

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

Name:

Date: **04/07/2010**Facility/Unit: **Oconee**

Region:

I ☐ II ☒ III ☐ IV ☐Reactor Type: W ☐ CE ☐ BW ☒ GE ☐

Start Time:

Finish Time:

Instructions

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. To pass the examination, you must achieve a final grade of at least 80.00 percent. Examination papers will be collected 6 hours after the examination begins.

Applicant Certification

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

Applicant's Signature**Results**

Examination Value

_____ **75** _____ Points

Applicant's Score

_____ Points

Applicant's Grade

_____ Percent

1 POINT

Question 1

Unit 1 plant conditions:

- Reactor power = 100%
- 1RC-66 (PORV) is leaking past its seat
- Pressurizer temperature = 648 °F
- Quench tank pressure = 5 psig

Based on the above conditions, which ONE of the following describes the expected tailpipe temperature (°F) downstream of 1RC-66?

- A. 162
- B. 228
- C. 272
- D. 648

1 POINT

Question 2

Unit 1 plant conditions:

- Reactor Trip
- SBLOCA has occurred
- Rule 2 (Loss of SCM) in progress
- 1A & 1B Steam Generator levels = 78" XSUR increasing
- Cooldown rate = 65°F / ½hr

Based on the above conditions, which ONE of the following describes...

(1) why SG levels are being increased?

AND

(2) how EFDW flows will be controlled in accordance with Rule 2?

- A. (1) Ensure secondary inventory available for heat transfer if SG feed is lost
(2) EFDW flow should be stopped until cooldown rate is in compliance with Tech Spec limits
- B. (1) Ensure secondary inventory available for heat transfer if SG feed is lost
(2) EFDW flow will be reduced in an effort to comply with Tech Spec limits but SG levels must continue to increase
- C. (1) Ensure boiler-condenser heat transfer is established
(2) EFDW flow should be stopped until cooldown rate is in compliance with Tech Spec limits
- D. (1) Ensure boiler-condenser heat transfer is established
(2) EFDW flow will be reduced in an effort to comply with Tech Spec limits but SG levels must continue to increase

1 POINT

Question 3

Unit 1 plant conditions:

- Reactor trip from 100% power
- RCS pressure = 88 psig decreasing
- Reactor Building pressure = 27 psig increasing
- 1B LPI Pump failed to start

Based on the above conditions, which ONE of the following describes the guidance provided in EOP Enclosure 5.1 (ES Actuation) regarding the LPI pumps and system operation?

EOP Enclosure 5.1 (ES Actuation)....

- A. directs continued operation with only the 1A LPI pump and no re-alignment of LPI header flows
- B. directs continued operation with only the 1A LPI pump and manually re-aligns LPI flow down both the 1A and 1B LPI headers
- C. utilizes the 1A and the 1C LPI Pump and aligns flow down both headers with 1LP-9 and 10 closed
- D. utilizes only the 1C LPI Pump and aligns flow down both headers with 1LP-9 & 10 open

1 POINT

Question 4

Unit 1 plant conditions:

- Reactor power = 100%
- 1TA and 1TB de-energized

Based on the above conditions, which ONE of the following indicates the Thot and Tcold values expected approximately 15 minutes after the Reactor trip?

Thot would be approximately _____°F and Tcold would be approximately _____°F.

- A. 534 / 532
- B. 570 / 540
- C. 556 / 554
- D. 585 / 555

1 POINT

Question 5

Unit 1 initial conditions:

- Reactor in MODE 5
- RCS pressure = 0 psig
- Normal LPI decay heat removal in service
- 1C LPI pump operating
- Unit Blackout occurs

Current conditions:

- MFB's re-energized from CT-5

Based on the above conditions, which ONE of the following describes actions required by AP/26 (Loss of Decay heat Removal)?

- A. Start 1C LPI pump AND initiate AP/11 (Recovery from Loss of Power)
- B. Start 1C LPI pump AND initiate the Blackout tab of the EOP
- C. Feed and steam SG's to maintain CETC < 246°F AND initiate AP/11 (Recovery from Loss of Power)
- D. Feed and steam SG's to maintain CETC < 246°F AND perform AP/26 Encl. 5.6 (Venting LPI Pumps and Suction Lines)

1 POINT

Question 6

Unit 1 plant conditions:

- Reactor trip has just occurred
- Total RCP seal injection flow = 0 gpm
- Component Cooling is unavailable

Based on the above conditions, which ONE of the following describes the procedure whose performance is directed by the EOP and why?

Initiate...

- A. AP/20 (Loss of CC) to restore Component Cooling
- B. AP/20 (Loss of CC) to ensure letdown is isolated
- C. AP/25 (SSF EOP) to align an alternate letdown flowpath
- D. AP/25 (SSF EOP) to align an alternate source of seal injection

1 POINT

Question 7

Unit 1 initial conditions:

- Reactor power = 90%
- 1B Main Feedwater pump trips

Current conditions:

- Reactor power = 70% decreasing
- RCS pressure = 2165 psig slowly decreasing
- Pressurizer level = 228 inches slowly decreasing
- Pressurizer temperature = 640°F slowly decreasing
- Pressurizer heater bank 1 (Group A and K) is ON
- Pressurizer heater banks 2, 3, and 4 are in AUTO and are OFF

Based on the above conditions, which ONE of the following describes the status of the pressurizer and the pressurizer saturation circuit?

The pressurizer is _____ AND the pressurizer saturation circuit _____.

- A. subcooled / is responding as expected
- B. subcooled / has failed
- C. saturated / is responding as expected
- D. saturated / has failed

1 POINT

Question 8

Unit 2 initial conditions:

- Time = 1200:00
- Reactor power = 100%
- Both MFDW Pumps tripped

Current conditions:

- Time = 1201:45
- Reactor power = 30% decreasing
- Loop A SCM = 0°F stable
- Rule 1 (ATWS/Unanticipated Nuclear Power Production) in progress
- 2SA9/D2 (RC Pump Vibration High) Actuated
- Rule 2 (Loss of SCM) initiated

Based on the above conditions, which ONE of the following describes the required actions regarding Reactor Coolant Pumps (RCP's) and the reason for those actions?

- A. Leave RCP's operating to minimize core damage from an increase in DNBR that would occur if secured
- B. Leave RCP's operating to provide flow through the core for heat removal
- C. Secure RCP's to reduce the amount of RCS inventory lost
- D. Secure RCP's before the RCS can evolve to a Void fraction of > 70%

1 POINT

Question 9

Unit 1 plant conditions:

- SGTR tab in progress
- 1B SG isolated
- 1A loop Tcold = 440°F decreasing
- 1B S/G TUBE/SHELL DT = (-)72°F

Based on the above conditions, which ONE of the following describes:

- (1) the reason the SGTR tab directs minimizing core SCM during cooldown
AND
(2) the initial method used to reduce the SCM?

