LOT-17 NRC RO EXAM KEY

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

KEY

Question 1

In accordance with 0POP01-ZA-0018, Emergency Operating Procedure User's Guide, which one of the following is correct regarding the initial performance of Emergency Operating Procedure immediate actions?

A. Each immediate action step is performed after being read by the Unit Supervisor.

B. All immediate action steps are performed after the RO obtains a working copy of the procedure.

C. Each immediate action step is performed after receiving a peer check from another operator.

D. All immediate action steps are performed immediately from memory.

Question 2

In accordance with 0PGP03-ZA-0010, Performing and Verifying Station Activities, which of the following methods are an approved way to assure that a working copy of a procedure is current?

1. Document/Records Management Tracking System.
2. Comparison to a Level 1 Station Controlled hardcopy procedure.
3. Review of daily listing of procedure changes for continual use operational procedures.
4. Verify the working copy is the same revision and contains the same Field Changes as the last completed copy of the procedure.

A. 1, 2, 3

B. 1, 2, 4

C. 1, 3, 4

D. 2, 3, 4

Question 3

Which ONE of the following correctly describes the makeup water source(s) to the Component Cooling Water (CCW) Surge Tank?

A. Reactor Makeup Water via an automatic level control valve is the only makeup water source.

B. Demineralized Water via an automatic level control valve is the only makeup water source.

C. Reactor Makeup Water via an automatic level control valve is the normal makeup source and Demineralized Water via a manual valve is the backup source.

D. Demineralized Water via an automatic level control valve is the normal makeup source and Reactor Makeup Water via a manual valve is the backup source.

Question 4

Given the following condition:

- AFW Pump 11 is running with a flow rate of 540 gpm and a discharge pressure of 1550 psig

Which ONE of the following describes the system response as the AFW regulating valve for AFW Pump 11 is fully closed?

A. The Automatic Recirculation Valve opens to maintain pump flow and discharge pressure constant.

B. The Automatic Recirculation Valve opens to maintain pump flow constant. Pump discharge pressure will lower because back pressure from the AFW Storage Tank is less than that of the Steam Generator.

C. Pump flow will lower to about 100 gpm and stabilize as the Automatic Recirculation Valve opens. Discharge pressure will rise because the pump is operating closer to shutoff head conditions.

D. Pump flow will lower to about 100 gpm and stabilize as the Automatic Recirculation Valve opens. Discharge pressure will rise because the pump is operating closer to runout conditions.

Question 5

Which one of the following automatic actions will occur as Instrument Air pressure decreases to 95 psig?

A. 1-IA-PV-9983, Instrument Air Dryer Bypass Valve will OPEN

B. 1-CV-FV-0011, Letdown Orifice Header Isolation Valve will CLOSE

C. 1-IA-PV-8568, Instrument Air to Yard Valve will CLOSE

D. 1-IA-PV-9785, Service Air Isolation Valve will CLOSE

Question 6

Given the following conditions:

- Unit 1 is in Mode 5
- RHR Train 'A' is in service providing shutdown cooling.
- FV-8565, IA OCIV, subsequently fails closed.

Which one of the following correctly describes the effect of the valve failure?

RHR Train 'A' is.....

A. AVAILABLE to provide shutdown cooling since instrument air accumulator tanks in containment will continue to supply the necessary air and allow normal operation.

B. AVAILABLE to provide shutdown cooling since the RHR Heat Exchanger Outlet valve fails open and the RHR Heat Exchanger Bypass valve fails closed providing full cooling flow.

C. NOT available to provide shutdown cooling since the RHR Heat Exchanger Outlet valve fails closed and the RHR Heat Exchanger Bypass valve fails open providing no cooling flow.

D. NOT available to provide shutdown cooling since the RHR Pump Recirculation valve fails open which would not allow adequate cooling water flow to reach the RCS.

Question 7

Given the following:

- The crew has completed 0POP05-EO-EO20, Faulted SG Isolation, and have transitioned to 0POP05-EO-EO10, Loss of Reactor or Secondary Coolant
- All conditions are satisfied to terminate SI flow per step 15
- Current plant conditions are as follows:
  - RCS subcooling - 45° F and stable
  - Intact SG NR levels – 25% and stable
  - Faulted SG level – 0% Wide Range
  - RCS pressure – 1750 psig and stable
  - Pressurizer level – 19%

Which one of the following describes the current status of the High Head Safety Injection system (HHSI)?

A. HHSI pumps are injecting into the RCS HOT legs and pressurizer level is trending up slowly

B. HHSI pumps are injecting into the RCS COLD legs and pressurizer level is trending up slowly

C. HHSI pumps are running at shutoff head with miniflow directed to the suction of each pump

D. HHSI pumps are running at shutoff head with miniflow directed to the RWST

Question 8

Given the following conditions:

- Reactor power is at 15% with the SGWLC system in automatic on the Main Feed Reg Valves (MFRV's)
- #12 SGFPT is in service and in AUTO
- The SGFP Master Controller is in AUTO.
- Steam header pressure transmitter PT-557 fails high.

Which ONE of the following describes the INITIAL plant response?

	SGFP speed	Main Feed Reg Valves
A.	DECREASES	OPEN
B.	DECREASES	CLOSE
C.	INCREASES	OPEN
D.	INCREASES	CLOSE

Question 9

Given the following plant conditions:

- Reactor power is 65%
- SGFPs 11 and 12 are in service
- SGFP 13 is secured (0 rpm)

SGFP 12 trips and the secondary reactor operator notices:

- Startup SGFP failed to start
- All Steam Generator levels are lowering

Which of the following are immediate operator actions required FOR THESE CONDITIONS in accordance with POP04-FW-0002, Steam Generator Feed Pump Trip?

1. Attempt to manually start the Startup SGFP
2. Place SGFP 13 in service
3. Manually start the standby Feedwater Booster Pump
4. Check the SGFP Master Speed Controller properly responding in AUTO
5. Place all 4 Main Feedwater Regulating Valves in MANUAL

A. 1, 2, 3

B. 1, 3, 4

C. 2, 3, 4

D 3, 4, 5

Question 10

Given the following:

- Unit 1 is preparing to conduct Main Steamline warm-up in accordance with 0POP03-ZG-0003, Secondary Plant Startup.
- Main Steamline Isolation has been reset.

Which one of the below sequences will allow throttling OPEN the Steam Generator 1B Main Steam Isolation Bypass (MSIB) Valve from the Control Room?

A.
1. Place handswitch for Steam Generator 1B MAIN STEAM ISOL TRAIN B permissive grade solenoid to OPEN PERM.
2. Place handswitch SG 1B MSIB CONT FV-7422 in MODUL.
3. Throttle open SG 1B MSIB FV-7422 using Hagen controller.

B.
1. Place handswitch for Steam Generator 1B MAIN STEAM ISOL TRAIN B permissive grade solenoid to OPEN PERM.
2. Throttle open SG 1B MSIB FV-7422 using Hagen controller.

C.
1. Place handswitch for Steam Generator 1B MAIN STEAM ISOL TRAIN B permissive grade solenoid to OPEN PERM.
2. Place handswitch for Steam Generator 1B MAIN STEAM ISOL TRAIN A permissive grade solenoid to OPEN PERM.
3. Throttle open SG 1B MSIB FV-7422 using Hagen controller.

D.
1. Place handswitch for Steam Generator 1B MAIN STEAM ISOL TRAIN B permissive grade solenoid to OPEN PERM.
2. Place handswitch for Steam Generator 1B MAIN STEAM ISOL TRAIN A permissive grade solenoid to OPEN PERM.
3. Place handswitch SG 1B MSIB CONT FV-7422 in MODUL.
4. Throttle open SG 1B MSIB FV-7422 using Hagen controller.

Question 11

Given the following:

- Unit 1 is operating at 100% power
- A Feedwater Line Break on SG 1C occurs inside the RCB.

Assuming no Operator action is taken, which one of the following describes the operational implications of this event?

A. RCS Tavg rises prior to the Reactor trip. The post-trip RCS cooldown will be the same as if a steamline break occurred on the same SG.

B. RCS Tavg rises prior to the Reactor trip. The post-trip RCS cooldown will be less than if a steamline break occurred on the same SG.

C. RCS Tavg lowers prior to the Reactor trip. The post-trip RCS cooldown will be the same as if a Steamline Break occurred.

D. RCS Tavg lowers prior to the Reactor trip. The post-trip RCS cooldown will be less than if a steamline break occurred on the same SG.

Question 12

Given the following:

- Unit 2 is operating at 100% power.
- The Control Room receives the ROD BOTTOM alarm on annunciator lampbox 5M03 window F-4
- The RO observes ONE dropped rod
- An I&C technician was dispatched to investigate and reports cause unknown.

Which one of the below describes the basis for reducing Reactor power LESS THAN 75% within 1 hour in accordance with 0POP04-RS-0001, Control Rod Malfunction?

A. Ensure sufficient margin to Axial Flux Difference limits while performing the dropped control rod recovery.

B. Ensure the Reactor Protection system will prevent exceeding core design criteria (during a transient) due to Nuclear Instrument shadowing induced by the dropped control rod

C. Ensure that Local Linear Heat Rate increases in other regions of the core (due to the dropped rod), will not cause core design criteria to be exceeded.

D. Ensure the increased power density due to Xenon decay within the affected fuel assembly (containing dropped rod) over the next few hours does not exceed core design criteria.

Question 13

Given the following:

- Unit 1 is operating at 75%
- Turbine EHC is in IMP IN
- Generator Voltage Regulator is ON (Auto)
- Severe Thunderstorms have caused a grid disturbance

Unit 1 Control Room receives the GEN MAX EXCT alarm on annunciator lampbox 7M01 window C-4.

Which one of the below describes the grid disturbance and required operator actions in response to the alarm condition?

A. Grid voltage has INCREASED causing the generator voltage regulator to raise excitation; LOWER excitation using the Voltage Adjuster control.

B. Grid voltage has DECREASED causing the generator voltage regulator to raise excitation; LOWER excitation using the Voltage Adjuster control.

