% and decreasing.

Which ONE (1) of the following describes the operation of the PZR PORVs, if needed, during this event?

- A. NOT required. PZR Spray valves will be used to depressurize the RCS so that Hi Steam Line DP and PZR Pressure SI signals can be blocked prior to performing action to establish Condensate flow.
- B. Required. PZR PORVs will be used to depressurize the RCS so that Hi Steam Line DP and PZR Pressure SI signals can be blocked prior to performing action to establish Condensate flow.
- C. NOT required. Bleed and feed cooling will not be required as long as 8% WR S/G level is maintained.
- D. Required. ONE (1) PZR PORV will be opened to establish bleed and feed cooling.

55.

Given the following:

- A LOCA has occurred.
- Due to subsequent RHR system failures, the crew is performing EPP-15, Loss of Emergency Coolant Recirculation.
- APP-002-A3, RWST HI/LO LVL, is extinguished.
- The RO is evaluating Containment Cooling requirements.
- Containment pressure peaked at 27 psig and is presently 8 psig and lowering.

Which ONE (1) of the following describes the action taken with respect to the CV Spray Pumps? **(REFERENCE PROVIDED)**

- A. BOTH pumps may be stopped to conserve RWST inventory, since Containment Fan Coolers are adequate for the current conditions.
- B. BOTH CV Spray pumps must remain in operation to provide Containment cooling function.
- C. ONE (1) CV Spray pump is required to be stopped, with ONE (1) remaining in service until CV pressure is below 4 psig.
- D. ONE (1) CV Spray pump is required to be stopped, with ONE (1) remaining in service to ensure minimum safeguards until a recirculation flowpath can be restored.

56.

Given the following:

- The crew is responding to a Steam Line Break inside the CV.
- Due to equipment failures, EPP-16, Uncontrolled Depressurization of All Steam Generators, is in progress.
- RCS cooldown rate was 118°F in the last 60 minutes.

Which ONE (1) of the following describes the MINIMUM AFW flow for this condition, and the basis in accordance with EPP-16?

- A. 80 GPM to ensure adequate secondary heat sink to maintain natural circulation in the RCS.
- B. 300 GPM to ensure adequate secondary heat sink to maintain natural circulation in the RCS.
- C. 80 GPM to ensure components remain wet so that thermal stresses are minimized upon a feed flow increase.
- D. 300 GPM to ensure components remain wet so that thermal stresses are minimized upon a feed flow increase.

57.

Given the following:

- The plant is at 95% RTP.
- While withdrawing Control Bank D rods to maintain Tave, Rod H12 continues to withdraw.
- When the rod motion is stopped, the rod is 18 steps above the remainder of Control Bank D.
- APP-005-F3, PR UPPER CH HI FLUX DEV / AUTO DEFEAT is ILLUMINATED.
- QPTR has been calculated at 1.028.

Which ONE (1) of the following states the power limitation or reduction for this condition?

- A. Power is limited to 97.6% RTP.
- B. Power must be reduced to 92.6% RTP.
- C. Power must be reduced to 91.6% RTP.
- D. Power must be reduced to 86.6% RTP.

58.

Which ONE (1) of the following describes the function of the Intermediate Range **Level Trip Bypass Switch** on the Intermediate Range NI cabinets?

- A. Bypasses the Intermediate Range High Flux Reactor Trip ONLY. Placed in BYPASS for testing ONLY.
- B. Bypasses the Intermediate Range High Flux Reactor Trip ONLY. Placed in BYPASS for testing OR for channel failures.
- C. Bypasses the Intermediate Range Rod Stop and Intermediate Range High Flux Reactor Trip. Placed in BYPASS for testing ONLY.
- D. Bypasses the Intermediate Range Rod Stop and Intermediate Range High Flux Reactor Trip. Placed in BYPASS for testing OR for channel failures.

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59.

Which ONE (1) of the following Radiation Monitoring System monitors could cause a potential unanalyzed radioactive release directly to Lake Robinson if its alarm setpoint is set in a non-conservative direction?

