

# RO ANSWER KEY

Q#	Item #	Topic	KEY	SF
1			A	
2			B	
3			A	
4			D	
5			B	
6			C	
7			A	
8			A	
9			C	
10			D	
11			C	
12			C	
13			A	
14			D	
15			B	
16			C	
17			B	
18			D	
19			D	
20			C	
21			B	
22			B	
23			C	
24			A	
25			D	
26			D	
27			A	
28			D	
29			A	
30			A	
31			C	
32			A	
33			B	
34			A	
35			D	
36			A	
37			B	
38			C	
39			A	
40			C	
41			D	
42			A	
43			A	
44			A	
45			D	
46			D	
47			D	
48			D	

RO ANSWER KEY

Q#	Item #	Topic	KEY
49			D
50			D
51			D
52			C
53			B
54			D
55			A
56			D
57			B
58			C
59			A
60			D
61			A
62			B
63			D
64			B
65			C
66			C
67			D
68			C
69			A
70			B
71			B
72			B
73			B
74			B
75			D

# PROVIDED RO REFERENCES

## List of RO Exam Attachments

- #17 AP/3/A/1700/034 Encl. 5.1 Generator Capability Curve - pgs 1 & 3 of 3
- #73 ARG for 1SA-03/ B-6 (FIRE ALARM) which comes from OP/1/A/6101/003  
– pgs 1-7 and pgs 26 & 27
- #75 OP/0/A/1108/001 Enclosure 4.39 (page 1 only with action notes removed)

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

**Applicant Information**

Name:

Date: **03/13/2009**

Facility/Unit: **Oconee 1, 2, 3**

Region: **II**

Reactor Type: **BW**

Start Time: **0900**

Finish Time: **1500**

**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 starts.

**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 \_\_\_\_\_ Points

**1 POINT**

**Question 1**

Unit 1 initial conditions:

- Reactor power = 100%

Current conditions:

- Both Main FDWPs tripped
- Reactor power = 46% decreasing
- All Main Turbine Stop Valves are open
- The generator breakers are closed (PCB-20 & PCB-21)

Based on the current conditions, which ONE of the following would be the required initial operator actions?

- A. Manually insert control rods and initiate Emergency Boration
- B. Manually insert control rods and ensure both channels of AMSAC have actuated
- C. Place both EHC pumps in pull-to-lock and initiate Emergency Boration
- D. Place both EHC pumps in pull-to-lock and ensure both channels of AMSAC have actuated

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1 POINT

Question 2

Unit 2 initial conditions:

- Mode 3
- Startup in progress
- RCS temperature = 350°F stable
- RCS Pressure = 1250 psig slowly decreasing
- Pressurizer Level = 292 inches stable
- Quench Tank Level = 84 inches increasing
- Quench Tank pressure = 5 psig slowly increasing
- The PORV is leaking

Based on the above conditions, which ONE of the following describes the expected PORV tail pipe temperature (°F) and is the Pressurizer level exceeding the TS limit?

- A. 265 / no
- B. 265 / yes
- C. 228 / no
- D. 228 / yes

**1 POINT**

**Question 3**

Unit 1 initial conditions:

- Reactor power = 100%

Current conditions:

- SBLOCA
- 1A and 1B SG Levels at the LOSCM setpoint
- TBVs in AUTO and CLOSED

Based on the above conditions, which ONE of the following combinations of parameters describes the indications that boiler-condenser mode heat transfer has been established?

RCS primary water level is \_\_\_\_\_ / SG Pressures will \_\_\_\_\_

- A. below the SG secondary water level / increase until the TBV setpoint is reached
- B. below the SG secondary water level / decrease until SG pressure stabilizes at Tsat for the RCS temperature
- C. above the SG upper tube sheet / increase until the TBV setpoint is reached
- D. above the SG upper tube sheet / decrease until SG pressure stabilizes at Tsat for the RCS temperature

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**1 POINT**

**Question 4**

Unit 1 conditions:

- RCS Pressure = 200 psig decreasing
- HPI Flow in 1A Header = 750 gpm
- HPI Flow in 1B Header = 490 gpm

Based on the conditions above, which ONE of the following describes the required operator actions to protect the HPI pumps?

- A. Throttle HPI flows in BOTH 1A & 1B headers to <475 gpm per pump
- B. Throttle HPI flow in ONLY 1A header to <750 gpm
- C. Throttle HPI flows in BOTH 1A & 1B headers to <950 gpm combined
- D. Throttle HPI flow in ONLY 1B header to <475 gpm

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1 POINT

Question 5

Unit 1 initial conditions:

- Reactor power = 65%
- 1LPSW-6 (UNIT 1 RCP COOLERS SUPPLY) fails closed

Current conditions:

- AP/16 (Abnormal RCP Operation) in progress
- RCP Temperatures:

	<u>1A1</u>	<u>1A2</u>	<u>1B1</u>	<u>1B2</u>
Upper Guide Bearing Temp	182°F	197°F	188°F	185°
Radial Bearing Temp	219°F	220°F	231°F	222°

Based on the above conditions, which ONE of the following is required per AP/16?

- A. Manually trip the Reactor and stop ALL RCPs
- B. Manually trip the Reactor and stop RCPs 1A2 & 1B1 ONLY
- C. Stop RCP 1A2 ONLY and verify FDW re-ratios properly
- D. Stop RCP 1B1 ONLY and verify FDW re-ratios properly

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**1 POINT**

**Question 6**

Unit 1 plant conditions:

Time = 0400

- Reactor power = 100%
- 1A HPI Pump operating
- 1B HPI Pump in AUTO

Time = 0401

- 1SA-2/C-2 (HP Injection Pump Disch Header Pressure Low) actuated
- 1SA-2/B-2 (HP RCP Seal Inlet Header Flow High/Low) actuated
- RCS makeup flow erratic and low
- 1A HPI Pump amps cycling

Time = 0405

- AP/14 (Loss Of Normal HPI Makeup and/or RCP Seal Injection) in progress
- Operators just completed Step 3.3, for stopping all HPI pumps

Based on the conditions above, which ONE of the following describes the pump used to restore RCS makeup and the suction source used as directed by AP/14?

- A. 1B HPI pump / BWST
- B. 1B HPI pump / LDST
- C. 1C HPI Pump / BWST
- D. 1C HPI Pump / LDST

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**1 POINT**

**Question 7**

Unit 1 initial conditions:

- Normal LPI decay heat removal in service

Current conditions:

- Loss of offsite power occurs
- Power restored via CT-4
- 1A and 1B LPI Pumps not available

Based on the above conditions, which ONE of the following describes the requirements to start the 1C LPI Pump to restore decay heat removal?

Manual reset of Load Shed is \_\_\_\_\_ and starting of 1C LPI Pump is allowed after a minimum of \_\_\_\_\_ seconds.

