

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

Name:

Date: 03/07/2005

Facility/Unit: BVPS-2

Region: I

Reactor Type: Westinghouse

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.

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Applicant's Signature**Results**

Examination Value \_\_\_\_\_ Points

Applicant's Score \_\_\_\_\_ Points

Applicant's Grade \_\_\_\_\_ Percent

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**Question # 1**

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Which ONE of the following describes a function of the flywheel on the RCP's?

- A. Prolongs RCP coastdown time to aid in maintaining loop flow thus maintaining hot channel factors at an acceptable level during certain loss of RCS flow events.
- B. Prolongs RCP coastdown time to aid in maintaining loop flow thus maintaining DNBR within acceptable limits during certain loss of flow events.
- C. Maintains constant RCP speed, minimizing the potential for spurious RCS low flow reactor trips and maintaining hot channel factors at an acceptable level during power operation.
- D. Minimizes acceleration on pump start to minimize the effects of core lift when the first RCP is started during an RCS heatup from Cold Shutdown.

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### Question # 2

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Given the following conditions:

- The Unit is at 100% power with all systems in NSA.
- 2RCS\*P21A, Reactor Coolant Pump has tripped on overcurrent due to an apparent shaft seizure.
- A reactor trip occurs.

Which ONE of the following describes SG response to the event 3 (THREE) minutes following the trip?

SG 21A level is...

- A. Lower than 21B and 21C SG due to SG shrink when the RCP tripped.
- B. Higher than 21B and 21C SG due to less heat removal from 21A SG.
- C. Higher than 21B and 21C SG due to SG swell when the RCP tripped.
- D. Lower than 21B and 21C SG due to the rise in Tcold on the idle loop.

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**Question # 3**

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Given the following:

- The Unit is at 90% power.
- All systems are in their at-power, NSA configurations.
- Tav<sub>g</sub> is rising due to a xenon transient.

You are directed to adjust RCS temperature using the Reactor Makeup Control System.

Which ONE of the following is the mode of makeup control required and the corresponding valve lineup?

A. Borate:

2CHS\*FCV113A, Boric Acid Flow Control Valve - OPEN  
2CHS\*FCV114A, Primary Water Flow Control Valve - CLOSED  
2CHS\*FCV113B, Makeup Stop Valve To Charging Pump Suction - OPEN  
2CHS\*FCV114B, Makeup Stop Valve To VCT - CLOSED

B. Borate:

2CHS\*FCV113A, Boric Acid Flow Control Valve - OPEN  
2CHS\*FCV114A, Primary Water Flow Control Valve - CLOSED  
2CHS\*FCV113B, Makeup Stop Valve To Charging Pump Suction - CLOSED  
2CHS\*FCV114B, Makeup Stop Valve To VCT - OPEN

C. Dilute:

2CHS\*FCV113A, Boric Acid Flow Control Valve - OPEN  
2CHS\*FCV114A, Primary Water Flow Control Valve - OPEN  
2CHS\*FCV113B, Makeup Stop Valve To Charging Pump Suction - OPEN  
2CHS\*FCV114B, Makeup Stop Valve To VCT - CLOSED

D. Dilute:

2CHS\*FCV113A, Boric Acid Flow Control Valve - CLOSED  
2CHS\*FCV114A, Primary Water Flow Control Valve - OPEN  
2CHS\*FCV113B, Makeup Stop Valve To Charging Pump Suction - CLOSED  
2CHS\*FCV114B, Makeup Stop Valve To VCT - OPEN

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### Question # 4

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Given the following conditions:

- The Unit is in Mode 4.
- RCS cooldown is in progress on RHS Train "B".
- [2CCP\*P21A], Component Cooling Water Pump is running.
- [2CCP\*P21B], Component Cooling Water Pump is racked out.
- [2CCP\*P21C], Component Cooling Water Pump is in standby connected to the 2DF bus.

The following annunciators alarm in the Control Room:

- [A6-1H], PRI COMP COOLING WATER SYSTEM TROUBLE
- [A6-1G], PRI COMP COOLING PUMP AUTO START/AUTO STOP

The crew determines that the cause is a high CCP system demand, with NO other failures present.

Assuming all equipment operates as required and **NO** operator action, which ONE of the following describes the CCP pump control indication on Benchboard - B?

- A. [2CCP\*P21A] bright white indication. [2CCP\*P21C] red indication.
- B. [2CCP\*P21A] red indication. [2CCP\*P21C] bright white indication.
- C. [2CCP\*P21A] bright white indication. [2CCP\*P21C] bright white indication.
- D. [2CCP\*P21A] red indication. [2CCP\*P21C] red indication.

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**Question # 5**

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Given the following conditions:

- The plant is in Mode 4, cooling down for refueling.
- RHS Pump [2RHS\*P21A], and heat exchanger are in service.
- The auto setpoint on [2RHS\*FCV605A], RHR Heat Exchanger Bypass Flow Control Valve drifts **HIGH**.

Which ONE of the following describes the effect, if any, on the RCS cooldown rate?

The RCS cooldown rate...

- A. rises, due to the increased flow through the RHR heat exchanger.
- B. lowers, due to the decreased total flow through the RHR system.
- C. lowers, due to the decreased flow through the RHR heat exchanger.
- D. rises, due to the increased total flow through the RHR system.

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**Question # 6**

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Given the following conditions:

- A reactor trip has occurred.
- The crew has transitioned to ES-0.1, Reactor Trip Response.

The following conditions develop:

- RCS pressure is 1950 psig and lowering slowly.
- [2CHS\*P21A], Charging Pump is RUNNING.
- [2CHS\*P21B], Charging Pump is in STANDBY.
- Charging flow is offscale HIGH.
- Letdown is isolated.
- RCS temperature is 542°F and slowly lowering.
- PRZR level is 4% and lowering.

Which ONE of the following actions is required?

- A. Initiate SI and continue in ES-0.1.
- B. Initiate SI and return to E-0, Reactor Trip Or Safety Injection.
- C. Start HHSI pumps as required to maintain PRZR level and continue in ES-0.1.
- D. Start HHSI pumps as required to maintain PRZR level and return to E-0.

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**Question # 7**

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Given the following conditions:

- A load rejection has occurred.
- PRZR PORV operation has resulted in high pressure and temperature in the PRZR Relief Tank.
- PRT pressure is 13 psig.
- The PORV has reseated.

Which ONE of the following describes the operation of [2RCS-MOV516], PRT Spray Valve, and [2RCS-AOV519], PRT Primary Grade Makeup Water Inlet Isolation Valve in response to the high PRT pressure?

- A. PRT spray valve and PRT primary water supply isolation valve automatically open.
- B. PRT spray valve and the PRT primary water supply isolation valve must both be manually opened.
- C. Check open PRT spray valve. PRT primary water supply isolation valve must be manually opened.
- D. PRT spray valve must be manually opened. Check open PRT primary water supply isolation valve.



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**Question # 8**

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The Unit is at 80% power with all systems in NSA when the following alarms are received:

- [A6-1H], PRI Comp Cooling Water System Trouble
- [A4-5C], Radiation Monitoring Level HIGH

CCP Surge Tank level is 70% and rising slowly.

Which ONE of the following actions is required?

- A. Trip the reactor, enter E-0, Reactor Trip Or Safety Injection and trip all RCP's.
- B. Close Chilled Water System inlet and outlet isolation valves to determine if the leak is in the Chilled Water System.
- C. Close any RCP thermal barrier isolation valve that indicates less than 50 gpm CCP discharge flow.
- D. Close 2CHS-AOV200A, B, & C, Letdown Orifice Isolation Valves to determine if the leak is in the CVCS letdown non-regenerative heat exchanger.

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**Question # 9**

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Given the following conditions:

- A plant heatup is in progress per 2OM-50.4.M, Station Startup From Mode 5 to Mode 3.
- RCS pressure is 335 psig with [2CHS-PCV145], NRHX Discharge Pressure Control Valve in AUTO.
- PRZR temperature is 380°F and rising at 1°F per minute.
- The PRZR is SOLID; a bubble is being drawn.

Which ONE of the following is the approximate time before a bubble is formed in the Pressurizer?

- A. Less than 15 minutes
- B. 15 to 30 minutes
- C. 45 to 60 minutes
- D. 75 to 90 minutes

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**Question # 10**

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Given the following conditions:

- The Unit was operating at 68% power.
- An automatic reactor trip occurred.
- The cause of the trip was low flow in RCS Loop 21A.
- The cause of the trip was determined to be an instrument failure.

Which ONE of the following input failures caused the reactor trip?

- A. The loop high pressure side flow input failed high.
- B. The loop high pressure side flow input failed low.
- C. One loop low pressure side flow input failed high.
- D. One loop low pressure side flow input failed low.

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**Question # 11**

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Given the following conditions:

- The Unit was operating at 100% power.
- A PRZR PORV failed open.
- The reactor tripped on low PRZR pressure.
- PRZR pressure stabilized at 1700 psig.
- CNMT pressure is 2 psig.

Plant status is as follows:

- All control rods are fully inserted.
- Normally running charging pump is in service.
- Standby charging pump is NOT running,
- NO LHSI pumps are running.
- CIA is NOT actuated.
- CIB is NOT actuated.
- Main steam lines are NOT isolated.
- FWIS is NOT actuated.

Which ONE of the following describes the required **MANUAL** operator actions?

Manually initiate both trains of only...

- A. Safety Injection.
- B. Safety Injection and Main Steam Line Isolation.
- C. Safety Injection, CIB, and Main Steam Line Isolation.
- D. Safety Injection, CIB, and CIA.

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**Question # 12**

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With the Unit at full power, and all systems in NSA, an event occurs that causes CNMT pressure to slowly rise to a maximum of 10 psig.

Assuming all systems operate as designed, the cooling water being supplied to the CNMT penetration cooling coils will...

- A. automatically isolate when CNMT pressure reaches the SI setpoint.
- B. automatically isolate when CNMT pressure reaches the MSLI setpoint.
- C. automatically isolate when CNMT pressure reaches the CIB setpoint.
- D. NOT automatically isolate throughout the entire event.

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**Question # 13**

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Given the following conditions:

- A reactor trip has occurred.
- Safety Injection actuates on low PRZR pressure.
- All equipment started and is operating as designed.
- RCS pressure is 340 psig and lowering.
- CTMT pressure is 18 psig and rising.

Prior to the event, [2HVR\*FN201A and 201B], Containment Air Recirculation Fans were running. [2HVR\*FN201C], Containment Air Recirculation Fan was in standby aligned to 480V Bus 2P.

Which ONE of the following describes the status of the containment air recirculation fans?  
(Assuming **NO** operator actions.)

- A. All containment air recirculation fans are running.
- B. All containment air recirculation fans are tripped and **CANNOT** be started.
- C. 2HVR\*FN201A and 201B, Containment Air Recirculation Fans can be manually started. 2HVR\*FN201C is tripped and **CANNOT** be started.
- D. 2HVR\*FN201A, 201B and 201C, Containment Air Recirculation Fans can be manually started.

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**Question # 14**

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Given the following conditions:

- A LOCA has occurred.
- The crew is performing the actions of E-1, Loss Of Reactor Or Secondary Coolant.
- SI, CIA, and CIB are reset.
- The crew is evaluating whether Containment Spray should be stopped.
- Containment pressure is (-) 3 psig.

Which ONE of the following describes the action required for Containment Spray?

- A. STOP ONE (1) train of quench spray. When containment pressure reaches (-) 4 psig, STOP the other train.
- B. Allow BOTH trains of quench spray to run. Cycle 2SWS\*MOV105A and B, Recirc Spray HX Cooling Water Disch Valves as necessary to maintain (-) 2 to (-) 4 psig.
- C. Allow BOTH trains of quench spray to run until containment pressure is reduced to (-) 4 psig. Cycle 2SWS\*MOV105A and B, Recirc Spray HX Cooling Water Disch Valves as necessary to maintain (-) 2 to (-) 4 psig.
- D. STOP quench spray chemical injection pumps. Leave the quench spray pumps running until containment pressure reaches (-) 4 psig.

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**Question # 15**

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Given the following conditions:

- A Unit startup is in progress following a mid-cycle outage.
- The reactor is critical at  $1 \times 10^{-8}$  amps on the Intermediate Range NI's.

A condenser steam dump valve fails partially open.

Assuming **NO** action by the crew, which one of the following describes the **IMMEDIATE** effect on the plant?

- A. Power INCREASES; RCS Temperature INCREASES
- B. Power INCREASES; RCS Temperature DECREASES
- C. Power DECREASES; RCS Temperature INCREASES
- D. Power DECREASES; RCS Temperature DECREASES



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**Question # 16**

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Given the following conditions:

- The Unit is at 100% power.
- The following annunciators are in alarm:
  - o [A6-9E], Steam Generator 21A Level Deviation From Setpoint
  - o [A6-9H], Loop A Steam Flow Greater Than Feedwater Flow

The BOP determines that [2FWS-FCV478], SG 21A Feed Regulating Valve is opening.

Which ONE of the following describes the event taking place?

- A. A controlling feedwater flow transmitter has failed high.
- B. A controlling steam pressure transmitter has failed high.
- C. A controlling steam flow transmitter has failed low.
- D. A SG level transmitter has failed high.

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**Question # 17**

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With SG level on program which ONE of the following is the expected behavior for SG level during a power increase from 0% to 100% power?

- A. Level ramps from 33% at 0% RTP to 44% at 20% RTP, then holds at 44%.
- B. Level is constant at 33% throughout the power ascension.
- C. Level will hold at 33% until 20% power, then rises to 44% at 100% RTP.
- D. Level is constant at 44% throughout the power ascension.

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**Question # 18**

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Which ONE of the following provides a direct automatic trip of [2FWS-P21A], SG Main Feed Pump?

- A. 2 out of 3 Lo-Lo Level in any SG
- B. Reactor Trip coincident with Low Tavg
- C. 2 out of 3 Hi-Hi Level (P-14) in any SG
- D. 2FWS-MOV150A, SG Main Feed Pump Discharge Valve shut

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**Question # 19**

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Which ONE of the following describes the suction sources for the Auxiliary Feedwater System?

- A. Normal suction aligned to 2FWE-TK210, PDWST. Suction can be aligned directly to 2WTD-TK23, Demin Water Storage Tank if the PDWST is unavailable.
- B. Normal suction aligned to 2WTD-TK23, Demin Water Storage Tank. Suction can be aligned to 2FWE-TK210, PDWST if the Demin Water Storage Tank is unavailable.
- C. Normal suction aligned to 2FWE-TK210, PDWST. Suction can be aligned to the Service Water System if the PDWST is unavailable.
- D. Normal suction aligned to 2WTD-TK23, Demin Water Storage Tank. Suction can be aligned to the Service Water System if the Demin Water Storage Tank is unavailable.

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**Question # 20**

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The plant is in Mode 3 following a reactor trip. A plant cooldown of 50°F/hr. is underway.

Assuming SG level is held constant, which ONE of the following describes the trend of auxiliary feedwater flow requirements as the plant cools down to Mode 5?

- A. More AFW flow is required to maintain SG level due to the decreased density of the SG water as it cools.
- B. AFW flow requirements are constant as long as the cooldown rate remains constant even when RHS is placed in service.
- C. Less AFW flow is required to maintain SG level because heat input to the SG's decreases as the cooldown continues.
- D. AFW flow requirements are constant as long as SG level remains constant.

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**Question # 21**

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Given the following conditions:

- The plant is at 90% power, with all systems in NSA.
- An electrical fault causes an overcurrent trip and lockout of the 4KV Bus Feeder Breakers supplied by "D" USST.

Which ONE of the following describes the Reactor Coolant Pumps that are running 10 seconds after this event takes place?

- A. 21A and 21C
- B. 21B and 21C
- C. 21A and 21B
- D. All RCP's running

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**Question # 22**

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How is an emergency diesel generator in standby affected by a loss of all 125VDC power?

- A. It can be locally started, and could still generate power after manual field flash.
- B. It can start automatically, but cannot generate electricity due to loss of field flash.
- C. It can start automatically, and could still generate power after manual field flash.
- D. It cannot start automatically or locally, and therefore cannot generate electricity.

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**Question # 23**

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Given the following conditions:

- A loss of offsite power has occurred.
- While performing the actions of E-0, the RO manually initiated a Safety Injection.
- Approximately 5 minutes later, 2-1 EDG tripped.

Which ONE of the following was the cause of the EDG trip?

- A. Loss of Field
- B. Reverse Power
- C. Generator Ground Overcurrent
- D. Generator Differential Overcurrent



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**Question # 24**

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Given the following conditions:

- The Unit is at 100% power.
- 2OST-36.2, Emergency Diesel Generator [2EGS\*EG2-2] Monthly Test is in progress.
- 2-2 EDG is paralleled to the grid, carrying approximately 50% load.
- A grid disturbance causes frequency to drop very slightly. Grid voltage remains constant.

Which ONE of the following describes the response of 2-2 EDG?

- A. KW output rises.
- B. KW output lowers.
- C. KW output and KVAR output rises.
- D. KW output and KVAR output lowers.

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**Question # 25**

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A liquid waste release is in progress to cooling tower blowdown from [2SGC-TK23A], SG Blowdown Test Tank when the following annunciator alarms:

- [A4-5A], Radiation Monitoring System Trouble

The BOP determines that [2SGC-RQI100], Liquid Waste Effluent Radiation Monitor has failed.

Which ONE of the following is the required action?

- A. The release may continue provided grab samples are taken within 4 hours and determined to remain within limits.
- B. The release may continue provided two (2) independent samples are independently determined to be within limits and two (2) technically qualified personnel verify the valve lineup.
- C. The release must be terminated. It shall not be restarted until detector [2SGC-RQI100] is operable.
- D. The release must be terminated. It shall not be restarted until two (2) samples are independently analyzed and two (2) technically qualified personnel verify valve lineups.

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**Question # 26**

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Given the following conditions:

- [2SWS-P21A], Service Water Pump is running.
- [2SWS-P21B], Service Water Pump is in P-T-L.
- [2SWS-P21C], Service Water Pump is running in place of 2SWS-P21B.

Subsequently, a loss of offsite power occurs.

Which ONE of the following describes the Service Water pumps that will be in operation when the EDG's have completed their loading sequence?

- A. 2SWS\*P21A ONLY
- B. 2SWS\*P21A and 2SWS\*P21B ONLY
- C. 2SWS\*P21A and 2SWS\*P21C ONLY
- D. NO Service Water pumps will be running.

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**Question # 27**

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With the unit in Mode 3, assuming **NO** operator actions, which **ONE** of the following describes the effect of a loss of station instrument air on Volume Control Tank (VCT) level?

- A. VCT level decreases due to maximum charging and letdown isolating.
- B. VCT level decreases due to maximum charging and letdown flow being diverted to the degassifiers.
- C. VCT level increases due to minimum charging and the letdown pressure control valve failing open.
- D. VCT level increases due to minimum charging and the letdown orifice isolation valves failing open.

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**Question # 28**

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Given the following:

- The Unit was at 100% power.
- A steam break occurred downstream of the Main Steam Isolation Valves.
- A reactor trip and safety injection occurred from Train "A" ONLY.

Which one of the following correctly describes the status of the CNMT penetration lines for the Phase "A" (CIA) and Phase "B" (CIB) isolation valves before any operator action(s)?

- A. One valve in each Phase "A" line is closed; one valve in each Phase "B" line is closed.
- B. One valve in each Phase "A" line is closed; all Phase "B" valves do not change position.
- C. All Phase "A" valves are closed; all Phase "B" valves are closed.
- D. All Phase "A" valves are closed; all Phase "B" valves do not change position.