To reduce the ____ (1) ____ AND reducing SCM would initially be attempted by ____ (2) ____.

- A. primary to secondary leak rate / de-energizing Pzr heaters and cycling Pzr spray
- B. primary to secondary leak rate / cycling the PORV
- C. compressive stresses in the 1B SG / de-energizing Pzr heaters and cycling Pzr spray
- D. compressive stresses in the 1B SG / cycling the PORV

1 POINT

Question 10

Unit 1 plant conditions:

- Both MFB's de-energized
- TDEFWP operating

Based on the above conditions, which ONE of the following describes the status of bearing oil cooling water supply to the TDEFWP?

TDEFWP bearing oil cooling is currently provided by _____ and it _____ provide adequate cooling water flow until AC power has been re-established.

- A. CCW / will
- B. HPSW / will
- C. CCW / will NOT
- D. HPSW / will NOT

1 POINT

Question 11

Unit 1 initial conditions:

- Station Blackout occurred
- Neither KHU automatically started
- Manual Emergency Start of BOTH KHU's is required

Time = 1201

- Keowee Emergency Start Channel A control room switch placed in START

Time = 1202

- Keowee Emergency Start Channel B control room switch placed in START

Based on the above conditions, which ONE of the following describes the time at which BOTH KHU's have received an Emergency Start signal AND the Generator Output Voltage (KV) of the KHU's that would indicate proper operation?

- A. 1201 / 13.8
- B. 1202 / 13.8
- C. 1201 / 4.16
- D. 1202 / 4.16

1 POINT

Question 12

Which ONE of the following would indicate that the 2DIC inverter has experienced a loss of AC output voltage AND how 2KVIC panelboard would then receive power?

- A. LOAD CONNECTED TO EMERGENCY light on the inverter will be illuminated AND panelboard 2KVIC will automatically be energized from panelboard 2KRA (regulated power).
- B. LOAD CONNECTED TO EMERGENCY light on the inverter will be illuminated AND panelboard 2KVIC will automatically be energized from Unit 3.
- C. INVERTER OUTPUT LOW light on the Inverter be illuminated AND the 2KVIC panelboard will be de-energized until manually aligned to panelboard 2KRA (regulated power).
- D. INVERTER OUTPUT LOW light on the Inverter be illuminated AND the 2KVIC panelboard will be de-energized until manually aligned to receive power from Unit 3.

1 POINT

Question 13

Plant conditions:

- 1CA Battery Charger fails - output voltage = 0 VDC
- 1CA Battery voltage = 126 VDC
- 1DCB Bus voltage = 123 VDC
- Unit 2 DCA/DCB Bus voltage = 124 VDC
- Unit 3 DCA/DCB Bus voltage = 127 VDC

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

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

1 POINT

Question 14

Unit 1 and 2 initial conditions:

- A and B LPSW pump operating

Current conditions:

- 1SA9/A9 (LPSW HEADER A PRESS LOW)
- A LPSW pump amps = 15 - 35 fluctuating
- B LPSW pump amps = 55 stable
- LPSW HDR PRESS = rapidly fluctuating between 60 & 75 psig

Based on current conditions, which ONE of the following describes the status of the LPSW pumps and what actions are directed by AP/24 (Loss of LPSW)?

- A. The A LPSW pump is cavitating / Place the Unit 1/2 STANDBY LPSW PUMP AUTO START CIRCUIT in DISABLE then stop LPSW Pump A and start LPSW Pump C
- B. The A LPSW pump has a sheared shaft / Place the Unit 1/2 STANDBY LPSW PUMP AUTO START CIRCUIT in DISABLE then stop LPSW Pump A and start LPSW Pump C
- C. The A LPSW pump is cavitating / Start LPSW Pump C then stop LPSW Pump A
- D. The A LPSW pump has a sheared shaft / Start LPSW Pump C then stop LPSW Pump A

1 POINT

Question 15

Unit 3 initial conditions:

- Time = 1200
- Reactor power = 45% stable
- Operating Main Feedwater Pump trips
- IA and AIA are lost to 3FDW-315

Current conditions:

- Time = 1300
- RCS Tave = 550°F stable

Based on the above conditions, which ONE of the following describes the expected SG level and the status of 3FDW-315?

ASSUME NO OPERATOR ACTIONS HAVE OCCURRED

- A. 25" S/U level / failed open
- B. 25" S/U level / controlling SG level at setpoint
- C. 30" XSUR / failed open
- D. 30" XSUR / controlling SG level at setpoint

1 POINT

Question 16

Unit 1 plant conditions:

- Reactor power = 50% stable
- Units 2 and 3 in MODE 5
- AP/34 (Degraded Grid) in progress due to grid disturbance
- BOTH KHU's generating to the grid
- All but ONE of the Offsite Sources required by Tech Spec 3.8.1 (AC Sources-Operating) are lost

Based on the above conditions which ONE of the following describes ...

1) actions required by Tech Spec 3.8.1 ?

AND

2) a condition that would require manually separating BOTH KHU's from the electrical grid in accordance with AP/34?

- A. Immediately enter Tech Spec LCO 3.0.3 / KHU High Generator Output Voltage
- B. Immediately enter Tech Spec LCO 3.0.3 / KHU Low Generator Output Voltage
- C. Energize BOTH Standby Busses within one hour / KHU High Generator Output Voltage
- D. Energize BOTH Standby Busses within one hour / KHU Low Generator Output Voltage

1 POINT

Question 17

Unit 1 initial conditions:

- Reactor power = 100%
- 1C HPI pump OOS

Current conditions:

- 1A and 1B Main FDW pumps tripped
- Condensate Booster Pumps unavailable
- All EFDW pumps unavailable
- 1A and 1B SG Outlet pressure = 860 psig slowly decreasing
- RCS pressure = 2317 psig increasing

Based on the above conditions, which ONE of the following describes the required operator action(s) in accordance with the EOP?

- A. Establish SSF ASW flow to the SG and establish SG levels at 240 inches.
- B. Establish SSF ASW flow to the SG and do NOT establish a level in the SGs.
- C. Establish HPI forced cooling and open 1HP-410.
- D. Establish HPI forced cooling and open 1HP-409.