- A. NOT required / 5
- B. required / 5
- C. NOT required / 30
- D. required / 30

**1 POINT**

**Question 8**

Unit 1 initial conditions:

- Reactor power = 100%
- NR RCS Pressure Channel "A" failed low
- NR RCS Pressure Channel "B" = 2155 psig stable
- NR RCS Pressure Channel "C" = 2158 psig stable
- NR RCS Pressure Channel "D" = 2162 psig stable
- NR RCS Pressure Channel "E" = 2148 psig stable

Current conditions:

- NR RCS Pressure Channel "E" failed low

Based on the conditions above, which ONE of the following describes the impact on Pzr Heaters and the response of the unit over the next 30 minutes?

**ASSUME NO OPERATOR ACTION**

All Pzr Heater controlled from the Unit 1 control room are...

- A. "ON" / Reactor will automatically trip
- B. "ON" / Reactor will NOT automatically trip
- C. NOT "ON" / Reactor will automatically trip
- D. NOT "ON" / Reactor will NOT automatically trip

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1 POINT

Question 9

Unit 3 initial conditions:

- Reactor Power = 95% decreasing
- RCS Pressure = 2455 psig increasing
- Tavg = 598°F increasing
- Pressurizer level = 355 inches increasing

Current conditions:

- Reactor Power = 4% decreasing
- RCS Pressure = 2735 psig (maximum reached) decreasing
- Tavg = 596°F decreasing
- Pressurizer level = 365 inches decreasing

Based on the conditions above, which ONE of the following describes whether or not the RCS Pressure safety limit has been exceeded and the bases for the safety limit?

The TS RCS Pressure Safety Limit has \_\_\_\_\_. This Safety Limit \_\_\_\_\_.

- A. been exceeded / ensures RCS pressure is maintained below 110% of design pressure to prevent RCS pressure boundary failure
- B. been exceeded / ensures that RCS pressure remains in the assumed range used in the analysis for reactivity accidents including slow rod withdrawal
- C. NOT been exceeded / ensures RCS pressure is maintained below 110% of design pressure to prevent RCS pressure boundary failure
- D. NOT been exceeded / ensures that RCS pressure remains in the assumed range used in the analysis for reactivity accidents including slow rod withdrawal

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1 POINT

Question 10

Unit 1 plant conditions:

- Reactor Power = 29% decreasing
- Primary to secondary leakage in 1A SG
- Pzr level = 160 inches decreasing
- ALL HPI Pumps running
- 1HP-26 and 1HP-27 open
- 1HP-5 closed

Based on the conditions above, which ONE of the following describes whether 1RIA-59 & 1RIA-60 may be used to determine the SG Tube Leak Rate and what method will be used to shutdown per the EOP SGTR Tab?

1RIA-59 & 1RIA-60 \_\_\_\_\_ to determine the SG Tube Leak Rate and the \_\_\_\_\_.

- A. may be used / reactor is NOT required to be manually tripped
- B. may be used / reactor is required to be manually tripped
- C. may NOT be used / reactor is NOT required to be manually tripped
- D. may NOT be used / reactor is required to be manually tripped

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**1 POINT**

**Question 11**

Unit 1 conditions:

- Reactor Tripped
- Main Turbine Control Valves are ALL closed
- Main Turbine Stop Valves 1 & 3 (1MS-105 & 103) are both open

Based on the conditions above, which ONE of the following describes the action required (if any) and the reason action is (or is not) required?

- A. No action is required / ALL Control Valves being closed isolates the Main Steam supply to the Main Turbine and prevents a post trip overcooling due to excessive steam flow.
- B. No action is required / ALL Control Valves being closed isolates the Main Steam supply to the Main Turbine to prevent turbine damage from overspeeding following a generator trip from 100% power.
- C. Place both EHC Pumps in PULL TO LOCK / ALL Stop Valves must be closed to ensure the Main Steam Lines are isolated from each other to prevent a main steam line break from affecting both SGs.
- D. Place both EHC Pumps in PULL TO LOCK / ALL Stop Valves must be closed to ensure the steam chest delta T requirements are not exceeded.

**1 POINT****Question 12**

Unit 1 initial conditions:

- Reactor power = 100%

Current conditions:

- Station Blackout (power has NOT been restored)
- RCS Temperatures 2 minutes after trip
  - $T_c = 550^\circ\text{F}$
  - $T_h = 556^\circ\text{F}$
  - CETCs =  $558^\circ\text{F}$
- SG Pressures = 1010 psig stable

Based on the conditions above, which ONE of the following describes the response of the RCS heat removal parameters during the transition but prior to establishing natural circulation?

- | <u>RCS Tcold</u> | <u>CETCs</u> |
|------------------|--------------|
| A. Increasing    | Increasing   |
| B. Decreasing    | Stable       |
| C. Stable        | Increasing   |
| D. Decreasing    | Increasing   |

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**1 POINT**

**Question 13**

Unit 1 initial conditions:

- LBLOCA occurred 1 hour ago
- RCS Pressure = 30 psig
- 1A & 1B LPI Pumps are running

Current conditions:

- 1KVIA is de-energized
- 1SA-18/A-3 RVLIS/ICCM/RG1.97 Train A Trouble actuated

Based on the conditions above, which ONE of the following describes the impact on the LPI system instrumentation and what alternate indication can be used to determine the status of the LPI pumps?

- A. LPI HDR 1A INJ FLOW (gpm) is Blank / 1A LPI Pump amps and breaker indicating lights
- B. LPI HDR 1A INJ FLOW (gpm) is Blank / 1A LPI HDR flow computer point (OAC)
- C. LPI HDR 1B INJ FLOW (gpm) is Blank / 1B LPI Pump amps and breaker indicating lights
- D. LPI HDR 1B INJ FLOW (gpm) is Blank / 1B LPI HDR flow computer point (OAC)

**1 POINT**

**Question 14**

Plant conditions:

- Unit 1, 2, & 3 Vital DC systems are aligned normally
- 1CA Battery Charger fails - output voltage = 0 VDC
- 1CA Battery voltage = 120 VDC
- 1DCB Bus voltage = 123 VDC
- Unit 2 DCA/DCB Bus voltage = 125 VDC
- Unit 3 DCA/DCB Bus voltage = 127 VDC

Based on the above conditions, which ONE of the following will supply power to 1DIA panelboard?

**ASSUME NO OPERATOR ACTIONS**

- A. 1CA Battery
- B. Unit 3 DC Bus
- C. 1DCB Bus
- D. Unit 2 DC Bus

**1 POINT**

**Question 15**

Unit 3 initial conditions:

- Reactor power = 100%

Current conditions:

- LPSW header pressure = 20 psig increasing

Based on the above conditions, which ONE of the following describes the status of statalarm 3SA-9/C3 (LPSW Low Press RB Aux Cooler Isolation) and if the RBACs isolate, how is LPSW flow restored?