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**Question # 29**

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What is the correct sequence of components that supply power from the 480 VAC substations to the control rod drive mechanisms (CRDM's)?

(RDMG's = Rod Drive Motor Generator Sets)

- A. 480V Bus A, RDMG's, Power Cabinets, Trip Breakers
- B. 480V Bus B, Power Cabinets, Trip Breakers, RDMG's
- C. 480V Bus A, Trip Breakers, RDMG's, Power Cabinets
- D. 480V Bus B, RDMG's, Trip Breakers, Power Cabinets

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**Question # 30**

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Which ONE of the following describes the ONLY equipment required by Technical Specifications to be **OPERABLE** for detection of small amounts of RCS leakage?

- A. Containment Dew Point Monitor and Gaseous Activity Radiation Monitor
- B. Containment Particulate Activity Radiation Monitor and Containment Sump Monitor
- C. Containment Sump Monitor and Containment Temperature Monitoring
- D. Containment Temperature Monitoring and Containment Dew Point Monitor

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**Question # 31**

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Given the following conditions:

- The Unit is at 100% power with all system in NSA.
- The controlling PRZR level transmitter [2RCS-LT459] fails at the programmed level that corresponds to full plant load.
- Assume **NO** operator action is taken.

Which ONE of the following describes the effect on charging flow and PRZR level when plant power is **REDUCED** to 10%?

- A. Charging flow remains constant and actual PRZR level remains constant. PRZR heaters will energize to compensate for reduced Tavg.
- B. Charging flow decreases and actual PRZR level decreases. On low PRZR level, letdown will isolate and the PRZR heaters will turn off.
- C. Actual PRZR level increases and charging flow increases. The backup heaters will energize as level rises due to the apparent in-surge.
- D. Actual PRZR level decreases and charging flow increases. When actual level increases back to program level, charging flow will back down to maintain level.



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### Question # 32

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The Unit was operating at 100% power when a reactor trip occurred due to a LOCA. All Safety Injection systems failed to operate and FR-C.1, Response To Inadequate Core Cooling has been entered.

Given the following:

- The Unit Supervisor has directed the depressurization of all intact SG's to 300 psig using the condenser steam dump valves.
- All main steam trip valves are open and the condenser is available.
- [2MSS\*PK464], Steam Dump Controller is in MANUAL.
- The Steam Dump Control Mode Selector Switch is in the STM PRESS position and SG depressurization is underway.
- PRZR pressure is > 1950 psig and the Block Steamline SI Switches have NOT been placed in the Block position.
- As the SG depressurization progresses, the steam flow automatically stops.

Which ONE of the following caused the steam flow to stop?

- A. SG pressure has reached 300 psig, or Main Steamline Isolation occurred due to exceeding the high steam pressure rate setpoint.
- B. Steam header pressure has dropped below the setpoint on 2MSS\*PK464, or Tavg is below 541°F and no action has been taken to defeat the Tavg Interlock.
- C. Tavg is below 541°F and no action has been taken to defeat the Tavg Interlock, or Main Steamline Isolation occurred due to exceeding the low steam pressure rate sensitive setpoint.
- D. Main Steamline Isolation due to exceeding the high steam pressure rate setpoint, or steam header pressure has dropped below the setpoint on 2MSS\*PK464.

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**Question # 33**

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Which ONE of the following describes a design feature of the Spent Fuel Pool Cooling and Purification System?

- A. Maintains  $K_{eff} < 0.95$  with unborated water during all fuel handling activities.
- B. Ensures that any pipe break in the system will maintain sufficient shielding over irradiated fuel bundles.
- C. Maintains water temperature below 200°F for all postulated events.
- D. Provides sufficient storage for all irradiated fuel assemblies for the life of the plant.

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**Question # 34**

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Given the following conditions:

- The Unit has been in Mode 6 for seven (7) days.
- Fuel movement is in progress.
- Containment Purge System is operating.

[2HVR\*RQ104A], Containment Purge and Exhaust Radiation Monitor fails a channel check and is declared **INOPERABLE**.

Which ONE of the following describes how, if at all, fuel movement is affected?

- A. No effect. Refueling may continue.
- B. Refueling may continue as long as 2RMR\*RQ303A and B, Containment Atmosphere Process Monitors are operable.
- C. Suspend fuel movement until the Containment Purge System is isolated, and then resume refueling activities.
- D. Refueling may continue as long as 2HVR-RQ104B, Containment Purge And Exhaust Radiation Monitor remains operable.

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**Question # 35**

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Given the following conditions

- Reactor power is at approximately 106% and slowly rising on 3 channels.
- The remaining power range channel is 104.5% and rising.

Which of the following describes the response of the main turbine/generator? Assume the initiating condition does not clear.

- A. The load reference is runback, the runback timer will cycle on/off, on for 1.5 seconds, then off for 30 seconds, until generator load is zero.
- B. The load reference is runback, the runback timer will cycle on/off, on for 1.5 seconds, then off for 30 seconds, until generator load is reduced to 20%.
- C. Load is reduced at a constant rate of 200% per minute until load is reduced to 20%, with no further automatic action.
- D. Load is reduced at a constant rate of 200% per minute until load is reduced to 0%, with no further automatic action.

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**Question # 36**

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Given the following:

- The Unit is operating at 100% power with all systems in NSA.
- A liquid waste discharge is in progress to the Unit 2 cooling tower basin.
- A **HIGH** radiation alarm occurs on [2SGC-RQ100], Liquid Waste Process Monitor.

Which ONE of the following describes the action that will occur?

- A. Manually close 2SGC-HCV100, High Radiation Valve terminating the release.
- B. Verify 2SGC-HCV100, High Radiation Valve closes automatically immediately terminating the release.
- C. Manually open 2SGC-HCV100, High Radiation Valve diverting the release to the Unit 1 boron recovery test tank.
- D. Verify 2SGC-HCV100, High Radiation Valve opens automatically immediately diverting the release to the Unit 1 boron recovery test tank.

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**Question # 37**

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Regarding RMQ-RQI303, Waste Gas Storage Vault Ventilation Radiation Monitor on an Alert level...

- A. the ventilation exhaust path is automatically isolated.
- B. no automatic actions occur, and on the high alarm level the ventilation exhaust path is isolated.
- C. the ventilation automatically swaps to a filtered pathway, and on the high alarm level the ventilation exhaust path is isolated.
- D. no automatic actions occur, and on the high alarm level a HEPA filter is automatically placed in service.

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**Question # 38**

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A precaution contained in 2OM-25.4.L, Discharging Steam Generator Blowdown Evaporator Test Tank [2SGC-TK23A(B)] Contents To Cooling Tower Blowdown states that two tanks containing radioactive liquid can **NOT** be discharged at the same time.

Which ONE of the following describes the reason for this precaution?

- A. The discharge permit for discharging the contents of a single liquid waste tank is based upon a dilution rate which includes the cooling tower blowdown rate of both units.
- B. Pipe size restrictions in the effluent line could result in an overpressure condition if more than 1 waste tank pump is in operation.
- C. The limit prevents excessive wear on the foot valve in the discharge structure due to high flow rates.
- D. The common discharge point is only provided with a limited amount of dilution flow from the Unit 2 cooling tower blowdown.

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**Question # 39**

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Given the following conditions:

- A reactor trip has occurred.
- Due to a steam dump failure, PRZR level dropped to 10%.
- PRZR level has recovered to 22%.
- Steam Dumps have been closed.
- Safety Injection is NOT actuated OR required.
- The crew is performing the actions of ES-0.1, Reactor Trip Response.
- The RO is restoring letdown after re-energizing PRZR heaters.

Which ONE of the following is the **FIRST** action taken when restoring letdown in accordance with ES-0.1, Reactor Trip Response?

- A. OPEN 2CHS\*LCV460A, B.
- B. Place 2CHS\*PCV145 in MANUAL at 50% OPEN.
- C. Ensure 2CHS-AOV204 is CLOSED.
- D. OPEN 2CHS-AOV200A, B, C.



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**Question # 40**

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With the Unit operating at 100% power, the reactor trips on low PRZR pressure.

[2RCS-PI472], Pressurizer Relief Tank Pressure indicates 35 psig. The crew suspects that a PORV opened inadvertently and is now stuck partially open.

Which ONE of the following confirming indications could be expected if a PORV is stuck partially open?

- A. PORV relief line temperature stabilized at 281°F. PRZR safety relief line temperatures slowly rising.
- B. PORV relief line temperature stabilized at 250°F. PRZR safety relief line temperatures slowly rising.
- C. PORV relief line temperature stabilized at 281°F. PRZR safety relief line temperatures indicate ambient temperature and stable.
- D. PORV relief line temperature stabilized at 250°F. PRZR safety relief line temperatures indicate ambient temperature and stable.

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**Question # 41**

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The Unit is operating at 100% power, NSA with the exception of [PT-447], Turbine Impulse Pressure Transmitter, which is in the process of being removed from service due to erratic operation. The condenser steam dumps are still in the Tavg mode. A loss of primary plant component cooling water then results in a manual reactor trip. Ten minutes after the trip, the following conditions exist during the performance of ES-0.1, Reactor Trip Response:

SG	Pressure
21A	1000 psig and stable
21B	1005 psig and stable
21C	995 psig and stable

- All RCP's are OFF.
- RCS pressure is 2230 psig and stable.
- Thot is approximately 575°F in all 3 loops and slowly lowering.
- Core Exit TC's indicate approximately 580°F and stable.
- Tcold is approximately 555°F in all 3 loops and stable.
- Reactor Trip Breaker "A" failed to open.

Based on the above indications, what is the condition of the RCS and the preferred method of heat removal for the current plant conditions?

- A. Natural circulation exists. The condenser steam dumps are maintaining heat removal.
- B. Natural circulation does NOT exist. Heat removal will be established by opening the condenser steam dumps.
- C. Natural circulation exists. SG atmospheric steam dumps are maintaining heat removal.
- D. Natural circulation does NOT exist. Heat removal will be established by opening the SG atmospheric steam dumps.

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**Question # 42**

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The Unit was at 55% power when all charging flow was lost. The following conditions exist:

- The crew has isolated letdown while attempting to restore charging flow.
- The RO reports that PRZR level is lowering at a rate of 1% every five (5) minutes.
- PRZR level was approximately 2% below reference when letdown was isolated.

Assuming charging flow is not restored, approximately how long can PRZR heater operation be maintained?

- A. 1 hour
- B. 1.5 hours
- C. 2 hours
- D. 2.5 hours

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**Question # 43**

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Given the following conditions:

- The Unit is in Mode 5.
- A loss of RHS cooling has occurred.
- The crew is performing actions of AOP-2.10.1, Residual Heat Removal System Loss.
- The RO reports that CCP pumps CANNOT be started.
- The US directs the RO to monitor RHS system temperature.

Which ONE of the following describes the reason for monitoring RHS temperature at this time?

- A. RHS temperature must be logged to determine time to RCS saturation.
- B. RHS temperature must be logged to determine time available to vent RHS pumps.
- C. If temperature exceeds 180°F, the RHS pumps must be tripped to prevent seal damage.
- D. If temperature exceeds 180°F, the RHS pumps must be tripped to prevent cavitation.

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### Question # 44

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Given the following conditions:

- The Unit is at 100% power with all systems in NSA.
- The following annunciator is in alarm:
  - [A4-1D], Pressurizer Control Press HIGH/LOW

The RO determines that [2RCS\*PT445], PRZR pressure transmitter is failing **LOW**.

Assuming **NO** operator action is taken, which ONE of the following describes the expected indication on [2RCS\*PI444], PRZR Control Pressure?

- A. Rises until 2RCS\*PCV455C, PRZR PORV Relief Valve OPENS.
- B. Rises until 2RCS\*PCV455D and 456 PRZR PORV Relief Valves OPEN.
- C. Remains constant at the normal full power value. NO control action occurs.
- D. Remains constant due to AUTO control of PRZR Heater Group 2C. All backup heaters TRIP.

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**Question # 45**

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Which ONE of the following describes the reason that emergency boration is initiated in FR-S.1, Response to Nuclear Power Generation - ATWS?

- A. After control rod trip and rod insertion functions, boration is the next most direct manner of adding negative reactivity to the core.
- B. It is the fastest method of adding negative reactivity in the event that an uncontrolled cooldown results from a turbine trip failure.
- C. To provide a method of boron addition at high RCS pressures, helping to avoid unnecessary SI initiation.
- D. It is required because the UFSAR accident analysis does not take credit for local operator actions in the event of an ATWS.

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**Question # 46**

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Given the following:

- The Unit has sustained a Steam Generator Tube Rupture and the crew is preparing to cooldown to a target temperature of 505°F on the CET's.
- A loss of offsite power occurs.
- All equipment functions as required.

Which ONE of the following describes how the cooldown to target temperature will be accomplished?

- A. Fully open the intact SG atmospheric dump valves to establish maximum cooldown rate.
- B. Gradually open the intact SG atmospheric dump valves to establish a cooldown rate below Technical Specification limits.
- C. Gradually open the condenser steam dumps in "Pressure Control" mode to establish a cooldown rate below Technical Specification limits.
- D. Fully open the condenser steam dumps in "Pressure Control" mode to establish maximum cooldown rate.

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**Question # 47**

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Given the following conditions:

- A reactor trip and safety injection have occurred.
- The crew is performing the actions of E-2, Faulted Steam Generator Isolation due to the uncontrolled depressurization of SG 21A.
- The crew is evaluating if SI flow should be reduced.
- The following conditions exist:
  - RCS temperature is 460°F and slowly dropping.
  - RCS pressure is 1650 psig and rising slowly.
  - Containment pressure is 23 psig.
  - SG 21B and 21C NR levels are 15% and rising.
  - AFW flow is 375 gpm.
  - PRZR level is 20%.

Based on the conditions above, the crew may enter ES-1.1, SI Termination...

- A. immediately.
- B. after transition to E-1 when RCS subcooling criteria is met.
- C. after transition to E-1 when PRZR level criteria is met.
- D. after transition to E-1 when SG level criteria is met.



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**Question # 48**

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Given the following:

- The crew is responding to an event and is currently in FR-H.1, Response To Loss Of Secondary Heat Sink.
- Attempts to restore feedwater flow have failed.
- RCS bleed and feed has been established with one PRZR PORV open.
- The other two PORV's will **NOT** open.

Which ONE of the following actions is required to be taken?

- A. Terminate attempts to establish a SG heat sink because one PRZR PORV will provide sufficient bleed flow to permit adequate RCS heat removal.
- B. Continue attempts to open the failed PRZR PORV's and reduce SI flow as necessary to prevent rapid overpressurization of the RCS.
- C. Establish alternate RCS bleed paths because one PRZR PORV may not depressurize the RCS sufficiently to permit adequate cooling from the SI flow.
- D. Terminate RCS bleed and feed because with only one PRZR PORV open, RCS pressure will rise causing SI flow and RCS inventory to drop.

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**Question # 49**

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In ECA-0.0, Loss Of All 4KV Emergency Power during the rapid depressurization of intact SG's to 300 psig, an overshoot occurs and all 3 SG's are reduced to 180 psig before the depressurization is stabilized.

Which ONE of the following is a plant condition that may result from this overshoot in SG depressurization?

- A. The Integrity CSFST may be challenged.
- B. The Subcriticality CSFST may be challenged requiring entry into a Functional Restoration Procedure.
- C. Natural circulation may be impeded by accumulator Nitrogen injection.
- D. Sufficient steam supply may not be available for effective turbine driven AFW pump operation.

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**Question # 50**

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Given the following conditions:

- The Unit is at 100% power.
- 2-2 EDG is OOS.
- A loss of offsite power occurs.
- All equipment operates as designed.

Which ONE of the following describes the status of the motor driven AFW pumps?

- A. 2FWE\*P23A and 2FWE\*P23B are both RUNNING.
- B. 2FWE\*P23A and 2FWE\*P3B are both STOPPED.
- C. 2FWE\*P23A is RUNNING. 2FWE\*P23B is STOPPED.
- D. 2FWE\*P23B is RUNNING. 2FWE\*P23A is STOPPED.

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**Question # 51**

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A loss of 120VAC Vital Bus No. 2-1 has occurred.

Which ONE of the following AFFECTED channel ESF bistable status indicators will be **EXTINGUISHED** following the vital bus failure?

- A. HIGH 3 CNMT PRESSURE CIB CHAN I
- B. PRZR PRESS LO SI SETPOINT CHAN I
- C. PWR RNG N41 LOW POWER SP
- D. 21A SG HI-HI LEVEL CHAN I

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**Question # 52**

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How is it ensured that loads powered off of 125V DC distribution buses 2-5 and 2-6, ("swing") loads do not inadvertently cross-tie the affected DC buses?

- A. A mechanical interlock prevents simultaneous closure of both DC supply breakers.
- B. An electrical interlock trips both DC supply breakers if they are simultaneously closed.
- C. An alarm sounds in the Control Room to warn the operators if both DC supply breakers are simultaneously closed.
- D. Administrative controls only (procedure requirements) prevent simultaneous closure of both DC supply breakers.

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**Question # 53**

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Given the following conditions:

- The Unit is at 35% power with all systems in NSA performing a normal plant shutdown due to the inoperability of the No. 2-1 EDG which is currently on clearance.
- When transferring the electrical busses to the offsite source, an electrical fault occurred resulting in the following breakers tripping open on overcurrent:
  - Main generator exciter breaker
  - Both main generator output breakers
  - 4KV Bus "A" feeder breakers from both the USST and SSST

Which ONE of the following procedures immediate operator actions should be performed first?

- A. AOP-2.1.3, RCCA Control Bank Inappropriate Continuous Movement
- B. AOP-2.26.1 Turbine and Generator Trip
- C. AOP-2.36.2, Loss of 4KV Emergency Bus
- D. E-0, Reactor Trip or Safety Injection

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**Question # 54**

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Following a reactor trip and safety injection, the crew is performing actions of E-0, Reactor Trip Or Safety Injection.

The following conditions exist:

- All SG pressures are stable at 1000 psig.
- All SG NR levels are approximately 25%.
- AFW is supplying the SG's.
- RCS pressure is approximately 1000 psig.
- RCS temperature is 545°F.
- Auxiliary Building radiation monitors are alarming.
- Containment pressure is (-) 5 psig.

Which ONE of the following procedures will mitigate this event?

- A. E-1, Loss of Reactor or Secondary Coolant
- B. ES-1.1, SI Termination
- C. ES-1.2, Post-LOCA Cooldown and Depressurization
- D. ECA-1.2, LOCA Outside Containment

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**Question # 55**

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Given the following conditions:

- A reactor trip and safety injection have occurred.
- The crew has performed the actions of E-0, Reactor Trip Or Safety Injection.
- AFW flow **CANNOT** be established.
- All SG NR levels are offscale low.
- The crew has entered FR-H.1, Response To Loss Of Secondary Heat Sink.
- RCS pressure is 200 psig.
- SG pressures are each 550 psig and lowering.

Which ONE of the following describes the required actions?

- A. Remain in FR-H.1 because a large break LOCA is in progress AND a secondary heat sink is required.
- B. Remain in FR-H.1 because a small break LOCA is in progress AND a secondary heat sink is required.
- C. Go to E-1 because a large break LOCA is in progress AND a secondary heat sink is NOT required.
- D. Go to E-1 because a small break LOCA is in progress AND a secondary heat sink is NOT required.



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**Question # 56**

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Given the following conditions:

- A LOCA has occurred.
- Due to multiple equipment failures, the crew is performing actions of ECA-1.1, Loss Of Emergency Coolant Recirculation.
- Two (2) Charging/HHSI pumps and two (2) LHSI pumps are running.
- RWST level is approximately 10 inches and continues to drop.

