

2010A NRC SENIOR REACTOR OPERATOR EXAM

1 POINT

Question 76

Unit 2 initial conditions:

- Time = 1300
- Reactor power = 100%

Current conditions:

- Time = 1310
- RCS pressure = 52 psig slowly decreasing
- Reactor Building pressure = 52 psig slowly decreasing
- All SCM's = 0°F
- 2RIA-57 = 92 R/hr slowly increasing
- 2RIA-58 = 45 R/hr slowly increasing
- Average of 5 highest CETC's = 312°F decreasing
- NO RBCU's can be started
- NO RBS Pumps can be started

Based on the above conditions, which ONE of the following is the Emergency Action Level Classification?

REFERENCE PROVIDED

- A. Alert based on Loss of Fuel Clad Barrier and Potential Loss of Containment Barrier
- B. Alert based on Loss of RCS Barrier and Potential Loss of Containment Barrier
- C. Site Area Emergency based on Loss of RCS Barrier and Loss of Containment Barrier
- D. Site Area Emergency based on Loss of Fuel Clad Barrier and Loss of Containment Barrier

2010A NRC SENIOR REACTOR OPERATOR EXAM

1 POINT

Question 77

Unit 1 plant conditions:

- Reactor power = 100%
- CC CRD Return Flow = 125 gpm slowly decreasing
- CC Return Flow = 563 gpm decreasing
- Letdown Temperature = 138°F stable
- The following alarms have actuated:
 - 1SA-9/B-1 (CC CRD Return Flow Low).
 - 1SA-2/C-1 (HP Letdown Temperature High)
 - 1SA-9/C-1 (CC Component Cooling Return Flow Low)

Based on the above conditions:

(1) Which ONE of the following describes a required action from the associated ARG(s) to mitigate this event?

AND

(2) If the ARG directed actions are NOT successful, which Abnormal Procedure is required to be entered first?

- A. (1) Decrease letdown flow using 1HP-7 (LETDOWN CONTROL)
(2) AP/32 (Loss of Letdown)
- B. (1) Decrease letdown flow using 1HP-7 (LETDOWN CONTROL)
(2) AP/20 (Loss of Component Cooling)
- C. (1) Verify CC Surge Tank level > 12 inches and start the standby CC pump
(2) AP/32 (Loss of Letdown)
- D. (1) Verify CC Surge Tank level > 12 inches and start the standby CC pump
(2) AP/20 (Loss of Component Cooling)

2010A NRC SENIOR REACTOR OPERATOR EXAM

1 POINT

Question 78

Unit 1 initial conditions:

- Date = 12/01
- Time = 0800
- Reactor Power = 100%
- All Pressurizer heater breakers trip open and cannot be reclosed

Current conditions:

- Date = 12/04
- Time = 2200

Based on the above conditions, which ONE of the following is the HIGHER RCS temperature (degrees F) that is in compliance with the requirements of Tech Specs AND the bases for the Pzr heater power supply requirements in TS 3.4.9 (Pressurizer)?

REFERENCE PROVIDED

- A. 320 / ensure ability to perform a subcooled cooldown while on natural circulation during an extended loss of power
- B. 320 / ensure ability to control pressure and remain subcooled during an extended loss of power
- C. 375 / ensure ability to perform a natural circulation cooldown during an extended loss of power
- D. 375 / ensure ability to control pressure and remain subcooled during an extended loss of power

2010A NRC SENIOR REACTOR OPERATOR EXAM

1 POINT

Question 79

Unit 1 initial conditions:

- Reactor power = 75% stable
- ICS in MANUAL
- 1B HPIP tagged out
- The following alarms actuate:
 - 1SA-1/A1 (RP CHANNEL A TRIP)
 - 1SA-1/B1 (RP CHANNEL B TRIP)

Current conditions:

- Reactor power = 34% slowly decreasing
- BOTH Main Feedwater pumps are operating
- All SCM's = 0°F stable

Based on the above conditions, which ONE of the following describes the EOP tab that will be directed first AND the guidance the SRO will provide to the RO?