1 POINT

Question 18

Unit 1 initial conditions:

- Reactor power = 100%
- 1A MSLB occurs

Current conditions:

- Reactor has tripped
- RCS Tave = 544°F slowly increasing
- 1A SG Pressure = 0 psig
- 1B SG Pressure = 990 psig slowly increasing
- Turbine bypass valves in Auto
- Reactor Building pressure = 0.2 psig stable

Based on the above conditions, which ONE of the following describes the status of the TDEFWP and how subsequent operation of the TDEFWP would be performed?

TDEFWP is...

- A. operating and can be secured with TDEFWP control switch before AFIS is reset
- B. operating and can be secured with TDEFWP control switch ONLY after AFIS is reset
- C. NOT operating and can be started with TDEFWP control switch before AFIS is reset
- D. NOT operating and can be started with TDEFWP control switch ONLY after AFIS is reset

1 POINT

Question 19

Unit 1 plant conditions:

- Reactor power = 70% stable
- Pressurizer level = 210" slowly decreasing
- 1HP-120 (RC VOLUME CONTROL) failed closed
- AP/14 (Loss of Normal HPI Makeup and/or RCP Seal Injection) initiated

Based on the above conditions, which ONE of the following describes the initial actions required to control Pressurizer level AND the minimum allowed Pressurizer level (inches) in accordance with AP/14?

Throttle...

- A. 1HP-26 / 200
- B. 1HP-26 / 80
- C. 1HP-122 (RC VOLUME CONTROL BYPASS) / 200
- D. 1HP-122 (RC VOLUME CONTROL BYPASS) / 80

1 POINT

Question 20

Unit 1 initial conditions:

- Reactor in MODE 6

Current conditions:

- Fuel Transfer Canal level decreasing
- East fuel carriage is in the RB and empty
- West fuel carriage is in the SFP and empty
- Reactor Building 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. Close 1SF-1 and 1SF-2 (East/West Transfer Tube Isolations)
- B. Verify SF system aligned for refueling cooling mode and stop 2B SF cooling pump
- C. Place the fuel assembly into the East Upender and position the West Fuel Carriage to the RB
- D. Place the fuel assembly into the East Upender and position the East Fuel Carriage to the SFP

1 POINT

Question 21

Which ONE of the following describes conditions that indicate RIA-54 is unable to perform its function AND if batch releases are allowed while the RIA is inoperable?

- A. Counts do not increase when Source Check is performed / Batch releases are allowed.
- B. Counts do not increase when Source Check is performed / Batch releases are NOT allowed.
- C. Sample pump found OFF / Batch releases are allowed.
- D. Sample pump found OFF / Batch releases are NOT allowed.

1 POINT

Question 22

Unit 2 plant conditions:

- 3 of the 5 fire detectors in the West penetration room will be simultaneously removed for repair and/or replacement

Based on the above conditions, which ONE of the following describes the compensatory actions required by SLC 16.9.6 (Fire Detection Instrumentation)?

Within 1 hour of removing the detectors....

- A. Perform Channel Functional Test on remaining fire detectors ONLY
- B. Establish a fire watch ONLY
- C. Perform Channel Functional Test on remaining fire detectors AND stage 4 additional fire extinguishers in the West Penetration Room.
- D. Establish a fire watch AND stage 4 additional fire extinguishers in the West Penetration Room.

1 POINT

Question 23

Unit 3 plant conditions:

- Loop A and Loop B SCM's = 0°F stable
- Core SCM = (-)5°F flashing with a red background

Based on the above conditions, which ONE of the following describes the status of the reactor core?

- A. saturated and covered
- B. saturated and partially uncovered
- C. superheated and covered
- D. superheated and partially uncovered

1 POINT

Question 24

Unit 2 initial conditions:

- Reactor power = 100%

Current conditions:

- 2SA2/B4 (RC AVERAGE TEMP HIGH/LOW) actuated
- Loop 'A' Controlling Thot fails high (620°F)

Based on the above conditions, which ONE of the following describes the initial ICS response AND requirements placed on the operator when stabilizing the plant?

ICS will _____ Feedwater flow AND SRO approval _____ required prior to making the initial manual adjustment to Feedwater flow in accordance with OMP 1-18 (Implementation Standard During Abnormal And Emergency Events).

- A. increase / is
- B. increase / is NOT
- C. decrease / is
- D. decrease / is NOT

1 POINT

Question 25

Unit 1 initial conditions:

- Reactor power = 25% slowly increasing
- Turbine trip

Current conditions:

- Reactor power = 22% decreasing

Based on the above conditions, which ONE of the following describes the procedure(s) that will be utilized to direct plant activities AND the expected Steam Generator pressure (psig)?

- A. UNPP tab / 885
- B. UNPP tab / 1010
- C. Plant Operating Procedures / 885
- D. Plant Operating Procedures / 1010

1 POINT

Question 26

Unit 1 plant conditions:

- Reactor power = 100%
- 2SA-18/A11 (TURBINE BSMT WATER EMERGENCY HIGH LEVEL) actuated
- NEO reports water level in Turbine Building basement increasing

Based on the above conditions, which ONE of the following describes the required actions directed by AP/10 (Turbine Building Flood)?

Manually trip the reactor and...

- A. align Station ASW pump for use
- B. secure all LPSW pumps
- C. secure all operating CCW pumps
- D. place all HPSW pump switches to "OFF"

1 POINT

Question 27

Unit 1 plant conditions:

- Core SCM = 0°F
- LOCA Cooldown tab in progress
- CETC's = 395°F slowly decreasing
- 1LP-103 (POST LOCA BORON DILUTE) will NOT open

Based on the above conditions, which ONE of the following valves is required to be opened in accordance with the LOCA CD tab to establish post LOCA boron dilution flow?

- A. 1LP-3
- B. 1LP-19
- C. 1LP-104
- D. 1LP-105

1 POINT

Question 28

Unit 3 initial conditions:

- Time = 0300
- Reactor power = 100%
- Reactor trip
- CT-3 Lockout occurs

Current conditions:

- MFB re-energized
- 6900V power still unavailable
- HPI system leak downstream of 3HP-31 occurs
- 3A1 RCP SI flow = 3.9 gpm slowly decreasing
- 3A2 RCP SI flow = 3.7 gpm slowly decreasing
- 3B1 RCP SI flow = 3.5 gpm slowly decreasing
- 3B2 RCP SI flow = 3.4 gpm slowly decreasing
- Seal Inlet Header Flow = 40 gpm stable

Based on the above conditions, which ONE of the following describes the status of the following RCP support systems valve(s) two minutes later?