Which ONE of the following describes the action required in accordance with ECA-1.1?

- A. STOP ONLY ONE (1) HHSI and ONLY ONE (1) LHSI pump and verify NO backflow from the RWST to CTMT sump.
- B. STOP ONLY ONE (1) HHSI and ONLY ONE (1) LHSI pump and initiate secondary depressurization to facilitate SI accumulator injection.
- C. STOP ALL pumps taking a suction from the RWST and verify NO backflow from the RWST to CTMT sump.
- D. STOP ALL pumps taking a suction from the RWST and initiate secondary depressurization to facilitate SI accumulator injection.

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**Question # 57**

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The following conditions exist:

- The Unit is operating at 80%, steady state power.
- The Rod Control Selector Switch is in Automatic.
- Control Bank "D" starts to step in continuously.
- Turbine load is stable.

Which ONE of the following actions must the operator take in response to these conditions?

- A. Place the Rod Control Mode Selector Switch in Manual.
- B. Place the Rod Control Mode Selector Switch in Bank "D".
- C. Place the Rod Control Mode Selector Switch in either Shutdown Bank position.
- D. Manually trip the reactor.

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**Question # 58**

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Given the following conditions:

- The Unit is operating at 100% power with all systems in NSA.
- The RO recognizes that Control Bank "D", Group 2, and Control Bank "B", Group 2 control rods drop just prior to a reactor trip.

Which ONE of the following is the cause of the failure?

- A. Logic Cabinet Oscillator failure
- B. Logic Cabinet Master Cyclor failure
- C. Power Cabinet Thyristor failure
- D. Power Cabinet Logic error

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**Question # 59**

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During operation at power SG tube leakage is detected and estimated at 250 gpm by the Reactor Operator. The following plant indications exist:

- RCS pressure - 2000 psig and lowering
- Reactor power - 80%
- SG pressures - 800 psig
- PRZR level - 42% and lowering

The Unit is tripped and plant parameters following the trip are:

- RCS pressure - 1600 psig and lowering
- Reactor power - 0%
- SG pressures - 1000 psig
- PRZR level - 13%

Based on the two sets of given data, which ONE of the following describes the effect on primary-to-secondary leakage?

Leakage following the trip is...

- A. one half of the initial leak rate or about 125 gpm.
- B. essentially equal to the initial leak rate or about 250 gpm.
- C. approximately 70% of the initial leak rate or about 175 gpm.
- D. One third of the initial leak rate or about 83 gpm.

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**Question # 60**

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[2RMC\*RQ201A], Control Room Area Radiation Monitor indication on the RM-11 console grid display is backlit **YELLOW**.

Which ONE of the following describes the status of 2RMC\*RQ201A?

- A. Monitor has FAILED.
- B. Monitor is OFF-LINE.
- C. HIGH alarm setpoint has been reached.
- D. ALERT alarm setpoint has been reached.

**Question # 61**

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Given the following conditions:

- An inadvertent Safety Injection has occurred.
- The crew has completed action to terminate SI in accordance with ES-1.1, SI Termination.
- The following annunciator is illuminated:
  - AUTO SAFETY INJECTION BLOCKED

Which ONE of the following actions is required to clear the annunciator?

- A. Depress and hold the SI reset pushbuttons until the light clears.
- B. Reset SI, CIA, CIB, and SI Recirc Mode Reset.
- C. Close, and then re-open the reactor trip breakers.
- D. Place the BB-A reactor trip switch in TRIP until the annunciator clears.

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**Question # 62**

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Select the statement that describes the purpose of the initial depressurization of the SG's in FR-C.1, Response To Inadequate Core Cooling.

- A. To prevent the SG's from acting as a source of heat to the inadequately cooled core.
- B. To reduce RCS pressure in order to allow SI accumulator and/or LHSI flow.
- C. To provide driving head for a controlled two phase natural circulation cooldown of the RCS.
- D. To minimize the possibility of lifting a secondary safety valve in the event of a SG tube rupture.

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**Question # 63**

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Following a small break LOCA, the crew is performing action contained in FR-P.1, Response To Imminent Pressurized Thermal Shock Conditions.

Which ONE of the following describes the difference in SI termination criteria for FR-P.1 as opposed to the criteria in ES-1.1, Safety Injection Termination?

The criteria in FR-P.1 is...

- A. less restrictive to allow for a faster reduction in RCS pressure.
- B. more restrictive to allow for a more controlled reduction in RCS pressure.
- C. less restrictive because subsequent RCP restart is likely to cause propagation of any existing flaw in the reactor vessel walls.
- D. more restrictive because subsequent RCP restart is likely to cause propagation of any existing flaw in the reactor vessel walls.



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**Question # 64**

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A reactor trip has occurred. The crew has entered FR-H.2, Response To Steam Generator Overpressure based upon a **YELLOW** condition on the Heat Sink CSF Status Tree. The following conditions exist:

- SG 21A pressure indicates 1150 psig.
- SG 21B and 21C pressures indicate 1010 psig.
- SG 21A NR level is 65%.
- Instrument air header pressure has been lost.

Which ONE of the following actions is available to mitigate the SG overpressure condition?

- A. Initiate SG blowdown flow.
- B. Open condenser steam dump valves.
- C. Go to FR-H.3, Response To SG High Level to reduce pressure by reducing SG level.
- D. Manually or locally open the residual heat release valve to reduce SG pressure.

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**Question # 65**

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The Control Room is being evacuated to the Emergency Shutdown Panel. The crew is preparing to evacuate in accordance with AOP-2.33.1A, Control Room Inaccessibility. All equipment is operating as designed.

Which ONE of the following describes the operation of the emergency diesel generators (EDG's) during this evolution?

- A. EDG's are started and vital equipment is loaded from the Control Room. Control is transferred to the Emergency Shutdown Panel after evacuation.
- B. EDG's remain in standby status. Control is switched to the Emergency Shutdown Panel after evacuation.
- C. EDG's remain in standby status. Control is transferred to the local control panel from the Control Room prior to evacuation.
- D. EDG control is switched to the local control panel after evacuation. EDG's are started and vital equipment is loaded as soon as local control is established.

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**Question # 66**

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You are a licensed Reactor Operator and have been assigned to an administrative function. You are current in maintaining qualification in the Licensed Operator Requalification Program. The date is February 23, 2005 and you are preparing to return to shift duties.

The time you were on shift since this assignment is as follows:

- 12 hours on December 24, 2004 BOP
- 12 hours on November 23, 2004 BOP
- 12 hours on November 22, 2004 BOP
- 12 hours on September 19, 2004 RO
- 12 hours on September 18, 2004 RO

Which ONE of the following describes the status of your license in accordance with 1/2-ADM-1351, Licensed Operator Retraining Program?

- A. Your license is active. You may stand watch with no restrictions.
- B. Your license is active. You must regain qualification as RO by standing three (3) additional 12-hour shifts in the RO position.
- C. Your license is inactive. You must reactivate your license by standing five (5) 8-hour shifts under instruction in the RO position and one 8-hour shift in any one of the Non-licensed tour positions.
- D. Your license is inactive. You must reactivate your license by standing five (5) 8-hour shifts under instruction as either RO or BOP.

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**Question # 67**

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Given the following conditions:

- The Unit has been at 100% power for 3 weeks. All systems are in NSA.
- RCS boron concentration is 1000 ppm.
- A controlled power reduction to 50% is to be performed.

Using the references provided and maintaining control rods at their current position, assuming no change in xenon concentration, which ONE of the following describes the **MINIMUM** amount of boric acid required to initially maneuver the plant to 50% power?

- A. 700 - 800 gallons
- B. 850 - 950 gallons
- C. 1000 - 1100 gallons
- D. 1150 - 1250 gallons

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**Question # 68**

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When performing an OST procedure, which one of the following conditions **PROHIBITS** the use of "N/A" in the sign-off spaces provided?

- A. Performance of partial tests.
- B. Inability to perform the OST as written.
- C. Performing an OST that pre-establishes conditions for non-performance of steps.
- D. Non-performance of steps that cannot be performed due to plant conditions, but do not change the intent of the procedure.

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**Question # 69**

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Regarding Technical Specification **SAFETY LIMITS**, which ONE of the following core limitations does the OTΔT reactor trip prevent exceeding?

- A. Total Core Power
- B. Power Density (KW/ft)
- C. Axial Flux Difference (AFD)
- D. Departure from Nucleate Boiling (DNB)

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**Question # 70**

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Which ONE of the following is the responsibility of the Reactor Operator during refueling operations?

- A. Monitor source range count rate during core reload, and remain cognizant of 1/M plot results.
- B. Maintain continuous communications with the Refueling Floor.
- C. Maintain a 1/M plot during fuel shuffle.
- D. Update the Control Room Status Board for each core alteration as it is performed.

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**Question # 71**

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Given the following conditions:

- You are required to make an entry to a Locked High Radiation Area.
- Your year-to-date exposure is 2.6 Rem Total Effective Dose Equivalent (TEDE).
- The job is planned to take 20 minutes to complete, with 5 minutes transit time each way.
- Transit path radiation levels are 400 mR/hr.
- Work area radiation levels are 1200 mR/hr.

Which ONE of the following describes your eligibility to perform this task?

- A. You may perform this task provided you are signed onto a High Radiation Area RWP and have received authorization to exceed the exposure Admin Control Level.
- B. You may not perform this task because you will exceed the BVPS Admin Guide for TEDE.
- C. You may perform this task provided you are signed onto a High Radiation Area RWP with no other restrictions other than that listed on the RWP.
- D. You may not perform the task because your current year to date exposure is already within 80% of the BVPS Admin Guide for TEDE.



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**Question # 72**

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Given the following conditions:

- A rapid load reduction from 100% power to 65% power was performed approximately 3 hours ago.
- [2CHS\*RQ101A], Reactor Coolant Letdown Low Range Monitor is in HIGH alarm.
- [2CHS\*RQ101B], Reactor Coolant Letdown High Range Monitor has just reached its HIGH alarm setpoint.
- Actions of 2OM-43.4.AAC, Radiation Monitoring High have been completed.
- Chemistry confirms RCS activity exceeds TS 3.4.8 limits.

The Unit Supervisor directs a plant shutdown to be performed.

Which ONE of the following actions is subsequently performed to limit the release of radioactivity?

- A. MSIVs are closed.
- B. SG atmospheric dump valve setpoints are raised.
- C. RCS is cooled down below 500°F.
- D. Maximum condensate polishers are placed in service.

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**Question # 73**

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Which of the following is the **LOWEST** emergency classification at which the Technical Support Center (TSC) **MUST** be activated?

- A. Unusual Event
- B. Alert
- C. Site Area Emergency
- D. General

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**Question # 74**

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During the performance of EOP actions, the crew observes a **NOTE** prior to Step 1 of the EOP, and a **CAUTION** prior to Step 3 of the EOP.

Which **ONE** of the following describes the applicability of these statements during the performance of the EOP?

- A. The NOTE is applicable throughout the entire procedure. The CAUTION applies to Step 3 ONLY.
- B. The NOTE applies to Step 1 ONLY. The CAUTION applies to Step 3 ONLY.
- C. The NOTE is applicable throughout the entire procedure. The CAUTION applies to all steps of the procedure that succeed it.
- D. The NOTE applies to Step 1 ONLY. The CAUTION applies to all steps of the procedure that succeed it.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 75**

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Given the following conditions:

- A reactor trip and safety injection have occurred.
- All equipment is operating as designed.
- The crew is performing diagnostic actions of E-0, Reactor Trip Or Safety Injection.
- Containment pressure is 19 psig and LOWERING.
- RCS pressure is 1250 psig and STABLE.
- RCS subcooling margin is 46°F and STABLE.
- RWST level is 700 inches and dropping slowly
- PRZR level is 4% and RISING.
- All AFW pumps are running with 400 gpm flow.
- All RCP's are STOPPED.

Based upon conditions above, which ONE of the following procedures will the crew transition to, which will then provide guidance to start a reactor coolant pump, if it is desired?

- A. ES-1.3, Transfer to Cold Leg Recirculation
- B. ES-0.1, Reactor Trip Response
- C. E-1, Loss Of Reactor Or Secondary Coolant
- D. ES-1.2, Post-LOCA Cooldown And Depressurization

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 76**

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Given the following conditions:

- The Unit is in Mode 5.
- RHS Train "B" is in service.
- The following annunciator is received:
  - [A1-5H], Residual Heat Removal System Trouble
- [2RMR\*RQ303A], Containment Airborne Monitor is in alarm.
- RHS flow is oscillating slowly.

Which ONE of the following describes the plant condition and action required under these conditions?

- A. An RHS leak exists in containment. Enter AOP-2.6.5, Shutdown LOCA.
- B. An RHS leak exists in the Auxiliary Building. Enter AOP-2.6.7, Excessive Primary Plant Leakage.
- C. An RHS leak exists in containment. Enter AOP-2.10.1, Residual Heat Removal System Loss.
- D. An RHS leak exists in the Auxiliary Building. Enter AOP-2.6.5, Shutdown LOCA.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 77**

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Given the following conditions:

- A manual reactor trip is attempted by the RO.
- Reactor Trip Breaker "B" indicates closed on PSMS.
- All lights on the DRPI display are extinguished.
- Reactor power indicates 6% and stable.
- The crew has entered E-0, Reactor Trip Or Safety Injection.

Which ONE of the following describes the condition of the reactor and the appropriate action?

- A. The reactor is tripped. Continue in E-0, Reactor Trip Or Safety Injection.
- B. The reactor is NOT tripped. Emergency boration is required per ES-0.1, Reactor Trip Response.
- C. The reactor is NOT tripped. Transition to FR-S.1, Response To Nuclear Power Generation - ATWS.
- D. The reactor is NOT tripped. Dispatch an operator to locally trip the reactor and initiate a turbine trip per E-0, Reactor Trip Or Safety Injection.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 78**

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With the plant in Mode 1, 2, or 3, Technical Specifications limit the RCS activity to  $\leq 0.35 \mu\text{Ci/gm}$  Dose Equivalent I-131.

Which ONE of the following describes the basis for this limit?

- A. In the case of a steam break-induced steam generator tube leakage, ensures offsite dose does not exceed a small fraction of 10CFR100 guidelines.
- B. In case of a LOCA, ensures offsite dose does not exceed a small fraction of 10CFR100 guidelines.
- C. In case of a steam break-induced steam generator tube leakage, ensures offsite dose rates do not exceed 10CFR20 limits.
- D. In case of a LOCA, ensures offsite dose rates do not exceed 10CFR20 limits.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 79**

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Given the following conditions:

- The Unit is in Mode 6.
- Refueling is in progress with an irradiated fuel assembly movement in progress in containment.
- Train "A" is the Protected Train.
- Train "B" 125V DC Bus 2-2 is out-of-service for battery replacement.

125VDC Bus 2-3 sustains a fault and is de-energized. The Refueling crew is ordered to complete the move in progress and then suspend refueling operations.

Which ONE of the following describes the reason that **Technical Specifications** requires suspending fuel movement?

- A. The failure of DC Bus 2-3 also makes 120V AC distribution inoperable.
- B. Failure of protected train DC power raises the Shutdown Risk level to an unacceptable RED status.
- C. The plant no longer meets the initial conditions assumed in the safety analysis of a redundant set of AC and DC power sources operable during an assumed loss of off-site AC power and single failure of 1 other AC source.
- D. There is insufficient instrumentation and control power available to recover from a postulated event, such as a Fuel Handling Accident.



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 80**

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Given the following conditions:

The Unit is at 100% power with all systems in NSA.

The following annunciators are in alarm:

- [A1-4F], Service Water Pump Auto Start/Auto Stop
- [A1-4G], Service Water Header Pressure Low
- [A1-5F], Standby Service Water Pump Auto Start/Auto Stop

Additionally, the operators note the following conditions:

- [2SWS\*P21A], Service Water Pump is tripped (previously running).
- [2SWE-P21A], Service Water Pump remains in Standby.

Which ONE of the following actions is required to restore the Service Water System?

- A. Start 2SWE-P21A, remove 2SWS\*P21A from service, and place 2SWS\*P21C on the 2AE Bus in accordance with the ARP's and the applicable section of 2OM-30.
- B. Start 2SWE-P21A, remove 2SWS\*P21A from service, and place 2SWS\*P21C on the 2DF Bus in accordance with the ARP's and the applicable section of 2OM-30.
- C. Align 2SWS\*P21B to the "A" header, and place 2SWS\*P21C on the 2AE Bus in accordance with AOP-2.30.1, Service Water/Normal Intake Structure Loss.
- D. Align 2SWS\*P21B to the "A" header, and place 2SWS\*P21C on the 2DF Bus in accordance with AOP-2.30.1, Service Water/Normal Intake Structure Loss.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 81**

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A reactor trip and safety injection have occurred.

ECA-1.2, LOCA Outside Containment has been entered from E-0, Reactor Trip Or Safety Injection.

After closing the valves listed in ECA-1.2, the following conditions exist:

- RCS pressure is 1400 psig and STABLE.
- ECCS flow is STABLE.

Which ONE of the following describes the status of the LOCA and required action?

- A. The LOCA is isolated. Transition to E-1, Loss Of Reactor Or Secondary Coolant.
- B. The LOCA is NOT isolated. Transition to ECA-1.1, Loss Of Emergency Coolant Recirculation.
- C. The LOCA is NOT isolated. Transition to E-0, Reactor Trip Or Safety Injection.
- D. The LOCA is isolated. Transition to ES-1.1, SI Termination.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 82**

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Which ONE of the following events requires a **1 HOUR** report to the NRC in accordance with 10CFR50.72?

- A. Initiation of a plant shutdown in accordance with T.S. 3.0.3
- B. Initiation of a Licensee Event Report (LER)
- C. Confirmed violation of Fitness for Duty requirements
- D. Declaration of an Unusual Event

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## BVPS - 2LOT5 NRC Written Exam

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### Question # 83

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Given the following conditions:

- A reactor trip has occurred due to a loss of offsite power.
- The crew is performing actions of ES-0.2, Natural Circulation Cooldown.
- RVLIS is **NOT** available.
- The crew has commenced RCS depressurization to 1950 psig.

The following conditions are indicated:

- RCS pressure is 2030 psig and trending DOWN slowly.
- RCS Tavg is 547°F and trending DOWN slowly.
- PRZR level is 21% and trending DOWN slowly.

Which ONE of the following actions is required?

- A. Continue depressurization to 1950 psig and block SI.
- B. Initiate Safety Injection and go to E-0, Reactor Trip Or Safety Injection.
- C. Stop the cooldown, Block SI, and initiate depressurization to 1950 psig.
- D. Stop the depressurization and go to ES-0.4, Natural Circulation Cooldown With Steam Void In Vessel (Without RVLIS).

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 84**

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Given the following conditions:

- A reactor trip and Safety Injection have occurred.
- The crew was performing action contained in E-1, Loss of Reactor or Secondary Coolant.
- The US was concerned about conflicting indications, and the crew entered ES-0.0, Rediagnosis.
- The crew determines that there is an increasing trend on secondary plant radiation monitors.

Which one of the following describes how the crew will transition to the correct procedure?

- A. Go directly to the appropriate E-3 or ECA-3 series procedure.
- B. Return to E-0 diagnostic steps to verify indications that will confirm the event in progress.
- C. Return to E-1 step in effect and use the Symptomatic Response/Unexpected Conditions page to direct entry to E-3.
- D. Direct Chemistry sample of steam generators to confirm radiation monitor readings prior to making a determination of appropriate procedure entry.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 85**

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Given the following conditions:

- A LOCA has occurred.
- ECCS has NOT functioned as required.
- All RCP's are TRIPPED.
- CET's indicate 626°F.
- RVLIS Full Range is 40%.
- All SG pressures are approximately 1070 psig.
- Total AFW flow is 380 gpm.
- SG NR levels are 13%, 11%, and 17%, respectively.