- A. R-17, Component Cooling Water.
R-18, Waste Disposal - Liquid.
- B. R-18, Waste Disposal - Liquid.
R-19C, Steam Generator Blowdown.
- C. R-19C, Steam Generator Blowdown.
R-37, Condensate Polisher Liquid Waste.
- D. R-17, Component Cooling Water.
R-37, Condensate Polisher Liquid Waste.

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60.

Given the following:

- The plant is at 100% RTP.
- The following alarm is received on the FAC:
 - APP-044-A72, ZN-3 FIRE ALARM TRN-B Safety Injection Pump Room
- The CRT alarm text display is RED.

Which ONE (1) of the following conditions exists, and the action required?

- A. An open or faulty circuit exists at the transceiver. Notify the Fire Incident Commander and initiate action to correct the fault.
- B. An open or faulty circuit exists at the transceiver. Dispatch a Fire Brigade AO to the area to determine the cause.
- C. A valid fire alarm exists. Dispatch a Fire Brigade AO to the area to determine the cause.
- D. A valid fire alarm exists. Activate the Fire Brigade to initiate fire fighting activities.

61.

Given the following:

- The reactor has tripped.
- Safety Injection is actuated.
- The crew has transitioned to EPP-7, SI Termination.
- Safety Injection is reset.
- SI and RHR Pumps have just been stopped.
- While aligning the Charging System, PZR level cannot be maintained above 10% with normal charging.

Which ONE (1) of the following is required in accordance with EPP-7?

- A. Open the BIT outlet valves and verify letdown valves isolated.
- B. Manually initiate Safety Injection and return to PATH-1, Entry Point A.
- C. Start BOTH SI pumps and return to PATH-1, Entry Point C.
- D. Start BOTH SI pumps and Go to EPP-8, Post LOCA Cooldown and Depressurization.

62.

Given the following:

- A Steam Generator Tube Rupture has occurred.
- During the performance of PATH-2, additional failures have occurred.
- The crew is performing EPP-17, SGTR with Loss of Reactor Coolant: Subcooled Recovery.
- The CRSS decides to transition to EPP-18, SGTR with Loss of Reactor Coolant: Saturated Recovery, to address the decreasing RWST inventory.

Which ONE (1) of the following is a requirement for entry into EPP-18?

- A. EPP-18 is entered from EPP-17 anytime that saturated conditions are noted in the RCS.
- B. EPP-18 is entered from EPP-17 ONLY after the FIRST 26 steps have been completed in EPP-17.
- C. EPP-18 can be directly entered from the actions specified in the Inventory YELLOW Path FRPs.
- D. EPP-18 can be directly entered from the actions specified in the Core Cooling YELLOW Path FRPs.

63.

Given the following:

- The reactor has tripped due to a loss of off-site power.
- A RCS cooldown to Mode 5 must be performed.
- A Natural Circulation cooldown is in progress in accordance with EPP-5, NATURAL CIRCULATION COOLDOWN.
- BOTH CRDM Cooling Fans, HVH-5A and 5B, are running.
- TSC has determined that RCS cooldown must be performed at 50°F/hr.

Which ONE (1) of the following states the correct mitigation strategy and the Technical Specification RCS Cooldown rate limit?

- A. Transition to EPP-6; Cooldown limit is 100°F/hr.
- B. Transition to EPP-6; Cooldown limit is 60°F/hr.
- C. Remain in EPP-5; Cooldown limit is 100°F/hr.
- D. Remain in EPP-5; Cooldown limit is 60°F/hr.

64.

Given the following:

A LOCA has occurred. The crew is performing the actions of PATH-1.

The following conditions exist:

- RCS Pressure is 200 psig.
- RCS temperature is 410°F.
- SG NR levels are Off-Scale Low.
- SG Pressures are 650 psig and trending down.
- AFW flow is 450 GPM.
- Pressurizer level is Off-Scale Low.
- CV Pressure is 43 psig.
- SPDS has been reset.

Which ONE (1) of the following procedures will the crew perform next for this event?