- A. UNPP / Trip the Main Turbine
- B. UNPP / Throttle Feedwater to control RCS temperature
- C. LOSCM / Fully depressurize BOTH Steam Generators
- D. LOSCM / Throttle Feedwater to control RCS temperature

2010A NRC SENIOR REACTOR OPERATOR EXAM

1 POINT

Question 80

Unit 3 plant conditions:

- Date 4/5
- Time = 1100
- 3KVID panelboard de-energized

Current conditions:

- Time = 1200
- DC panelboard 3DIC is de-energized

Based on the above conditions, which ONE of the following states the actions required by Tech Spec 3.8.8 (Distribution Systems-Operating) AND the bases behind the different Completion Times for inoperable Vital Instrument and Control panelboards?

REFERENCE PROVIDED

- A. Restore either 3KVIC OR 3KVID within 24 hours / KVIA AND KVIB have shorter completion times due to being the source of power for the ES Digital Channels
- B. Restore either 3KVIC OR 3KVID within 24 hours / KVIA AND KVIB have shorter completion times due to providing power for SK and SL breakers protective relaying
- C. Enter LCO 3.0.3 immediately / KVIA AND KVIB have shorter completion times due to being the source of power for the ES Digital Channels
- D. Enter LCO 3.0.3 immediately / KVIA AND KVIB have shorter completion times due to providing power for SK and SL breakers protective relaying

2010A NRC SENIOR REACTOR OPERATOR EXAM

1 POINT

Question 81

Unit 1 initial conditions:

- Reactor trip from 100% power
- Both Main Feedwater pumps trip
- EFDW pumps will not start

Current conditions:

- Rule 3 in progress
- LOHT tab initiated
- ALL SCM's > 0°F

Based on the above conditions, which ONE of the following would result in a transfer out of the LOHT tab?

- A. Pressurizer level = 375 inches
- B. RCS heats up and results in ANY SCM = 0°F
- C. HPI Forced Cooling is established and verified
- D. Condensate Booster Pump feed is established

2010A NRC SENIOR REACTOR OPERATOR EXAM

1 POINT

Question 82

Unit 1 initial conditions:

- Startup in progress
- Reactor in MODE 3
- Source Range NI's 2 & 4 OOS
- Source Range NI's 1 & 3 = 834 cps increasing
- Wide Range NI's 1 thru 4 = 5E-5% increasing

Current conditions:

- Source Range NI-1 = 0 cps
- 1SA-05/A8 (NI-1 TEST/FAIL) actuates

Based on the above conditions, which ONE of the following describes the reason for the NI-1 indications AND the Tech Specs impact on the startup?

- A. Loss of +15V Power supply / Suspend the startup
- B. Loss of +15V Power supply / Startup may continue
- C. Source range becomes saturated / Suspend the startup
- D. Source range becomes saturated / Startup may continue

2010A NRC SENIOR REACTOR OPERATOR EXAM

1 POINT

Question 83

Unit 1 plant conditions:

- ALL SCM = 0°F stable
- RCS pressure = 855 psig slowly decreasing
- LOCA CD tab in progress
- LPI suction source is the RBES
- HPI aligned for piggyback operation
- 1LP-15 failed closed

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

(1) if LPI ES analog channels are allowed to be manually bypassed in accordance with the LOCA CD tab?

AND

(2) the MAXIMUM allowed HPI flow if 1LP-15 will not open?

LPI ES _____ be bypassed AND the MAXIMUM allowed HPI flow is _____ gpm.

- A. may / 750
- B. may NOT / 750
- C. may / 500
- D. may NOT / 500

2010A NRC SENIOR REACTOR OPERATOR EXAM

1 POINT

Question 84

Unit 1 initial conditions:

- Reactor power = 70% stable
- 1B1 RCP has been secured
- ICS is in manual

Current conditions:

- Group 2 Rod 4 drops into core

Based on the above conditions, which ONE of the following describes the direction that will be provided to the RO AND the maximum time allowed by AP/1 (Unit Runback) to carry out the directions?

Reduce Core Thermal Power to \leq _____ within _____ hour(s).

- A. 60% / 1
- B. 60% / 2
- C. 45% / 1
- D. 45% / 2

2010A NRC SENIOR REACTOR OPERATOR EXAM
1 POINT

Question 85

Unit 2 initial conditions:

- Reactor power = 100% stable

Current conditions:

- Reactor trip occurs
- Main Turbine does NOT trip
- Manual Turbine trip is unsuccessful

Based on the above conditions, which ONE of the following describes actions required by the EOP AND the MAXIMUM time allowed by NSD 202 (Reportability) prior to notifying the NRC?