C. Grid frequency has DECREASED causing the Main Turbine to shed MW load. LOWER Turbine MW load by using the Turbine EHC controls.

D. Grid frequency has INCREASED causing the Main Turbine to take more MW load. RAISE Turbine MW load by using the Turbine EHC controls.

Question 14

Unit 1 is operating at 100% power with all systems in their normal lineup. An RCS leak develops in the Letdown Heat Exchanger room with the following Control Room indications:

- Pressurizer level indicates 57% and stable
- RCS pressure indicates 2235 psig and stable
- VCT level is 35 % and lowering
- LETDN HX OUTLET PRESSURE PI-0135 indicates 360 psig and stable
- LETDOWN HX OUTLET FLOW FI-0132 indicates 70 gpm and stable

Considering these indications, which ONE of the following AUTOMATIC actions has taken place?

A. TCV-0143, Letdown Temperature Divert Valve, positioned to the VCT

B. MOV-0468, Letdown Isolation Valve closed

C. FV-0011, Letdown Header Orifice Isolation Valve closed

D. PCV-0135, Letdown Pressure Control Valve throttled in close direction

Question 15

Given the following:

- Unit 1 is in Mode 4.
- RCS Pressure – 380 psig and stable.
- RCS Temperature – 330 °F and stable.
- Train 'A' RHR is in service.
- Low Pressure Letdown from Train 'A' RHR is in service to the VCT.
- Low Pressure Letdown flow (LETDN HX OUTL FLOW FI-0132) – 130 gpm and stable.
- Normal Letdown is NOT in service.

Which ONE of the below describes the correct system response to a TRIP of the Train 'A' RHR Pump?

A. PRESS CONT PCV-0135 will automatically restore LETDN HX OUTL FLOW FI-0132 to 130 gpm.

B. RHR CVCS ISOL MOV-0066A will auto-close and secure Low Pressure Letdown.

C. Letdown OUTLET PRESS PI-0135 will lower, PRESS CONT PCV-0135 must be throttled CLOSED to raise pressure and restore Letdown flow to 130 gpm.

D. LETDN HX OUTL FLOW FI-0132 will lower, PRESS CONT PCV-0135 must be throttled OPEN to restore LETDN HX OUTL FLOW FI-0132 to 130 gpm.

Question 16

Given the following plant conditions:

- The plant is in Mode 4 cooling down to Mode 5
- All six RHR Pump suction MOVs have been energized
- The crew is preparing to place RHR in service
- Sensing line blockage has caused RCS wide range pressure transmitter PT-407 to stabilize at 700 psig
- RCS pressure has been verified to be 330 psig

Which ONE of the following correctly describes the effect of the blockage AND a method to mitigate the condition?

A. NONE of the RHR suction MOVs will open normally. The MOVs can be opened by holding the control switch in the OPEN position, and then opening the supply breaker once the valve is open in accordance with "skill of the craft" guidance in the Conduct of Operations Manual.

B. NONE of the RHR suction MOVs will open normally. The MOVs can be opened by temporarily transferring control to the Auxiliary Shutdown Panel in accordance with POP02-RH-0001, Residual Heat Removal System Operation .

C. ONLY TWO of the RHR suction MOVs will NOT open normally. The MOVs can be opened by holding the control switch in the OPEN position, and then opening the supply breaker once the valve is open in accordance with "skill of the craft" guidance in the Conduct of Operations Manual.

D. ONLY TWO of the RHR suction MOVs will NOT open normally. The MOVs can be opened by temporarily transferring control to the Auxiliary Shutdown Panel in accordance with POP02-RH-0001, Residual Heat Removal System Operation.

Question 17

Given the following:

- Unit 2 was operating at steady-state 100% power
- A Reactor trip occurred due to a Turbine trip
- RCS Tavg – 567 °F and stable
- Pressurizer pressure – 1920 psig and trending down slowly
- Pressurizer level – 36% and trending up slowly
- PRT level – 70% and stable
- PRT pressure – 4 psig and stable

Which one of the following describes current plant conditions and required operator actions?

A. Parameters are trending to normal values after a Reactor trip; no actions necessary.

B. A leak has developed in the Pressurizer surge line; initiate Safety Injection to maintain RCS inventory.

C. A Pressurizer Safety Valve is leaking by; raise Letdown flow to prevent overfilling the Pressurizer.

D. A leak has developed on the spray line connection to the Pressurizer; initiate Safety Injection to maintain RCS inventory.

Question 18

Given the following:

- Unit 1 is operating at 100% power
- ESF DG #12 is out of service for maintenance
- An electrical fault occurs on the Unit 1 Auxiliary Transformer

You are the Reactor Operator performing the actions of 0POP05-EO-EO00, Reactor Trip or Safety Injection, step 3 and note the following:

- 4160v Bus 'A' voltage is 0 volts
- ESF DG 11 Blue, READY FOR LD light is LIT
- 4160v Bus 'B' voltage is 0 volts
- 4160v Bus 'C' voltage is 0 volts
- ESF DG 13 Blue, READY FOR LD light is NOT lit.

Which of the below correctly describes the appropriate response and the reasons for this response?

A. Close the output breaker for ESF DG 11 because it should have automatically closed. Continue in 0POP05-EO-EO00.

B. Perform a normal start of ESF DG 13, then close its output breaker because it should have automatically started. Continue in 0POP05-EO-EO00.

C. Recommend the Unit Supervisor enter 0POP05-EO-EC00, Loss of All AC Power, because there is currently no power to any ESF 4160v busses.

D. Recommend the Unit Supervisor enter 0POP05-EO-EC00, Loss of All AC Power, because the Auxiliary Transformer fault will prevent any ESF DG output breaker from being closed.

Question 19

Unit 2 is progressing through 0POP05-EO-EC00, Loss of All AC Power, and preparing to depressurize the intact SG's to 355 psig in accordance with step 16.

A Caution prior to step 16 indicates SG pressures should remain greater than 255 psig.

This Caution is based on:

A. Preventing injection of SI Accumulator nitrogen into the RCS which could impede natural circulation.

B. Ensuring a minimum of 35 °F subcooling is maintained for RCS pressure control.

C. Preventing void formation in the Reactor Vessel Head to prevent possible core uncovery.

D. Ensuring adequate RCP seal DP to allow for subsequent RCP operation.

Question 20

Given the following:

- Unit 1 operators are establishing RCS bleed and feed in accordance with 0POP05-EO-FRH1, Loss of Secondary Heat Sink.
- While verifying RCS bleed path per step 13, the Reactor Operator observes that ONE of the Pressurizer PORV's will not open.

Which one of the following describes the appropriate response in accordance with 0POP05-EO-FRH1, Loss of Secondary Heat Sink, step 13, and the reason for this response?

A. Open the Reactor Vessel Head Vent valves because the RCS may not depressurize sufficiently to permit adequate SI flow to remove core decay heat.

B. Close the open PORV and continue efforts to restore AFW flow because one PORV will not depressurize the RCS sufficiently to allow SI to maintain RCS inventory.

C. No action is required because the RCS will still depressurize sufficiently with one PORV open to permit adequate SI flow to remove core decay heat.

D. Close the open PORV, then open the Reactor Vessel Head Vent valves to restrict the mass loss sufficiently to ensure RCS inventory can be maintained with SI.

Question 21

Given the following:

- A Large Break Loss of Coolant Accident has occurred.
- The ECCS is operating in the Cold Leg Recirculation mode.

Based on standard heat transfer relationships (e.g. $\dot{Q} = UA\Delta T$), which one of the below describes the INITIAL effects of INCREASED CCW temperature to the RHR Heat Exchanger during these plant conditions?

ΔT across the RHR Heat Exchanger tubes will…

A. RISE resulting in LOWER heat transfer rate in the RHR Heat Exchanger.

B. RISE resulting in HIGHER heat transfer rate in the RHR Heat Exchanger.

C. LOWER resulting in LOWER heat transfer rate in the RHR Heat Exchanger.

D. LOWER resulting in HIGHER heat transfer rate in the RHR Heat Exchanger.

Question 22

Given the following:

- Unit 2 has experienced a Large Break LOCA
- The ECCS is being aligned for Cold Leg Recirculation
- The Control Room operators have performed all the required actions of 0POP05-EO-ES13, Transfer to Cold Leg Recirculation, and NO Containment Emergency Sump Outlet Valves have opened.

Which ONE of the following RWST levels is the minimum level at which ANY pump taking suction on the RWST should be secured per 0POP05-EO-EC11, Loss of Emergency Coolant Recirculation?

A. 16,500 gallons (3%)

B. 26,500 gallons (5%)

C. 32,500 gallons (6%)

D. 42,500 gallons (8%)

Question 23

Given the following:

- Unit 1 is in Mode 3
- A Pressurizer PORV has failed open and caused the PRT Rupture Disc to rupture.

Which of the below Containment parameters could be initially affected by this event AND indicates in the Control Room?

1. Air Temperature (RCFC Inlet)
2. ECCS Emergency Sump Level
3. RT-8011, RCS Atmosphere Rad Monitor
4. RT-8050, RCB High Range Area Monitor
5. Dewpoint

A. 1, 2, 3

B. 2, 3, 4

C. 1, 4, 5

D. 1, 3, 5

Question 24

Unit 1 has experienced a Small Break Loss Of Coolant Accident. The Control Room Staff is performing the actions of 0POP05-EO-ES12, Post LOCA Cooldown and Depressurization, with the following plant condition:

- The TSC Staff has determined that hydrogen dissolution has occurred in the Pressurizer reference leg and that Pressurizer heaters should not be energized until Pressurizer level indication is 30-40%

Which one of the following correctly describes how indicated Pressurizer level may be affected AND the basis for the TSC Staff determination?

A. Indicated Pressurizer level may be greater than actual Pressurizer level. It is to ensure Pressurizer heaters are covered prior to being energized.