- A. Actuated / Automatically when LPSW pressure returns above setpoint
- B. Actuated / Manually after depressing LPSW LOW PRESS DIG CH 1 AND 2 pushbuttons
- C. Not Actuated / Automatically when LPSW pressure returns above setpoint
- D. Not Actuated / Manually after depressing LPSW LOW PRESS DIG CH 1 AND 2 pushbuttons

**1 POINT**

**Question 16**

Unit 1 initial conditions:

- Reactor power = 100%
- Instrument Air Pressure decreasing
- AP/22 (Loss of Instrument Air) initiated

Current conditions:

- Instrument Air pressure = 61 psig decreasing
- FDW Pump  $\Delta P$  OAC alarms actuate
- 1A & 1B Main FDW Pump speeds are both increasing

Based on the above conditions, which ONE of the following describes the actions required by AP/22?

- A. Commence a plant shutdown. If at any time two or more CRD temperatures are  $>180^{\circ}\text{F}$ , then trip the reactor.
- B. Commence a plant shutdown. If at any time SG level approaches main FDW pump trip criteria, then trip the reactor.
- C. Manually trip the reactor. Manually trip both main FDW pumps.
- D. Manually trip the reactor. Take both FDW Masters to Hand and decrease demand to zero.

**1 POINT**

**Question 17**

Unit 3 plant conditions:

- A voltage disturbance is occurring
- AP/34 (Degrade Grid) initiated
- Power Factor is leading
- Generator Mwe = 800
- Generator Hydrogen pressure = 60 psig
- Generator output voltage = 18.3 kV

Based on the above conditions, which ONE of the following is the limit on MVARs in accordance with the Generator Capacity Curve?

**REFERENCE PROVIDED**

- A. 325
- B. 375
- C. 410
- D. 550

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1 POINT

Question 18

Unit 1 plant conditions:

- Loss of Heat Transfer exists due to the loss of ALL FDW sources
- HPI Forced Cooling in progress
- RCS pressure = 2210 psig slowly decreasing
- Pzr Level = 380 inches increasing
- Core SCM = 56°F increasing

Based on the conditions above, which ONE of the following correctly completes the statement below regarding HPI throttling and the parameter/trend used to determine if the criteria for HPI throttling is met?

HPI flow \_\_\_\_\_ be throttled because \_\_\_\_\_.

- A. may NOT / RCS pressure is decreasing
- B. may NOT / CETCs are increasing
- C. may / Pzr Level is increasing
- D. may / CETCs are decreasing

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1 POINT

Question 19

Unit 3 initial conditions:

- Reactor power = 100%
- SASS is in MANUAL
- ALL PZR level Channels = 220 inches
- PZR Level Channel 3 is selected

Current conditions:

- PZR temperature channel "B" fails LOW

Which ONE of the following describes how Standby Shutdown Facility (SSF) PZR Level indication will be initially affected by the above temperature failure and how will 3HP-120 respond to the failure?

SSF PZR Level indication will initially \_\_\_\_\_ and 3HP-120 will \_\_\_\_\_.

- A. decrease / be unaffected
- B. stay the same / be unaffected
- C. decrease / open
- D. stay the same / open

**1 POINT**

**Question 20**

Plant initial conditions:

- Unit 1 in MODE 6
  - De-fuel in progress
- Unit 2 in MODE 5
- Unit 1 & 2 RB Purge Fans running
- 1RIA-3 (Fuel Transfer Canal Wall) = 1.4 mr/hr
- 1RIA-6 (Spent Fuel Pool) = 1.72 mr/hr

Current conditions:

- 1RIA-3 (Fuel Transfer Canal Wall) = 1.5 mr/hr
- 1RIA-6 (Spent Fuel Pool) = 15.2 mr/hr

Based on the above conditions, which ONE of the following describes REQUIRED operator actions?

- A. Stop Unit 1 RB Purge Fan and start a SFP Filtered exhaust fan.
- B. Start ALL Outside Air Booster Fans and stop Unit 1 RB Purge Fan.
- C. Stop Unit 2 RB Purge Fan and start a SFP Filtered exhaust fan.
- D. Start ALL Outside Air Booster Fans and close ALL containment penetrations

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1 POINT

Question 21

Unit 1 plant conditions:

- A Steam Generator Tube Rupture has occurred in the "1B" SG
- ALL RCPs operating

Which ONE of the following sets of parameters will result in the least amount of primary to secondary leakage?

RCS temperature is \_\_\_\_\_ °F.      RCS pressure is \_\_\_\_\_ psig.

- |    | <b>RCS Temp</b> | / | <b>RCS pressure</b> |
|----|-----------------|---|---------------------|
| A. | 520             | / | 831                 |
| B. | 532             | / | 890                 |
| C. | 540             | / | 987                 |
| D. | 552             | / | 1095                |

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**1 POINT**

**Question 22**

Unit 3 plant conditions:

- Reactor power = 100%
- Main condenser vacuum = 28" Hg decreasing slowly

Based on the above conditions, which ONE of the following describes the highest vacuum (inches Hg) at which a MANUAL Reactor Trip would be required per 3AP/27 (Loss of Condenser Vacuum)?

- A. 25
- B. 22
- C. 20
- D. 19

**1 POINT**

**Question 23**

Unit 1 initial conditions:

- Mode 6
- Fuel assemblies are being loaded into the core
- All four SR NIs in service
- SR 1NI-1 and SR 1NI-3 are the designated NIs for Fuel Handling

Current conditions:

- Power supply to SR 1NI-1 fails (0 vdc)

Based on the above conditions, which ONE of the following describes the impact on fuel movement?

Fuel movement...

- A. may continue because two SR NIs remain in service.
- B. may continue because one of the designated SR NIs is still in service.
- C. is required to be stopped until another SR NI is designated because other NIs are procedurally allowed to be designated.
- D. is required to be stopped and cannot be resumed until SR 1NI-1 is returned to service because other NIs are NOT procedurally allowed to be designated.

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1 POINT

Question 24

Unit 3 initial conditions:

- SBLOCA
- EOP ICC tab is in progress
- No ECCS injection sources are available
- 3RC-4 (PORV Block) is closed

Current conditions:

- 3A & 3B HPI pumps operating
- Conditions require the opening of 3RC-4 and establishing PORV flow to the Quench Tank

Based on the above conditions, which ONE of the following describes actions required to operate 3RC-4 and the reason for establishing flow to the Quench Tank?

Position 3RC-4 switch to...

- A. OPEN / increase HPI injection flow
- B. OPEN / elimination of non-condensable gases
- C. OPEN AND depress OPEN PERMIT / increase HPI injection flow
- D. OPEN AND depress OPEN PERMIT / elimination of non-condensable gases

**1 POINT**

**Question 25**

Unit 3 plant conditions:

- Control Room Evacuation complete due to a non-fire event
- ASDP has been "manned"
  
- Following indications are observed at the ASDP:
  - Turbine Header Pressure = 1011 psig and slowly decreasing
  - TBVs demand is 12% in Automatic and decreasing
  - RCS T Hot = 560°F and slowly decreasing
  - Pzr Level = 140 inches increasing
  - SG SU levels = 48 inches and increasing
  - ALL RCPs are operating

Based on the conditions above, which ONE of the following correctly describes the action(s) required (if any) per AP/8 (Loss of Control Room)?