- A. Place BOTH EHC pumps in PULL TO LOCK / eight hours
- B. Place BOTH EHC pumps in PULL TO LOCK / four hours
- C. Initiate Rule 5 (MSLB) / eight hours
- D. Initiate Rule 5 (MSLB) / four hours

2010A NRC SENIOR REACTOR OPERATOR EXAM

1 POINT

Question 86

Unit 1 initial conditions:

- Reactor in MODE 3
- 1A2 and 1B2 RCPs operating

Current conditions:

- RCS leakage = 140 gpm
- All SCM's = 45°F stable
- Pressurizer level = 200 inches stable
- 1A2 RCP Motor Upper Guide Bearing temperature = 195°F slowly increasing
- 1B2 RCP Motor Stator Temperature = 235°F slowly increasing

Based on the above conditions, which ONE of the following describes the actions required by AP/16 (Abnormal Reactor Coolant Pump Operation) AND which EOP tab would provide guidance for a plant cooldown if ALL RCP's are secured?

Trip the ...

- A. 1A2 RCP / Forced Cooldown
- B. 1A2 RCP / LOCA Cooldown
- C. 1B2 RCP / Forced Cooldown
- D. 1B2 RCP / LOCA Cooldown

2010A NRC SENIOR REACTOR OPERATOR EXAM
1 POINT

Question 87

Unit 3 plant conditions:

- Reactor power = 100%
- 3A RBCU tagged out

Based on the above conditions, which ONE of the following would require immediate entry into LCO 3.0.3 AND describes actions that are required once LCO 3.0.3 is entered in accordance with OMP 2-23 (Operations Shift Manager Rules Of Practice)?

- A. 3LPSW-19 (3B RBCU INLET) fails closed / Must determine a time to begin power reduction within 1 hour
- B. 3LPSW-19 (3B RBCU INLET) fails closed / Must actually initiate a power reduction within 1 hour
- C. 3A RBS Pump declared inoperable / Within 1 hour determine a time to initiate power reduction
- D. 3A RBS Pump declared inoperable / Must actually initiate a power reduction within 1 hour

2010A NRC SENIOR REACTOR OPERATOR EXAM

1 POINT

Question 88

Plant initial conditions:

- All three ONS units reactor power = 100%
- STBY Buses 1 AND 2 energized from Central Switchyard

Current conditions:

- STBY Bus 1 locks out

Based on the above conditions, which ONE of the following describes the operability of the Keowee Underground power path AND if Oconee Unit 1 experienced a LOCA/LOOP from where would the MFBs receive power?

Keowee Underground Power path is _____ and Unit 1s MFBs would be energized from _____.

- A. OPERABLE / CT-1
- B. OPERABLE / CT-5
- C. NOT OPERABLE / CT-1
- D. NOT OPERABLE / CT-5

2010A NRC SENIOR REACTOR OPERATOR EXAM
1 POINT

Question 89

Unit 1 plant conditions:

- Reactor power = 20% stable
- 1A Main Feedwater Pump in service

Based on the above conditions, which ONE of the following will require entry into the EOP AND describes the initial actions directed by the EOP if the NEO dispatched to verify ALL MSRVS have reseated reports that one of the MSRVS is still passing steam?

- A. FDWPT Exhaust Vacuum = 23.2 inches HG / Transfer to EHT tab
- B. FDWPT Exhaust Vacuum = 23.2 inches HG / Manually decrease SG pressure
- C. Feedwater pump bearing oil pressure = 3.1 psig / Transfer to EHT tab
- D. Feedwater pump bearing oil pressure = 3.1 psig / Manually decrease SG pressure

2010A NRC SENIOR REACTOR OPERATOR EXAM

1 POINT

Question 90

Unit 1 initial conditions:

- Reactor in MODE 6
- Spent Fuel Pool in Refueling Cooling Mode alignment
- Defueling in progress

Current conditions:

- Fuel Transfer Canal level decreasing

Based on the above conditions, which ONE of the following describes why AP/26 directs stopping all LPI pumps AND the reason the AP only requires establishing Containment Closure (vs. restoring containment to OPERABLE)?