Which ONE of the following procedures should the crew implement for these conditions?

- A. FR-H.1, Response To Loss of Secondary Heat Sink
- B. FR-H.2, Response To Steam Generator Overpressure
- C. FR-C.1, Response To Inadequate Core Cooling
- D. FR-C.2, Response To Degraded Core Cooling

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 86**

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Given the following conditions:

- The Unit is in Mode 3 during a plant heatup with all RCP's in operation.
- RCP 21B has been stopped due to vibration concerns.
- While investigating the high vibration on RCP 21B, the US determines that RCP 21C should also be stopped due to vibration concerns.
- RCP 21A is unaffected.

Which ONE of the following actions is required?

- A. Correct the cause of the high vibration on "B" and "C" RCP's or be in Cold Shutdown within 12 hours.
- B. Correct the cause of the high vibration on at least ONE of the affected RCP's or be in Cold Shutdown within 12 hours.
- C. Immediately suspend any operations involving a reduction in RCS boron concentration and initiate corrective action to restore at least ONE RCP to service.
- D. Immediately de-energize control rod drive mechanisms or align the rod control system so it is incapable of control rod withdrawal.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 87**

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With the Unit in Mode 1, the relief capacity of \_\_\_\_\_ pressurizer safety valve(s) is greater than the maximum surge rate resulting from a complete loss of load WITHOUT immediate reactor trip, assuming \_\_\_\_\_ operation.

- A.     all               no PORV or Steam Dump
- B.     all               PORV and Steam Dump
- C.     each            no PORV or Steam Dump
- D.     each            PORV and Steam Dump



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 88**

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Given the following conditions:

- The plant is at 100% power with all systems in NSA.
- The RO has recently performed a small dilution for Tavg control.
- The following indications are available in the Control Room:
  - Power Range NI's are increasing.
  - Tavg is decreasing.
  - Steam flow and feed flow are slightly elevated.

Reactor power is 101% and rising slowly.

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

- A. Main steam line leak; reduce power by reducing turbine load as necessary.
- B. Inadvertent RCS dilution; reduce power and Tavg by inserting control rods.
- C. Main steam line leak; trip the reactor and enter E-0, Reactor Trip Or Safety Injection.
- D. Inadvertent RCS dilution; trip the reactor and enter E-0, Reactor Trip Or Safety Injection.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 89**

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Given the following conditions:

- The Unit is at 100% power with all systems in NSA.
- [2IAS-PI106], Instrument Air Pressure has been slowly decreasing and is reading 85 psig.
- The crew enters AOP-2.34.1, Loss Of Station Instrument Air.
- All station air compressors are running. No reports of air leakage have been received.

Which one of the following actions will be performed next in accordance with AOP-2.34.1, Loss Of Station Instrument Air?

- A. Place the instrument air dryer bypass filters in service.
- B. Place feedwater regulating valve control in MANUAL.
- C. Start the motor driven AFW pumps.
- D. Trip the reactor and enter E-0, Reactor Trip Or Safety Injection.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 90**

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While operating in Mode 4, which ONE of the following is required to be operable for each containment airlock?

- A. Both doors
- B. Only the inner door
- C. Only the outer door
- D. Only one door, either the inner or outer door

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 91**

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The Unit is in Mode 1 at 89% power. Control Bank "D" Group 1 indicates the following:

- Group step counter position is 196 steps.
- DRPI indicates the following:
  - Control Rod H02 at 194 steps.
  - Control Rod H14 at 205 steps.
  - Control Rod P08 at 182 steps.
  - Control Rod B08 at 180 steps.

Which ONE of the following describes the action(s) required by Technical Specifications and AOP-2.1.8, Rod Inoperability?

- A. Immediately trip the reactor and emergency borate the RCS.
- B. Reduce thermal power to less than 80% within 1 hour and restore both control rods to within alignment within 2 hours.
- C. Restore both control rods to within alignment in 2 hours or be in Hot Standby within 6 hours.
- D. Verify shutdown margin is within the limits within 1 hour and be in Hot Standby within 6 hours.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 92**

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Given the following conditions:

- A reactor trip and safety injection have occurred.
- RCS pressure is 1600 psig and DECREASING.
- PRZR level is offscale LOW.
- Tavg is 500°F and DECREASING.
- Containment pressure is 3 psig and INCREASING.
- SG 21A pressure is 620 psig and DECREASING.
- SG 21B and 21C pressures are 900 psig and STABLE.

Which ONE of the following procedures will be used immediately following transition from E-0, Reactor Trip Or Safety Injection?

- A. ES-1.1, SI Termination
- B. ES-1.2, Post LOCA Cooldown And Depressurization
- C. E-2, Faulted Steam Generator Isolation
- D. ES-0.1, Reactor Trip Response

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 93**

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The Unit is at 72% power with all systems in NSA.

The following annunciators are in alarm:

- [A6-5D], Condensate Pump Auto Start-Stop
- [A6-10B], Steam Generator Feed Pump 21A/B Suction Press Low

The BOP determines that Condensate Pump 21B has tripped. The control switch bright white indication is **LIT**.

Condensate Pump 21C trips on overcurrent when a manual start is attempted.

Which ONE of the following describes the action required?

- A. Verify all heater drain and separator drain receiver pumps are running and maintain current power level until at least two condensate pumps are running.
- B. Reset and attempt ONE (1) restart of Condensate Pump 21B.
- C. Reduce power to less than 65% in accordance with AOP-2.24.1, Loss Of Main Feedwater.
- D. Reduce load in accordance with AOP-2.24.1, Loss Of Main Feedwater, until Annunciator [A6-10B] is clear.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 94**

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Given the following conditions:

- The crew is performing E-0, Reactor Trip Or Safety Injection.
- The BOP has been directed to perform Attachment A-0.11, Verification Of Automatic Actions.
- While performing Attachment A-0.11, the US determines that a transition to E-1, Loss Of Reactor Or Secondary Coolant is necessary.

Which ONE of the following actions is required?

- A. Discontinue action in Attachment A-0.11 until directed by E-1.
- B. Continue action in Attachment A-0.11, but do not perform actions of any other Attachment until directed by E-1.
- C. Complete the action in Attachment A-0.11 prior to transitioning to E-1.
- D. Transition to E-1 and continue action as necessary in Attachment A-0.11.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 95**

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You are the Unit Supervisor on night shift, Saturday evening.

You receive a report from the Outside Tour Operator that a safety related component is mispositioned and there is indication of tampering.

Which ONE of the following describes the action required in accordance with 1/2-ADM-0701, Reporting and Notification of Potential Mispositioning or Tampering Events?

- A. Direct the Operator to reposition the component and immediately report to the Control Room. Notify the Security Shift Supervisor.
- B. Direct the Operator to reposition the component and immediately report to the Control Room. Direct the PAB Tour Operator to second check the component position.
- C. Direct the Operator to leave the component in its current position and remain in the area. Direct the PAB Tour Operator to verify the mispositioning.
- D. Direct the Operator to leave the component in its current position and remain in the area. Notify the Security Shift Supervisor.



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## BVPS - 2LOT5 NRC Written Exam

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### Question # 96

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Given the following conditions:

- The Unit is in Mode 6.
- Core reload is being initiated in accordance with 1/2RP-3.24, Core Reload.
- Prior to an assembly being placed on the manipulator crane, it is desired to reposition a fuel assembly loading guide (shoehorn).
- A bridge and trolley interlock must be defeated to access and reposition the loading guide.

Which ONE of the following describes the requirement(s) that must be met in order to defeat interlocks required to reposition the loading guide?

- A. Refueling SRO only must grant permission.
- B. Shift Manager and Refueling SRO must grant permission.
- C. The evolution must be governed by a written procedure and the Hoist interlock may NOT be bypassed.
- D. The evolution must be governed by a written procedure and the Refueling SRO must grant permission.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 97**

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During hydrostatic testing of the RCS in Mode 5, RCS pressure is increased to 2770 psig.

Which ONE of the following describes the **MAXIMUM** time allowed in accordance with Technical Specifications to reduce pressure below the Safety Limit?

- A. 5 minutes
- B. 15 minutes
- C. 30 minutes
- D. 1 hour

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 98**

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The Unit is in Mode 5. Containment purge through the SLCRS unfiltered flow path is being initiated.

[2HVR\*MOD23A], CNMT Purge Discharge Isol Damper, [2HVR\*MOD21, 22], Containment Purge Exhaust Motor Operated Dampers, and [2HVR\*MOD25A], CNMT Purge Supply Damper are in their correct positions.

Which ONE of the following describes the correct sequence for completing the Containment purge lineup in accordance with 2OM-44C.4.A, Containment Air Purge And Exhaust System Startup?

- A. Place the NORMAL/PURGE control switch for containment purge air supply to PURGE. Start 2HVS-FN263B, Leak Collection Normal Exhaust Fan and throttle 2HVR\*MOD23B to obtain the desired flow rate required by the RWDA permit.
- B. Start 2HVS-FN263B, Leak Collection Normal Exhaust Fan. Place the NORMAL/PURGE control switch for containment purge air supply to PURGE and throttle 2HVR\*MOD23B to obtain the desired flow rate required by the RWDA permit.
- C. Throttle 2HVR\*MOD23B to obtain the setpoint required by the RWDA permit. Place the NORMAL/PURGE control switch for containment purge air supply to PURGE. Start 2HVS-FN263B, Leak Collection Normal Exhaust Fan.
- D. Place the NORMAL/PURGE control switch for containment purge air supply to PURGE. Throttle 2HVR\*MOD23B to obtain the setpoint required by the RWDA permit. Start 2HVS-FN263B, Leak Collection Normal Exhaust Fan.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 99**

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Given the following conditions:

- You are the Shift Manager.
- The Control Room is being evacuated due to a fire.
- The affected fire area is CB-1, Cable Spreading Area.
- You are assigning responsibilities.
- The Outside Tour Operator is available to perform 2OM-56C.4.E, Nuclear Operator #2.

Which ONE of the following actions will the Outside Tour Operator perform?

- A. Go to the Alternate Shutdown Panel and initiate equipment transfer to LOCAL.
- B. Manual feed SG's using the turbine driven AFW pump.
- C. Align charging pump control for manual local operation.
- D. Align valves in the PAB by isolating and venting their air supplies.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 100**

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Given the following conditions:

- The Unit is operating at 100% power.
- EDG 2-2 is out of service and is expected to return to service in two (2) hours.
- A loss of offsite power occurs.
- The reactor is tripped and the crew enters E-0, Reactor Trip Or Safety Injection.
- SI is **NOT** actuated.
- The crew made a transition to FR-H.1, Loss Of Secondary Heat Sink based on a CSFST RED Path.

Subsequently, EDG 2-1 output breaker trips on a bus fault.

Which ONE of the following actions will be taken?

- A. Immediately transition to ECA-0.0, Loss Of All 4KV Emergency Power.
- B. Restore feed flow in FR-H.1, and then return to E-0 to restore EDG 2-1.
- C. Remain in FR-H.1 until directed to return to procedure in effect, and then transition to ECA-0.0.
- D. Remain in FR-H.1 unless a higher priority RED condition is observed. When directed to return to procedure in effect, return to E-0. Restore EDG 2-1 or 2-2 in ES-0.1, Reactor Trip Response.

## BVPS - 2LOT5 NRC Written Exam

03/07/05

«FirstName» «LastName»

SSN «SSN»

- |             |             |             |             |
|-------------|-------------|-------------|-------------|
| 1. A B C D  | 26. A B C D | 51. A B C D | 76. A B C D |
| 2. A B C D  | 27. A B C D | 52. A B C D | 77. A B C D |
| 3. A B C D  | 28. A B C D | 53. A B C D | 78. A B C D |
| 4. A B C D  | 29. A B C D | 54. A B C D | 79. A B C D |
| 5. A B C D  | 30. A B C D | 55. A B C D | 80. A B C D |
| 6. A B C D  | 31. A B C D | 56. A B C D | 81. A B C D |
| 7. A B C D  | 32. A B C D | 57. A B C D | 82. A B C D |
| 8. A B C D  | 33. A B C D | 58. A B C D | 83. A B C D |
| 9. A B C D  | 34. A B C D | 59. A B C D | 84. A B C D |
| 10. A B C D | 35. A B C D | 60. A B C D | 85. A B C D |
| 11. A B C D | 36. A B C D | 61. A B C D | 86. A B C D |
| 12. A B C D | 37. A B C D | 62. A B C D | 87. A B C D |
| 13. A B C D | 38. A B C D | 63. A B C D | 88. A B C D |
| 14. A B C D | 39. A B C D | 64. A B C D | 89. A B C D |
| 15. A B C D | 40. A B C D | 65. A B C D | 90. A B C D |
| 16. A B C D | 41. A B C D | 66. A B C D | 91. A B C D |
| 17. A B C D | 42. A B C D | 67. A B C D | 92. A B C D |
| 18. A B C D | 43. A B C D | 68. A B C D | 93. A B C D |
| 19. A B C D | 44. A B C D | 69. A B C D | 94. A B C D |
| 20. A B C D | 45. A B C D | 70. A B C D | 95. A B C D |
| 21. A B C D | 46. A B C D | 71. A B C D | 96. A B C D |
| 22. A B C D | 47. A B C D | 72. A B C D | 97. A B C D |
| 23. A B C D | 48. A B C D | 73. A B C D | 98. A B C D |
| 24. A B C D | 49. A B C D | 74. A B C D | 99. A B C D |
| 25. A B C D | 50. A B C D | 75. A B C D | 100.        |

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 1**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	003 K5.02	
	Importance Rating	2.8	

Knowledge of the operational implications of the following concepts as they apply to the RCPS: Effects of RCP coastdown on RCS parameters

Proposed Question: Common 1

Which ONE of the following describes a function of the flywheel on the RCP's?

- A. Prolongs RCP coastdown time to aid in maintaining loop flow thus maintaining hot channel factors at an acceptable level during certain loss of RCS flow events.
- B. Prolongs RCP coastdown time to aid in maintaining loop flow thus maintaining DNBR within acceptable limits during certain loss of flow events.
- C. Maintains constant RCP speed, minimizing the potential for spurious RCS low flow reactor trips and maintaining hot channel factors at an acceptable level during power operation.
- D. Minimizes acceleration on pump start to minimize the effects of core lift when the first RCP is started during an RCS heatup from Cold Shutdown.

Proposed Answer: **B**

Explanation (Optional):

- A. Incorrect. Flywheel designed to provide inertia to aid DNBR, not specifically for hot channel factors. Hot channel factors are affected by control rods.
- B. Correct.
- C. Incorrect. Flywheel more important for loss of flow, where RCP coastdown time is important for heat removal. Hot channel factors are affected by control rods.
- D. Incorrect. Core lift is a concern during Cold Shutdown pump starts, but is minimized by starting RCP's in opposite loops.

Technical Reference(s): 2OM-1.1B, 2SQS-6.3 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

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**BVPS - 2LOT5 NRC Written Exam**

**Question #2**

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Learning Objective: 2SQS-6.3 Objective 2 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # X (Note changes or attach parent)  
New \_\_\_\_\_

Question History: BVPS-2 NRC Exam 2002

Question Cognitive Level: Memory or Fundamental Knowledge X  
Comprehension or Analysis \_\_\_\_\_

10 CFR Part 55 Content: 55.41 X  
55.43 \_\_\_\_\_

Comments:



Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	003 K3.02	
	Importance Rating	3.5	

Knowledge of the effect that a loss or malfunction of the RCPS will have on the following: S/G

Proposed Question: Common 2

Given the following conditions:

- The Unit is at 100% power with all systems in NSA.
- 2RCS\*P21A, Reactor Coolant Pump has tripped on overcurrent due to an apparent shaft seizure.
- A reactor trip occurs.

Which ONE of the following describes SG response to the event 3 (THREE) minutes following the trip?

SG 21A level is...

- A. Lower than 21B and 21C SG due to SG shrink when the RCP tripped.
- B. Higher than 21B and 21C SG due to less heat removal from 21A SG.
- C. Higher than 21B and 21C SG due to SG swell when the RCP tripped.
- D. Lower than 21B and 21C SG due to the rise in Tcold on the idle loop.

Proposed Answer: **B**

Explanation (Optional):

- A. Incorrect. Effects of shrink on SG level are minimal.
- B. Correct. Less heat input means less evaporation of SG contents, therefore, same feed, higher level.
- C. Incorrect. Effects of SG swell are minimal, but in this case, there is no SG swell.
- D. Incorrect.  $\Delta T$  on the idle loop will go to zero, but Tcold will be at no-load temperature.

Technical Reference(s): Simulator, T&AA (Attach if not previously provided)

**Question #<sup>2</sup>~~4~~**

**BVPS - 2LOT5 NRC Written Exam**

Proposed references to be provided to applicants during examination: None

Learning Objective: 2SQS-6.3 Objective 6 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43 \_\_\_\_\_

Comments:

Given the following:

- The Unit is at 90% power.
- All systems are in their at-power, NSA configurations.
- Tavg is rising due to a xenon transient.

You are directed to adjust RCS temperature using the Reactor Makeup Control System.

Which ONE of the following is the mode of makeup control required and the corresponding valve lineup?

- A. Borate:  
2CHS\*FCV113A, Boric Acid Flow Control Valve - OPEN  
2CHS\*FCV114A ,Primary Water Flow Control Valve - CLOSED  
2CHS\*FCV113B, Makeup Stop Valve To Charging Pump Suction - OPEN  
2CHS\*FCV114B, Makeup Stop Valve To VCT - CLOSED
- B. Borate:  
2CHS\*FCV113A, Boric Acid Flow Control Valve - OPEN  
2CHS\*FCV114A ,Primary Water Flow Control Valve - CLOSED  
2CHS\*FCV113B, Makeup Stop Valve To Charging Pump Suction - CLOSED  
2CHS\*FCV114B, Makeup Stop Valve To VCT - OPEN
- C. Dilute:  
2CHS\*FCV113A, Boric Acid Flow Control Valve - OPEN  
2CHS\*FCV114A ,Primary Water Flow Control Valve - OPEN  
2CHS\*FCV113B, Makeup Stop Valve To Charging Pump Suction - OPEN  
2CHS\*FCV114B, Makeup Stop Valve To VCT - CLOSED
- D. Dilute:  
2CHS\*FCV113A, Boric Acid Flow Control Valve - CLOSED  
2CHS\*FCV114A ,Primary Water Flow Control Valve - OPEN  
2CHS\*FCV113B, Makeup Stop Valve To Charging Pump Suction - CLOSED  
2CHS\*FCV114B, Makeup Stop Valve To VCT - OPEN

Proposed Answer: **A**

Explanation (Optional):

Question # 3

**BVPS - 2LOT5 NRC Written Exam**

- A. Correct. Boration is required for Tavg rising. Valve lineup is correct.
- B. Incorrect. Although boration is required, FCV113B and FCV114B are listed in the incorrect positions.
- C. Incorrect. Dilution is not required, and FCV114A is in the incorrect position.
- D. Incorrect. Dilution is not required, and each valve is in opposite of it's correct position.

Technical Reference(s): 2OM-7.4K (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: 2SQS-7.1 Objective 2 (As available)

Question Source: Bank # X  
Modified Bank #                      (Note changes or attach parent)  
New                     

Question History: Last NRC Exam                     

Question Cognitive Level: Memory or Fundamental Knowledge                       
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43                     

Comments:  
Facility Bank – Not previous NRC

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	005 A4.04	
	Importance Rating	3.1	

Ability to manually operate and/or monitor in the control room: Controls and indication for closed cooling water pumps

Proposed Question: Common 4

Given the following conditions:

- The Unit is in Mode 4.
- RCS cooldown is in progress on RHS Train "B".
- [2CCP\*P21A], Component Cooling Water Pump is running.
- [2CCP\*P21B], Component Cooling Water Pump is racked out.
- [2CCP\*P21C], Component Cooling Water Pump is in standby connected to the 2DF bus.