- A. ONLY 3HP-21 has closed
- B. ONLY 3HP-21 AND 3HP-31 have closed
- C. ONLY ALL individual seal return valves and 3HP-21 have closed
- D. ALL individual seal return valves, 3HP-21, and 3HP-31 have closed

1 POINT

Question 29

Unit 1 plant conditions:

- Reactor power = 100%
- 1CC-8 (CC RETURN PENT (54) OUTSIDE BLOCK) fails closed
- 1LPSW-6 (UNIT 1 RCP COOLERS SUPPLY) fails closed

Based on the above conditions, which ONE of the failed valves will require ALL RCPs to be secured in accordance with AP/16 (Abnormal Reactor Coolant Pump Operation) and why?

- A. 1CC-8 / due to high RCP motor stator temperatures
- B. 1CC-8 / due to high RCP radial bearing temperatures
- C. 1LPSW-6 / due to high RCP motor stator temperatures
- D. 1LPSW-6 / due to high RCP radial bearing temperatures

1 POINT

Question 30

Unit 1 initial conditions:

- Reactor power = 100%
- 1A CC pump operating

Current conditions:

- 1CC-7 fails closed

Based on the above conditions, which ONE of the following describes the expected plant response?

- A. Letdown must be manually isolated and NEITHER CC Pump will be operating
- B. Letdown must be manually isolated and BOTH CC Pumps will be operating
- C. Letdown will be automatically isolated and NEITHER CC Pump will be operating
- D. Letdown will be automatically isolated and BOTH CC Pumps will be operating

1 POINT

Question 31

Unit 3 initial conditions:

- Reactor in MODE 4
- LPI DHR alignment for cooldown in progress

Current conditions:

- 3LP-3 (LPI HOT LEG SUCTION) will not open
- 3LP-12 (3A LPI COOLER OUTLET) failed closed

Based on the above conditions, which ONE of the following describes the effect of the failures on ECCS-LPI train availability?

The 3LP-3 failure _____ impact ECCS-LPI train availability and the failure of 3LP-12 _____ impact ECCS-LPI train availability.

- A. Does / Does
- B. Does / Does NOT
- C. Does NOT / Does
- D. Does NOT / Does NOT

1 POINT

Question 32

Unit 1 plant conditions:

- RCS pressure = 365 psig
- An attempt is made to open 1LP-1 (LPI RETURN BLOCK FROM RCS)

Based on the above conditions, which ONE of the following describes if 1LP-1 will open AND the reason 1LP-1 has an interlock?

- A. yes / prevent overpressurizing LPI suction piping
- B. yes / ensure delta p across 1LP-1 will allow it to open
- C. No / prevent overpressurizing LPI suction piping
- D. No / ensure delta p across 1LP-1 will allow it to open

1 POINT

Question 33

Unit 1 initial conditions:

- Reactor power = 100%

Current conditions:

- RCS pressure = 1350 psig decreasing
- Reactor Building pressure = 4.8 psig increasing
- ES Channel 2 did NOT actuate

Based on the above conditions, which ONE of the following describes ALL safety injection pumps that have AUTOMATICALLY started?

- A. 1A HPI, 1B HPI, 1A LPI, 1B LPI
- B. 1A HPI, 1C HPI, 1A LPI, 1B LPI
- C. 1A HPI, 1B HPI, 1A LPI ONLY
- D. 1A HPI, 1A LPI ONLY

1 POINT**Question 34**

Unit 1 plant conditions:

- OP/1/A/1103/002, (Filling and Venting RCS) Enclosure 4.14 (Establishing Pzr Steam Bubble And RCS Final Vent) in progress
- Quench Tank level = 82 inches
- Quench Tank pressure = 0.5 psig
- The Pressurizer is vented to the Quench Tank for 30 minutes

Based on the above conditions, which ONE of the following describes QT parameters that would indicate that Pzr Steam Bubble Formation is complete?

	QT level (inches)	QT pressure (psig)
A.	82.1	0.6
B.	84.1	0.6
C.	82.1	2.5
D.	84.1	2.5

1 POINT

Question 35

Which ONE of the following describes the normal power supply to the 1A CC pump AND the emergency backup source of power that will be supplying the Main Feeder Buses following a Loss of Offsite Power due to a Switchyard Isolation?

- A. 1XL / KHU via overhead path
- B. 1XL / KHU via underground path
- C. 1XS1 / KHU via overhead path
- D. 1XS1 / KHU via underground path

1 POINT

Question 36

Unit 3 plant conditions:

- Reactor power = 100%
- Channel A AND Channel E narrow range RCS pressure fails HIGH

Based on the above conditions, which ONE of the following describes the RPS trip that will trip the reactor AND the RCS pressure that will result in an ES digital channels 1 & 2 actuation?

ASSUME NO OPERATOR ACTIONS

- A. Variable Low Pressure / 1600
- B. Variable Low Pressure / 1810
- C. High Pressure / 1600
- D. High Pressure / 1810

1 POINT

Question 37

Unit 2 plant conditions:

- Reactor power = 100%
- 2B RPS Channel Low RCS Pressure Bistable failed in “tripped” state
- 2B RPS Channel in “Manual Bypass”

Current conditions:

- 2C RPS Channel inadvertently placed in “Shutdown Bypass”

Based on the above conditions, which ONE of the following describes the impact (if any) on reactor power and control room alarms?

With NO additional operator actions, reactor power will be _____ and the associated RPS Channel C statalarm for _____ bistable trip will be actuated.

- A. 0% / Low pressure
- B. 0% / High pressure
- C. 100% / Low pressure
- D. 100% / High pressure

1 POINT

Question 38

Which ONE of the following would result in a trip of the 1D RPS Channel AND the 1D CRD Breaker?

- A. Reactor Building pressure bistables in the 1A and 1B RPS channels fail in the "tripped" state
- B. Reactor Building pressure bistable in the 1D RPS channel fails in the "tripped" state
- C. RC pressure test module for 1D RPS channel placed in "Test Operate"
- D. Loss of the 1KVID panelboard

1 POINT

Question 39

Unit 2 initial conditions:

- Reactor power = 100%

Current conditions:

- MSLB occurs
- RCS pressure = 1580 psig slowly increasing
- RB peak pressure = 2.8 psig

Based on the above conditions, which ONE of the following describes valves that have received a signal to CLOSE?