B. Indicated Pressurizer level may be less than actual Pressurizer level. It is to ensure Pressurizer heaters are covered prior to being energized

C. Indicated Pressurizer level may be greater than actual Pressurizer level. It is to ensure appropriate proportion of steam and water volumes to provide adequate cushioning during RCS pressure transients.

D. Indicated Pressurizer level may be less than actual Pressurizer level. It is to ensure appropriate proportion of steam and water volumes to provide adequate cushioning during RCS pressure transients.

Question 25

Unit 2 was operating at 100% power when a LOCA outside Containment occurred. The following conditions exist:

- The crew is performing 0POP05-EO-EC12, LOCA Outside Containment.
- FHB Area Rad Monitors are alarming.
- Train 'A' ECCS and Containment Spray have been isolated based on high FHB SI/CS sump level.
- RCS temperature is slowly rising.
- RCS Pressure continues to lower.

Based on these conditions, which one of the below correctly describes the plant status and action path for the crew?

A. The leak IS ISOLATED. Transition to another EOP to cool down and depressurize the plant to Cold Shutdown conditions.

B. The leak IS ISOLATED. Transition to another EOP to terminate Safety Injection before initiating plant cooldown.

C. The leak is NOT ISOLATED. Remain in 0POP05-EO-EC12, and sequentially isolate the remaining ECCS and CS trains in an attempt to stop the leakage.

D. The leak is NOT ISOLATED. Remain in 0POP05-EO-EC12, and begin isolating systems that connect with the RCS that are located in the MAB.

Question 26

Given the following:

- Unit 1 was operating at 100% power.
- A SGTR occurred in SG 1B.
- The crew is ready to depressurize the RCS in accordance with 0POP05-EO-EO30, SGTR.

Which one of the below correctly describe the basis for depressurizing the RCS?

A. Reduce RCP seal DP to minimize the possibility of a seal failure.

B. Ensure RCS pressure is within the limits of Tech Spec 3.4.9.1, Pressure/Temperature Limits.

C. Provide RCS inventory by re-filling the Pressurizer.

D. Prevent lifting the 1B SG Safety.

Question 27

Given the following:

- Unit 1 is operating at 100% power
- Pressurizer level is at 32%, trending down slowly
- 0POP04-RC-0004, Steam Generator Tube Leakage, procedure is being implemented.

The Crew should take which one of the following actions in accordance with 0POP04-RC-0004, Steam Generator Tube Leakage, to control Pressurizer level?

A. ISOLATE letdown flow; RAISE charging flow; START additional Charging Pump; TRIP the Reactor and INITIATE Safety Injection if Pressurizer level can NOT be maintained GREATER THAN 17%

B. ISOLATE letdown flow; RAISE charging flow; START additional Charging Pump; TRIP the Reactor and ALIGN CCP suction to the RWST if Pressurizer level can NOT be maintained GREATER THAN 17%

C. LOWER letdown flow; RAISE charging flow; START additional Charging Pump; TRIP the Reactor and INITIATE Safety Injection if Pressurizer level can NOT be maintained GREATER THAN 17%

D. LOWER letdown flow; RAISE charging flow; START additional Charging Pump; TRIP the Reactor and ALIGN CCP suction to the RWST if Pressurizer level can NOT be maintained GREATER THAN 17%

Question 28

Given the following:

- Unit 2 has experienced a SG Tube Leak of 80 gallons per day (gpd)
- The crew is implementing 0POP04-RC-0004, Steam Generator Tube Leakage

Step 8.0 of 0POP04-RC-0004 requires the crew to check if BOTH of the following conditions exist:

- Leakage from any one SG is $\geq$ 75 gpd
- Rate of leakage increase $\geq$ 30 gpd/hr.

Which one of the below correctly describes the bases for monitoring these limits?

A. Leakage has exceeded Technical Specification limits for Primary-to-Secondary leakage and the unit should be rapidly shut down per 0POP03-ZG-0006, Plant Shutdown from 100% to Hot Standby.

B. Leakage has exceeded Technical Specification limits for Pressure Boundary leakage and the unit should be rapidly shut down per 0POP03-ZG-0006, Plant Shutdown from 100% to Hot Standby.

C. Leakage has increased to a size that indicates the unit should be shutdown in a planned manner by using 0POP03-ZG-0006, Plant Shutdown from 100% to Hot Standby.

D. These conditions are evidence the tube leak is increasing rapidly and the plant should be shutdown promptly by using 0POP04-TM-0005, Rapid Load Reduction.

Question 29

The following plant conditions exist:

- Unit 1 is at 100% power
- A lockout occurs on 4.16 KV ESF Bus E1B.
- No operator actions are taken to change load on 125 VDC Bus E1B11.

If the E1B11 Battery discharge is allowed to continue, which of the following is correct?

E1B11 Battery voltage indication will.....

A. continuously lower until the battery is fully discharged and then fall rapidly.

B. remain constant until the battery is fully discharged and then fall rapidly.

C. spike to an above-normal value during the initial minute of the discharge and then lower.

D. slowly rise during the last few hours of the discharge and then fall rapidly when the battery is fully discharged.

Question 30

Given the following:

- Unit 1 was in Mode 1 when a loss of offsite power occurred.
- ESF DG #11 failed to start.

Assuming no operator actions are taken, 125 VDC Bus E1A11 will…

A. continue to supply its loads for a minimum of 12 hrs.

B. be supplied automatically from its Standby Battery Charger.

C. not be supplied by a Battery Charger until power is restored to Train 'A' 4160 v Bus AND a Battery Charger is manually restarted.

D. not be supplied by a Battery Charger until power is restored to Train 'A' 4160 v Bus. The in-service train Battery Charger will automatically re-start when its MCC is re-energized.

Question 31

Which one of the below correctly indicates the power supply and distribution for Power Range Channel N-42?

	Power Supply Distribution Panel (DP)	Power to Channel Ion Chamber Detector	Power to Channel Bistables
A	1202	Instrument Power	Control Power
B	002	Control Power	Instrument Power
C	002	Instrument Power	Control Power
D	1202	Control Power	Instrument Power

Question 32

Given the following:

- Unit 1 is operating at 100% power
- The following Annunciator and BYP INOP alarms are received in the Control Room:
  - 120V AC CH I DIST PNL 001 TRBL
  - 125V DC SYSTEM E1A11 TRBL
  - BATT A11 OUTP BKR
  - INVRTR IV 001
  - 4KV E1A SPLY BKR TRIP
  - 4KV BUS O/C LCKOUT

Assuming no operator actions, which one of the below correctly describes the status of 120 VAC Panel DP-001?

DP-001 is ....

A. ENERGIZED because its Static Switch has automatically transferred to an alternate power source.

B. ENERGIZED because its Bypass Switch has automatically transferred to an alternate power source.

C. DE-ENERGIZED because its Rectifier/Inverter unit has lost power.

D. DE-ENERGIZED because its Voltage Regulating Transformer (VRT) has lost power.

Question 33

Unit 1 is operating at 90% power when the following annunciator and Bistable Monitoring Panel (BSMP) indications are received:

- Annunciator 5M02, Window F-2, UV RX PRETRIP
- BSMP - RCP1B U/V RX TRIP

NO other alarms or changes in indications or equipment status are observed.

Which ONE of the following statements is correct?

A. Control of RCP 1B from the Control Room has been lost.

B. The UV device on Auxiliary Bus 1G should have tripped RCP 1B.

C. The Reactor Protection System failed to actuate and initiate a reactor trip.

D. The RCP 1B UV device has failed.

Question 34

Which of the following are 4.16 KV Bus 1D loads?

1. Start-up Feedwater Pump
2. Low Pressure Heater Drip Pumps
3. Open Loop Auxiliary Cooling Water Pumps
4. Reactor Containment Building Chillers
5. Instrument Air Compressors

A. 1, 2, 3

B. 2, 3, 4

C. 1, 4, 5

D. 2, 4, 5

Question 35

Given the following:

- ESF DG #12 is independently supplying 4.16 KV ESF Bus E1B.
- Bus voltage and frequency are stable.

Subsequently, a large load supplied by ESF Bus E1B is place in service.

Which one of the following correctly describes how the diesel will respond?

The diesel will slow down causing the speed governor to ...

A. adjust the fuel rack to allow the fuel injectors to inject more fuel.

B. adjust the fuel rack to raise the speed of the positive displacement fuel oil supply pump so it will pump more fuel.

C. throttle open the air intake butterfly valve allowing more combustion air to the engine.

D. raise the speed of the turbocharger and force additional combustion air into the engine.

Question 36

Given the following:

- Unit 2 has a normal 13.8 KV electrical lineup.
- A compressor malfunction has resulted in one Starting Air Receiver on ESF DG #21 to completely depressurize.
- The second Starting Air Receiver is unaffected and at normal operating pressure.

Subsequently, a Unit 2 Standby Transformer lockout occurs.

Which one of the following correctly describes the effect of the depressurized air receiver on this event?

ESF DG #21 will...

A. NOT receive a start signal, but IS capable of starting if needed.

B. NOT receive a start signal and is NOT capable of starting.

C. receive a start signal and WILL start and run.

D. receive a start signal, but is NOT capable of starting.

Question 37

Following a Loss of Offsite Power (LOOP), which ONE of the following statements describes the Pressurizer heater groups that will be available to maintain Pressurizer pressure?

A. Backup heater groups A and B only

B. Backup heater groups D and E only

C. All Backup heater groups

D. Control heater group C only

Question 38

Unit 1 is operating at 100% power. The following conditions exist:

- ECW/CCW Train Mode Selector Switches are aligned as follows:
  - 'A' in RUN; 'B' in STBY; 'C' in OFF
- All ECW Pumps are running

An electrical failure causes a loss of power to 13.8 KV Standby Bus 1H.

ECW Pump 1C will be stripped and.....

A. must be started manually. Once started, it will automatically supply cooling water flow to #13 ESF D/G and Train 'C' CCW HX only.