The following annunciators alarm in the Control Room:

- [A6-1H], PRI COMP COOLING WATER SYSTEM TROUBLE
- [A6-1G], PRI COMP COOLING PUMP AUTO START/AUTO STOP

The crew determines that the cause is a high CCP system demand, with NO other failures present.

Assuming all equipment operates as required and **NO** operator action, which ONE of the following describes the CCP pump control indication on Benchboard - B?

- [2CCP\*P21A] bright white indication. [2CCP\*P21C] red indication.
- [2CCP\*P21A] red indication. [2CCP\*P21C] bright white indication.
- [2CCP\*P21A] bright white indication. [2CCP\*P21C] bright white indication.
- [2CCP\*P21A] red indication. [2CCP\*P21C] red indication.

Question <sup>4</sup>~~9~~

**BVPS - 2LOT5 NRC Written Exam**

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. Bright white would indicate a pump trip. Indications in root of question do not provide for a trip, rather, just a low pressure.
- B. Incorrect. Bright white would indicate a pump trip. Indications in root of question do not provide for a trip, rather, just a low pressure.
- C. Incorrect. Bright white would indicate a pump trip. Indications in root of question do not provide for a trip, rather, just a low pressure.
- D. Correct. Both pumps run; P21C remains running when connected.

Technical Reference(s): 2SQS-15.1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-15.1 Objective 22 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43 \_\_\_\_\_

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 10**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	005 K3.01	
	Importance Rating	3.9	

Knowledge of the effect that a loss or malfunction of the RHRS will have on the following: RCS

Proposed Question: Common 5

Given the following conditions:

- The plant is in Mode 4, cooling down for refueling.
- RHS Pump [2RHS\*P21A], and heat exchanger are in service.
- The auto setpoint on [2RHS\*FCV605A], RHR Heat Exchanger Bypass Flow Control Valve drifts **HIGH**.

Which ONE of the following describes the effect, if any, on the RCS cooldown rate?

The RCS cooldown rate...

- A. rises, due to the increased flow through the RHR heat exchanger.
- B. lowers, due to the decreased total flow through the RHR system.
- C. lowers, due to the decreased flow through the RHR heat exchanger.
- D. rises, due to the increased total flow through the RHR system.

Proposed Answer: **C**

Explanation (Optional):

- A. Incorrect. Cooldown rate will not rise. If setpoint drifts high, more total flow will result in less RHR heat exchanger flow.
- B. Incorrect. Rate does lower, but total flow increases, not decreases.
- C. Correct. More bypass flow with a higher setpoint for total flow.
- D. Incorrect. Temperature may rise, but the rate will slow down. Correct reason.

Technical Reference(s): 2SQS-10.1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 11**

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Learning Objective: 2SQS-10.1 Objective 7 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43 \_\_\_\_\_

Comments:



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 12**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	006 A2.12	
	Importance Rating	4.0	

Ability to (a) predict the impacts of the following malfunctions or operations on the ECCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Conditions requiring actuation of ECCS

Proposed Question: Common 6

Given the following conditions:

- A reactor trip has occurred.
- The crew has transitioned to ES-0.1, Reactor Trip Response.

The following conditions develop:

- RCS pressure is 1950 psig and lowering slowly.
- [2CHS\*P21A], Charging Pump is RUNNING.
- [2CHS\*P21B], Charging Pump is in STANDBY.
- Charging flow is offscale HIGH.
- Letdown is isolated.
- RCS temperature is 542°F and slowly lowering.
- PRZR level is 4% and lowering.

Which ONE of the following actions is required?

- A. Initiate SI and continue in ES-0.1.
- B. Initiate SI and return to E-0, Reactor Trip Or Safety Injection.
- C. Start HHSI pumps as required to maintain PRZR level and continue in ES-0.1.
- D. Start HHSI pumps as required to maintain PRZR level and return to E-0.

Proposed Answer: **B**

Explanation (Optional):

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 13**

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- A. Incorrect. While the action is correct, the crew will not remain in ES-0.1.  
B. Correct. PRZR level is below the minimum left hand page requiring SI actuation.  
C. Incorrect. Only start HHSI as needed if the crew is in a reduction or termination of SI sequence. Since it has not initiated, this action would be inappropriate.  
D. Incorrect. Procedure transition is correct, but the action is incorrect.

Technical Reference(s): ES-0.1 Foldout (Left Hand Page) (Attach if not previously provided)  
\_\_\_\_\_

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 3SQS-53.2, Objective 4 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # X (Note changes or attach parent)  
New \_\_\_\_\_

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43 \_\_\_\_\_

Comments:  
Robinson 2004 NRC Exam

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 14**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	007 A4.01	
	Importance Rating	2.7	

Ability to manually operate and/or monitor in the control room: PRT spray supply valve

Proposed Question: Common 7

Given the following conditions:

- A load rejection has occurred.
- PRZR PORV operation has resulted in high pressure and temperature in the PRZR Relief Tank.
- PRT pressure is 13 psig.
- The PORV has reseated.

Which ONE of the following describes the operation of [2RCS-MOV516], PRT Spray Valve, and [2RCS-AOV519], PRT Primary Grade Makeup Water Inlet Isolation Valve in response to the high PRT pressure?

- A. PRT spray valve and PRT primary water supply isolation valve automatically open.
- B. PRT spray valve and the PRT primary water supply isolation valve must both be manually opened.
- C. Check open PRT spray valve. PRT primary water supply isolation valve must be manually opened.
- D. PRT spray valve must be manually opened. Check open PRT primary water supply isolation valve.

Proposed Answer: **B**

Explanation (Optional):

- A. Incorrect. Both valves are manual.
- B. Correct.
- C. Incorrect. Correct for BVPS-1.
- D. Incorrect. Opposite of BVPS-1 actions.

Technical Reference(s): 1OM-6.4.AAY (Attach if not previously provided)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 15**

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Proposed references to be provided to applicants during examination: NONE

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Learning Objective: 2SQS-6.4 Objective 10 (As available)

Question Source: Bank #                       
Modified Bank #                      (Note changes or attach parent)  
New X

Question History: Last NRC Exam                     

Question Cognitive Level: Memory or Fundamental Knowledge X  
Comprehension or Analysis                     

10 CFR Part 55 Content: 55.41 X  
55.43                     

Comments:

### Question # 16

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 17**

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Proposed references to be provided to applicants during examination: \_\_\_\_\_

Learning Objective: 2SQS-53C.1 Objective 5 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43 \_\_\_\_\_

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 18**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	010 K5.01	
	Importance Rating	3.5	

Knowledge of the operational implications of the following concepts as they apply to the PZR PCS: Determination of condition of fluid in PZR, using steam tables

Proposed Question: Common 9

Given the following conditions:

- A plant heatup is in progress per 2OM-50.4.M, Station Startup From Mode 5 to Mode 3.
- RCS pressure is 335 psig with [2CHS-PCV145], NRHX Discharge Pressure Control Valve in AUTO.
- PRZR temperature is 380°F and rising at 1°F per minute.
- The PRZR is SOLID; a bubble is being drawn.

Which ONE of the following is the approximate time before a bubble is formed in the Pressurizer?

- A. Less than 15 minutes
- B. 15 to 30 minutes
- C. 45 to 60 minutes
- D. 75 to 90 minutes

Proposed Answer: **C**

Explanation (Optional):

- A. Incorrect. Allows for interpretation mistakes and symmetry of choices.
- B. Incorrect. Allows for interpretation mistakes and symmetry of choices.
- C. Correct. 335 psig is 350 psia, saturation temperature is 431°F. At 1°F per minute, it will take 51 minutes to draw a bubble.
- D. Incorrect. Allows for interpretation mistakes and symmetry of choices.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 19**

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Technical Reference(s): Steam Tables (Attach if not previously provided)  
2OM-6.4.P

Proposed references to be provided to applicants during examination: Steam Tables

Learning Objective: 2SQS-6.4 Objective 9 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43 \_\_\_\_\_

Comments:



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 20**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	012 K6.06	
	Importance Rating	2.7	

Knowledge of the effect of a loss or malfunction of the following will have on the RPS: Sensors and detectors

Proposed Question: Common 10

Given the following conditions:

- The Unit was operating at 68% power.
- An automatic reactor trip occurred.
- The cause of the trip was low flow in RCS Loop 21A.
- The cause of the trip was determined to be an instrument failure.

Which ONE of the following input failures caused the reactor trip?

- A. The loop high pressure side flow input failed high.
- B. The loop high pressure side flow input failed low.
- C. One loop low pressure side flow input failed high.
- D. One loop low pressure side flow input failed low.

Proposed Answer: **B**

Explanation (Optional):

- A. Incorrect. High side input will indicate high DP and high flow.
- B. Correct. Each flow transmitter takes input from 1 high side tap and 3 low side taps. If the high side tap fails low, then all 3 DP's indicate low, satisfying the 2/3 logic for 1 loop low flow trip.
- C. Incorrect. Low side tap failing high causes a 1 out of 3 low flow trip. 2 out of 3 are required for a reactor trip to occur.
- D. Incorrect. Low side failing low would cause a high DP and high flow indication.

Technical Reference(s): 2OM-6 Figure 6-1 & 6-3 (Attach if not previously provided)  
2OM-6.4.IF

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 21**

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Proposed references to be provided to applicants during examination: NONE

Learning Objective: 3SQS-1.1 Objective 8 and 11 (As available)

Question Source: Bank # X  
Modified Bank #                      (Note changes or attach parent)  
New                     

Question History: Last NRC Exam                     

Question Cognitive Level: Memory or Fundamental Knowledge                       
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43                     

Comments:

BVPS-1 2002 NRC exam Q24

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 22**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	013 A4.01	
	Importance Rating	4.5	

Ability to manually operate and/or monitor in the control room: ESFAS-initiated equipment which fails to actuate

Proposed Question: Common 11

Given the following conditions:

- The Unit was operating at 100% power.
- A PRZR PORV failed open.
- The reactor tripped on low PRZR pressure.
- PRZR pressure stabilized at 1700 psig.
- CNMT pressure is 2 psig.

Plant status is as follows:

- All control rods are fully inserted.
- Normally running charging pump is in service.
- Standby charging pump is NOT running,
- NO LHSI pumps are running.
- CIA is NOT actuated.
- CIB is NOT actuated.
- Main steam lines are NOT isolated.
- FWIS is NOT actuated.

Which ONE of the following describes the required **MANUAL** operator actions?

Manually initiate both trains of only...

- A. Safety Injection.
- B. Safety Injection and Main Steam Line Isolation.
- C. Safety Injection, CIB, and Main Steam Line Isolation.
- D. Safety Injection, CIB, and CIA.

### Question # 23

BVPS-1 2002 NRC exam Q8

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 24**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	022 K4.01	
	Importance Rating	2.5	

Knowledge of CCS design feature(s) and/or interlock(s) which provide for the following: Cooling of containment penetrations

Proposed Question: Common 12

With the Unit at full power, and all systems in NSA, an event occurs that causes CNMT pressure to slowly rise to a maximum of 10 psig.

Assuming all systems operate as designed, the cooling water being supplied to the CNMT penetration cooling coils will...

- A. automatically isolate when CNMT pressure reaches the SI setpoint.
- B. automatically isolate when CNMT pressure reaches the MSLI setpoint.
- C. automatically isolate when CNMT pressure reaches the CIB setpoint.
- D. NOT automatically isolate throughout the entire event.

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. No automatic isolation occurs.
- B. Incorrect. No automatic isolation occurs.
- C. Incorrect. No automatic isolation occurs. CIB will cause a loss of flow through the coils due to the loss of the CCP pumps on CIB but the flowpath will not automatically isolate.
- D. Correct.

Technical Reference(s): 2SQS-15.1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-15.1 Objective 2 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 25**

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New

X

Question History:

Last NRC Exam

Question Cognitive Level:

Memory or Fundamental Knowledge

X

Comprehension or Analysis

10 CFR Part 55 Content:

55.41

X

55.43

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 26**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	022 K1.02	
	Importance Rating	3.7	

Knowledge of the physical connections and/or cause-effect relationships between the CCS and the following systems: SEC/remote monitoring systems

Proposed Question: Common 13

Given the following conditions:

- A reactor trip has occurred.
- Safety Injection actuates on low PRZR pressure.
- All equipment started and is operating as designed.
- RCS pressure is 340 psig and lowering.
- CTMT pressure is 18 psig and rising.

Prior to the event, [2HVR\*FN201A and 201B], Containment Air Recirculation Fans were running. [2HVR\*FN201C], Containment Air Recirculation Fan was in standby aligned to 480V Bus 2P.

Which ONE of the following describes the status of the containment air recirculation fans?  
(Assuming **NO** operator actions.)

- A. All containment air recirculation fans are running.
- B. All containment air recirculation fans are tripped and CANNOT be started.
- C. 2HVR\*FN201A and 201B, Containment Air Recirculation Fans can be manually started. 2HVR\*FN201C is tripped and CANNOT be started.
- D. 2HVR\*FN201A, 201B and 201C, Containment Air Recirculation Fans can be manually started.

Proposed Answer: **B**

Explanation (Optional):

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 27**

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- A. Incorrect. The fans trip on an SI.
- B. Correct.
- C. Incorrect. All fans trip. None will be manually started until after SI is reset.
- D. Incorrect. All fans trip, cannot be manually started until SI is reset.

Technical Reference(s): 2SQS-44.C.1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-44.C.1 Objective 10 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43 \_\_\_\_\_

Comments:



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 28**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	026 G2.1.23	
	Importance Rating	3.9	

Conduct of Operations: Ability to perform specific system and integrated plant procedures during all modes of plant operation.

Proposed Question: Common 14

Given the following conditions:

- A LOCA has occurred.
- The crew is performing the actions of E-1, Loss Of Reactor Or Secondary Coolant.
- SI, CIA, and CIB are reset.
- The crew is evaluating whether Containment Spray should be stopped.
- Containment pressure is (-) 3 psig.

Which ONE of the following describes the action required for Containment Spray?

- A. STOP ONE (1) train of quench spray. When containment pressure reaches (-) 4 psig, STOP the other train.
- B. Allow BOTH trains of quench spray to run. Cycle 2SWS\*MOV105A and B, Recirc Spray HX Cooling Water Disch Valves as necessary to maintain (-) 2 to (-) 4 psig.
- C. Allow BOTH trains of quench spray to run until containment pressure is reduced to (-) 4 psig. Cycle 2SWS\*MOV105A and B, Recirc Spray HX Cooling Water Disch Valves as necessary to maintain (-) 2 to (-) 4 psig.
- D. STOP quench spray chemical injection pumps. Leave the quench spray pumps running until containment pressure reaches (-) 4 psig.

Proposed Answer: **B**

Explanation (Optional):

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 29**

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- A. Incorrect. In E-1, both trains of quench spray are stopped when pressure is (–) 2 psig.
- B. Correct. Applies Steps 10.a - d, leaving quench spray running and Steps 10.f & g to maintain containment pressure between (–) 2 psig and (–) 4 psig. (SG's are not faulted.)
- C. Incorrect. The (–) 4 psig number correlates to closing the Recirc Spray HX discharge valves to maintain CNMT pressure and stopping quench spray.
- D. Incorrect. The first step in stopping quench spray is to stop the injection pumps, but for this step, quench spray pumps are not stopped.

Technical Reference(s): E-1, Step 10 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 3SQS-53.3 Objective 3 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43 \_\_\_\_\_

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 30**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	039 K3.05	
	Importance Rating	3.6	

Knowledge of the effect that a loss or malfunction of the MRSS will have on the following: RCS

Proposed Question: Common 15

Given the following conditions:

- A Unit startup is in progress following a mid-cycle outage.
- The reactor is critical at  $1 \times 10^{-8}$  amps on the Intermediate Range NI's.

A condenser steam dump valve fails partially open.

Assuming **NO** action by the crew, which one of the following describes the **IMMEDIATE** effect on the plant?

- A. Power INCREASES; RCS Temperature INCREASES
- B. Power INCREASES; RCS Temperature DECREASES
- C. Power DECREASES; RCS Temperature INCREASES
- D. Power DECREASES; RCS Temperature DECREASES

Proposed Answer: **B**

Explanation (Optional):

- A. Incorrect. More steam demand will cause temperature to decrease.
- B. Correct. Negative MTC. (Middle of Life) If temperature decreases, power increases.
- C. Incorrect. Power increases due to negative MTC. Temperature decreases due to increased heat removal.
- D. Incorrect. If MTC was positive, this would be the initial effect, but MTC is only positive at BOL with a high boron concentration.

Technical Reference(s): GFE - Reactor Operational (Attach if not previously provided)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 31**

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PhysicsSimulator ResponseProposed references to be provided to applicants during examination: NONELearning Objective: 2SQS-21.1 Objective 11 (As available)

Question Source: Bank # X  
Modified Bank #                      (Note changes or attach parent)  
New                     

Question History: Last NRC Exam 2002

Question Cognitive Level: Memory or Fundamental Knowledge                       
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43                     

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 32**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	039 K1.08	
	Importance Rating	2.7	

Knowledge of the physical connections and/or cause-effect relationships between the MRSS and the following systems: MFW

Proposed Question: Common 16

Given the following conditions:

- The Unit is at 100% power.
- The following annunciators are in alarm:
  - o [A6-9E], Steam Generator 21A Level Deviation From Setpoint
  - o [A6-9H], Loop A Steam Flow Greater Than Feedwater Flow

The BOP determines that [2FWS-FCV478], SG 21A Feed Regulating Valve is opening.

Which ONE of the following describes the event taking place?

- A. A controlling feedwater flow transmitter has failed high.
- B. A controlling steam pressure transmitter has failed high.
- C. A controlling steam flow transmitter has failed low.
- D. A SG level transmitter has failed high.

Proposed Answer: **B**

Explanation (Optional):

- A. Incorrect. For this failure, the FRV would close.
- B. Correct. Steam pressure compensates steam flow and will fail flow in the same direction. Feedwater will attempt to compensate, the FRV will open and SG level will rise.
- C. Incorrect. If steam flow fails low, then the FRV controller responds by closing the FRV and SG level decreases.
- D. Incorrect. If a SG level transmitter fails high, then the FRV would compensate by closing.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 33**

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Technical Reference(s): 2OM-24.4.IF (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-24.1 Objective 16 (As available)

Question Source: Bank #   
Modified Bank #  (Note changes or attach parent)  
New X

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge   
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 34**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	059 A3.02	
	Importance Rating	2.9	

Ability to monitor automatic operation of the MFW, including: Programmed levels of the S/G

Proposed Question: Common 17

With SG level on program which ONE of the following is the expected behavior for SG level during a power increase from 0% to 100% power?

- A. Level ramps from 33% at 0% RTP to 44% at 20% RTP, then holds at 44%.
- B. Level is constant at 33% throughout the power ascension.
- C. Level will hold at 33% until 20% power, then rises to 44% at 100% RTP.
- D. Level is constant at 44% throughout the power ascension.

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. Similar to former program prior to SG level program modification change.
- B. Incorrect. Wrong level program.
- C. Incorrect. SG program prior to SG level program modification change.
- D. Correct.