The operator must take ...

- A. NO actions the plant is responding as expected.
- B. manual control of TBVs to stabilize SG Pressure.
- C. manual control and cycle 3B HPI pump to stabilize Pzr level.
- D. manual control of FDW Startup Control Valves and lower SG levels.

**1 POINT**

**Question 26**

Boron precipitation is primarily a concern for a \_\_\_\_\_ leg rupture. Failure to initiate the Boron Dilution flow path when required would challenge the ability to \_\_\_\_\_.

- A. hot / prevent boron stratification in the cold leg to ensure a restart event does not occur when the cold leg volume enters the core.
- B. hot / ensure boron does not concentrate in the core and block the long term core cooling flow path
- C. cold / prevent boron stratification in the cold leg to ensure a restart event does not occur when the cold leg volume enters the core.
- D. cold / ensure boron does not concentrate in the core and block the long term core cooling flow path

**1 POINT**

**Question 27**

Unit 1 initial conditions:

- Reactor power = 100%
- ACB-3 closed

Current conditions:

- Switchyard Isolation
- RCS pressure = 1146 psig stable
- All SCM = 21°F increasing
- Keowee Unit 2 emergency locked out

Based on the above conditions, which ONE of the following describes the first procedure required to be performed by an RO after EOP IMAs and Symptoms Check are complete?

- A. Enclosure 5.1 (ES Actuation)
- B. Enclosure 5.2 (Placing RB Hydrogen Analyzers In Service)
- C. Enclosure 5.5 (Pressurizer and LDST Level Control)
- D. Enclosure 5.38 (Restoration of Power)

**1 POINT**

**Question 28**

Unit 1 plant conditions:

- Unit 1 startup in progress
- 1A1 and 1B1 RCPs are operating

Based on the above conditions, which ONE of the following describes a condition that would prevent 1A2 RCP from starting?

- A. RCS  $T_c = 340^\circ\text{F}$
- B. RCP Oil Lift Pressure = 700 psig
- C. HPI Seal Injection flow rate = 28 gpm
- D. Total Component Cooling flow = 554 gpm

**1 POINT**

**Question 29**

Unit 1 initial conditions:

- Reactor power = 100%

Current conditions:

- 1TE de-energized

Based on the above conditions, which ONE of the following describes the status of the listed HPI components?

- A. 1B HPI pump      de-energized  
   1HP-26            energized
- B. 1B HPI pump      de-energized  
   1HP-27            de-energized
- C. 1C HPI pump      de-energized  
   1HP-26            de-energized
- D. 1C HPI pump      de-energized  
   1HP-27            energized

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**1 POINT**

**Question 30**

Unit 3 plant conditions:

- Reactor power = 100%
- Aligning of 3B LPI Train for BWST recirc is in progress

Based on the above conditions, which ONE of the following describes a condition that must be met prior to operating 3LP-42 (LPI RETURN TO BWST) in accordance with OP/3/A/1104/004 (Low Pressure Injection System)?

An individual is required to be designated to...

- A. close 3LP-42 in the event of an Engineered Safeguards actuation.
- B. close 3LP-42 in the event of an LPI piping overpressure condition.
- C. throttle 3LP-42 to ensure adequate LPI pump NPSH is maintained.
- D. throttle 3LP-42 to ensure LPI pump minimum flow requirements are met.

**1 POINT**

**Question 31**

Which ONE of the following events and failures will result in fuel/clad damage?

**ASSUME NO OPERATOR ACTION**

- A. MSLB with a failure of ES Channels 1 & 2
- B. MSLB with a failure of ES Channels 3 & 4
- C. SBLOCA with a failure of ES Channels 1 & 2
- D. SBLOCA with a failure of ES Channels 3 & 4

**1 POINT**

**Question 32**

Unit 1 initial conditions:

- Loss of all Feedwater
- HPI forced cooling initiated
- Quench Tank pressure = 50 psig increasing
- RCS activity indicates no fuel failures present

Current conditions:

- Quench Tank pressure = 3 psig stable

Which ONE of the following describes the containment response to the above conditions?

- A. RB Normal sump level rises. 1RIA-47 radiation level increases
- B. RB Normal sump level rises. 1RIA-47 radiation level remains constant
- C. RB Normal sump level remains constant. 1RIA-47 radiation level increases
- D. RB Normal sump level remains constant. 1RIA-47 radiation level remains constant

**1 POINT**

**Question 33**

Which ONE of the following describes the interlock associated with the High Pressure Injection (HPI) valves (HP-1 and HP-2) and Component Cooling (CC) valves (CC-1 and CC-2) for the Letdown Coolers?

The interlock...

- A. isolates the Letdown Cooler if letdown temperature reaches interlock setpoint.
- B. ensures CC flow is established before letdown flow.
- C. prevents over-rating the CC system cooling capacity.
- D. ensures letdown flow is secured after CC flow.

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1 POINT

Question 34

Which ONE of the following states the automatic OPEN setpoints (psig) for 1RC-1 (Pzr Spray) and 1RC-66 (PORV) in Mode 1?

- |    | <u>1RC-1</u> | <u>1RC-66</u> |
|----|--------------|---------------|
| A. | 2205         | 2450          |
| B. | 2205         | 2500          |
| C. | 2255         | 2450          |
| D. | 2255         | 2500          |

**1 POINT**

**Question 35**

Unit 2 initial conditions:

- Reactor power = 100%
- Feedwater transient occurs

Current conditions:

- Reactor power = 65% stable
- Pzr level = 250" slowly decreasing
- RCS pressure = 2195 psig (highest reached) slowly decreasing
- Pzr temperature = 627°F

Based on the current conditions, which ONE of the following describes the status of the Pzr heaters and the yellow dot on the OAC P/T display?

- A. All Pzr heaters are "OFF" / yellow dot is "ON" the blue saturation line
- B. All Pzr heaters are "OFF" / yellow dot is "LEFT" of the blue saturation line
- C. Some Pzr heaters are "ON" / yellow dot is "ON" the blue saturation line
- D. Some Pzr heaters are "ON" / yellow dot is "LEFT" of the blue saturation line

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1 POINT

Question 36

Unit 2 plant conditions:

- Reactor power = 100%
- I&E technicians went to the wrong unit and incorrectly removed the HI TEMPERATURE TRIP bistable from the 2B RPS Channel

Based on the above conditions, which ONE of the following describes the affect on the Reactor Protection System?

2B RPS Channel is \_\_\_\_\_ and the associated CRD Breaker is \_\_\_\_\_.