B. then sequenced on, automatically supplying cooling water flow to #13 ESF D/G and Train 'C' CCW HX only.

C. must be started manually. Once started, it will automatically supply cooling water flow to #13 ESF D/G, Train 'C' CCW Hx, Train 'C' Essential Chiller and Train 'C' CCW Pump Supplementary Cooler.

D. then sequenced on, automatically supplying cooling water flow to #13 ESF D/G, Train 'C' CCW Hx, Train 'C' Essential Chiller, and Train 'C' CCW Pump Supplementary Cooler.

Question 39

Given the following:

- Unit 2 was operating at steady-state 100% power.
- Train 'B' ECW and CCW is in service.
- A steam line break resulted in a Reactor trip and Safety Injection.
- Annunciator 02M4-D-1, CCW HX 2B OUTL TEMP HI alarms.

What is the appropriate operator action to address the alarm?

A. Verify proper ECW flow through the CCW/ECW Heat Exchanger.

B. Verify a CCW Level 2 isolation has occurred to isolate non-essential CCW heat loads.

C. Verify the ECW bypass valve on the CCW/ECW Heat Exchanger is throttled closed to maximize CCW/ECW heat transfer.

D. Verify the CCW bypass valve on the CCW/ECW Heat Exchanger is throttled open to reduce the heat load on the ECW system.

Question 40

Given the following conditions:

- Unit 1 at 100% steady-state power.
- Instrument Air pressure is 59 psig and trending down slowly.

Based on these conditions, which one of the following describes the appropriate crew response in accordance with 0POP04-IA-0001, Loss of Instrument Air?

A. Attempt to restore Instrument Air pressure while monitoring primary and secondary systems for "valve drift"; trip the Reactor upon loss of main feedwater control.

B. Attempt to restore Instrument Air pressure; trip the Reactor if Instrument air pressure drops below 50 psig.

C. Attempt to restore Instrument Air pressure; trip the Reactor if Instrument air pressure drops below 55 psig.

D. Trip the Reactor and perform the actions of 0POP05-EO-EO00, Reactor Trip or Safety Injection.

Question 41

If high radiation is detected by an Area Radiation Monitor detector, the alarm will be displayed on the Radiation Monitoring System (RMS) operator console (RM11) located in the Control Room.

Which one of the following correctly lists ALL of the RM11 operator console locations where the alarm will be displayed OUTSIDE the Control Room?

A. Emergency Operations Facility

B. Technical Support Center

C. Technical Support Center
AND
Health Physics Office

D. Emergency Operations Facility
AND
Health Physics Office

Question 42

During the performance of POP04-RC-0001, High Reactor Coolant System Activity, the Unit Supervisor directs you to check RT-8039, Failed Fuel Monitor, greater than the ALERT setpoint.

Which ONE of the following correctly describes how this can be accomplished?

A. On the QDPS Qual PAMS display, verify the RT-8039 readout is flashing.

B. On the QDPS Qual PAMS display, verify the RT-8039 readout is backlit.

C. On the RM-11 CRT display, verify RT-8039 indicates yellow or red.

D. On the RM-11 CRT display, verify RT-8039 indicates magenta.

Question 43

Per 0POP04-RA-0001, Radiation Monitoring System Alarm Response, which one of the following correctly matches a radiation monitor with its automatic action?

	Monitor	Automatic Action
A.	RT-8011, RCB Atmosphere	Closes Containment Supplemental Purge Isolation Valves.
B.	RT-8041, TGB Drain Monitor	Trips TGB Sump Number 1 Sump Pumps.
C.	RT-8033, EAB Intake	Trips Control Room Envelope Supply and Return Fans.
D.	RT-8039, Failed Fuel Monitor	Closes Letdown Isolation Valves LCV-0465 and LVC-0468.

Question 44

Due to a malfunction, RT-8038, LWPS Discharge Monitor, erroneously indicates a HIGH alarm condition.

Which one of the following correctly describes the effect of the malfunction?

A. If the Condensate Polisher Cation Low Total Dissolved Solids (LTDS) tank is being discharged to the Neutralization basin, then the LTDS Transfer Pump will trip.

B. If the Condensate Polisher Cation Low Total Dissolved Solids (LTDS) tank is being discharged to the Neutralization basin, then FV-5804, TDS Waste Discharge to Neutralization Basin, will close.

C. If a Waste Monitor Tank (WMT) is being discharged to the Main Reservoir, then the Waste Monitor Tank Pump will trip.

D. If a Waste Monitor Tank (WMT) is being discharged to the Main Reservoir, then FV-4077, LWPS Discharge Valve, will reposition to RECIRC.

Question 45

During normal plant operation, power is lost to RT-8032, GWPS Outlet Radiation Monitor.

Which one of the following describes the effects of the power loss and subsequent system operation?

The GWPS will ....

A. automatically shutdown. To re-establish GWPS operation, the waste gas flowpath must be re-aligned to bypass RT-8032. Grab samples will have to be taken periodically to monitor discharge radioactivity.

B. automatically shutdown. GWPS operation cannot be re-established until power is restored to RT-8032 unless the GWPS inlet and outlet valve controls are placed in the 'OPEN' position.

C. continue operating providing RT-8031, GWPS Inlet Radiation Monitor, remains in service because RT-8031 also provides for automatic isolation on high radioactivity.

D. continue operating, but grab samples will have to be taken periodically to monitor discharge radioactivity and the Oxygen Analyzer will be declared inoperable.

Question 46

Given the following:

- Unit 2 Control Room has been evacuated due to a fire.
- 0POP04-ZO-0001, Control Room Evacuation, is being implemented.
- RCP seal injection has been placed in service.
- Pressurizer level is 53% and trending up slowly.

Which one of the following describes the appropriate crew response in accordance with 0POP04-ZO-0001, Control Room Evacuation, to stabilize Pressurizer level?

A. Place Excess Letdown in service with flowpath to the Volume Control Tank.

B. Place Excess Letdown in service with flowpath to the Reactor Coolant Drain Tank.

C. Intermittently place Normal Letdown in service utilizing the 120 gpm orifice.

D. Place an additional Normal Letdown orifice in service to raise Letdown flow.

Question 47

Given the following plant conditions:

- Reactor power is at 45% with power ascension in progress following a refueling outage.
- All control systems are in automatic.
- A Pressurizer backup heater group has been manually energized to force spray flow.

The breaker for the backup heater group that was just energized trips open.

Assuming no Operator actions are taken, which ONE of the following describes a possible consequence of the breaker trip as the power ascension continues?

A. If a large Reactor Coolant System (RCS) cooldown occurs, the RCS boron concentration would lower.

B. If a large Reactor Coolant System (RCS) heatup occurs, the RCS boron concentration would lower.

C. If a large Reactor Coolant System (RCS) heatup occurs, the RCS boron concentration would rise.

D. If a large Reactor Coolant System (RCS) cooldown occurs, the RCS boron concentration would rise.

Question 48

Given the following:

- Unit 2 is at 100% power.
- Pressurizer Pressure Control is selected to position 457/456.
- Channel PT-0455 is bypassed for surveillance testing
- All Pressurizer Pressure controls are in AUTO.

As the Reactor Operator, you observe the following indications:

- PI-0456 – 1700 psig
- PI-0457 – 2200 psig
- PI-0458 – 2202 psig

Which one of the following is correct for the conditions described above?

A. "PRZR PRESS LO RX TRIP ALERT" alarm lit
Pressurizer Variable Heaters – Energized
Pressurizer Backup Heaters – De-energized

B. "PRZR PRESS LO RX TRIP ALERT" alarm lit
Pressurizer Variable Heaters – Energized
Pressurizer Backup Heaters – Energized

C. "PRZR PRESS LO PORV BLKD" alarm lit
Pressurizer Variable Heaters – Energized
Pressurizer Backup Heaters – De-energized

D. "PRZR PRESS LO PORV BLKD" alarm lit
Pressurizer Variable Heaters – Energized
Pressurizer Backup Heaters - Energized

Question 49

Given the following:

- Unit 1 is in Mode 2 performing a Reactor startup.
- Turbine Impulse Pressure channel PT-506 fails high.

Which ONE of the following Reactor Trip signals is ENABLED due to the PT-506 failure?

Reactor Trip from:

A. Low Pressurizer Pressure.

B. Loss of Reactor Coolant Flow in 1 Loop.

C. Pressurizer Low Water Level.

D. AMSAC

Question 50

Given the following plant conditions:

- A plant shutdown is in progress for refueling
- Permissive P-8 did not actuate as power was reduced

With Reactor power at 30%, which ONE of the following correctly describes the results of the P-8 malfunction?

A. The Reactor WILL trip if one Reactor Coolant Pump trips.

B. The Turbine will NOT trip if the Reactor trips.

C. The Reactor WILL trip if the Turbine trips.

D. The Reactor will NOT trip if Pressurizer level rises to 93%.

Question 51

Given the following:

- Unit 1 is performing a plant shutdown per 0POP03-ZG-0006, Plant Shutdown from 100%.
- P-13 TURB LOAD LESS THAN 10 PRCT is illuminated.
- P-10 MAN BLOCK INT/LO PR RX TRP PERM is extinguished.
- Due to an excessive EHC leak the Main Turbine was tripped.

Which ONE of the following correctly reflects the status of the plant?

P-7 POWER OPER RX TRIPS BLKD is....

A. extinguished and Reactor Trip Breakers are open.

B. extinguished and the Reactor is critical.

C. illuminated and the Reactor is critical.

D. illuminated and Reactor Trip Breakers are open.

Question 52

Which ONE of the following groups of setpoints and coincidences will cause a Steam Line Isolation Signal?

A. Steam line pressure less than 735 psig, 2/3 channels on 1/4 steam lines with Low Steamline Pressure SI NOT blocked.

B. Containment HIGH-II pressure greater than 3 psig on 1/3 channels.

C. Steam line pressure less than 735 psig, 2/3 channels on 2/4 steam lines with Low Steamline Pressure SI blocked.

D. Containment HIGH-I pressure greater than 2 psig on 2/3 channels.

Question 53

Ten minutes after an accident, containment pressure indicates the following:

- PT-934 = 9.5 psig
- PT-935 = 9.6 psig
- PT-936 = 9.3 psig
- PT-937 = 9.4 psig

Which of the following describes the response of the Containment Spray System assuming bistables actuate at their exact setpoint and no ESF systems have been reset?