Technical Reference(s): 2SQS-24.1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQSD-24.1 Objective 13 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # X (Note changes or attach parent)  
New \_\_\_\_\_

Question History: Last NRC Exam \_\_\_\_\_

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 35**

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Question Cognitive Level: Memory or Fundamental Knowledge   X    
Comprehension or Analysis           

10 CFR Part 55 Content: 55.41   X    
55.43           

**Comments:**

Valid because it is a recent system modification.



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 36**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	059 K4.16	
	Importance Rating	3.1	

Knowledge of MFW design feature(s) and/or interlock(s) which provide for the following: Automatic trips for MFW pumps

Proposed Question: Common 18

Which ONE of the following provides a direct automatic trip of [2FWS-P21A], SG Main Feed Pump?

- A. 2 out of 3 Lo-Lo Level in any SG
- B. Reactor Trip coincident with Low Tavg
- C. 2 out of 3 Hi-Hi Level (P-14) in any SG
- D. 2FWS-MOV150A, SG Main Feed Pump Discharge Valve shut

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. Results in a reactor trip and automatic start of the AFW pumps.
- B. Incorrect. Results in a partial FWI, but does not include MFW pump trip.
- C. Correct.
- D. Incorrect. Discharge valve shut is a start interlock for the pump.

Technical Reference(s): 2SQS-24.1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-24.1 Objective 13 (As available)

Question Source: Bank # X  
Modified Bank # (Note changes or attach parent)  
New

Question History: Last NRC Exam

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 37**

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Question Cognitive Level: Memory or Fundamental Knowledge   X    
Comprehension or Analysis           

10 CFR Part 55 Content: 55.41   X    
55.43           

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 38**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	061 K1.07	
	Importance Rating	3.6	

Knowledge of the physical connections and/or cause-effect relationships between the AFW and the following systems: Emergency water source

Proposed Question: Common 19

Which ONE of the following describes the suction sources for the Auxiliary Feedwater System?

- A. Normal suction aligned to 2FWE-TK210, PDWST. Suction can be aligned directly to 2WTD-TK23, Demin Water Storage Tank if the PDWST is unavailable.
- B. Normal suction aligned to 2WTD-TK23, Demin Water Storage Tank. Suction can be aligned to 2FWE-TK210, PDWST if the Demin Water Storage Tank is unavailable.
- C. Normal suction aligned to 2FWE-TK210, PDWST. Suction can be aligned to the Service Water System if the PDWST is unavailable.
- D. Normal suction aligned to 2WTD-TK23, Demin Water Storage Tank. Suction can be aligned to the Service Water System if the Demin Water Storage Tank is unavailable.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. TK23 can makeup to TK210, but the suction cannot be aligned to it.
- B. Incorrect. Opposite of distractor 'A'. AFW suction cannot be aligned to TK23.
- C. Correct.
- D. Incorrect. Wrong normal source of supply.

Technical Reference(s): 2SQS-24.1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-24.1 Objective 2 (As available)

Question Source: Bank #

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 39**

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Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New   X  

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge   X    
Comprehension or Analysis \_\_\_\_\_

10 CFR Part 55 Content: 55.41   X    
55.43 \_\_\_\_\_

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 40**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	061 A3.02	
	Importance Rating	4.0	

Ability to monitor automatic operation of the AFW, including: RCS cooldown during AFW operations

Proposed Question: Common 20

The plant is in Mode 3 following a reactor trip. A plant cooldown of 50°F/hr. is underway.

Assuming SG level is held constant, which ONE of the following describes the trend of auxiliary feedwater flow requirements as the plant cools down to Mode 5?

- A. More AFW flow is required to maintain SG level due to the decreased density of the SG water as it cools.
- B. AFW flow requirements are constant as long as the cooldown rate remains constant even when RHS is placed in service.
- C. Less AFW flow is required to maintain SG level because heat input to the SG's decreases as the cooldown continues.
- D. AFW flow requirements are constant as long as SG level remains constant.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. Density will increase, not decrease.
- B. Incorrect. When RHS is placed in service, the steaming rate is reduced if the cooldown rate is held constant.
- C. Correct. Decay heat rate drops as time progresses.
- D. Incorrect. It takes less feedwater to maintain level constant as the RCS cooldown continues. Otherwise, AFW pumps would be adequate for full power operation.

Technical Reference(s): Thermo (Attach if not previously provided)  
\_\_\_\_\_

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-24.1 Objective 5 (As available)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 41**

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Question Source:

Bank # \_\_\_\_\_

Modified Bank # \_\_\_\_\_

(Note changes or attach parent)

New \_\_\_\_\_

X

Question History:

Last NRC Exam \_\_\_\_\_

Question Cognitive Level:

Memory or Fundamental Knowledge \_\_\_\_\_

Comprehension or Analysis \_\_\_\_\_

X

10 CFR Part 55 Content:

55.41 X

55.43 \_\_\_\_\_

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 42**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	062 K2.01	
	Importance Rating	3.3	

Knowledge of Bus Power Supplies to the following: Major System Loads

Proposed Question: Common 21

Given the following conditions:

- The plant is at 90% power, with all systems in NSA.
- An electrical fault causes an overcurrent trip and lockout of the 4KV Bus Feeder Breakers supplied by "D" USST.

Which ONE of the following describes the Reactor Coolant Pumps that are running 10 seconds after this event takes place?

- A. 21A and 21C
- B. 21B and 21C
- C. 21A and 21B
- D. All RCP's running

Proposed Answer: **C**

Explanation (Optional):

- A. Incorrect. 21C will have no power.
- B. Incorrect. 21C will have no power.
- C. Correct. "D" USST lockout will prevent "B" SSST from energizing 4KV Bus 2C.
- D. Incorrect. USST's are in service > 65% power. Could be correct if SSST's are in service. supplying the busses.

Technical Reference(s): 2SQS-6.3 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 43**

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Learning Objective: 2SQS-6.3 Objective 3 (As available)

Question Source: Bank #                     

Modified Bank #                      (Note changes or attach parent)

New X

Question History: Last NRC Exam                     

Question Cognitive Level: Memory or Fundamental Knowledge                       
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43                     

Comments:



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 44**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	063 K3.01	
	Importance Rating	3.7	

Knowledge of the effect that a loss or malfunction of the dc electrical system will have on the following: ED/G

Proposed Question: Common 22

How is an emergency diesel generator in standby affected by a loss of all 125VDC power?

- A. It can be locally started, and could still generate power after manual field flash.
- B. It can start automatically, but cannot generate electricity due to loss of field flash.
- C. It can start automatically, and could still generate power after manual field flash.
- D. It cannot start automatically or locally, and therefore cannot generate electricity.

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. Cannot generate power if DC is not available for field flash.
- B. Incorrect. Auto start circuitry is disabled.
- C. Incorrect. Auto start circuitry is disabled.
- D. Correct. All EDG control circuits are DC powered (auto and local) and start solenoids cannot be manually overridden.

Technical Reference(s): 2SQS-36.2 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-36.2 Objective 3 (As available)

Question Source: Bank # X  
Modified Bank #  (Note changes or attach parent)  
New

Question History: Last NRC Exam

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 45**

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Question Cognitive Level: Memory or Fundamental Knowledge   X    
Comprehension or Analysis           

10 CFR Part 55 Content: 55.41   X    
55.43           

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 46**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	064 K4.02	
	Importance Rating	3.9	

Knowledge of ED/G system design feature(s) and/or inter-lock(s) which provide for the following: Trips for ED/G while operating (normal or emergency)

Proposed Question: Common 23

Given the following conditions:

- A loss of offsite power has occurred.
- While performing the actions of E-0, the RO manually initiated a Safety Injection.
- Approximately 5 minutes later, 2-1 EDG tripped.

Which ONE of the following was the cause of the EDG trip?

- A. Loss of Field
- B. Reverse Power
- C. Generator Ground Overcurrent
- D. Generator Differential Overcurrent

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. Only active when the EDG is paralleled.
- B. Incorrect. Only active when the EDG is paralleled.
- C. Incorrect. Only active when the EDG is paralleled.
- D. Correct. Differential and overspeed trips remain active when the EDG is carrying the bus.

Technical Reference(s): 2SQS-36.2 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-36.2 Objective 13 (As available)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 47**

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Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New   X  

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge   X    
Comprehension or Analysis \_\_\_\_\_

10 CFR Part 55 Content: 55.41   X    
55.43 \_\_\_\_\_

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 48**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	064 A3.05	
	Importance Rating	2.8	

Ability to monitor automatic operation of the ED/G system, including: Operation of the governor control of frequency and voltage control in parallel operation

Proposed Question: Common 24

Given the following conditions:

- The Unit is at 100% power.
- 2OST-36.2, Emergency Diesel Generator [2EGS\*EG2-2] Monthly Test is in progress.
- 2-2 EDG is paralleled to the grid, carrying approximately 50% load.
- A grid disturbance causes frequency to drop very slightly. Grid voltage remains constant.

Which ONE of the following describes the response of 2-2 EDG?

- A. KW output rises.
- B. KW output lowers.
- C. KW output and KVAR output rises.
- D. KW output and KVAR output lowers.

Proposed Answer: **A**

Explanation (Optional):

- A. Correct. If frequency drops, the EDG will attempt to increase speed, which will pick up real load.
- B. Incorrect. KW output will rise when the EDG tries to raise grid frequency.
- C. Incorrect. KVAR output will remain essentially constant if grid voltage is constant. If it did change, it would change in the opposite direction of KW.
- D. Incorrect. KW output will rise.

Technical Reference(s): Electrical Theory Manual (Attach if not previously provided)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 49**

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Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-36.2 Objective 12 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43 \_\_\_\_\_

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 50**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	073 A2.02	
	Importance Rating	2.7	

Ability to (a) predict the impacts of the following malfunctions or operations on the PRM system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Detector failure

Proposed Question: Common 25

A liquid waste release is in progress to cooling tower blowdown from [2SGC-TK23A], SG Blowdown Test Tank when the following annunciator alarms:

- [A4-5A], Radiation Monitoring System Trouble

The BOP determines that [2SGC-RQI100], Liquid Waste Effluent Radiation Monitor has failed.

Which ONE of the following is the required action?

- A. The release may continue provided grab samples are taken within 4 hours and determined to remain within limits.
- B. The release may continue provided two (2) independent samples are independently determined to be within limits and two (2) technically qualified personnel verify the valve lineup.
- C. The release must be terminated. It shall not be restarted until detector [2SGC-RQI100] is operable.
- D. The release must be terminated. It shall not be restarted until two (2) samples are independently analyzed and two (2) technically qualified personnel verify valve lineups.

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. With a failed monitor, the release must be stopped until compensatory actions have been put in place.
- B. Incorrect. Action is correct but not for ongoing release.
- C. Incorrect. Action is correct but RQI100 does not have to be operable if compensatory measures are taken.
- D. Correct.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 51**

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Technical Reference(s): ODCM (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-17.1 Objective 11 (As available)

Question Source: Bank # X  
Modified Bank #  (Note changes or attach parent)  
New

Question History: Last NRC Exam 2002

Question Cognitive Level: Memory or Fundamental Knowledge X  
Comprehension or Analysis

10 CFR Part 55 Content: 55.41 X  
55.43 X

Comments:  
BVPS-2 2002 NRC



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 52**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	076 K2.01	
	Importance Rating	2.7	

Knowledge of bus power supplies to the following: Service water

Proposed Question: Common 26

Given the following conditions:

- [2SWS-P21A], Service Water Pump is running.
- [2SWS-P21B], Service Water Pump is in P-T-L.
- [2SWS-P21C], Service Water Pump is running in place of 2SWS-P21B.

Subsequently, a loss of offsite power occurs.

Which ONE of the following describes the Service Water pumps that will be in operation when the EDG's have completed their loading sequence?

- A. 2SWS\*P21A ONLY
- B. 2SWS\*P21A and 2SWS\*P21B ONLY
- C. 2SWS\*P21A and 2SWS\*P21C ONLY
- D. NO Service Water pumps will be running.

Proposed Answer: **C**

Explanation (Optional):

- A. Incorrect. The swing pump, 21C will also start if connected to 2DF bus.
- B. Incorrect. As long as both pumps are connected to different busses, they will both start.
- C. Correct. As long as both pumps are on different busses, they will both start.
- D. Incorrect. Loss of power only, nothing preventing both pumps from starting.

Technical Reference(s): 2SQS-30.1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-30.1 Objective 15 (As available)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 53**

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Question Source: Bank # X  
Modified Bank #                      (Note changes or attach parent)  
New                     

Question History: Last NRC Exam                     

Question Cognitive Level: Memory or Fundamental Knowledge                       
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43                     

Comments:  
BVPS-1 Bank

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 54**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	078 K3.02	
	Importance Rating	3.4	

Knowledge of the effect that a loss or malfunction of the IAS will have on the following: Systems having pneumatic valves and controls

Proposed Question: Common 27

With the unit in Mode 3, assuming **NO** operator actions, which **ONE** of the following describes the effect of a loss of station instrument air on Volume Control Tank (VCT) level?

- A. VCT level decreases due to maximum charging and letdown isolating.
- B. VCT level decreases due to maximum charging and letdown flow being diverted to the degassifiers.
- C. VCT level increases due to minimum charging and the letdown pressure control valve failing open.
- D. VCT level increases due to minimum charging and the letdown orifice isolation valves failing open.

Proposed Answer: **A**

Explanation (Optional):

- A. Correct.
- B. Incorrect. No divert on loss of air, just valve closure.
- C. Incorrect. Charging is at maximum, letdown backpressure valve fails open, but letdown isolation valves close.
- D. Incorrect. Opposite of actual effect.

Technical Reference(s): AOP-2.34.1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-34.1 Objective 11 (As available)

Question Source: Bank # X  
Modified Bank #                      (Note changes or attach parent)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 55**

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New

Question History:

Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge  
Comprehension or AnalysisX10 CFR Part 55 Content: 55.41 X  
55.43       

Comments:

Harris 2004 NRC Exam Question 69

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 56**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	103 A3.01	
	Importance Rating	3.9	

Ability to monitor automatic operation of the containment system, including: Containment isolation

Proposed Question: Common 28

Given the following:

- The Unit was at 100% power.
- A steam break occurred downstream of the Main Steam Isolation Valves.
- A reactor trip and safety injection occurred from Train "A" ONLY.

Which one of the following correctly describes the status of the CNMT penetration lines for the Phase "A" (CIA) and Phase "B" (CIB) isolation valves before any operator action(s)?

- A. One valve in each Phase "A" line is closed; one valve in each Phase "B" line is closed.
- B. One valve in each Phase "A" line is closed; all Phase "B" valves do not change position.
- C. All Phase "A" valves are closed; all Phase "B" valves are closed.
- D. All Phase "A" valves are closed; all Phase "B" valves do not change position.

Proposed Answer: **B**

Explanation (Optional):

- A. Containment pressure (Phase B) is not rising for this event.
- B. Correct.
- C.. Each train controls one Phase A valve and containment pressure is not rising.
- D. Each train controls one Phase A valve and containment pressure is not rising.

Technical Reference(s): 2SQS-11.1 (Attach if not previously provided)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 57**

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Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQSD-11.1 Objective 16 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43 \_\_\_\_\_

Comments: There are some phase B valves that are NSA closed.

### Question # 58

**SRO**

2

2

001 K2.01

### 3.5

**Knowledge of bus power supplies to the following: One-line diagram of power supply to M/G sets.**

**Proposed Question:** Common 29

**What is the correct sequence of components that supply power from the 480 VAC substations to the control rod drive mechanisms (CRDM's)?**

(RDMG's = Rod Drive Motor Generator Sets)

- A. 480V Bus A, RDMG's, Power Cabinets, Trip Breakers
- B. 480V Bus B, Power Cabinets, Trip Breakers, RDMG's
- C. 480V Bus A, Trip Breakers, RDMG's, Power Cabinets
- D. 480V Bus B, RDMG's, Trip Breakers, Power Cabinets

**Proposed Answer: D**

**Explanation (Optional):**

- A. Incorrect. Sequence is wrong.  
B. Incorrect. Sequence is wrong.  
C. Incorrect. Sequence is wrong.  
D. Correct.

Technical Reference(s): 3SQS-1.3 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 3SQS-1.3 Objective 3 (As available)

**Question Source:**

Bank #

X

Modified Bank #

(Note changes or attach parent)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 59**

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New

Question History:

Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge  
Comprehension or AnalysisX  
          

10 CFR Part 55 Content:

55.41 X  
55.43           

Comments:

BVPS-1/2 Bank Reference ID 1586



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 60**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	002 K4.05	
	Importance Rating	3.8	

Knowledge of RCS design features and/or interlocks which provide for the following: Detection of RCS leakage

Proposed Question: Common 30

Which ONE of the following describes the ONLY equipment required by Technical Specifications to be **OPERABLE** for detection of small amounts of RCS leakage?

- A. Containment Dew Point Monitor and Gaseous Activity Radiation Monitor
- B. Containment Particulate Activity Radiation Monitor and Containment Sump Monitor
- C. Containment Sump Monitor and Containment Temperature Monitoring
- D. Containment Temperature Monitoring and Containment Dew Point Monitor

Proposed Answer: **B**

Explanation (Optional):

- A. Incorrect. Dew point monitor is helpful, but not required.
- B. Correct.
- C. Incorrect. Containment temperature monitor is helpful, but not required.
- D. Incorrect. Containment temperature and dewpoint will indicate leakage, but not required by TS.

Technical Reference(s): Tech Spec and Bases (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: N/A (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 61**

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Question Cognitive Level: Memory or Fundamental Knowledge   X    
Comprehension or Analysis           

10 CFR Part 55 Content: 55.41   X    
55.43   X  

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 62**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	011 K3.01	
	Importance Rating	3.2	

Knowledge of the effect that a loss or malfunction of the PZR LCS will have on the following: CVCS

Proposed Question: Common 31

Given the following conditions:

- The Unit is at 100% power with all system in NSA.
- The controlling PRZR level transmitter [2RCS-LT459] fails at the programmed level that corresponds to full plant load.
- Assume **NO** operator action is taken.

Which ONE of the following describes the effect on charging flow and PRZR level when plant power is **REDUCED** to 10%?

- A. Charging flow remains constant and actual PRZR level remains constant. PRZR heaters will energize to compensate for reduced Tavg.
- B. Charging flow decreases and actual PRZR level decreases. On low PRZR level, letdown will isolate and the PRZR heaters will turn off.
- C. Actual PRZR level increases and charging flow increases. The backup heaters will energize as level rises due to the apparent in-surge.
- D. Actual PRZR level decreases and charging flow increases. When actual level increases back to program level, charging flow will back down to maintain level.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 63**

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Proposed Answer: **B**

Explanation (Optional):

- A. Incorrect for reason indicated in answer.
- B. Correct. Charging flow will decrease because Tavg is decreasing and it will appear that actual level is too high due to the failed transmitter. (Indicated level will be 54% when actual will start to decrease). LT-460 will show the actual pressurizer level which will be decreasing. When level decreases to 14%, letdown will isolate and heaters will cut off.
- C. Incorrect for reason indicated in answer.
- D. Incorrect for reason indicated in answer.

Technical Reference(s): 2SQS-7.1 (Attach if not previously provided)  
Proposed references to be provided to applicants during examination: NONELearning Objective: 2SQS-7.1 Objective 19 (As available)

Question Source:	Bank #	<u>X</u>	
	Modified Bank #	<u></u>	(Note changes or attach parent)
	New	<u></u>	

Question History: Last NRC Exam 

Question Cognitive Level:	Memory or Fundamental Knowledge	<u></u>
	Comprehension or Analysis	<u>X</u>

10 CFR Part 55 Content:	55.41	<u>X</u>
	55.43	<u></u>

Comments:

Robinson 2002 NRC exam

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 64**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	041 A1.01	
	Importance Rating	2.9	

Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the SDS controls, including: Tave, verification above low-low setpoint

Proposed Question: Common 32

The Unit was operating at 100% power when a reactor trip occurred due to a LOCA. All Safety Injection systems failed to operate and FR-C.1, Response To Inadequate Core Cooling has been entered.