- A. Tripped / Closed
- B. Tripped / Open
- C. Not Tripped / Closed
- D. Not Tripped / Open

**1 POINT**

**Question 37**

Unit 3 initial conditions:

- Reactor power = 100%
- 3B HPI Pump in service

Current conditions:

- Reactor tripped due to SBLOCA
- ES Digital Channels 1, 3, and 5 failed to automatically actuate

Based on the above conditions, which ONE of the following lists the safety related components that will be in their ES condition?

**ASSUME NO OPERATOR ACTIONS**

- A. 3A HPI Pump / 3B LPI Pump
- B. 3B HPI Pump / 3B LPI Pump
- C. 3A HPI Pump / 3A LPI Pump
- D. 3B HPI Pump / 3A LPI Pump

**1 POINT**

**Question 38**

Unit 1 initial conditions:

- Reactor power = 50%

Current conditions:

- LBLOCA occurs
- 1TC de-energized

Based on the above conditions, which ONE of the following describes the status of the below listed Reactor Building Cooling Units five (5) minutes after ES actuates?

**ASSUME NO OPERATOR ACTIONS**

<u>1A RBCU</u>	<u>1B RBCU</u>
A. LOW	LOW
B. LOW	OFF
C. OFF	LOW
D. OFF	OFF

**1 POINT**

**Question 39**

Unit 2 initial conditions:

- Reactor Building Spray actuated

Current conditions:

- RB Pressure = 2 psig slowly decreasing

Based on the above conditions, which ONE of the following describes the operation and any control room actions associated with resetting the RB Pressure Contact Buffers and ES Digital Channels 7 & 8?

RB Pressure Contact Buffers \_\_\_\_\_ and ES Digital Channels 7 & 8\_\_\_\_\_.

- A. automatically reset / must be reset manually
- B. automatically reset / automatically reset
- C. must be reset manually / must be reset manually
- D. must be reset manually / automatically reset

**1 POINT**

**Question 40**

Unit 1 plant conditions:

- SB LOCA has occurred
- EOP Enclosure 5.12 (ECCS Suction Swap to RBES) is in progress
- 1LP-19 & 1LP-20 (1A & 1B RX BLDG SUCTION) are OPEN
- 1LP-21 & 1LP-22 (1A & 1B LPI BWST SUCTION) are OPEN
- RB pressure = 12 psig stable

Based on the above conditions, which ONE of the following describes the suction source that is supplying the RB Spray pumps and the reason for the addition of caustic to the RBES?

- A. BWST / to enhance iodine entrainment in RB Spray water
- B. BWST / to minimize hydrogen production from zirconium-water reaction
- C. RBES / to enhance iodine entrainment in RB Spray water
- D. RBES / to minimize hydrogen production from zirconium-water reaction

**1 POINT**

**Question 41**

Unit 1 initial conditions:

- Reactor Power = 100% stable
- 1RIA-16 = 14 mr/hr increasing
- 1RIA-17 = 0.01 mr/hr stable
- 1RIA-59 = 12 gpm slowly increasing
- 1RIA-60 = 5.8 E -3 gpd stable
- 1RIA-40 in alarm HIGH

Current conditions:

- Reactor power = 45% decreasing
- 1SA-8/E-10 "RM N-16 Primary to Secondary Tube Leak" actuated
- 1RIA-16 = 21 mr/hr increasing
- 1RIA-17 = 3.7 mr/hr increasing
- 1RIA-59 = 27.1 gpm increasing
- 1RIA-60 = 1.9 gpm increasing

Based on the current conditions above, which ONE of the following describes the SG(s) with indications of a tube leak and the procedure that contains the required operator actions used to mitigate this event?

- A. 1A SG ONLY / AP/31 (Primary to Secondary Leakage)
- B. 1A SG ONLY / EOP SGTR Tab
- C. 1A & 1B SG / AP/31 (Primary to Secondary Leakage)
- D. 1A & 1B SG / EOP SGTR Tab

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1 POINT

Question 42

Unit 2 initial conditions:

- Reactor power = 100%

Current conditions:

- Feedwater Valve  $\Delta P$  controlling signal fails LOW

**ASSUME NO OPERATOR ACTIONS**

Based on the above conditions, which ONE of the following describes the Main Feedwater Pump Turbines (FWPTs) response and the required actions per AP/28 (ICS Instrument Failures)?

BOTH FWPTs speed \_\_\_\_\_ / Place \_\_\_\_\_

- A. increases to HSS (high speed stop) / BOTH 2A & 2B MAIN FDW PUMPs to Hand and lower speed to prevent tripping FWPs on high discharge pressure
- B. decreases to LSS (low speed stop) / BOTH 2A & 2B MAIN FDW PUMPs to Hand and raise speed to prevent tripping the Reactor on high RCS pressure
- C. increases to HSS (high speed stop) / ALL Feedwater Control Valves (Main & Startup) to Hand and adjust as necessary to restore stable plant conditions
- D. decreases to LSS (low speed stop) / ALL Feedwater Control Valves (Main & Startup) to Hand and adjust as necessary to restore stable plant conditions

**1 POINT**

**Question 43**

Unit 3 initial conditions:

- 04:00:00
- Reactor power = 70% stable
- 3A Main Feed Pump suction pressure = 236 psig decreasing

Current conditions:

- 04:01:25
- 3A Main FDW Pump suction pressure = 230 psig increasing

Based on the current conditions, which ONE of the following describes the current status of the Main Feedwater pumps and the plant?

- A. Both MFPs are operating / Plant runback in progress at 20%/min
- B. Both MFPs are operating / Reactor power = 70% stable
- C. 3A MFP has tripped / Plant runback in progress at 20%/min
- D. 3A MFP has tripped / Reactor power = 65% stable

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1 POINT

**Question 44**

Unit 1 initial conditions:

- Reactor power = 100%
- 1TDEFWP is OOS

Current conditions:

- Both Main Feed Pumps trip
- 1A MDEFWP fails to start
- 1A SG level = 26 inches XSUR decreasing
- 1B SG level = 28 inches XSUR increasing
- Enclosure 5.9 (Extended EFDW Operation) is in progress
- 1FDW-313 and 1FDW-314 (1A & 1B EFDW LINE DISCH X-CONNs) open

Based on the above conditions, which ONE of the following describes the maximum acceptable flowrate (gpm) allowed to each SG at the same time per EOP Rule 7?

- A. 1A SG = 300 / 1B SG = 300
- B. 1A SG = 500 / 1B SG = 450
- C. 1A SG = 600 / 1B SG = 600
- D. 1A SG = 100 / 1B SG = 600

**1 POINT**

**Question 45**

Unit 1 plant conditions:

- Reactor power = 100%
- Pressurizer level = 219 inches and stable
- 1B1 RCP parameters:
  - Lower seal cavity pressure = 900 psig decreasing
  - Upper seal cavity pressure = 100 psig decreasing
  - Seal Return flow = 1.1 gpm decreasing
  - Seal Leakage flow = 0.9 gpm increasing

Based on the above conditions, which ONE of the following 1B1 RCP seal(s) are failing?