- A. 2CC-7
- B. 2LWD-1
- C. 2LPSW-6
- D. 2LPSW-1062

1 POINT

Question 40

Unit 3 plant conditions:

- Reactor power = 100%
- 3KVIA AC Vital Power Panelboard supply breaker trips OPEN
- ES Analog Channel "C" WR RCS pressure signal fails LOW

Based on the above conditions, which ONE of the following describes which (if any) ES digital channels have actuated?

_____ have actuated.

- A. NO channels
- B. Channels 1 thru 4
- C. ONLY channels 2 AND 4
- D. ONLY channels 1 AND 3

1 POINT

Question 41

Unit 1 plant conditions:

- Time = 03:00
- Reactor power = 100%
- 1B and 1C RBCUs operating in HIGH speed
- 1A RBCU is operable and OFF
- ES channels 1-6 actuate

Based on the above conditions, which ONE of the following describes RBCU status at 03:02?

- A. 1B and 1C RBCUs operating in HIGH speed and 1A RBCU OFF
- B. 1B and C RBCUs operating in LOW speed and 1A RBCU OFF
- C. ALL RBCUs operating in LOW speed
- D. ALL RBCUs will be OFF

1 POINT

Question 42

Which ONE of the following describes the range of BWST levels where RBS pump suction would be aligned to both the RBES and the BWST simultaneously AND what action(s) would be required if 1LP-22 failed to close when isolating the BWST?

When performing Enclosure 5. 12 (ECCS Suction Swap to RBES) both suction sources are aligned when BWST level is between _____ (feet) AND _____.

- A. 15 – 9 / stop the 1B LPI pump AND 1B RBS pump
- B. 15 – 9 / Maximize total LPI flow < 3100 gpm
- C. 9 - 6 / stop the 1B LPI pump AND 1B RBS pump
- D. 9 - 6 / Maximize total LPI flow < 3100 gpm

1 POINT

Question 43

Unit 3 initial conditions:

- Reactor power = 35% slowly increasing

Current conditions:

- Reactor power = 30% decreasing
- PCB 58 and PCB-59 (Unit 3 Generator Output Bkrs) OPEN
- Turbine master in HAND
- OAC point O3X2060 (ICS TURBINE LOADING STATUS) = FALSE

Based on the above conditions, which ONE of the following describes the operation of the Turbine Bypass Valves (TBV's)?

_____ is being compared to Turbine Header Pressure setpoint to develop the controlling error signal AND TBV's are controlling at _____ psig?

- A. Turbine Header Pressure / 885
- B. Turbine Header Pressure / 935
- C. Steam Generator Outlet Pressure / 885
- D. Steam Generator Outlet Pressure / 935

1 POINT

Question 44

Unit 1 initial conditions:

- Reactor power = 70% stable

Current conditions:

- 1HPE-6 (Heater 1A1 Bleed Inlet) closed

Based on the above conditions, which ONE of the following predicts the impact of the malfunction on Feedwater flow assuming no operator action AND the procedure which will be used to reopen 1HPE-6?

Feedwater flow will stabilize at a _____ value than the pre-transient level AND _____ will be used to reopen 1HPE-6.

- A. higher / OP/1/A/1106/23 (High and Low Pressure Extraction)
- B. higher / OP/1/A/1106/002 (Condensate and FDW system)
- C. lower / OP/1/A/1106/23 (High and Low Pressure Extraction)
- D. lower / OP/1/A/1106/002 (Condensate and FDW system)

1 POINT

Question 45

Unit 1 initial conditions:

- Reactor power = 100%

Current conditions:

- Reactor trip
- 1FDW-33 (1A SU FDW Block) FAILS closed

Based on the above conditions, which ONE of the following describes the expected Steam Generator levels 20 minutes after the trip?

ASSUME NO OPERATOR ACTIONS

1A SG level = _____ AND 1B SG level = _____.

A. 25" S/U / 25" S/U

B. 12" S/U / 25" S/U

C. 30" XSUR / 25" S/U

D. 30" XSUR / 30" XSUR

1 POINT

Question 46

Unit 1 initial conditions:

- Reactor power = 100%
- Unit 1 TDEFWP unavailable

Current conditions:

- Both Main FDW pumps trip
- 1B MDEFWP fails to start

Based on the above conditions, which ONE of the following describes actions directed by the EOP to remove core decay heat?

Initiate...

- A. Rule 3 (Loss of Main or Emergency Feedwater) and cross connect with an alternate unit to supply the 1B Steam Generator
- B. Rule 3 (Loss of Main or Emergency Feedwater) to decrease SG pressure and feed with Condensate Booster pumps
- C. Rule 4 (Initiation of HPI Forced Cooling) if RCS pressure reaches 2300 psig
- D. EOP Encl. 5.9 (Extended EFDW Operation) and feed both SG's with 1A MDEFWP

1 POINT

Question 47

Which ONE of the following describes actions required that will extend the life of the Control Batteries following a loss of all AC power in accordance with EOP Enclosure 5.38 (Restoration of Power)?

Load Shed the _____ inverter.

- A. KI
- B. DIA
- C. KSF-1
- D. KOAC

1 POINT

Question 48

Which ONE of the following describes the normal alignment of the Power Battery busses AND a condition in which SLC 16.8.3 (Power Battery Parameters) would require changing that alignment?

The Oconee units are normally _____ and this would be changed if _____.

- A. cross-tied / a single power battery becomes inoperable
- B. cross-tied / two or more power batteries simultaneously become inoperable
- C. separated / a single power battery becomes inoperable
- D. separated / two or more power batteries simultaneously become inoperable

1 POINT

Question 49

Operators are preparing to synchronize KHU-2 to the grid in accordance with OP/0/A/1106/019, (Keowee Hydro At Oconee)

The operator notes the following indications:

- Grid Frequency = 59.9 cycles
- Keowee Frequency = 60.3 cycles
- Keowee 2 Line Volts = 13.7 kV
- Keowee 2 Output Volts = 15.2 kV

Based on the above conditions, which ONE of the following describes the control that will be used to adjust the synchroscope indication and after ACB-2 is closed, generator output should be adjusted to _____?

The _____ will be used to adjust the synchroscope indication AND generator output should be adjusted to _____ MWs.

- A. UNIT 2 AUTO VOLTAGE ADJUSTER / 0
- B. UNIT 2 SPEED CHANGER MOTOR / 0
- C. UNIT 2 AUTO VOLTAGE ADJUSTER / 10
- D. UNIT 2 SPEED CHANGER MOTOR / 10

1 POINT

Question 50

Unit 1 conditions:

Time = 1159:40

- Reactor power = 100% stable
- KHU-1 OOS
- ACB-4 closed
- KHU-2 gets Emergency Start signal from another unit

Time = 1200:00

- KHU-2 speed reaches 190 RPM

Time = 1200:30

- KHU-2 speed = 190 RPM

Based on the above conditions, which ONE of the following describes the status of KHU-2 and the procedural actions required by Unit 1 (if any) as a result of that status?