A. Containment Spray has not automatically actuated.

B Containment Spray has automatically actuated, but only the pumps have started.

C. Containment Spray has automatically actuated, but only the pump discharge valves have opened.

D. Containment Spray has automatically actuated. The pumps have started and their discharge valves have opened.

Question 54

If it is desired to cross-tie AFW Trains and reduce the number of running AFW Pumps 0POP01-ZA-0018, Emergency Operating Procedure Users Guide, allows this provided ...

A. flow through a single AFW cross-tie valve must be less than 675 gpm.

B. flow through a single AFW pump must be less than 675 gpm.

C. flow through a single AFW cross-tie valve must be less than 640 gpm.

D. flow through a single AFW pump must be less than 640 gpm.

Question 55

Given the following Unit 1 conditions:

- A Large Break LOCA has occurred
- Operators have completed 0POP05-EO-EO00, Reactor Trip or Safety Injection, through step 4
- Containment pressure – 6.0 psig and stable
- Motor-driven AFW pumps – all running
- Turbine-driven AFW pump – not running
- Total AFW flow – 500 gpm
- Steam Generator NR levels range from 10 – 16%
- Addendum 5, Verification of SI Equipment Operation, is in progress at step 3, Verify AFW System Status.

As the Operator assigned to perform step 3 of Addendum 5, which one of the following correctly describes the MINIMUM required actions for step 3?

A. Align AFW Regulating valves to achieve greater than 576 gpm total AFW flow using ONLY the running Motor-driven pumps.

B. Align AFW Regulating valves to control ALL Steam Generator NR Levels between 14% and 50% with ONLY the running Motor-driven pumps.

C. Manually OPEN steam supply valves to start the Turbine-driven AFW pump then verify total AFW flow is greater than 576 gpm.

D. Manually OPEN steam supply valves to start the Turbine-driven AFW pump then control ALL Steam Generator NR Levels between 14% and 50%.

Question 56

With Unit 1 at 100% power, the following occurred:

- A 500 gpm RCS Loss of Coolant Accident (LOCA)
- A Loss of Offsite Power (LOOP).
- Essential Cooling Water (ECW) Pump 1B failed to start and will not start manually.
- The Control Room Staff is performing the actions of 0POP05-EO-EO00, Reactor Trip or Safety Injection and has completed the actions of Addendum 5.
- No other manual operator actions have been taken.

Based on this information which ONE of the following is true?

A. Aux Feedwater Flow to Steam Generator 1B is being automatically controlled between 550 and 640 gpm.

B. Opening FV-7516, X CONN, for AFW Train 1B will feed Steam Generator 1B from a running Aux Feedwater Pump.

C. Aux Feedwater Pump #12 is running with approximately 100 gpm recirc flow.

D. Steam Generator 1B Aux Feedwater flow is 0 gpm. Aux Feedwater Pump #12 has no power available to it.

Question 57

Unit 2 is in Mode 4, cooling down for a refueling outage.

Which one of the following would require entry into the action statement for Technical Specification 3.6.1.1, Containment Integrity? (consider each condition separately)

A. The outer airlock door is opened for personnel entry.

B. LCV-0465, LTDN ISOL, is de-energized in the OPEN position for breaker maintenance.

C. MOV-0025, Charging OCIV, has a burned out motor and is currently de-energized in the CLOSED position.

D. The equipment Hatch was opened to allow moving outage equipment into the Containment Building.

Question 58

Given the following:

- Unit 1 is at 90% reactor power
- Control rod C9 in Shutdown Bank B has dropped and is being recovered in accordance with 0POP04-RS-0001, Control Rod Malfunction, Addendum 1, Recovery of a Dropped Rod
- Lift coil disconnect switches for all rods in Shutdown Bank B, except rod C9, have been placed in the DISCONNECTED position

Which one of the following describes (1) where the lift coil disconnect switches are located and (2) the expected Control Room alarm as a result of disconnecting Shutdown Bank B control rods?

A. Lift coil disconnect switches are located in their respective rod control power cabinets; A ROD CONT URGENT ALARM will actuate when lift coil disconnect switches are placed in the DISCONNECT position.

B. Lift coil disconnect switches are located in their respective rod control power cabinets; A ROD CONT URGENT ALARM will actuate when rod withdrawal begins for control rod C9.

C. Lift coil disconnect switches are located in the Control Room; A ROD CONT URGENT ALARM will actuate when lift coil disconnect switches are placed in the DISCONNECT position.

D. Lift coil disconnect switches are located in the Control Room; A ROD CONT URGENT ALARM will actuate when rod withdrawal begins for control rod C9.

Question 59

The following plant conditions exist in Unit 1:

- Power Range Nuclear Instruments (NI) indicate 100% (all channels)
- Loop ΔT indicates 100% (all loops)
- Loop Tavg indicates 592°F (all loops)

If Tavg is lowered 1°F, which of the following is true? (Assume that Main Generator Load remains constant.)

A. Loop ΔT indication remains constant; Power Range NI indication will be slightly higher.

B. Loop ΔT indication remains constant; Power Range NI indication will be slightly lower.

C. Loop ΔT indication will be slightly lower; Power Range NI indication will remain constant.

D. Loop ΔT indication will be slightly lower; Power Range NI indication will be slightly lower.

Question 60

A normal cooldown is being performed in Unit 1 with the following conditions:

- RCS temperature is 555 °F and decreasing at 50 °F/hr
- RCS pressure is 2000 psig and decreasing
- Cooldown is being performed using Steam Dumps in AUTO
- All RCPs are in operation

A few minutes later, the Secondary Reactor Operator notices Main Steam pressure rising.

Which ONE of the following explains why Main Steam pressure is rising?

A. RCS temperature decreased below the Low-Low Tave setpoint

B. Steam Header Pressure PT-557 failed low

C. A Main Steamline Isolation occurred from High Steam Pressure Rate

D. Turbine Impulse Pressure PT-505 failed high

Question 61

An Equipment Clearance Order (ECO) for removing power from the Jockey Fire Pump motor has been sent out to be hung.

The ECO places the handswitch in the OFF position and opens the supply breaker for the Jockey Fire Pump.

Based upon the actions taken when performing this lineup, what is the expected response of the Diesel Fire Pumps? (Assume that all Diesel Fire Pumps are available and aligned for automatic operation.)

A. No Diesel Fire Pumps will start.

B. All Diesel Fire Pumps will start 5 seconds after fire header pressure reaches 130 psig.

C. #11 Diesel Fire Pump will start 5 seconds after fire header pressure reaches 130 psig.

D. All Diesel Fire Pumps will start sequentially with a 5 second time delay between starts.

Question 62

Given the following:

- Plant cooldown is in progress, currently in Mode 4 at 300 °F.
- Operators notice a rapid drop in Pressurizer level AND a rise in containment radiation levels.
- 0POP04-RC-0006, Shutdown LOCA, is entered.
- Due to continually lowering Pressurizer level, the procedure directs the operators to establish flow from the High Head Safety Injection pumps.

Based on these conditions, which ONE of the following correctly describes the availability of the High Head Safety Injection (HHSI) Pumps?

A. All 3 HHSI Pumps are immediately available for use.

B. 2 HHSI Pumps are immediately available for use. The breaker for the 3rd pump must be racked in prior to use.

C. 1 HHSI Pump is immediately available for use. The breaker for the standby pump must be racked in prior to use.

D. None of the HHSI Pumps are available for immediate use. The breaker for any pump to be started must be racked in first.

Question 63

To satisfy the Reactor Coolant System Pressure SAFETY LIMIT, Reactor Coolant System pressure cannot exceed _____ psig.

A. 2380

B. 2485

C. 2735

D. 3110

Question 64

Given the following:

- Unit 2 is in Mode 3 at normal operating temperature and pressure.
- RCB temperature is approximately 80 °F.
- An error during surveillance testing results in a spurious Safety Injection initiation.
- RCB temperature has risen to 108 °F.

Which one of the following correctly describes the RCB temperature response?

RCB temperature is:

A. below the Tech Spec limit, and is rising because there is no cooling water flow through the RCFC's.

B. below the Tech Spec limit, and is rising because RCFC cooling flow has transferred to CCW.

C. above the Tech Spec limit, and is rising because there is no cooling water flow through the RCFC's.

D. above the Tech Spec limit, and is rising because RCFC cooling flow has transferred to CCW.

Question 65

Given the following:

- Unit 2 is at 3% Reactor power performing a power ascension.
- Chemistry sampled the Refueling Water Storage Tank (RWST) and reports the boron concentration to be 2790 ppm.

Which one of the following correctly describes the results of the chemistry sample AND the appropriate action to take?

The reported RWST boron concentration is ...

A. BELOW Technical Specification required limits; the RWST should be processed through the Boron Thermal Regeneration System (BTRS) in the borate mode in accordance with 0POP02-CV-0002, Boron Thermal Regeneration System.

B. BELOW Technical Specification required limits; boric acid should be added to the RWST in accordance with 0POP02-CV-0001, Makeup to the Reactor Coolant System.

C. GREATER THAN Technical Specification required limits; the RWST should be processed through the Boron Thermal Regeneration System (BTRS) in the dilution mode in accordance with 0POP02-CV-0002, Boron Thermal Regeneration System.

D. GREATER THAN Technical Specification required limits; Reactor Makeup Water should be added to the RWST in accordance with 0POP02-CV-0001, Makeup to the Reactor Coolant System.

Question 66

The following plant conditions exist in Unit 1:

- Power is at 100%
- Most recent Reactor Coolant System Inventory indicates a small increase in the unidentified leakage rate.
- Preparations are being made to perform a Containment Building entry to determine the possible source of the leak.

Which ONE of the following is the greater potential radiological hazard to personnel making entry and the method that could be used to reduce this hazard?