Given the following:

- The Unit Supervisor has directed the depressurization of all intact SG's to 300 psig using the condenser steam dump valves.
- All main steam trip valves are open and the condenser is available.
- [2MSS\*PK464], Steam Dump Controller is in MANUAL.
- The Steam Dump Control Mode Selector Switch is in the STM PRESS position and SG depressurization is underway.
- PRZR pressure is > 1950 psig and the Block Steamline SI Switches have NOT been placed in the Block position.
- As the SG depressurization progresses, the steam flow automatically stops.

Which ONE of the following caused the steam flow to stop?

- A. SG pressure has reached 300 psig, or Main Steamline Isolation occurred due to exceeding the high steam pressure rate setpoint.
- B. Steam header pressure has dropped below the setpoint on 2MSS\*PK464, or Tavg is below 541°F and no action has been taken to defeat the Tavg Interlock.
- C. Tavg is below 541°F and no action has been taken to defeat the Tavg Interlock, or Main Steamline Isolation occurred due to exceeding the low steam pressure rate sensitive setpoint.
- D. Main Steamline Isolation due to exceeding the high steam pressure rate setpoint, or steam header pressure has dropped below the setpoint on 2MSS\*PK464.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 65**

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Proposed Answer: **C**

Explanation (Optional):

- A. Incorrect. No automatic actions halt steam dump at 300 psig.
- B. Incorrect. 2MSS\*PK464 is in manual. Pressure setpoint has no effect.
- C. Correct. As Tavg approaches 541°F, the Tavg Interlock must be defeated by holding both steam dump control bypass interlock selector switches to the DEFEAT TAVG NTLK position until the status light, "2/3 Lo-Lo Tavg" is LIT. This action was not performed. Also, the Main Steamline Isolation due to exceeding the high steam pressure rate setpoint is active and could have resulted in MSIV isolation, if the rate of depressurization was excessive.
- D. Incorrect. 2MSS\*PK464 is in manual. Pressure setpoint has no effect.

Technical Reference(s): 2OM-53A.FR-C.1 (Attach if not previously provided)  
Proposed references to be provided to applicants during examination: NONELearning Objective: 2SQS-21.1, Objective 11 (As available)

Question Source:	Bank #	<u>X</u>	
	Modified Bank #	<u></u>	(Note changes or attach parent)
	New	<u></u>	

Question History: Last NRC Exam 2002

Question Cognitive Level:	Memory or Fundamental Knowledge	<u></u>
	Comprehension or Analysis	<u>X</u>

10 CFR Part 55 Content:	55.41	<u>X</u>
	55.43	<u></u>

Comments:  
2002 NRC exam

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 66**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	033 G2.1.27	
	Importance Rating	2.8	

Conduct of Operations: Knowledge of system purpose and or function.

Proposed Question: Common 33

Which ONE of the following describes a design feature of the Spent Fuel Pool Cooling and Purification System?

- A. Maintains  $K_{eff} < 0.95$  with unborated water during all fuel handling activities.
- B. Ensures that any pipe break in the system will maintain sufficient shielding over irradiated fuel bundles.
- C. Maintains water temperature below 200°F for all postulated events.
- D. Provides sufficient storage for all irradiated fuel assemblies for the life of the plant.

Proposed Answer: **B**

Explanation (Optional):

- A. Incorrect. Boration is required for core offload to the SFP.
- B. Correct.
- C. Incorrect. If allowed to heat up with a full core offloaded, SFP would reach boiling without cooling.
- D. Incorrect. Available storage is limited to 18 refuelings.

Technical Reference(s): 2SQS-20.1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-20.1 Objective 1 (As available)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 67**

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Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New   X  

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge   X    
Comprehension or Analysis \_\_\_\_\_

10 CFR Part 55 Content: 55.41   X    
55.43 \_\_\_\_\_

Comments:



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 68**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	034 K6.02	
	Importance Rating	2.6	

Knowledge of the effect of a loss or malfunction on the following will have on the Fuel Handling System : Radiation monitoring systems

Proposed Question: Common 34

Given the following conditions:

- The Unit has been in Mode 6 for seven (7) days.
- Fuel movement is in progress.
- Containment Purge System is operating.

[2HVR\*RQ104A], Containment Purge and Exhaust Radiation Monitor fails a channel check and is declared **INOPERABLE**.

Which ONE of the following describes how, if at all, fuel movement is affected?

- A. No effect. Refueling may continue.
- B. Refueling may continue as long as 2RMR\*RQ303A and B, Containment Atmosphere Process Monitors are operable.
- C. Suspend fuel movement until the Containment Purge System is isolated, and then resume refueling activities.
- D. Refueling may continue as long as 2HVR-RQ104B, Containment Purge And Exhaust Radiation Monitor remains operable.

Proposed Answer: **A**

Explanation (Optional):

- A. Correct. As long as > 100 hours shutdown, monitors are not required by TS.
- B. Incorrect. No requirement for RQ303A/B to replace RQ104A, and there is no input to purge isolation.
- C. Incorrect. If CNMT purge monitors were required, this would be an alternative action to perform.
- D. Incorrect. If they were required, they would both be required.

Technical Reference(s): 2OM-44C.1 (Attach if not previously provided)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 69**

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Proposed references to be provided to applicants during examination: NONE

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Learning Objective: 2SQS-44C.1, Objective 14 (As available)

Question Source: Bank #                       
Modified Bank #                      (Note changes or attach parent)  
New X

Question History: Last NRC Exam                     

Question Cognitive Level: Memory or Fundamental Knowledge                       
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43 X

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 70**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	045 K1.18	
	Importance Rating	3.6	

Knowledge of the physical connections and/or cause-effect relationships between the MT/G system and the following systems: RPS

Proposed Question: Common 35

Given the following conditions

- Reactor power is at approximately 106% and slowly rising on 3 channels.
- The remaining power range channel is 104.5% and rising.

Which of the following describes the response of the main turbine/generator? Assume the initiating condition does not clear.

- A. The load reference is runback, the runback timer will cycle on/off, on for 1.5 seconds, then off for 30 seconds, until generator load is zero.
- B. The load reference is runback, the runback timer will cycle on/off, on for 1.5 seconds, then off for 30 seconds, until generator load is reduced to 20%.
- C. Load is reduced at a constant rate of 200% per minute until load is reduced to 20%, with no further automatic action.
- D. Load is reduced at a constant rate of 200% per minute until load is reduced to 0%, with no further automatic action.

Proposed Answer: **A**

Explanation (Optional):

- A. Correct.
- B. Incorrect. There is no limit to 20% if the initiating condition remains active.
- C. Incorrect. Load is reduced at a rate of 200% per minute, but only in 1.5 second pulses, and would not stop at 20% power.
- D. Incorrect. Load is reduced at a rate of 200% per minute, but only in 1.5 second pulses.

Technical Reference(s): 2SQS-35.3 (Attach if not previously provided)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 71**

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Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-35.3 Objective 2 (As available)

Question Source: Bank # X  
Modified Bank #                      (Note changes or attach parent)  
New                     

Question History: Last NRC Exam                     

Question Cognitive Level: Memory or Fundamental Knowledge X  
Comprehension or Analysis                     

10 CFR Part 55 Content: 55.41 X  
55.43                     

Comments:

BVPS-1 Ref ID 1SQS-26.1-12-01

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 72**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	068 A3.02	
	Importance Rating	3.6	

Ability to monitor automatic operation of the Liquid Radwaste System including: Automatic isolation

Proposed Question: Common 36

Given the following:

- The Unit is operating at 100% power with all systems in NSA.
- A liquid waste discharge is in progress to the Unit 2 cooling tower basin.
- A **HIGH** radiation alarm occurs on [2SGC-RQ100], Liquid Waste Process Monitor.

Which ONE of the following describes the action that will occur?

- A. Manually close 2SGC-HCV100, High Radiation Valve terminating the release.
- B. Verify 2SGC-HCV100, High Radiation Valve closes automatically immediately terminating the release.
- C. Manually open 2SGC-HCV100, High Radiation Valve diverting the release to the Unit 1 boron recovery test tank.
- D. Verify 2SGC-HCV100, High Radiation Valve opens automatically immediately diverting the release to the Unit 1 boron recovery test tank.

Proposed Answer: **B**

Explanation (Optional):

- A. Incorrect. The valve closes automatically.
- B. Correct.
- C. Incorrect. Opening HCV100 will not divert to U1 boron recovery system.
- D. Incorrect. Opening HCV100 will not divert to U1 boron recovery system.

Technical Reference(s): 2SQS-17.1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 73**

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Learning Objective: 2SQS-17.1 Objective 6 (As available)

Question Source: Bank # X  
Modified Bank #                      (Note changes or attach parent)  
New                     

Question History: Last NRC Exam                     

Question Cognitive Level: Memory or Fundamental Knowledge X  
Comprehension or Analysis                     

10 CFR Part 55 Content: 55.41 X  
55.43                     

Comments:

BVPS-1 Q77 2002 NRC

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 74**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	071 A1.06	
	Importance Rating	2.5	

Ability to predict and/or monitor changes in parameters(to prevent exceeding design limits) associated with operating the Waste Gas Disposal System controls including: Ventilation system

Proposed Question: Common 37

Regarding RMQ-RQI303, Waste Gas Storage Vault Ventilation Radiation Monitor on an Alert level...

- A. the ventilation exhaust path is automatically isolated.
- B. no automatic actions occur, and on the high alarm level the ventilation exhaust path is isolated.
- C. the ventilation automatically swaps to a filtered pathway, and on the high alarm level the ventilation exhaust path is isolated.
- D. no automatic actions occur, and on the high alarm level a HEPA filter is automatically placed in service.

Proposed Answer: **C**

Explanation (Optional):

- A. Incorrect. Isolated on a High alarm level.
- B. Incorrect. Filtered pathway is put in service on an Alert level.
- C. Correct.
- D. Incorrect. Filtered pathway is put in service on an Alert and isolated on a High level.

Technical Reference(s): 2OM-43.5.B.3 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-19.1 Objective 3 (As available)

Question Source: Bank # X  
Modified Bank #  (Note changes or attach parent)  
New

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 75**

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Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43 \_\_\_\_\_

**Comments:**

Editorially Modified from BVPS-1 2002 NRC Exam Question 20



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 76**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	075 K1.02	
	Importance Rating	2.9	

Knowledge of the physical connections and/or cause-effect relationships between the circulating water system and the following systems: Liquid radwaste discharge

Proposed Question: Common 38

A precaution contained in 2OM-25.4.L, Discharging Steam Generator Blowdown Evaporator Test Tank [2SGC-TK23A(B)] Contents To Cooling Tower Blowdown states that two tanks containing radioactive liquid can **NOT** be discharged at the same time.

Which ONE of the following describes the reason for this precaution?

- A. The discharge permit for discharging the contents of a single liquid waste tank is based upon a dilution rate which includes the cooling tower blowdown rate of both units.
- B. Pipe size restrictions in the effluent line could result in an overpressure condition if more than 1 waste tank pump is in operation.
- C. The limit prevents excessive wear on the foot valve in the discharge structure due to high flow rates.
- D. The common discharge point is only provided with a limited amount of dilution flow from the Unit 2 cooling tower blowdown.

Proposed Answer: **A**

Explanation (Optional):

- A. Correct.
- B. Incorrect. There are no pipe size restrictions, as either Unit can discharge to its own or the other unit's cooling tower blowdown.
- C. Incorrect. Insignificant flow compared to blowdown.
- D. Incorrect. No common discharge point actually exists. The piping is tied so that either Unit can discharge to either cooling tower blowdown.

Technical Reference(s): 2OM-25.4.L (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 77**

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Learning Objective: 2SQS-17.1 Objective 11 (As available)

Question Source: Bank # X  
Modified Bank #                      (Note changes or attach parent)  
New                     

Question History: Last NRC Exam                     

Question Cognitive Level: Memory or Fundamental Knowledge X  
Comprehension or Analysis                     

10 CFR Part 55 Content: 55.41 X  
55.43                     

Comments:  
2002 BVPS-1 Q80

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 78**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	007 EA1.09	
	Importance Rating	3.2	

Ability to operate and monitor the following as they apply to a reactor trip: CVCS

Proposed Question: Common 39

Given the following conditions:

- A reactor trip has occurred.
- Due to a steam dump failure, PRZR level dropped to 10%.
- PRZR level has recovered to 22%.
- Steam Dumps have been closed.
- Safety Injection is NOT actuated OR required.
- The crew is performing the actions of ES-0.1, Reactor Trip Response.
- The RO is restoring letdown after re-energizing PRZR heaters.

Which ONE of the following is the **FIRST** action taken when restoring letdown in accordance with ES-0.1, Reactor Trip Response?

- A. OPEN 2CHS\*LCV460A, B.
- B. Place 2CHS\*PCV145 in MANUAL at 50% OPEN.
- C. Ensure 2CHS-AOV204 is CLOSED.
- D. OPEN 2CHS-AOV200A, B, C.

Proposed Answer: **B**

Explanation (Optional):

- A. Incorrect. Valves should already be closed.
- B. Correct.
- C. Incorrect. Valve should be open as long as no CIA exists.
- D. Incorrect. Valves should be closed and will not be reopened until after PCV145.

Technical Reference(s): ES-0.1 Step 7.C RNO (Attach if not previously provided)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 79**

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Proposed references to be provided to applicants during examination: NONELearning Objective: 3SQS-53.3 Objective 3 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge X  
Comprehension or Analysis \_\_\_\_\_

10 CFR Part 55 Content: 55.41 X  
55.43 \_\_\_\_\_

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 80**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	008 AA2.20	
	Importance Rating	3.4	

Ability to determine and interpret the following as they apply to the Pressurizer Vapor Space Accident: The effect of an open PORV on code safety, based on observation of plant parameters

Proposed Question: Common 40

With the Unit operating at 100% power, the reactor trips on low PRZR pressure.

[2RCS-PI472], Pressurizer Relief Tank Pressure indicates 35 psig. The crew suspects that a PORV opened inadvertently and is now stuck partially open.

Which ONE of the following confirming indications could be expected if a PORV is stuck partially open?

- A. PORV relief line temperature stabilized at 281°F. PRZR safety relief line temperatures slowly rising.
- B. PORV relief line temperature stabilized at 250°F. PRZR safety relief line temperatures slowly rising.
- C. PORV relief line temperature stabilized at 281°F. PRZR safety relief line temperatures indicate ambient temperature and stable.
- D. PORV relief line temperature stabilized at 250°F. PRZR safety relief line temperatures indicate ambient temperature and stable.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 81**

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Proposed Answer: **A**

Explanation (Optional):

- A. Correct. 281°F is the saturation temperature corresponding to 50 psia.
- B. Incorrect. 255°F is approximately the saturation temperature corresponding to 35 psia (35 psig PRT pressure = 50 psia). Safety relief line temperatures would be rising because they share a common discharge line to the PRT with the PORV's.
- C. Incorrect. 281°F is the saturation temperature corresponding to 50 psia. However, safety relief line temperatures would be rising because they share a common discharge line to the PRT with the PORV's.
- D. Incorrect. 255°F is approximately the saturation temperature corresponding to 35 psia (35 psig PRT pressure = 50 psia); Also, safety relief line temperatures would be rising because they share a common discharge line to the PRT with the PORV's.

Technical Reference(s): Steam Tables (Attach if not previously provided)  
2OM6.4 Annunciator Response

Proposed references to be provided to applicants during examination: Steam Tables

Learning Objective: 2SQS-6.4 Objectives 19/20 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # X (Note changes or attach parent)  
New \_\_\_\_\_

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43 \_\_\_\_\_

Comments:

Provide Candidates with Steam Tables. Modified values to require interpretation of steam tables with similar, but different values, from last year BVPS-1 NRC exam

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 82**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	015 AK1.01	
	Importance Rating	4.4	

Knowledge of the operational implications of the following concepts as they apply to the Reactor Coolant Pump Malfunctions (Loss of RC Flow): Natural Circulation in a nuclear power plant

Proposed Question: Common 41

The Unit is operating at 100% power, NSA with the exception of [PT-447], Turbine Impulse Pressure Transmitter, which is in the process of being removed from service due to erratic operation. The condenser steam dumps are still in the Tavg mode. A loss of primary plant component cooling water then results in a manual reactor trip. Ten minutes after the trip, the following conditions exist during the performance of ES-0.1, Reactor Trip Response:

<u>SG</u>	<u>Pressure</u>
21A	1000 psig and stable
21B	1005 psig and stable
21C	995 psig and stable

- All RCP's are OFF.
- RCS pressure is 2230 psig and stable.
- Thot is approximately 575°F in all 3 loops and slowly lowering.
- Core Exit TC's indicate approximately 580°F and stable.
- Tcold is approximately 555°F in all 3 loops and stable.
- Reactor Trip Breaker "A" failed to open.

Based on the above indications, what is the condition of the RCS and the preferred method of heat removal for the current plant conditions?

- A. Natural circulation exists. The condenser steam dumps are maintaining heat removal.
- B. Natural circulation does NOT exist. Heat removal will be established by opening the condenser steam dumps.
- C. Natural circulation exists. SG atmospheric steam dumps are maintaining heat removal.
- D. Natural circulation does NOT exist. Heat removal will be established by opening the SG atmospheric steam dumps.

Proposed Answer: **B**

### Question # 83

- A. Incorrect. Natural circulation does not exist because  $T_{cold}$  temperatures are too high and stable.
- B. Correct. Condenser steam dumps are the preferred method of heat removal in ES-0.2.
- C. Incorrect. Natural circulation does not exist because  $T_{cold}$  is too high for SG pressure, and not trending down. No indications that SG ADV's are open for heat removal.
- D. Incorrect.  $T_{cold}$  is above saturation for each SG and not trending down indicating natural circulation does not exist. SG ADV's are not the preferred method of heat removal.

Proposed references to be provided to applicants during examination: Steam Tables

Question Source: Bank # \_\_\_\_\_  
Modified Bank #   X   (Note changes or attach parent)  
New \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

As written, the condenser steam dumps should have been open attempting to maintain Tavg at 547F. Since Tavg is at 565F and SG pressures are stable, one would assume that the condenser steam dumps are not available/working. Therefore, the “preferred” method of heat removal would be the ADV’s. To make the chosen answer correct (condenser steam dumps preferred), amplifying information was added to the stem to prevent the condenser steam dumps from operating in the Tavg mode, which would explain why they were not working post trip.



### Question # 84

Ability to determine and interpret the following as they apply to the Loss of Reactor Coolant Pump Makeup: How long PZR level can be maintained within limits

The Unit was at 55% power when all charging flow was lost. The following conditions exist:

- Assuming charging flow is not restored, approximately how long can PRZR heater operation be maintained?

- Proposed Answer: C**

**Explanation (Optional):**

- A. Incorrect. Value is close and symmetrical.
- B. Incorrect. Value is close and symmetrical.
- C. Correct. At 55% power, Tavg is approximately 55% of range. PRZR level program will be approximately 55% of scale between 22% and 54%. Pressurizer heater cutout is at 14%. Therefore, with level lowering at 1% every 5 minutes, it will take 128 minutes to reach 14%.
- D. Incorrect. Value is close and symmetrical.