- A. Emergency locked out / Enter LCO 3.0.3 immediately
- B. Emergency locked out / Energize BOTH Standby Buses within 1 hour
- C. Energizing CT-4 / No additional actions required
- D. Energizing CT-4 / Energize EITHER Standby Bus within 1 hour

1 POINT

Question 51

Unit 1 initial conditions:

- Time = 1200
- Reactor power = 35%
- 1A steam generator tube leak = 2.1 gpd stable
- RCS activity = 0.25 $\mu\text{Ci/ml}$ DEI increasing

Current conditions:

- Time = 1400
- NO change in 1A SG tube leak rate
- RCS activity = 0.65 $\mu\text{Ci/ml}$ DEI and increasing

Based on the above conditions, which ONE of the following describes the response of the radiation monitors between 1200 and 1400?

- A. 1RIA-16 (Main Steam Line Monitor) and 1RIA-40 (CSAE Off-gas) increased.
- B. 1RIA-16 (Main Steam Line Monitor) increased while 1RIA-40 (CSAE Off-gas) remained constant.
- C. 1RIA-59 (N-16 monitor) and 1RIA-40 (CSAE Off-gas) increased.
- D. 1RIA-59 (N-16 monitor) increased while 1RIA-40 (CSAE Off-gas) remained constant.

1 POINT

Question 52

Unit 1 initial conditions:

- Time = 1200
- Reactor power = 100%
- A and B LPSW Pumps operating
- C LPSW pump in AUTO
- Blackout Occurs

Current conditions:

- Time = 1230
- Both MFB's re-energized

Based on the above conditions, which ONE of the following describes the status of the C LPSW pump 5 seconds after the MFB's have re-energized AND the system that will require the use of OP/1/A/1104/010 (Low Pressure Service Water) to return it to service once LPSW pressure has been restored?

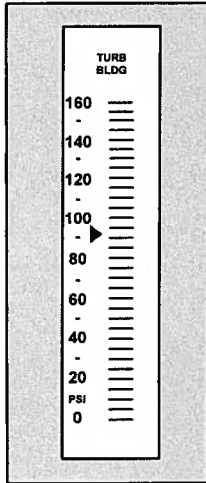
- A. operating / Reactor Building Aux Coolers
- B. operating / RBCU's
- C. NOT operating / Reactor Building Aux Coolers
- D. NOT operating / RBCU's

1 POINT

Question 53

Initial plant conditions:

- Large IA leak occurs
- Service air header pressure = 87 psig decreasing
- Turbine Building air header pressure per gage below



Based on the above conditions, which ONE of the following describes the air compressors that will be operating?

The Primary IA Compressor AND...

- A. Diesel Air Compressors ONLY
- B. Diesel Air Compressors AND AIA Compressors ONLY
- C. AIA Compressors AND Backup IA Compressors ONLY
- D. Backup IA Compressors ONLY

1 POINT

Question 54

Unit 2 initial conditions:

- Reactor power = 100%
- 2HP-5 failed closed

Current conditions:

- Operator dispatched to manually open 2HP-5
- Pressurizer level 245 inches slowly increasing

Based on the above conditions, which ONE of the following describes actions required in accordance with AP/32 (Loss of Letdown) AND the MINIMUM Pressurizer level (inches) at which a manual reactor trip would be required?

- A. Maintain constant communication with operator dispatched to open 2HP-5
400
- B. Maintain constant communication with operator dispatched to open 2HP-5
380
- C. Initiate unit shutdown at $\approx 20\%/min$ per AP/29 (Rapid Unit Shutdown)
400
- D. Initiate unit shutdown at $\approx 20\%/min$ per AP/29 (Rapid Unit Shutdown)
380

1 POINT

Question 55

Unit 3 initial conditions:

- 3CC-8 has been manually opened due to loss of air to the valve

Current conditions:

- Instrument air has been restored to 3CC-8
- 3CC-8 remains manually open

Based on the above conditions, which ONE of the following describes whether 3CC-8 can be operated from the control room and 3CC-8's response to an ES 1-6 actuation?

3CC-8 _____ be operated from the control room and 3CC-8 _____ automatically close.

- A. can / will
- B. can / will NOT
- C. can NOT / will
- D. can NOT / will NOT

1 POINT

Question 56

Unit 1 initial conditions:

- 100% power
- 450 EFPD

Based on the above conditions, which ONE of the following events is the cause of the indications on the attached P/T display?

ASSUME NO OPERATOR ACTIONS

- A. SBLOCA
- B. LBLOCA
- C. MSLB
- D. Loss of MFDW

1 POINT

Question 57

Which ONE of the following is the power supply for the Unit 1 Group B Pressurizer heaters?

- A. 1XH
- B. 1XI
- C. 1XS1
- D. 1XSF

1 POINT

Question 58

Which ONE of the following describes who determines that a RB Continuous Release is allowed and after it is started what are the requirements for sampling the RB atmosphere in accordance with OP/1102/014 (RB Purge System)?

- A. CRSRO / Release may continue indefinitely after initial 24 hours without submitting daily sample requests.
- B. CRSRO / Release may continue indefinitely provided RP assigns a new GWR number and sample results are entered in the Unit Log every 24 hours.
- C. Shift RP / Release may continue indefinitely after initial 24 hours without submitting daily sample requests.
- D. Shift RP / Release may continue indefinitely provided RP assigns a new GWR number and sample results are entered in the Unit Log every 24 hours.

1 POINT

Question 59

Plant conditions:

- Spent Fuel Storage Cask has been dropped in Unit 1&2 SFP
- Spent Fuel damage is visible
- RIA-6 and RIA-41 HIGH alarm actuates
- Spent Fuel Pool level = -3.5 feet decreasing

Based on the above conditions, which ONE of the following describes which filters will be used to reduce off site releases and the status of the SF Pumps?

Unit _____ Reactor Building Purge filters and the Spent Fuel Cooling pumps will be _____.

- A. 1 / ON
- B. 1 / OFF
- C. 2 / ON
- D. 2 / OFF

1 POINT

Question 60

Unit 2 initial conditions:

- Reactor power = 100%

Current conditions:

- Reactor trip
- Controlling 2A Steam Generator Outlet Pressure fails HIGH

Based on the above conditions, which ONE of the following describes the 2A AND 2B Turbine Bypass Valves (TBV's) response?