A. Iodine; Place Containment Carbon Units in service.

B. Iodine; Place Containment Normal Purge in service.

C. Radon; Place Containment Carbon Units in service.

D. Radon; Place Containment Normal Purge in service

Question 67

In accordance with the Conduct of Operations Manual, which of the following are true with respect to the response to an UNEXPECTED alarm?

1. A member of the control room staff will announce the alarm title, with the communication being directed to the Unit Supervisor/Shift Manager.
2. A member of the control room staff will announce the alarm title, with the communication being directed to another Reactor Operator.
3. The Unit Supervisor/Shift Manager will provide a repeat back of the alarm received.
4. The other Reactor Operator will provide a repeat back of the alarm received.
5. All alarms are considered as UNEXPECTED the first time they are received unless they are the result of direct operator action.
6. The Unit Supervisor/Shift Manager shall scan the control panels for additional alarms when the alarm is acknowledged.

A. 1, 3, 5

B. 1, 3, 6

C. 2, 4, 5

D. 2, 4, 6

Question 68

Given the following:

- Unit 1 is in a reduced inventory condition.
- RCP Seal Injection has been secured.
- SG primary side manways have been removed.
- All RHR cooling is lost.
- Containment sump levels are rising.

The loss of RHR cooling has resulted in rising sump levels due to ...

A. rising RCS density resulting in leakage out of the RCP seals.

B. lowering RCS density resulting in leakage out of the RCP seals.

C. rising RCS density resulting in leakage from open SG primary side manways.

D. lowering RCS density resulting in leakage from open SG primary side manways.

Question 69

Given the following:

- Unit 1 is in Mode 6 with fuel offload in progress
- High radiation alarms are received on 68' RCB Area Monitors RT-8099 and RT-8055
- 0POP04-FH-0001, Fuel Handling Accident, is entered

Which of the following are actions found in POP04-FH-0001 to protect the safety of site personnel under these conditions?

1. Ensure Control Room Envelope HVAC is operating in the Emergency Mode
2. Suspend core alterations in the Reactor Containment Building and the Fuel Handling Building
3. Manually initiate Safety Injection to actuate Containment Ventilation Isolation.
4. Establish Supplementary Purge using the Exhaust Fans only.
5. Initiate containment evacuation

A. 1, 2, 3

B. 2, 3, 4

C. 2, 4, 5

D. 1, 2, 5

Question 70

In accordance with 0POP08-FH-0009, Core Refueling, which of the below is an assigned task for a Licensed Control Room Operator during refueling operations?

A. Inform the Core Load Supervisor of the next core location to have a fuel assembly loaded.

B. Operate the remote television monitoring equipment used to observe refueling activities.

C. Monitor the Core Monitoring NI channels during and following insertion of each fuel assembly.

D. Inform the Refueling Machine Operator when he/she can disengage from a newly seated fuel assembly.

Question 71

Given the following:

- Unit 1 is in Mode 5
- Preparations to enter mode 6 are in progress
- RCS boron concentration is 2830 ppm

Which one of the below describes (1) RCS Temperature requirements for entering Mode 6 and (2) when Mode 6 is declared?

A. RCS Tave $\leq$ 140 °F; mode 6 is declared when ANY Reactor Vessel head closure bolt is less than fully tensioned

B. RCS Tave $\leq$ 200 °F; mode 6 is declared when ANY Reactor Vessel head closure bolt is less than fully tensioned

C. RCS Tave $\leq$ 140 °F; mode 6 is declared when ALL Reactor Vessel head closure bolts are detensioned

D. RCS Tave $\leq$ 200 °F; mode 6 is declared when ALL Reactor Vessel head closure bolts are detensioned

Question 72

With the Unit operating at full power, a single Shutdown Bank rod drops fully into the core.

Which one of the following describes the indications that will be seen by the operator and why?

The Rod Bottom Light for the affected rod will light due to a signal from the Rod Position Indication .....

A. reed switches; the ROD BOTTOM annunciator will NOT alarm because it only receives input from Control Bank rods.

B. reed switches; the ROD BOTTOM annunciator WILL alarm because it receives input from Shutdown Bank rods AND Control Bank rods.

C. coil stacks; the ROD BOTTOM annunciator will NOT alarm because it only receives input from Control Bank rods.

D. coil stacks; the ROD BOTTOM annunciator WILL alarm because it receives input from Shutdown Bank rods AND Control Bank rods.

Question 73

Given the following conditions:

- Unit 1 is operating with a normal plant lineup at 100% power.
- An RCS leak/break occurs

Which one of the following correctly describes the MAXIMUM RCS inventory loss rate, and its basis, beyond which a Reactor Trip and Safety Injection would be required?

A. 240 gpm because the Charging Flow Control Valve, FCV-0205 can pass up to this much flow.

B. 200 gpm because the Charging Flow Control Valve, FCV-0205 can pass up to this much flow.

C. 200 gpm because the Reactor Makeup Control System can provide sufficient makeup to the VCT.

D. 240 gpm because the Reactor Makeup Control System can provide sufficient makeup to the VCT.

Question 74

The Caution prior to step 1 of 0POP05-EO-E020, Faulted Steam Generator Isolation, states:

"If any faulted SG or secondary break is NOT needed for RCS cooldown, THEN it should remain isolated during subsequent recovery actions to ..."

A. minimize release to the containment or atmosphere.

B. prevent feeding a hot and dry steam generator.

C. prevent uncontrolled RCS cooldown.

D. prevent runout of the AFW pumps.

Question 75

A Large Break Loss of Coolant Accident has occurred. The crew is presently performing the actions of POP05-EO-EO10, Loss of Reactor or Secondary Coolant.

Given the attached Qual PAMS indications and Containment Critical Safety Function Status Tree, which ONE of the following correctly describes the necessary procedure flowpath?

A. Continue performing the actions of POP05-EO-EO10, Loss of Reactor or Secondary Coolant.

B. Enter POP05-EO-FRZ1, Response to High Containment Pressure.

C. Enter POP05-EO-FRZ2, Response to Containment Flooding.

D. Enter POP05-EP-FRZ3, Response to High Containment Radiation Level.

LOT-17 NRC SRO EXAM KEY

Question #	Answer	Question #	Answer	Question #	Answer	Question #	Answer
76	C						
77	C						
78	C						
79	B						
80	C						
81	A						
82	B						
83	C						
84	D						
85	C						
86	C						
87	D						
88	B						
89	D						
90	D						
91	A						
92	B						
93	A						
94	C						
95	D						
96	B						
97	B						
98	D						
99	D						
100	C						

KEY

Question 76

Given the following:

- Unit 1 is in Mode 5 following refueling
- The Reactor Coolant System has been filled and vented

In accordance with 0POP02-CV-0001, Makeup to the Reactor Coolant System, which one of the following describes the required position and bases for CV-0198, "RX MAKEUP WATER ISOL?"

CV-0198 will be ...

A. full open to allow normal use of the Reactor Makeup Control System.

B. locked in place to limit flow to 200 gpm in order to satisfy 0PGP03-ZO-0042, Reactivity Management Program, requirements.

C. locked in place to limit flow to 110 gpm in order to satisfy Technical Specification requirements.

D. locked closed in order to satisfy Technical Specification requirements.

Question 77

The following conditions exist:

- RT-8077, 60' MAB Area Radiation Monitor, is currently reading $6x10^3$ mR/hr.
- Health Physics has validated the reading with local measurements.
- The 24 hour average for RT-8077 is 3 mR/hr.

Which ONE of the following correctly identifies the required Emergency Classification for this condition AND the required notifications for the classification?

A. Notification of Unusual Event (UE); notify the State/County within 15 minutes and the NRC within 1 hour of declaring the event.

B. Notification of Unusual Event (UE); notify the NRC within 15 minutes and the State/County within 1 hour of declaring the event.

C. Alert; notify the State/County within 15 minutes and the NRC within 1 hour of declaring the event.

D. Alert; notify the NRC within 15 minutes and the State/County within 1 hour of declaring the event.

Question 78

Given the following conditions:

- Unit 1 was operating at 100% power when a feedwater line break occurred inside containment.
- Steam Generator narrow range levels are as follows:
  - SG 1A = 7%
  - SG 1B = 8%
  - SG 1C = 7%
  - SG 1D = 0%
- No Steam Generator feedwater (main or auxiliary) is available. Attempts are being made to restore AFW pumps.
- Containment pressure is 6 psig and stable

Which one of the below describes the existing emergency classification and the MINIMUM additional barrier degradation required for escalation to the next higher classification?

A. ALERT; escalation criteria would be Loss of Fuel Clad OR Loss of RCS

B. ALERT; escalation criteria would be Loss of Containment

C. SITE AREA EMERGENCY; escalation criteria would be Loss of Fuel Clad AND Loss of Containment

D. SITE AREA EMERGENCY; escalation criteria would be Loss of RCS AND Potential Loss of Containment

Question 79

Given the following:

- Unit 1 was operating at 100% reactor power
- Tripping of the Main Generator Field Breaker has resulted in a Turbine trip
- The crew has completed all actions in 0POP05-EO-EO00, Reactor Trip or Safety Injection, and have transitioned to 0POP05-EO-ES01, Reactor Trip Response

The Secondary Operator reports the following alarms and associated equipment status:

- 07M3-E-7, MAIN COND VACUUM LO, condenser vacuum is 21.0 in. hg and stable
- 03M3-A-8, DG 13 TRBL, ESF Diesel Generator 13 is not running
- 06M4 - F-2, FWIV FV-7143 N2 PRESS LO, Steam Generator 1C feedwater isolation valve FV-7143 is closed

What additional actions should be taken while continuing with 0POP05-EO-ES01, Reactor Trip Response?

A. Enter 0POP04-AE-0001, First Response To Loss Of Any Or All 13.8 KV Or 4.16 KV Bus while continuing with 0POP05-EO-ES01.