- A. Lower ONLY
- B. Upper ONLY
- C. BOTH Lower and Upper
- D. BOTH Middle and Upper

**1 POINT**

**Question 46**

Unit 1 initial conditions:

- Reactor power = 22% power
- CT1 Amps = 2000
- Central Switchyard is energizing the STBY Buses
- PCB 17 (OCONEE WH. STARTUP TRANS. CT1 TIE) is open for maintenance

Current conditions:

- Yellow Bus lockout occurs

Based on the conditions above, which ONE of the following alignments will supply power to Unit 1's Main Feeder Buses?

- A. 1T (Unit 1 Auxiliary Transformer)
- B. CT-1 (Unit 1 Startup Transformer)
- C. CT-4 (Keowee Underground to STBY Buses Transformer)
- D. CT-5 (100KV line to STBY Buses)

**1 POINT**

**Question 47**

Initial conditions:

- Both Keowee Units generating to the grid at  $\approx 60$  MWe
- ACB-4 closed

Current conditions:

- A SBLOCA occurs on Unit 2
- When ES channels 1&2 actuate
  - Keowee Unit #2 Emergency locks out
  - Keowee Main Step-Up Transformer locks out

Within thirty (30) seconds of these actions, which ONE of the following Keowee breaker combinations should exist?

- A. ACB-1 open and ACB-2 closed
- B. ACB-1 closed and ACB-3 closed
- C. ACB-3 open and ACB-4 closed
- D. ACB-3 closed and ACB-4 open

**1 POINT**

**Question 48**

Station initial conditions:

- All three units Reactor power = 100%

Current conditions:

- All Unit's 4160v Main Feeder Busses are de-energized
- Unit 1, 2, and 3 EOP Blackout tabs in progress

Based on the above conditions, which ONE of the following describes the required status of Unit 1 Essential Inverters per the EOP Enclosure 5.38 (Restoration of Power) and why?

Unit 1's Essential Inverters...

- A. remain energized to provide power to ES channels.
- B. remain energized to provide control power to 4160v.
- C. are de-energized to prevent inverter damage.
- D. are de-energized to extend available battery life.

1 POINT

Question 49

Operators are preparing to synchronize KHU-2 to the grid per OP/0/A/1106/019, Keowee Hydro At Oconee

The operator notes the following indications:

- Keowee 2 Line Volts = 13.8 kV
- Keowee 2 Output Volts = 15.4 kV
- Grid Frequency = 60 cycles
- Keowee Frequency = 60.6 cycles

Based on the above conditions, which one of the following describes the control that will be used to adjust the synchroscope indication and what is the response when ACB 2 is closed?

The \_\_\_\_\_ will be used to adjust the synchroscope indication and \_\_\_\_\_.

- UNIT 2 AUTO VOLTAGE ADJUSTER / ACB 2 will NOT receive a trip signal as a direct result of the line voltage differential.
- UNIT 2 SPEED CHANGER MOTOR / after 5 seconds ACB 2 will receive a trip signal as a direct result of the line voltage differential
- UNIT 2 AUTO VOLTAGE ADJUSTER / after 5 seconds ACB 2 will receive a trip signal as a direct result of the line voltage differential
- UNIT 2 SPEED CHANGER MOTOR / ACB 2 will NOT receive a trip signal as a direct result of the line voltage differential

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**1 POINT**

**Question 50**

Which ONE of the following describes the operation of the Unit Vent Radiation Monitors RIA-45 and RIA-46 when the switchover acceptance range setpoint is reached?

RIA-45 will read \_\_\_\_\_ and RIA-46 will provide \_\_\_\_\_

- A. offscale high / only alarm and unit vent radiation level indication.
- B. offscale high / the same interlock functions that RIA-45 performs.
- C. ZERO / only alarm and unit vent radiation level indication.
- D. ZERO / the same interlock functions that RIA-45 performs.

**1 POINT**

**Question 51**

Unit 1 initial conditions:

- Reactor power = 100%

Current conditions:

- A, B, and C LPSW pumps tripped
- AP/24, Loss of LPSW in progress

Based on the above conditions, which ONE of the following conditions will result in EOP entry?

- A. Pressurizer level = 278 inches
- B. Any one CRD stator temperature = 192 °F
- C. Any RCP Motor Stator temperature = 265 °F
- D. Main Turbine journal bearing #9 vibration = 17 mils

**1 POINT**

**Question 52**

Unit 3 initial conditions:

- Reactor Power = 100%
- 3A LPSW Pump operating
- LPSW Line leak occurs

Current conditions:

- Unit 3 LPSW Pressure = 60 psig decreasing slowly
- Operating LPSW pump(s) amps slowly increasing

Based on the conditions above, which ONE of the following describes the status of the Unit 3 LPSW Pumps and an appropriate action per AP/24 (Loss of LPSW)?

- A. ONLY 3A LPSW pump is running / secure operating LPSW pump
- B. ONLY 3A LPSW pump is running / reduce LPSW loads as needed
- C. BOTH 3A and 3B LPSW pumps are running / reduce LPSW loads as needed
- D. BOTH 3A and 3B LPSW pumps are running / secure operating LPSW pumps

**1 POINT**

**Question 53**

Initial conditions:

- IA Pressure = 105 psig stable
- IA-2718 (Air Supply to Radwaste Facility) Open
- Radwaste Air pressure 78 psig (and stable)
- Instrument air compressors are aligned as follows:
  - Primary IA compressor is Operating
  - Backup IA compressors "A" and "B" in Standby 1
  - Backup IA compressor "C" in Standby 2
  - Auxiliary IA compressors in Auto

Current conditions:

- IA pressure decreased to 91 psig and is stable

Based on the conditions above, which ONE of the following describes the status of IA components?

- A. Only Auxiliary IA Compressors start
- B. Only Backup IA compressors "A" & "B" start
- C. ALL Backup IA compressors start; Auxiliary IA Compressors start
- D. ALL Backup IA compressors start; IA-2718 (Air Supply to Radwaste Facility) CLOSES

**1 POINT**

**Question 54**

Unit 2 plant conditions:

- Reactor power = 100%
- RB pressure = 12.3 psia

Based on the above conditions, which ONE of the following describes how RB pressure will be increased to within the limits per PT/2/A/0600/001 (Periodic Instrument Surveillance)?

- A. 2PR-42 (RB Purge Disch to Unit Vent) will be opened and this alignment is limited to 1 hour.
- B. 2PR-42 (RB Purge Disch to Unit Vent) will be opened and this alignment is limited to 4 hours.
- C. 2IA-90 (IA Pent Isolation) will be opened and this alignment is limited to 1 hour.
- D. 2IA-90 (IA Pent Isolation) will be opened and this alignment is limited to 4 hours.