The 2A TBV's will fully open _____ AND the 2B TBV's will fully open _____.

- A. then return to throttled position / then return to throttled position
- B. then return to throttled position / and remain fully open
- C. and remain fully open / then return to throttled position
- D. and remain fully open / and remain fully open

1 POINT

Question 61

Unit 3 initial conditions:

- Reactor power = 100%
- 3MS-112 & 3MS-173 (SSRH 3A/3B Controls) are open and in MANUAL
- 3MS-77, 78, 80, 81 (MS to SSRH's) are open and in AUTO

Current conditions:

- Reactor trips

Based on the above conditions, which ONE of the following describes the plant response?

- A. 3MS-112, 3MS-173, 3MS-77, 3MS-78, 3MS-80, and 3MS-81 close
- B. 3MS-112 & 3MS-173 close AND 3MS-77, 78, 80, and 81 remain open
- C. 3MS-112 & 3MS-173 remains open AND 3MS-77, 78, 80, and 81 close
- D. 3MS-112, 3MS-173, 3MS-77, 3MS-78, 3MS-80, and 3MS-81 remain open

1 POINT

Question 62

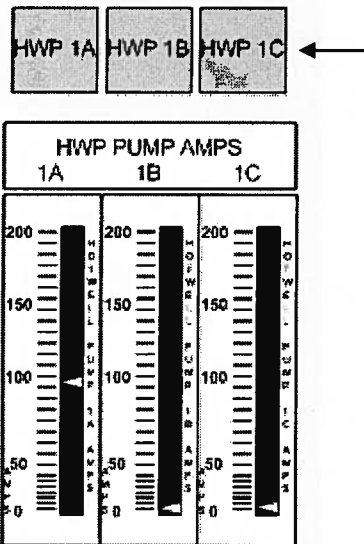
Unit 1 plant conditions:

- OP/1/A 1106/002A (Condensate And FDW System Startup And Shutdown) Encl. 4.2 (Condensate And FDW System Startup) in progress
- 1A Hotwell pump (HWP) operating
- CBP suction pressure = 45 psig slowly decreasing
- The 3 square amber lights located above the HWP PUMP AMP gages are "ON"
- Procedure directs placing a standby Hotwell pump to "AUTO"

Based on the above conditions, which ONE of the following describes what the Hotwell pump amber lights indicate AND the 1B Hotwell pump response once the control switch is placed in AUTO?

1A Hotwell pump is operating with _____ and the 1B Hotwell pump _____ automatically start when its control switch is placed in Auto.

- A. low suction pressure / will
- B. low discharge pressure / will
- C. low suction pressure / will NOT
- D. low discharge pressure / will NOT



1 POINT

Question 63

Unit 3 plant conditions:

- Reactor power = 100%
- Fuel movement in progress in SFP
- 3RIA-6 (Spent Fuel Pool) in HIGH alarm

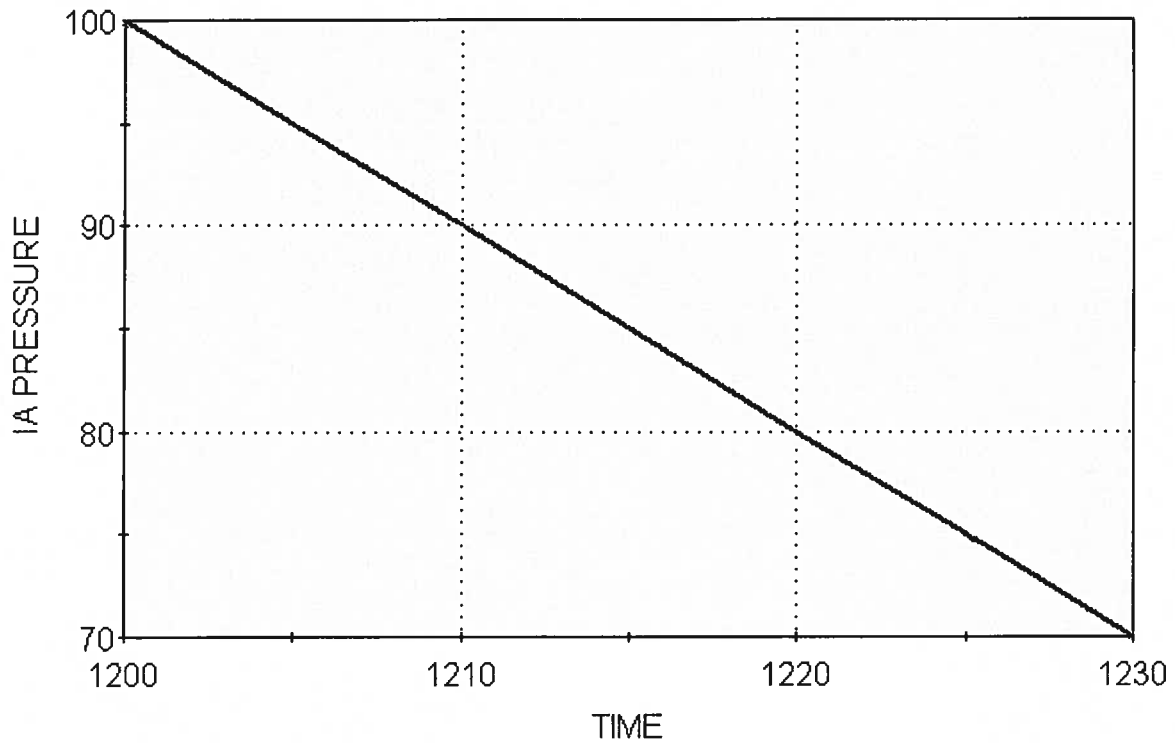
Based on the above conditions, which ONE of the following describes action(s) that will occur?

- A. 3RIA-6 audible alarm will automatically sound.
- B. the Spent Fuel Pool Ventilation system will be automatically isolated.
- C. the Spent Fuel Filtered Exhaust fans will be manually started from the Control Room.
- D. the Outside Air Booster Fans will be manually started from the Spent Fuel Pool entrance area.

1 POINT

Question 64

IA Pressure vs. Time



Based on the graph above, which ONE of the following describes the time at which SA-141 (SA to IA Controller) will automatically open?

- A. 1207
- B. 1210
- C. 1212
- D. 1215

1 POINT

Question 65

Unit 3 initial conditions:

- Reactor power = 100%
- Fire in progress in area of 3TE switchgear

Current conditions:

- 3TE bus is grounded due to water spray
- Relay 51G actuated

Based on the above conditions, which ONE of the following lists ONLY components that remain available?