- A. Determine if leak is on discharge of LPI pumps / fuel handling accidents will NOT result in significant Containment pressurization
- B. Determine if leak is on discharge of LPI pumps / with an OPERABLE Containment the Main Purge system cannot be used to clean up RB atmosphere
- C. Allow closing of 1SF-1 and 1SF-2 / fuel handling accidents will NOT result in significant Containment pressurization
- D. Allow closing of 1SF-1 and 1SF-2 / with an OPERABLE Containment the Main Purge system cannot be used to clean up RB atmosphere

2010A NRC SENIOR REACTOR OPERATOR EXAM
1 POINT

Question 91

Unit 1 plant conditions:

- Reactor power = 100%
- 1RC-1 fails open
- 1RC-3 will NOT close

Based on the above conditions, which ONE of the following describes the initial response of 1HP-120 (RC VOLUME CONTROL) valve position AND the action(s) required by AP/44 (Abnormal Pressurizer Pressure Control)?

1HP-120 valve position will initially _____ AND AP/44 will direct actions to _____.

- A. remain approximately the same / trip the reactor and secure the 1A1 and 1A2 RCP's
- B. remain approximately the same / enter AP/29, decrease power to <70%, and secure the 1A1 RCP
- C. fully open / trip the reactor and secure the 1A1 and 1A2 RCP's
- D. fully open / enter AP/29, decrease power to <70%, and secure the 1A1 RCP

2010A NRC SENIOR REACTOR OPERATOR EXAM
1 POINT

Question 92

Unit 3 initial conditions:

- Reactor power = 100%
- The volume of active TSP required by SLC 16.6.10 (Trisodium Phosphate) is NOT met

Current conditions:

- LOCA/LOOP occurs

Based on the above conditions, which ONE of the following describes the consequence of the inadequate TSP volume AND when TSP performs its credited function?

- A. ECCS acceptance criteria may be exceeded / During the injection phase
- B. ECCS acceptance criteria may be exceeded / During the recirculation phase
- C. Acceptable offsite dose limits may be exceeded / During the injection phase
- D. Acceptable offsite dose limits may be exceeded / During the recirculation phase

2010A NRC SENIOR REACTOR OPERATOR EXAM

1 POINT

Question 93

Unit 3 initial conditions:

- Reactor power = 100%
- Fuel movement in Unit 3 Spent Fuel Pool

Current conditions:

- 3RIA-6 (SFP) in HIGH alarm
- 3RIA-41 (SFP Gas) in HIGH alarm
- 3SA-8/B9 (PROCESS MONITOR RADIATION HIGH) in alarm

Based on the above conditions, which ONE of the following describes the Abnormal Procedure of the highest priority and the Outside Air Booster Fans that will be started as part of the mitigating actions?

- A. AP/9 (Spent Fuel Damage) / Unit 3 Outside Air Booster Fans ONLY
- B. AP/9 (Spent Fuel Damage) / Unit 1 and 2 AND Unit 3 Outside Air Booster Fans
- C. AP/18 (Abnormal Release of Radioactivity) / Unit 3 Outside Air Booster Fans ONLY
- D. AP/18 (Abnormal Release of Radioactivity) / Unit 1 and 2 AND Unit 3 Outside Air Booster Fans

2010A NRC SENIOR REACTOR OPERATOR EXAM
1 POINT

Question 94

Which ONE of the following describes a condition that would require making a plant page to implement Emergency Dose Limits AND whether that leakage would be included when calculating RCS Pressure Boundary leakage (gpm) as defined in Tech Spec 3.4.13 (RCS Operational Leakage)?

- A. 45 gpm SGTR / no
- B. 45 gpm SGTR / yes
- C. 125 gpm RCS leak in RCP suction pipe weld / no
- D. 125 gpm RCS leak in RCP suction pipe weld / yes

2010A NRC SENIOR REACTOR OPERATOR EXAM
1 POINT

Question 95

Unit 2 initial conditions:

- Refueling in progress
- FTC level = 22 feet stable
- No water additions are being made to the system
- 2A LPI train is operable and in service

Current conditions:

- Refueling SRO desires stopping the 2A LPI Pump to aid in inserting a fuel assembly
- 2A LPI pump has been in continuous operation for the previous 24 hours

Based on the above conditions, which ONE of the following describes whether the 2A LPI pump may be stopped in accordance with OP/2/A/1502/007 (Operations Defueling /Refueling Responsibilities) and the Tech Spec bases for requiring only 1 OPERABLE DHR loop in this condition?