- A. Continue in PATH-1 for the LOCA.
- B. FRP-J.1, Response to High Containment Pressure.
- C. FRP-H.1, Response to Loss of Secondary Heat Sink.
- D. EPP-16, Uncontrolled Depressurization of All Steam Generators.

65.

Given the following:

- A LOCA has occurred.
- The crew has performed actions of PATH-1.
- The CRSS has transitioned to FRP-J.2, Response to Containment Flooding.
- APP-002-A8, HVH-1 WTR OUTLET LO FLOW, is LIT.

Which ONE (1) of the following actions is required?

- A. Refer to AOP-022, Loss of Service Water, to determine the cause of the alarm.
- B. Stop HVH-1 and isolate Service Water flow to the cooler as directed by FRP-J.2.
- C. Exit FRP-J.2 and isolate Service Water flow to HVH-1 as directed by the APP.
- D. Start the Standby Service Water Booster Pump as directed by the APP and verify the alarm condition clears.

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66.

Given the following:

- A plant cooldown is in progress.
- RCS temperature is 357°F.
- RCS Pressure is 370 psig.
- Both PZR PORV OVERPRESSURE PROTECTION Permissive switches have been placed in LOW PRESSURE position.

Following the switch alignment, the following alarm is received in the control room:

- APP-003-A3, PCV-456 LP PROT ACT/TROUB

Which ONE (1) of the following is the cause of this alarm?

- A. RC-535, PORV BLOCK, is open.
- B. RCS temperature is too high to place LTOPP in service.
- C. RC-535, PORV Block Valve, breaker tripped open.
- D. RCS Pressure is too high to place LTOPP in service.

67.

Which ONE (1) of the following choices contains ONLY personnel allowed to manipulate RTGB controls under the direct supervision of the Reactor Operator at the Controls?

- A. I & C Technicians during the performance of approved procedures.
Auxiliary Operators that have been selected to enter Initial License class.
- B. I & C Technicians during the performance of approved procedures.
Licensed operators standing watch to reactivate their license.
- C. Licensed operators standing watch to reactivate their license.
Instructors enrolled in an approved SRO Certification program.
- D. Instructors enrolled in an approved SRO Certification program.
Auxiliary Operators that have been selected to enter Initial License class.

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68.

Given the following:

- Reactor tripped from 100% RTP.
- ECP has been calculated for 12 hours after the trip.
- Estimated critical rod position is Control Bank D at 100 steps.
- Startup is delayed for TWO (2) hours.

What is the effect on 1/M plot data taken during the approach to critical?

The 1/M plot will predict criticality at a.....

- A. LOWER rod height due to Xenon concentration less than that assumed in ECP calculation.
- B. HIGHER rod height due to Xenon concentration greater than that assumed in ECP calculation.
- C. HIGHER rod height due to Xenon concentration less than that assumed in ECP calculation.
- D. LOWER rod height due to Xenon concentration greater than that assumed in ECP calculation.

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70.

Given the following:

- Plant is in Mode 1 at 100% RTP.
- Maintenance is preparing to enter the CV and repair steam leak on "A" S/G secondary manway.
- CV Pressure Relief is in progress in preparation for purging the CV.
- CV pressure is currently at 0.05 psig.
- CV Purge Gaseous Waste Release Permit has been issued to Operations to allow the CV Purge to commence.

What is the proper sequence for starting the CV Purge IAW OP-921, Containment Air Handling?

- A. Verify closed the CV Pressure Relief and CV Vacuum Relief valves. Start CV Purge by placing the HVE-1A control switch to start.
- B. Start CV Purge by placing the HVE-1A control switch to start. CV Pressure Relief valves can be closed after purge flow is established.
- C. CV Purge and CV Pressure Relief can be performed concurrently due to both releasing the CV.
- D. CV Purge cannot be started until CV pressure is reduced to 0 psig.

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71.

Given the following:

- A Progress Energy employee has received 325 mRem radiation dose at the Robinson Plant this year.
- He has not received any Non-Progress Energy dose this year.
- He has received no Progress Energy management exposure extensions and no emergency exists.