- A. 3A MDEFDWP, 3B MDEFDWP
- B. 3A MDEFDWP, 3C HPIP
- C. 3C LPIP, 3B MDEFDWP
- D. 3C LPIP, 3C HPIP

1 POINT

Question 66

Unit 2 plant conditions:

- Reactor in MODE 6
- RCS Boron = 2270 ppmb

Based on the above conditions, which ONE of the following describes whether RCS Boron concentration meets the requirements of OP/2/A/1502/007 (Operations Defueling/Refueling Responsibilities) AND what is the minimum number of OPERABLE Source Range NI's required by the same procedure?

- A. meets / 2
- B. meets / 1
- C. does NOT meet / 2
- D. does NOT meet / 1

1 POINT

Question 67

Unit 1 initial conditions:

- Reactor power = 100%
- LDST level = 75" stable
- Group 7 rod position = 94% withdrawn
- Makeup to LDST initiated from 1B BHUT
- Neutron error = 0 stable

Current conditions:

- 1HP-15 Bailey controller indicates 470 gallons added to LDST
- 1B Bleed Transfer Pump secured

Based on the above conditions, which ONE of the following would describe a diverse indication that 470 gallons of 1B BHUT had been added to the LDST?

LDST level is approximately _____ inches and neutron error will become _____.

- A. 90 / positive
- B. 90 / negative
- C. 95 / positive
- D. 95 / negative

1 POINT

Question 68

Which ONE of the following states the RCS Pressure Safety Limit (psig) AND which of the listed items is credited with ensuring the limit is NOT exceeded?

- A. 2500 / RPS trip settings
- B. 2500 / PORV
- C. 2750 / RPS trip settings.
- D. 2750 / PORV

1 POINT

Question 69

Unit 1 plant conditions:

- Reactor power = 100%
- 1A Core Flood Tank parameters:
 - Pressure = 572 psig stable
 - Level = 12.91 feet
 - Boron Concentration = 2010 ppmb
- 1B Core Flood Tank parameters:
 - Pressure = 590 psig stable
 - Level = 12.51 feet
 - Boron Concentration = 1895 ppmb

Based on the above condition, which ONE of the following describes the action(s) required (if any) in accordance with Tech Spec 3.5.1 (Core Flood Tanks)?

- A. NO actions required
- B. Enter LCO 3.0.3 immediately
- C. Restore 1A CFT to OPERABLE within 1 hour ONLY
- D. Restore 1B CFT to OPERABLE within 1 hour ONLY

1 POINT

Question 70

Unit 1 plant conditions:

- Reactor power = 100%

Based on the above condition, which ONE of the following describes a condition that would require entry into a Tech Spec ACTIONS table?

- A. UST level = 5.6 feet
- B. BWST level = 47.3 feet
- C. 1D RPS channel in Manual bypass
- D. 230KV Dacus Black and White lines isolated

1 POINT

Question 71

Unit 1 plant conditions:

- Reactor in MODE 5
- Reactor Building Main Purge in operation

Based on the above conditions, which ONE of the following will cause the RB Purge fan to trip?

- A. Inadvertent actuation of ES Channel 5
- B. 1RIA-45 reaches ALERT setpoint
- C. Suction piping pressure = 5 inches of water vacuum
- D. 1PR-3 (RB PURGE CONTROL) closed

1 POINT

Question 72

Unit 1 plant conditions:

- Reactor in MODE 6
- LPI DHR in progress using 1A LPI pump
- Fuel movement in progress
- NI-3 and 4 SR out of service
- RB Purge in progress

Based on the above conditions, which ONE of the following describes when Reactor Building evacuation is required?

- A. 1NI-2 SR fails low
- B. 1RIA-4 HIGH alarm
- C. 1RIA-45 HIGH alarm
- D. 1NI-2 WR fails high

1 POINT

Question 73

For Operations personnel, which ONE of the following describes the required response to an Electronic Dosimeter dose alarm and when it is acceptable to deviate from that requirement?

- A. Exit the area immediately and contact RP / with RP permission
- B. Exit the area immediately and contact RP / with emergency dose limits in effect
- C. Move away from the area until alarm clears / with RP permission
- D. Move away from the area until alarm clears / with emergency dose limits in effect

1 POINT

Question 74

Unit 1 plant conditions:

- Blackout tab in progress
- EOP step gives direction to "Initiate AP/11 (Recovery From Loss of Power)"

Based on the above conditions, which ONE of the following describes the actions required to perform the EOP step?

- A. RO will perform AP/11 and SRO will wait until AP/11 has been completed to continue in the EOP.
- B. SRO will direct steps in AP/11 and then return to the EOP once AP/11 is complete.
- C. RO will begin AP/11 actions. SRO will continue in the EOP. SRO can re-direct RO actions.
- D. RO will begin AP/11 actions. SRO will continue in the EOP. RO must remain in AP/11 until the procedure is complete.

1 POINT

Question 75

Unit 1 plant conditions:

- Reactor power = 100%
- 1SA3/B6 (FIRE ALARM) actuated
- Fire Alarm panel indication
 - point 0202071 (Unit 1 pipe trench room 348 north end) actuated

Based on the above conditions, which ONE of the following describes who will be dispatched to the Unit 1 pipe trench room 348 per the Alarm Response Guide to determine the validity of the alarm AND a method used in RP/1000/029 (Fire Brigade Response) to dispatch the fire brigade when it is required?

- A. A Fire Brigade qualified operator / Plant Paging system
- B. A Fire Brigade qualified operator / Have Security dispatch fire brigade
- C. The Unit 1 BOP Reactor Operator / Plant Paging system
- D. The Unit 1 BOP Reactor Operator / Have Security dispatch fire brigade

Oconee 2010-301 Exam References

RO Exam:

Steam Tables
Unit 1 Loop A Narrow Range PT Plot

SRO Exam:

RP/0/B/1000/001 (Emergency Classification)
Technical Specification (T/S) 3.4.9 (Pressurizer)
T/S 3.8.8 (Distribution Systems – Operating)
Alarm Response Guide 1SA-03 B-6 pages 2-28.

[illegible]

O'conee 2010-301 RO EXAM KEY

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

O'Conce 2010-301 RO EXAM KEY

Q#	KEY
56	C
57	D
58	C
59	D
60	C
61	A
62	B
63	A
64	D
65	B
66	A
67	B
68	C
69	B
70	A
71	D
72	B
73	B
74	C
75	A