- A. 2A LPI Pump may be stopped for up to 1 hour per 8 hour period.
FTC level is within TS limits and provides adequate backup decay heat removal.
- B. 2A LPI Pump may be stopped for up to 1 hour per 8 hour period.
Spent Fuel Cooling system provides adequate backup decay heat removal.
- C. 2A LPI Pump may NOT be stopped
FTC level is below TS limits and cannot provide adequate backup decay heat removal.
- D. 2A LPI Pump may NOT be stopped
Spent Fuel Cooling system can NOT provide adequate backup decay heat removal.

2010A NRC SENIOR REACTOR OPERATOR EXAM

1 POINT

Question 96

Unit 1 plant conditions:

- Reactor power = 75% stable
- Regulating rods positioned in the Unacceptable region of the rod curves provided in the COLR

Which ONE of the following describes the ...

(1) direction that will be given to the OATC based on the above plant conditions...

AND

(2) consequences of continued power operations while in the Unacceptable Operation region of the rod curves in the COLR in accordance with the bases for TS 3.2.1 (Regulating Rods Position Limits)?

RCS boration using _____ is required to begin within 15 minutes AND...

- A. 1A BHUT / required shutdown margin may not exist
- B. 1A BHUT / Quadrant Power Tilt limits may be exceeded
- C. Unit 1 CBAST / required shutdown margin may not exist
- D. Unit 1 CBAST / Quadrant Power Tilt limits may be exceeded

2010A NRC SENIOR REACTOR OPERATOR EXAM
1 POINT

Question 97

Unit 3 plant conditions:

- LPI aligned to normal DHR mode using 3A LPI pump
- Both SG levels = 65% OR increasing using 3A and 3B MDEFWP's
- LR Cooldown pressure = 290 psig stable
- 3TA and 3TB de-energized
- CETC's = 196°F stable
- RCS Tcold = 205°F stable
- 3A LPI Cooler Outlet temperature = 195°F stable

Based on the above conditions, which ONE of the following describes the current plant MODE AND if the SG's can be used as a backup method of heat removal in accordance with Tech Specs?

- A. MODE 4 / no
- B. MODE 4 / yes
- C. MODE 5 / no
- D. MODE 5 / yes

2010A NRC SENIOR REACTOR OPERATOR EXAM

1 POINT

Question 98

Which ONE of the following describes the maximum dose (TEDE) that a non-volunteer can receive while saving a life and whose approval is required per RP/0/B/1000/11 (Planned Emergency Exposure).

- A. 10 rem / Emergency Coordinator
- B. 10 rem / Site Vice President
- C. 25 rem / Emergency Coordinator
- D. 25 rem / Site Vice President

2010A NRC SENIOR REACTOR OPERATOR EXAM

1 POINT

Question 99

Plant conditions:

- All 3 Units reactor power = 100%
- 1SA-3/B6 (FIRE ALARM) actuated
- NEO's dispatched to the Turbine Building Basement (Unit 1 and 2 Powdex area)

Current conditions:

- NEO reports: Fire location is TBB/K28. Heavy smoke and rolling flames (5-10ft.) spreading out from the Powdex Alarm Panel

Based on the above conditions, which ONE of the following describes the unit(s) requiring a reactor trip AND who is allowed to serve as a Fire Brigade leader in accordance with the bases of SLC 16.13.1 (Minimum Station Staffing Requirements) ?

REFERENCE PROVIDED

- A. ALL units / SRO ONLY
- B. Unit 2 (only) / SRO ONLY
- C. ALL units / SRO OR an NEO with appropriate qualifications
- D. Unit 2 (only) / SRO OR an NEO with appropriate qualifications

2010A NRC SENIOR REACTOR OPERATOR EXAM
1 POINT

Question 100

Unit 1 initial conditions:

- Reactor power = 100%
- 1RIA-59 reading 2 gpm slowly increasing
- AP/31 (Primary to Secondary Leakage) in progress

Current conditions:

- Reactor power = 75% decreasing
- 1RIA-59 reading 28 gpm increasing

Based on the above conditions, which ONE of the following describes how the SRO will proceed AND the actions required if during the subsequent RCS cooldown if the isolated steam generator approaches overfill conditions (285" XSUR)?

- A. Continue shutdown under the direction of AP/31 / Initiate SG Blowdown
- B. Continue shutdown under the direction of AP/31 / Steam the SG to the condenser
- C. Go directly to SGTR tab / Initiate SG Blowdown
- D. Go directly to SGTR tab / Steam the SG to the condenser

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.

Oconee 2010-301 SRO EXAM KEY

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