Which ONE (1) of the following is the additional total effective dose equivalent that the individual can receive this year without management concurrence and without exceeding Progress Energy Annual Administrative Dose Limits?

- A. 175 mRem.
- B. 1675 mRem.
- C. 3675 mRem.
- D. 4675 mRem.

72.

Given the following:

- The plant has experienced a Reactor Trip and Steam Line Break inside the CV.
- CV Pressure reached a maximum of 18 psig and has now decreased to 2 psig.

When are adverse setpoints within the EOP network required to be used and when will the operating crew return to the use of normal setpoints as described in OMM-022, EOP Users Guide?

- A. CV adverse setpoints are used when CV Pressure reaches 4 psig and will be used from that point forward, regardless of CV Pressure.
- B. CV adverse setpoints are used when CV Pressure reaches 4 psig and will be used until CV Pressure is reduced below 1 psig.
- C. CV adverse setpoints are used when CV Pressure reaches 10 psig and will be used from that point forward, regardless of CV Pressure.
- D. CV adverse setpoints are used when CV Pressure reaches 10 psig and will be used until CV Pressure is reduced below 4 psig.

73.

Given the following:

- A LOCA has occurred.
- Both SI pumps have tripped and other equipment problems have complicated the recovery of the plant.
- The crew is performing FRP-C.1, Response to Inadequate Core Cooling.
- The RWST Low Level Alarm has been received.
- RWST level is 27% and lowering slowly.

Which ONE (1) of the following describes when the crew will transition to EPP-9, Transfer to Cold Leg Recirculation?

- A. Immediately.
- B. When RWST level reaches 9%.
- C. When at least 1 RCP has been started to restore core cooling.
- D. When all actions of FRP-C.1 have been completed.

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74.

Given the following:

- At 1320, a Reactor Trip and Safety Injection automatically occurs.
- At 1327, the crew identifies SG "A" as the ruptured SG.
- At 1330, an ALERT is declared by the Site Emergency Coordinator (SEC).
- At 1340, the Emergency Notification Form was completed and signed by the SEC.

Which ONE (1) of the following describes the latest time that the initial notification to State/County officials is due?

- A. 1335
- B. 1342
- C. 1345
- D. 1355

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75.

Given the following:

- Mode 1 at 68% RTP.
- One Shutdown Bank A, Group 2 Rod has dropped into the core.
- The crew is recovering the dropped rod.
- APP-005-E2, ROD CONT SYSTEM URGENT FAILURE, is received.

Which ONE (1) of the following describes the Rod Control System Urgent Failure alarm and the plant response?

The alarm is.....

- A. unexpected. Rod withdrawal will not occur until the alarm is reset at the Logic Cabinet.
- B. unexpected. Rod withdrawal will not occur until the alarm is reset at the Power Cabinet.
- C. expected. The alarm will have to be reset to allow rod recovery to continue.
- D. expected. Rod withdrawal is unaffected and recovery may continue.

References

1. EPP-15, Revision 16, Page 11 of 33.

STEP

INSTRUCTIONS

RESPONSE NOT OBTAINED

24. Determine Number Of CV Spray Pumps Required Using The Following Table:

RWST LEVEL	CONTAINMENT PRESSURE	FAN COOLERS RUNNING	SPRAY PUMPS REQUIRED
GREATER THAN 27%	GREATER THAN 42 PSIG	—	2
	BETWEEN 4 PSIG AND 42 PSIG	0 or 1	2
		2 or 3	1
		4	0
	LESS THAN 4 PSIG	—	0
BETWEEN 9% and 27%	GREATER THAN 42 PSIG	—	2
	BETWEEN 4 PSIG and 42 PSIG	0, 1, or 2	1
		3 or 4	0
	LESS THAN 4 PSIG	—	0
LESS THAN 9%	—	—	0

- a. Verify CV Spray Pumps running
- EQUAL TO NUMBER REQUIRED

- b. Close CV SPRAY PUMP DISCH Valves on any stopped pump:

1) CV SPRAY PUMP A

- SI-880A
- SI-880B

2) CV SPRAY PUMP B

- SI-880C
- SI-880D