B. Close all Main Steam Isolation Valves and Main Steam Isolation Bypass Valves.

C. Close ONLY the Main Steam Isolation Valve and Main Steam Isolation Bypass Valve for the 1C steam generator.

D. No actions required outside of 0POP05-EO-ES01. These alarms are expected after a Reactor Trip.

Question 80

Given the following:

- A grid disturbance has occurred.
- The Secondary Operator reports Main Generator output to be 1350 MW and Main Generator reactive load to be 100 MVARS IN.

Which one of the following describes the condition of the Main Generator AND any action to be taken by the Unit Supervisor?

The Main Generator is operating...

A. within the limits of the Main Generator Capability Curve; no further action is required.

B. outside the limits of the Main Generator Capability Curve; raise hydrogen gas pressure in accordance with 0POP02-GG-0001, Generator Hydrogen and Carbon Dioxide Gas System, to establish operation within limits.

C. outside the limits of the Main Generator Capability Curve; raise Main Generator excitation in accordance with 0POP03-ZG-0008, Power Operations, to establish operation within limits.

D. outside the limits of the Main Generator Capability Curve; lower Main Generator excitation in accordance with 0POP03-ZG-0008, Power Operations, to establish operation within limits.

Question 81

Given the following Unit 2 conditions:

- A loss of all AC power has occurred.
- The Control Room operators are monitoring DC bus voltages in accordance with Addendum 4, Vital DC Bus Monitoring, of 0POP05-EO-EC00, Loss of All AC Power.
- Train "A" main battery breaker E2A11 has been opened due to low bus voltage.

Subsequently, the Primary Operator reports the following:

- Train B Class 1E battery voltage is 105 VDC
- Train C Class 1E battery voltage is 110 VDC

Which one of the following identifies the REQUIRED action to be taken AND the basis for the action?

A. Open Train "B" main battery breaker E2B11 to conserve the battery should ESF DG 22 become available.

B. Open BOTH Train "B" and Train "C" main battery breakers (E2B11 and E2C11) to conserve the batteries should their respective ESF DG's (DG 22 and DG 23) become available.

C. Open Train "B" main battery breaker E2B11 to prevent buildup of H_2 gas to explosive concentrations due to the excessive discharge with no ventilation.

D. Open BOTH Train "B" and Train "C" main battery breakers (E2B11 and E2C11) to prevent buildup of H_2 gas to explosive concentrations due to the excessive discharge with no ventilation.

Question 82

Given the following conditions:

- Unit 1 is in a refueling outage with core reload in progress.
- Extended Range Channel NI-45 is out of service.
- Source Range Channel NI-31 is providing audible count rate indication.
- Source Range Channel NI-32 is NOT capable of providing audible count rate indication.
- Source Range Channel NI-31 has a significantly lower detector voltage than Source Range Channel NI-32.

Which one of the below correctly describes the effect on Source Range Channel NI-31 due to the lower detector voltage and the applicable Technical Specification requirements if NI-31 were declared inoperable?

With a lower detector voltage on NI-31, the indicated count rate should be ...

A. LOWER than NI-32. Technical Specifications for Source Range Flux Monitoring would still be met if NI-31 was declared inoperable. Core Alterations could continue.

B. LOWER than NI-32. Technical Specifications for Source Range Flux Monitoring would NOT be met if NI-31 was declared inoperable. Core Alterations would be immediately suspended.

C. HIGHER than NI-32. Technical Specifications for Source Range Flux Monitoring would still be met if NI-31 was declared inoperable. Core Alterations could continue.

D. HIGHER than NI-32. Technical Specifications for Source Range Flux Monitoring would NOT be met if NI-31 was declared inoperable. Core Alterations would be immediately suspended.

Question 83

The following plant conditions exist in Unit 1:

- Reactor power is at 48%
- Annunciator 7M3-E7, MAIN COND VACUUM LO, is in alarm.
- Condenser vacuum is 21 inches Hg and slowly LOWERING.

Based on these plant conditions, which ONE of the following describes the correct actions for the Unit Supervisor to take?

A. Commence a plant shutdown in accordance with 0POP03-ZG-0006, Plant Shutdown From 100% to Hot Standby.

B. Perform a fast load reduction in accordance with 0POP04-TM-0005, Fast Load Reduction.

C. Ensure the reactor and main turbine are tripped and perform the actions of 0POP05-EO-EO00, Reactor Trip or Safety Injection

D. Trip the main turbine and perform the actions of 0POP04-TM-0003, Turbine Trip Below P-9.

Question 84

The Unit has just entered Mode 3 after operating for 6 months.

Which ONE of the following conditions indicates a loss of containment integrity and would require entry into the action statement for Technical Specification 3.6.1.1, Containment Integrity? (consider each condition separately)

A. Manual containment isolation valves located inside containment have not been verified since the last time the Unit was in Mode 5.

B. Work is in progress on a motor operated containment isolation valve's breaker with the valve de-energized in the closed position.

C. The inner personnel airlock door was declared inoperable 30 minutes ago. The outer door has just been opened to allow entry of maintenance personnel to work on the inner door.

D. It was identified 72 hours ago that the personnel airlock exceeded Surveillance 4.6.1.3.a leakage rate requirements (overall leakage requirements of 3.6.1.2, Containment Leakage are still met).

Question 85

A Reactor trip has occurred due to a Loss of Offsite Power (LOOP) and the crew has reached step 16 of POP05-EO-ES02, Natural Circulation Cooldown, to initiate RCS depressurization.

Plant conditions are as follows:

- One CRDM fan is running
- CET temperature in 500° F
- RCS pressure is 1200 psig
- Upper head temperature is 520° F
- Auxiliary spray valve is closed

Based on these conditions, what is the NEXT action the Unit Supervisor should direct the crew to take?

A. Raise RCS pressure to establish greater than 85° F subcooling based on core exit T/Cs.

B. Ensure Normal Spray Valves are closed and then open the Auxiliary Spray Valve.

C. Raise RCS pressure to establish greater than 100° F subcooling based on core exit T/Cs.

D. Open the Reactor Vessel Head Vent Isolation Valves and one Reactor Vessel Head Vent Throttle Valve.

Question 86

Given the following conditions:

- Unit 1 is at 100% power.
- All Pressurizer level channels indicate 57% and STABLE.
- VCT level instruments LT-112 and LT-113 indicate 27% and trending down.
- The Primary Operator reports the RC MU CONT SYS ON red light is not lit (bulb is good).

Which one of the following describes the action required?

A. No action required. The RC MU CONT SYS ON red light will illuminate during automatic makeup that normally occurs at 15% VCT level.

B. No action required. The RC MU CONT SYS ON red light will only illuminate if an alarm condition occurs during automatic makeup to the VCT.

C. Initiate makeup to the VCT utilizing the 'Manual Makeup to RCS' section of 0POP02-CV-0002, Makeup to the Reactor Coolant System.

D. Swap Charging Pump suction from the VCT to the RWST using the Annunciator Response Procedure for 4M08-E-2, VCT LEVEL HI/LO.

Question 87

The following plant conditions exist in Unit 1:

- The Control Room Staff are in the process of draining the RCS to mid-loop conditions in accordance with 0POP03-ZG-0009, Mid-Loop Operation.
- Pressurizer level is 5%.
- RHR Train A is in service.
- RHR Trains B and C are in standby.
- RHR Train A Inlet Temperature is being maintained less than 140°F.
- Annunciator 1M2-F4, RHR PUMP 1A DISCH FLOW LO alarms.
- All automatic actions have occurred, as designed.

Based on these plant conditions, the Unit Supervisor would.....

A. direct the Reactor Operator to raise RHR Train A flow by opening the RHR heat exchanger outlet flow control valve in accordance with the annunciator response procedure for Annunciator 1M2 Window F4.

B. direct the Reactor Operator to immediately start RHR Pump B per the "Skill of the Craft" guidance found in the Conduct of Operations.

C. enter 0POP04-RC-0007, Mode 5 Or Mode 6 LOCA With The Reactor Vessel Head On and direct the Reactor Operator to close all RHR Train suction isolation valves.

D. enter 0POP04-RH-0001, Loss of Residual Heat Removal, and direct the Reactor Operator to place RHR Train B in service in accordance with 0POP04-RH-0001.

Question 88

Given the following for Unit 1:

- Plant heatup is in progress per 0POP03-ZG-0001, Plant Heatup
- RCS Tave is 355 °F
- A loss of ALL Instrument Air has occurred.

Which one of the below correctly describes (1) the effect on the CCW Train RHR Heat Exchanger Outlet Valves (CCW OUTL FV-4531/4548/4565) and (2) the procedural guidance to mitigate the consequences for the operating CCW Train/s?

A. Fail OPEN; Align CCW Trains in accordance with 0POP04-RH-0001, Loss of Residual Heat Removal.

B. Fail OPEN; Align CCW Trains in accordance with the Annunciator Response Procedures for the CCW HX OUTLET FLOW HI/LO alarms.

C. Fail CLOSED; Align CCW Trains in accordance with the Annunciator Response Procedures for the CCW HX OUTLET FLOW HI/LO alarms.

D. Fail CLOSED; Align CCW Trains in accordance with 0POP04-RH-0001, Loss of Residual Heat Removal.

Question 89

Given the following:

- Unit 1 is at 100% power.
- E1A11 Breaker #5 tripped causing a loss of power to the Train R Reactor Trip Breaker Shunt Trip Coil

Which ONE of the following describes how the Trip Breaker will respond and what subsequent actions must be taken by the Unit Supervisor?

Train R Reactor Trip Breaker .....

A. trips OPEN. Restore the Train R Reactor Trip Breaker Shunt Trip to operable status within 24 hours or be in Hot Standby within the following 6 hours.

B. trips OPEN. Restore the Train R Reactor Trip Breaker Shunt Trip to operable status within 48 hours or ensure that both Train R and Train S Reactor Trip Breakers are open within the next hour.

C. remains CLOSED. Restore the Train R Reactor Trip Breaker Shunt Trip to operable status within 24 hours or be in Hot Standby within the following 6 hours.