**1 POINT**

**Question 55**

Unit 1 initial conditions:

- Reactor Power = 100%
- Reactor Building average temperature = 120°F stable
- RBCU Status:
  - 1A - High Speed
  - 1B - High Speed
  - 1C - High Speed

Current conditions:

- Inadvertent ES Channel 5 actuation

Based on the conditions above, which ONE of the following describes the response of RB Pressure and the RB high pressure limit per TS 3.6.4 (Containment Pressure)?

RB Pressure will \_\_\_\_\_ and the RB high pressure TS Limit is \_\_\_\_\_.

- A. increase /  $\leq + 1.2$  psig
- B. increase /  $\leq + 2.45$  psig
- C. decrease /  $\leq + 1.2$  psig
- D. decrease /  $\leq + 2.45$  psig

**1 POINT**

**Question 56**

Unit 1 initial conditions:

- RCS Cooldown is in progress
- RCS temperature = 240°F
- RCS pressure = 260 psig
- PORV Setpoint Selector is in LOW
- RC LR PRESS ENABLE Switch is inadvertently placed in OFF

Current conditions:

- RCS pressure = 450 psig

Based on the conditions given, which ONE of the following describes the operation of the PORV?

- A. PORV will open if pressure reaches 2450 psig.
- B. PORV will open if the LR PRESS ENABLE Switch is placed back in ON.
- C. PORV will NOT open automatically OR manually
- D. PORV will NOT open automatically but can be opened manually

**1 POINT**

**Question 57**

Unit 1 Power Range NI indications are as follows:

- NI-5 = 98.7%
- NI-6 = 99.2%
- NI-7 = 99.3%
- NI-8 = 98.8%
- NI-9 = 99.1%

Based on the conditions above, which ONE of the following NI signals will be supplying the input to the Unit 1 Chessell NI Chart Recorder?

- A. NI-5
- B. NI-6
- C. NI-7
- D. NI-9

1 POINT

Question 58

Unit 1 initial conditions:

- Reactor power = 40%

Current conditions:

- Final Feedwater temperature controlling signal fails HIGH

Based on the conditions above, which ONE of the following describes the initial plant response and the appropriate ICS station(s) used to stabilize the plant in accordance with AP/28 (ICS Instrument Failures)?

Actual Feedwater Flow will \_\_\_\_\_. Place the Diamond Panel in Manual and \_\_\_\_\_ in Hand.

- A. decrease / 1A & 1B FDW Masters
- B. decrease / Steam Generator Master
- C. increase / 1A & 1B FDW Masters
- D. increase / Steam Generator Master

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**1 POINT**

**Question 59**

Which ONE of the following describes the Train A ICCM/RVLIS plasma display indication of CORE SCM for a superheated core and the Core Exit Thermocouples used to calculate this indication.

- A. Reverse video with negative numbers / Average of the 5 highest of the 12 for that train of ICCM
- B. Red flashing negative numbers / Average of the 5 highest of the 12 for that train of ICCM
- C. Reverse video with negative numbers / Average of the 5 highest of the 24 qualified
- D. Red flashing negative numbers / Average of the 5 highest of the 24 qualified

**1 POINT**

**Question 60**

Unit 1 initial conditions:

- Reactor power = 100%
- 1KI is de-energized

Current conditions:

- Reactor trip

Based on the conditions given, which ONE of the following describes the operation of the Turbine Bypass valves (TBVs)?

The TBVs...

- A. fail closed.
- B. fail to 50% open.
- C. will continue to function normally in Auto.
- D. will be controlled manually from the control room.

**1 POINT**

**Question 61**

Unit 1 initial conditions:

- Mode 6
- Defueling in progress
- 1RIA-6 (Spent Fuel Pool Area Monitor) = 4 mr/hr stable

Current conditions:

- 1RIA-6 monitor power supply fuse blows
- 1RIA-6 local reading = 0 mr/hr
- 1RIA-6 View Node indication is magenta

Based on the conditions above, which ONE of the following describes the impact on fuel handling activities per OP/1/A/1502/007 (Operations Defueling/Refueling Responsibilities)?

Fuel Handling activities in the SFP may...

- A. NOT continue until a replacement monitor is in place that is equivalent to 1RIA-6.
- B. continue because only the SFP Portable Bridge monitor is required.
- C. NOT continue until continuous RP coverage is present on the SFP Bridge.
- D. continue provided RIA-41 (SFP Gas) is operable.

**1 POINT**

**Question 62**

Unit 1 initial conditions:

- Mode 6

Current conditions:

- FTC Level = 20.9 ft (placard on FTC Wall) decreasing
- East fuel carriage is in the RB and empty
- West fuel carriage is in the SFP and empty
- Main Fuel Bridge in transit to the upender with a spent fuel assembly in the mast
- Section 4D (Fuel Transfer Canal Flooded) of AP/26 (Loss of Decay Heat Removal) initiated

Based on the conditions above, which ONE of the following describes the first actions required to be taken in accordance with Section 4D (Fuel Transfer Canal Flooded)?

- A. Place the fuel assembly into the East Upender and position the West Fuel Carriage to the RB
- B. Place the fuel assembly into the East Upender and position the East Fuel Carriage to the SFP
- C. Verify SF system aligned for refueling cooling mode and stop 2B SF cooling pump
- D. Close 1SF-1 and 1SF-2 (East/West Transfer Tube Isolations)

1 POINT

**Question 63**

Unit 2 initial conditions:

- Reactor power = 100% stable
- Generator MWe = 890 Mwe
- Condenser vacuum = 28.5 inches Hg stable

Current conditions:

- Condenser vacuum = 24.5 inches Hg slowly decreasing
- AP-27 (Loss of Condenser Vacuum) in progress

Based on the conditions above, which ONE of the following describes the impact on Reactor power and a required action in accordance with AP/27?

Reactor power will...

- A. decrease / reduce power to decrease turbine exhaust steam load on condenser
- B. decrease / start and align the Main Vacuum Pumps to increase vacuum in the condenser
- C. remains approximately the same / reduce power to decrease turbine exhaust steam load on condenser
- D. remains approximately the same / start and align the Main Vacuum Pumps to increase vacuum in the condenser

**1 POINT**

**Question 64**

Which ONE of the following describes the RIA status that will automatically terminate a Gaseous waste release on Unit 3 and the status of the Waste Gas Exhauster if it is running prior to the alarm?

- A. 3RIA-37 (NORM WD Gas) AND 3RIA-38 (HIGH WD Gas) HIGH alarm actuated / Waste Gas Exhauster stops automatically.
- B. 3RIA-37 (NORM WD Gas) OR 3RIA-38 (HIGH WD Gas) HIGH alarm actuated / Waste Gas Exhauster stops automatically.
- C. 3RIA-37 (NORM WD Gas) AND 3RIA-38 (HIGH WD Gas) HIGH alarm actuated / operator must manually stop the Waste Gas Exhauster.
- D. 3RIA-37 (NORM WD Gas) OR 3RIA-38 (HIGH WD Gas) HIGH alarm actuated / operator must manually stop the Waste Gas Exhauster.

**1 POINT**

**Question 65**

Unit 2 initial conditions:

- Reactor power = 100%
- Switchyard Isolate occurs

Current conditions:

- Unit 2 MFB 1 & 2 energized

Based on the conditions above, which ONE of the following describes the suction supply to LPSW and when the LPSW pumps will restart?

Unit 1 & 2 LPSW is supplied via the ECCW \_\_\_\_\_ and LPSW pumps will restart \_\_\_\_\_ after power is restored?

- A. first siphon / immediately
- B. second siphon / immediately
- C. first siphon / 10 seconds
- D. second siphon / 10 seconds

**1 POINT**

**Question 66**

Which ONE of the following describes the requirements in OMP 1-02, Rules of Practice to ensure a Motor Operated Valve that acts as a throttle valve closes?

The switch must be placed in the CLOSED position and...

- A. released when the OPEN indication light is off.
- B. released as soon as the CLOSED indication light is lit.
- C. held for a minimum of five seconds after the CLOSED indication light is lit.
- D. held for a minimum of three seconds after the CLOSED indication light is lit.

**1 POINT**

**Question 67**

Unit 3 plant conditions:

Time: 0340

- Night Shift RO makes an AUTOLOG entry

Time: 0905

- Day Shift RO reviewing the AUTOLOG identifies a mistake in the entry made at 0340

Based on the above conditions, which ONE of the following describes how the AUTOLOG entry is corrected per OMP 2-2 (Unit Logs)?

Unit AUTOLOG corrections may be made...

- A. ONLY by the CR SRO by editing the original entry.
- B. by any member of the CR Team by editing the original entry.
- C. ONLY by the CR SRO by making a late entry that references the original entry.
- D. by any member of the CR Team by making a late entry that references the original entry.

**1 POINT**

**Question 68**

Which ONE of the following activities is consistent with the conservative operating guidance contained in SOMP 1-2 (Reactivity Management)?

- A. Manual rod withdrawal during a Feedwater transient to stop a temperature decrease caused by an instrument failure
- B. Manually increasing Feedwater flow to stop an RCS pressure increase caused by an RCS temperature increase
- C. Manually raising one Loop FDW demand while lowering the other Loop FDW demand to control  $\Delta T_{cold}$  following an RCP trip
- D. Manually increasing turbine demand to reduce Turbine Header Pressure and RCS temperature

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1 POINT

Question 69

In accordance with OMP 1-02 (Rules of Practice), which ONE of the following describes a condition which would allow Independent Verification of a single valve to be waived and the minimum level of approval required?

- A. Dose received will be = 14 mr for a single check  
Plant SRO
- B. Valve located in a room where the area dose rate = 878 mr/hr  
Plant SRO
- C. Dose received will be = 14 mr for a single check  
Operations Superintendent
- D. Valve located in a room where the area dose rate = 878 mr/hr  
Operations Superintendent

**1 POINT**

**Question 70**

Which ONE of the following describes two (2) evolutions or tests that have pre-planned pre-job briefs per NSD 213 (Risk Management Process), Infrequently Performed Tests or Evolutions?

- A. Unit 2 Mid-Loop Operations / Turbine Stop Valve Movement Test
- B. Unit 2 Mid-Loop Operations / Zero Power Physics Testing
- C. Placing a new demineralizer in service / Turbine Stop Valve Movement Test
- D. Placing a new demineralizer in service / Zero Power Physics Testing

**1 POINT**

**Question 71**

Unit 3 plant conditions:

- Spent Fuel Demineralizer Room dose rate = 3000 MR/HR

Based on the above condition, which ONE of the following describes the radiological posting requirements and the access controls for this area?

- A. Locked High Radiation / area MUST be posted with a Yellow Flashing Light
- B. Locked High Radiation / entrance MUST be Locked or Guarded
- C. Very High Radiation / area MUST be posted with a Yellow Flashing Light
- D. Very High Radiation / entrance MUST be Locked or Guarded

**1 POINT**

**Question 72**

Unit 1 plant conditions:

- Reactor power = 100%
- 7 gpm primary to secondary leak in 1A SG
- AP/31 is in progress
- The SRO has directed the NEO to perform an action in the turbine building basement

Based on the above conditions, which ONE of the following describes the location that will have the greatest increase in general area dose rates and the operators response if he receives a dose alarm in the area?

- A. Powdex / Remain in the area and monitor dose
- B. Powdex / Immediately stop and leave the area
- C. TB Sump / Remain in the area and monitor dose
- D. TB Sump / Immediately stop and leave the area

**1 POINT**

**Question 73**

Plant conditions:

- All Units Reactor power = 100%
- 1SA3/B-6 (Fire Alarm) actuated
- NEO reports flames and heavy smoke spreading to equipment and cable trays
- Fire location = Near the LPSW pumps, Column G30

Based on the above information, which ONE of the following locations is the affected SSF Risk Area(s) and the required action?

**REFERENCE PROVIDED**

- A. ALL Three Units / Trip ALL Three Units
- B. Unit 2 ONLY / Trip Unit 2 ONLY
- C. ALL Three Units / Perform a controlled shutdown on all three units
- D. Unit 2 ONLY / Perform a controlled shutdown on Unit 2 ONLY

**1 POINT**

**Question 74**

Unit 1 plant conditions:

- Reactor tripped from 100% power
- The following Statalarms actuate:
  - 1SA-1/C-11 (ES Channel 7 Trip)
  - 1SA-1/D-11 (ES Channel 8 Trip)
  - 1SA-2/C-4 (RC Pressurizer Level Emerg High/Low)
  - 1SA-2/C-8 (AFIS Header A Initiated)
  - 1SA-2/D-5 (HP LDST Level Interlock Initiated)
  - 1SA-8/A-3 (FDWPT A Trip)
  - 1SA-8/A-6 (FDWPT B Trip)

Based on the above conditions, which ONE of the following emergency procedures has the highest priority?

- A. Enclosure 5.1 (ES Actuation)
- B. Rule 5 (Main Steam Line Break)
- C. Enclosure 5.5 (Pzr and LDST Level Control)
- D. Rule 3 (Loss of Main or Emergency Feedwater)

**1 POINT**

**Question 75**

Unit 3 plant conditions

- LDST level = 75 inches decreasing
- LDST pressure = 35 psig stable

Based on the above level and pressure trend, which ONE of the following describes the status of the HPI system and states the required action in accordance with OP/1108/001 (Curves and General Information)?

**REFERENCE PROVIDED**

HPI is...

- A. Operable / Initiate makeup to LDST
- B. Operable / Depressurize LDST
- C. Inoperable / Initiate makeup to LDST
- D. Inoperable / Depressurize LDST