D. remains CLOSED. Restore the Train R Reactor Trip Breaker Shunt Trip to operable status within 48 hours or place the unit in Hot Standby within the following 6 hours.

Question 90

Due to system conditions on Unit 1, the Instrument Air Dryers are plugging up and Instrument Air pressure is currently 95 psig.

Which of the following correctly describes the impact on the Instrument Air System and the actions the Unit Supervisor should take?

A. Instrument air pressure will continue to lower indefinitely. Enter POP02-IA-0003, Instrument Air System Operation, and perform a 'remote' start on Instrument Air Compressor #14.

B. Instrument air pressure will continue to lower until Dryer Bypass Valve PV-9983 automatically opens. Enter POP02-IA-0003, Instrument Air System Operation, and perform a 'remote' start on Instrument Air Compressor #14.

C. Instrument air pressure will continue to lower indefinitely. Enter POP04-IA-0001, Loss of Instrument Air, and verify Unit 2 is supplying instrument air to the yard systems.

D. Instrument air pressure will continue to lower until Dryer Bypass Valve PV-9983 automatically opens. Enter POP04-IA-0001, Loss of Instrument Air, and verify Unit 2 is supplying instrument air to the yard systems.

Question 91

Given the following:

- A Unit 1 Reactor trip occurred due to Loss of Offsite Power (LOOP).
- Control Room operators are currently performing the actions of 0POP05-EO-ES01, Reactor Trip Response.
- Current plant conditions are as follows:
    - RCS Tcold - 571° F and stable
    - Pressurizer level – 27% and stable
    - Pressurizer pressure – 2245 psig and stable

The Primary Operator initiates Auxiliary Spray to lower Pressurizer pressure by performing the following:

- Opens AUX SPRY Valve, PV-3119
- Closes LOOP ISOL MOV-0003
- Manually opens Charging Flow Control Valve, FCV-0205, to maximize spray flow and reduce Pressurizer pressure to 2235 psig.

When RCS pressure reaches 2235 psig, the operator attempts to close the Aux Spray Valve, but the spray valve FAILS TO CLOSE.

Assuming no further operator action, which one of the following describes the Pressurizer LEVEL response and the correct procedure usage to mitigate the failure?

Pressurizer level will…

A. INCREASE; Implement 0POP04-RP-0001, Loss of Automatic Pressurizer Pressure Control.

B. INCREASE; Implement 0POP04-RP-0002, Loss of Automatic Pressurizer Level Control.

C. REMAIN STABLE; Implement 0POP04-RP-0001, Loss of Automatic Pressurizer Pressure Control.

D. REMAIN STABLE; Implement 0POP04-RP-0002, Loss of Automatic Pressurizer Level Control.

Question 92

Unit 1 is at 100% power.

An electrical malfunction results in the loss of the load center supplying the in service Spent Fuel Pool Cooling Pump, causing Annunciator 22M2-F6, SFP TROUBLE, to alarm.

Which ONE of the following correctly describes the impact of the loss AND the action to be taken by the Unit Supervisor?

With Spent Fuel Pool level greater than the Technical Specification requirements, Spent Fuel Pool Temperature .....

A. will NOT rise to the boiling point. Enter the annunciator response procedure for the SFP TROUBLE alarm and start the standby pump.

B. WILL rise to the boiling point. Enter the annunciator response procedure for the SFP TROUBLE alarm and start the standby pump.

C. will NOT rise to the boiling point. Since the loss of the load center also disabled the standby pump, enter POP04-FC-0001, Loss of Spent Fuel Pool Level or Cooling, and add water to the Spent Fuel Pool using a LHSI pump to maintain temperature.

D. WILL rise to the boiling point. Since the loss of the load center also disabled the standby pump, enter POP04-FC-0001, Loss of Spent Fuel Pool Level or Cooling, and add water to the Spent Fuel Pool using a LHSI pump to maintain temperature.

Question 93

Given the following:

- Unit 1 is in mode 5, maintaining RCS mid-loop conditions
- RCS Level is being maintained between +11 and +6 inches by narrow range hot leg level indication (33' 2" to 32' 9")
- RHR trains "A" & "B" are in service with flow throttled to 2800 gpm for each train
- Reactor Vessel Head detensioning is in progress

The Primary Operator reports the following:

- 01M2-F-1, RC MID LOOP LVL LO-LO, alarms
- RCS level indicates +0 inches (Narrow Range Hot Leg Indication) and stable
- Both in service RHR Pumps are exhibiting erratic flow and current indications

Which one of the following describes the appropriate action to take by the Unit Supervisor?

A. Enter 0POP04-RH-0001, Loss of Residual Heat Removal; STOP both RHR pumps.

B. Enter 0POP04-RH-0001, Loss of Residual Heat Removal; STOP 1 RHR pump.

C. Enter 0POP04-RC-0006, Shutdown LOCA; STOP both RHR pumps.

D. Enter 0POP04-RC-0006, Shutdown LOCA; STOP 1 RHR pump.

Question 94

As the Core Loading Supervisor, which one of the following conditions would require you to immediately suspend further core alterations in accordance with 0POP08-FH-0009, Core Refueling?

A. As a fuel assembly is loaded, the count rate on SR channel N-31 increases from 8 cps to 16 cps, however the count rate on N-32 remains stable at 8 cps.

B. The operating RHR loop inlet temperature has increased from 122°F to 130°F since the last recorded reading.

C. Boron concentration in the operating RHR loop has decreased from 2803 ppm to 2797 ppm since the last sample.

D. Moving the refueling bridge to a different location causes radiation levels on the bridge to increase from 7 mr/hr to 53 mr/hr.

Question 95

Which of the following identify requirements that must be met to be considered a Senior Reactor Operator (SRO) as part of a shift crew for the next calendar quarter in accordance with POP01-ZA-0014, Licensed Operator License Maintenance?

1. Current in Licensed Operator Requalification (LOR)
2. License physical current and valid
3. Respirator physical current and valid
4. Completed five 12-hour shifts within the current quarter
5. Completed a plant tour within the current quarter

A. 2, 3, 4 ONLY

B. 2, 4, 5 ONLY

C. 1, 2, 4, 5

D. 1, 2, 3, 4

Question 96

Given the following:

- Unit 1 is at 100% power with 79 days remaining until a refueling outage.
- Safety Injection Accumulator 1C is experiencing increased RCS in-leakage and requires draining twice per shift.
- A work package has been developed to shut the Accumulator 1C discharge isolation valve, MOV-0039C.
    - MOV-0039C valve control circuitry will be modified to receive an open signal on low RCS pressure in addition to a Safety Injection actuation signal
- MOV-0039C will be repaired and its control circuitry returned to original design configuration during the refueling outage.

What are the requirements for this modification to be implemented?

Since this modification ....

A. will be in service for less than 90 days, process this work package through the temporary modification process without performing a 10CFR50.59 evaluation.

B. may affect the Safety Injection function, process this work package through the 10CFR50.59 evaluation process.

C. establishes plant conditions that are in compliance with Technical Specifications, only a 10CFR50.59 screening is required.

D. meets the same functional requirements as the original design, the work package can be approved for implementation by performing only a 10CFR50.59 screening.

Question 97

Given the following conditions:

- Unit 2 is at 100% power.
- An Unusual Event has been declared due to high RT-8010B, Unit Vent Stack, radioactivity levels caused by an ongoing water leak in the MAB.
- The on-duty Shift Manager is the Emergency Director.

In accordance with PGP03-ZA-0090, Work Process Program, which ONE of the following describes a method that could be implemented to expeditiously repair the leak and stop the release?

Maintenance can be directed to begin work without an approved work package after....

A. The Shift Manager declares the repair Emergent Work.

B. The Shift Manager declares the repair Emergency Maintenance.

C. The Plant Manager declares the repair Emergent Work.

D. The Plant Manager declares the repair Emergency Maintenance.

Question 98

Given the following:

- Unit 2 is at 48% power
- HIGH alarms are received on the following Radiation Monitors:
  - RT-8027, Condenser Air Removal System
  - RT-8043, Steam Generator Blowdown System
- Charging flow is unexpectedly rising above letdown flow

Which one of the following describes the action to be taken by the Unit Supervisor?

A. Enter 0POP04-RC-0003, Excessive RCS Leakage; bypass the Condensate Polishers to prevent contamination of the resin.

B. Enter 0POP04-RC-0003, Excessive RCS Leakage; align Steam Generator Blowdown to the Blowdown Demineralizers to minimize the spread of contamination in the secondary system.

C. Enter 0POP04-RC-0004, Steam Generator Tube Leakage; bypass the Condensate Polishers to prevent contamination of the resin.

D. Enter 0POP04-RC-0004, Steam Generator Tube Leakage; align Steam Generator Blowdown to the Blowdown Demineralizers to minimize the spread of contamination in the secondary system.

Question 99

A fire has been reported in the Unit 1 Turbine Generator Building.

Which of the following describes the action to be taken by the Unit 1 Unit Supervisor?

A. Enter PGP03-ZF-0011, STPEGS Fire Brigade, contact the Unit 2 Control Room with fire information and request their coordination of the fire response.

B. Enter PGP03-ZF-0011, STPEGS Fire Brigade, sound the fire alarm and make a plant announcement to activate the fire brigade.

C. Enter POP04-ZO-0008, Fire/Explosion, contact the Unit 2 Control Room with fire information and request their coordination of the fire response.

D. Enter POP04-ZO-0008, Fire/Explosion, sound the fire alarm and make a plant announcement to activate the fire brigade.

Question 100

Given the following:

- An ALERT has been declared on Unit 1.
- The Shift Manager is in the process of transferring the Emergency Director responsibilities to the Technical Support Center (TSC) Manager.

Which ONE of the following responsibilities is retained by the Shift Manager (i.e. NOT transferred)?

A. Upgrading Emergency Classifications.

B. Approving commitments to the Nuclear Regulatory Commission.

C. Approving departure from license conditions per 10CFR50.54(x) for Control Room operator actions.

D. Approving communications with the Nuclear Regulatory Commission.