Technical Reference(s): 2SQS-6.4 (Attach if not previously provided)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 85**

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Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-6.4 Objectives 18/19 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43 \_\_\_\_\_

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 86**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	025 AA1.08	
	Importance Rating	2.9	

Ability to operate and / or monitor the following as they apply to the Loss of Residual Heat Removal System: RHR cooler inlet and outlet temperature indicators

Proposed Question: Common 43

Given the following conditions:

- The Unit is in Mode 5.
- A loss of RHS cooling has occurred.
- The crew is performing actions of AOP-2.10.1, Residual Heat Removal System Loss.
- The RO reports that CCP pumps CANNOT be started.
- The US directs the RO to monitor RHS system temperature.

Which ONE of the following describes the reason for monitoring RHS temperature at this time?

- A. RHS temperature must be logged to determine time to RCS saturation.
- B. RHS temperature must be logged to determine time available to vent RHS pumps.
- C. If temperature exceeds 180°F, the RHS pumps must be tripped to prevent seal damage.
- D. If temperature exceeds 180°F, the RHS pumps must be tripped to prevent cavitation.

Proposed Answer: **C**

Explanation (Optional):

- A. Incorrect. Core exit temperatures, not RHS temperature is logged.
- B. Incorrect. Core exit temperatures, not RHS temperature is logged.
- C. Correct.
- D. Incorrect. When cavitation occurs or RCS reaches saturation, pumps will be tripped.

Technical Reference(s): AOP-2.10.1 Step 9 (Attach if not previously provided)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 87**

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Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-53C.1 Objective 4 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge X  
Comprehension or Analysis \_\_\_\_\_

10 CFR Part 55 Content: 55.41 X  
55.43 \_\_\_\_\_

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 88**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	027 AA2.02	
	Importance Rating	3.8	

Ability to determine and interpret the following as they apply to the Pressurizer Pressure Control Malfunctions: Normal values for RCS pressure

Proposed Question: Common 44

Given the following conditions:

- The Unit is at 100% power with all systems in NSA.
- The following annunciator is in alarm:
  - [A4-1D], Pressurizer Control Press HIGH/LOW

The RO determines that [2RCS\*PT445], PRZR pressure transmitter is failing **LOW**.

Assuming **NO** operator action is taken, which **ONE** of the following describes the expected indication on [2RCS\*PI444], PRZR Control Pressure?

- A. Rises until 2RCS\*PCV455C, PRZR PORV Relief Valve OPENS.
- B. Rises until 2RCS\*PCV455D and 456 PRZR PORV Relief Valves OPEN.
- C. Remains constant at the normal full power value. NO control action occurs.
- D. Remains constant due to AUTO control of PRZR Heater Group 2C. All backup heaters TRIP.

Proposed Answer: **C**

Explanation (Optional):

- A. Incorrect. If PT445 fails low, the only indication will be the alarm. Heaters and spray valves are controlled from the master controller.
- B. Incorrect. These 2 valves are controlled by PT445, which is failing low.
- C. Correct.
- D. Incorrect. Backup heaters do not trip and there is no reason for them to trip.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 89**

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Technical Reference(s): 2OM-6.4.IF (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-6.4 Objective 19 (As available)

Question Source: Bank #   
Modified Bank #  (Note changes or attach parent)  
New X

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge   
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 90**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	<u>1</u>	<u>          </u>
	Group #	<u>1</u>	<u>          </u>
	K/A #	<u>029 EK3.11</u>	<u>          </u>
	Importance Rating	<u>4.2</u>	<u>          </u>

Knowledge of the reasons for the following responses as they apply to the ATWS: Initiating emergency boration

Proposed Question:           Common 45

Which ONE of the following describes the reason that emergency boration is initiated in FR-S.1, Response to Nuclear Power Generation - ATWS?

- A.    After control rod trip and rod insertion functions, boration is the next most direct manner of adding negative reactivity to the core.
- B.    It is the fastest method of adding negative reactivity in the event that an uncontrolled cooldown results from a turbine trip failure.
- C.    To provide a method of boron addition at high RCS pressures, helping to avoid unnecessary SI initiation.
- D.    It is required because the UFSAR accident analysis does not take credit for local operator actions in the event of an ATWS.

Proposed Answer:           **A**

Explanation (Optional):

- A.    Correct.
- B.    Incorrect. The fastest method is to insert rods.
- C.    Incorrect. Avoiding SI initiation is not a concern for FR-S.1.
- D.    Incorrect. Whether or not UFSAR takes credit for local actions has no bearing on why boration is initiated.

Technical Reference(s):   FR-S.1 Background           (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective:       3SQS-53.3 Objective 3           (As available)

Question Source:           Bank #                   X

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 91**

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Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New \_\_\_\_\_

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge   X    
Comprehension or Analysis \_\_\_\_\_

10 CFR Part 55 Content: 55.41   X    
55.43 \_\_\_\_\_

Comments:

Vendor Bank – Robinson 2004 Audit



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 92**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	038 EA1.16	
	Importance Rating	4.4	

Ability to operate and monitor the following as they apply to a SGTR: S/G atmospheric relief valve and secondary PORV controllers and indicators

Proposed Question: Common 46

Given the following:

- The Unit has sustained a Steam Generator Tube Rupture and the crew is preparing to cooldown to a target temperature of 505°F on the CET's.
- A loss of offsite power occurs.
- All equipment functions as required.

Which ONE of the following describes how the cooldown to target temperature will be accomplished?

- A. Fully open the intact SG atmospheric dump valves to establish maximum cooldown rate.
- B. Gradually open the intact SG atmospheric dump valves to establish a cooldown rate below Technical Specification limits.
- C. Gradually open the condenser steam dumps in "Pressure Control" mode to establish a cooldown rate below Technical Specification limits.
- D. Fully open the condenser steam dumps in "Pressure Control" mode to establish maximum cooldown rate.

Proposed Answer: **A**

Explanation (Optional):

- A. Correct.
- B. Incorrect. Cooldown should be performed as quickly as possible.
- C. Incorrect. Condenser steam dumps are not available.
- D. Incorrect. Condenser steam dumps are not available.

Technical Reference(s): E-3 (Attach if not previously provided)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 93**

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Proposed references to be provided to applicants during examination: NONE

Learning Objective: 3SQS-53.3 Objective 3 (As available)

Question Source: Bank # X  
Modified Bank #                      (Note changes or attach parent)  
New                     

Question History: Last NRC Exam                     

Question Cognitive Level: Memory or Fundamental Knowledge                       
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43                     

Comments:  
BVPS-1 REF ID 17089

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 94**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	040 AA2.05	
	Importance Rating	4.1	

Ability to determine and interpret the following as they apply to the Steam Line Rupture: When ESFAS systems may be secured

Proposed Question: Common 47

Given the following conditions:

- A reactor trip and safety injection have occurred.
- The crew is performing the actions of E-2, Faulted Steam Generator Isolation due to the uncontrolled depressurization of SG 21A.
- The crew is evaluating if SI flow should be reduced.
- The following conditions exist:
  - RCS temperature is 460°F and slowly dropping.
  - RCS pressure is 1650 psig and rising slowly.
  - Containment pressure is 23 psig.
  - SG 21B and 21C NR levels are 15% and rising.
  - AFW flow is 375 gpm.
  - PRZR level is 20%.

Based on the conditions above, the crew may enter ES-1.1, SI Termination...

- A. immediately.
- B. after transition to E-1 when RCS subcooling criteria is met.
- C. after transition to E-1 when PRZR level criteria is met.
- D. after transition to E-1 when SG level criteria is met.

### Question # 95

- A. Incorrect. PRZR level criteria is not high enough for the adverse CTMT conditions.
- B. Incorrect. Due to faulted SG, subcooling criteria is easily met.
- C. Correct.
- D. Incorrect. While SG levels are below the criteria for adverse CTMT, AFW flow is sufficient.

Technical Reference(s): ES-1.1 Entry from E-2, E-1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: \_\_\_\_\_

**Learning Objective:** 3SQS-53.3 Objective 2 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content:	55.41	<u>X</u>
	55.43	X

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 96**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	054 AA1.04	
	Importance Rating	4.4	

Ability to operate and / or monitor the following as they apply to the Loss of Main Feedwater (MFW): HPI, under total feedwater loss conditions

Proposed Question: Common 48

Given the following:

- The crew is responding to an event and is currently in FR-H.1, Response To Loss Of Secondary Heat Sink.
- Attempts to restore feedwater flow have failed.
- RCS bleed and feed has been established with one PRZR PORV open.
- The other two PORV's will **NOT** open.

Which ONE of the following actions is required to be taken?

- A. Terminate attempts to establish a SG heat sink because one PRZR PORV will provide sufficient bleed flow to permit adequate RCS heat removal.
- B. Continue attempts to open the failed PRZR PORV's and reduce SI flow as necessary to prevent rapid overpressurization of the RCS.
- C. Establish alternate RCS bleed paths because one PRZR PORV may not depressurize the RCS sufficiently to permit adequate cooling from the SI flow.
- D. Terminate RCS bleed and feed because with only one PRZR PORV open, RCS pressure will rise causing SI flow and RCS inventory to drop.

Proposed Answer: **C**

Explanation (Optional):

- A. Incorrect. Efforts to establish a heat sink are on-going.
- B. Incorrect. SI flow should not be reduced.
- C. Correct.
- D. Incorrect. Bleed and feed should not be terminated, although if no other vent paths can be opened, there may be insufficient feed.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 97**

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Technical Reference(s): 2OM-53B.4.FR-H.1, Step 17 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 3SQS-53.3 Objective 3 (As available)

Question Source: Bank # X  
Modified Bank #  (Note changes or attach parent)  
New

Question History: 2001 BVPS-2 NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge X  
Comprehension or Analysis

10 CFR Part 55 Content: 55.41 X  
55.43

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 98**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	055 EK1.02	
	Importance Rating	4.1	

Knowledge of the operational implications of the following concepts as they apply to the Station Blackout : Natural circulation cooling

Proposed Question: Common 49

In ECA-0.0, Loss Of All 4KV Emergency Power during the rapid depressurization of intact SG's to 300 psig, an overshoot occurs and all 3 SG's are reduced to 180 psig before the depressurization is stabilized.

Which ONE of the following is a plant condition that may result from this overshoot in SG depressurization?

- A. The Integrity CSFST may be challenged.
- B. The Subcriticality CSFST may be challenged requiring entry into a Functional Restoration Procedure.
- C. Natural circulation may be impeded by accumulator Nitrogen injection.
- D. Sufficient steam supply may not be available for effective turbine driven AFW pump operation.

Proposed Answer: **C**

Explanation (Optional):

- A. Incorrect. T<sub>sat</sub> for 180 psig is above the temperature limit for a Red or Orange path on the Integrity status tree.
- B. Incorrect. Even if the Subcriticality CSF was challenged, action would not be taken because there is no power.
- C. Correct. N<sub>2</sub> injection to the RCS would interrupt natural circulation flow.
- D. Incorrect. TDAFW pump can run down to 100 psig.

Technical Reference(s): ECA-0.0 Background (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 99**

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Learning Objective: 3SQS-53.3 Objective 3 (As available)

Question Source: Bank # X  
Modified Bank #                      (Note changes or attach parent)  
New                     

Question History: Last NRC Exam                     

Question Cognitive Level: Memory or Fundamental Knowledge X  
Comprehension or Analysis                     

10 CFR Part 55 Content: 55.41 X  
55.43                     

Comments:

Prairie Island Western Technical Bank # 44443



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 100**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	056 AA1.10	
	Importance Rating	4.3	

Ability to operate and / or monitor the following as they apply to the Loss of Offsite Power: Auxiliary/emergency feedwater pump (motor driven)

Proposed Question: Common 50

Given the following conditions:

- The Unit is at 100% power.
- 2-2 EDG is OOS.
- A loss of offsite power occurs.
- All equipment operates as designed.

Which ONE of the following describes the status of the motor driven AFW pumps?

- A. 2FWE\*P23A and 2FWE\*P23B are both RUNNING.
- B. 2FWE\*P23A and 2FWE\*P3B are both STOPPED.
- C. 2FWE\*P23A is RUNNING. 2FWE\*P23B is STOPPED.
- D. 2FWE\*P23B is RUNNING. 2FWE\*P23A is STOPPED.

Proposed Answer: **C**

Explanation (Optional):

- A. Incorrect. 2FWE\*P23B can not run without power.
- B. Incorrect. 2FWE\*P23A will be running.
- C. Correct.
- D. Incorrect. Opposite of actual pump operation.

Technical Reference(s): 2SQS-24.1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 101**

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Learning Objective: 2SQS-24.1 Objective 15 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43 \_\_\_\_\_

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 102**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	057 AA2.04	
	Importance Rating	3.7	

Ability to determine and interpret the following as they apply to the Loss of Vital AC Instrument Bus: ESF system panel alarm annunciators and channel status indicators

Proposed Question: Common 51

A loss of 120VAC Vital Bus No. 2-1 has occurred.

Which ONE of the following AFFECTED channel ESF bistable status indicators will be **EXTINGUISHED** following the vital bus failure?

- A. HIGH 3 CNMT PRESSURE CIB CHAN I
- B. PRZR PRESS LO SI SETPOINT CHAN I
- C. PWR RNG N41 LOW POWER SP
- D. 21A SG HI-HI LEVEL CHAN I

Proposed Answer: **A**

Explanation (Optional):

- A. Correct. Energize to actuate. Loss of power will not actuate bistable.
- B. Incorrect. Light will be lit due to actuation.
- C. Incorrect. Light will be lit due to actuation.
- D. Incorrect. Light will be lit due to actuation.

Technical Reference(s): AOP 2.38.1A (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 3SQS-38.1 Objective 12 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 103**

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New

X

Question History:

Last NRC Exam                     Question Cognitive Level: Memory or Fundamental Knowledge  
Comprehension or AnalysisX

10 CFR Part 55 Content:

55.41 X55.43                     

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 104**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	058 AA1.01	
	Importance Rating	3.4	

Ability to operate and / or monitor the following as they apply to the Loss of DC Power: Cross-tie of the affected dc bus with the alternate supply

Proposed Question: Common 52

How is it ensured that loads powered off of 125V DC distribution buses 2-5 and 2-6, ("swing") loads do not inadvertently cross-tie the affected DC buses?

- A. A mechanical interlock prevents simultaneous closure of both DC supply breakers.
- B. An electrical interlock trips both DC supply breakers if they are simultaneously closed.
- C. An alarm sounds in the Control Room to warn the operators if both DC supply breakers are simultaneously closed.
- D. Administrative controls only (procedure requirements) prevent simultaneous closure of both DC supply breakers.

Proposed Answer: A

Explanation (Optional):

- A. Correct. A physical barrier in the design of the distribution buses ensure loads cannot be cross-tied.
- B. Incorrect for reason above.
- C. Incorrect for reason above.
- D. Incorrect for reason above.

Technical Reference(s): \_\_\_\_\_ (Attach if not previously provided)  
\_\_\_\_\_

Proposed references to be provided to applicants during examination: NONE

Learning Objective: \_\_\_\_\_ (As available)

Question Source: Bank # X  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 105**

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New             
          

Question History:

Last NRC Exam           Question Cognitive Level: Memory or Fundamental Knowledge  
Comprehension or AnalysisX  
          

10 CFR Part 55 Content:

55.41 X55.43           

Comments:

Bank 3SQS-39.1-01-08-01

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 106**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	062 G2.4.4	
	Importance Rating	4.0	

Emergency Procedures/Plan: Ability to recognize abnormal indications for system operating parameters which are entry level conditions for abnormal and emergency operating procedures.

Proposed Question: Common 53

Given the following conditions:

- The Unit is at 35% power with all systems in NSA performing a normal plant shutdown due to the inoperability of the No. 2-1 EDG which is currently on clearance.
- When transferring the electrical busses to the offsite source, an electrical fault occurred resulting in the following breakers tripping open on overcurrent:
  - Main generator exciter breaker
  - Both main generator output breakers
  - 4KV Bus "A" feeder breakers from both the USST and SSST

Which ONE of the following procedures immediate operator actions should be performed first?

- A. AOP-2.1.3, RCCA Control Bank Inappropriate Continuous Movement
- B. AOP-2.26.1, Turbine and Generator Trip
- C. AOP-2.36.2, Loss of 4KV Emergency Bus
- D. E-0, Reactor Trip or Safety Injection

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. Reactor trip will occur on loss of the "A" RCP; this would be correct if just a load rejection occurred.
- B. Incorrect. Reactor trip will occur on loss of the "A" RCP; this would be correct if just a turbine trip occurred.
- C. Incorrect. E-0 immediate actions are performed first, then these immediate actions are performed.
- D. Correct.

Technical Reference(s): \_\_\_\_\_ (Attach if not previously provided)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 107**

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Proposed references to be provided to applicants during examination: NONE

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Learning Objective: \_\_\_\_\_ (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43 \_\_\_\_\_

Comments:



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 108**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	E04 EA2.1	
	Importance Rating	3.4	

Ability to determine and interpret the following as they apply to the (LOCA Outside Containment) Facility conditions and selection of appropriate procedures during abnormal and emergency operations.

Proposed Question: Common 54

Following a reactor trip and safety injection, the crew is performing actions of E-0, Reactor Trip Or Safety Injection.

The following conditions exist:

- All SG pressures are stable at 1000 psig.
- All SG NR levels are approximately 25%.
- AFW is supplying the SG's.
- RCS pressure is approximately 1000 psig.
- RCS temperature is 545°F.
- Auxiliary Building radiation monitors are alarming.
- Containment pressure is (-) 5 psig.

Which ONE of the following procedures will mitigate this event?

- A. E-1, Loss of Reactor or Secondary Coolant
- B. ES-1.1, SI Termination
- C. ES-1.2, Post-LOCA Cooldown and Depressurization
- D. ECA-1.2, LOCA Outside Containment

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. CNMT parameters are normal.
- B. Incorrect. RCS pressure is not high enough.
- C. Incorrect. Entry would be from E-1, which would not be used.
- D. Correct.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 109**

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Technical Reference(s): E-0 (Attach if not previously provided)  
Proposed references to be provided to applicants during examination: Learning Objective: 3SQS-53.3 Objective 2 (As available)Question Source: Bank #   
Modified Bank #  (Note changes or attach parent)  
New XQuestion History: Last NRC Exam Question Cognitive Level: Memory or Fundamental Knowledge   
Comprehension or Analysis X10 CFR Part 55 Content: 55.41 X  
55.43 X

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 110**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	E05 EK3.2	
	Importance Rating	3.7	

Knowledge of the reasons for the following responses as they apply to the (Loss of Secondary Heat Sink) Normal, abnormal and emergency operating procedures associated with (Loss of Secondary Heat Sink).

Proposed Question: Common 55

Given the following conditions:

- A reactor trip and safety injection have occurred.
- The crew has performed the actions of E-0, Reactor Trip Or Safety Injection.
- AFW flow **CANNOT** be established.
- All SG NR levels are offscale low.
- The crew has entered FR-H.1, Response To Loss Of Secondary Heat Sink.
- RCS pressure is 200 psig.
- SG pressures are each 550 psig and lowering.

Which ONE of the following describes the required actions?

- A. Remain in FR-H.1 because a large break LOCA is in progress AND a secondary heat sink is required.
- B. Remain in FR-H.1 because a small break LOCA is in progress AND a secondary heat sink is required.
- C. Go to E-1 because a large break LOCA is in progress AND a secondary heat sink is NOT required.
- D. Go to E-1 because a small break LOCA is in progress AND a secondary heat sink is NOT required.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 111**

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Proposed Answer: **C**

Explanation (Optional):

- A. Incorrect. RCS pressure is less than SG pressure, so SG's are acting as a heat sink.
- B. Incorrect. SBLOCA is not in progress.
- C. Correct. With RCS pressure less than SG pressure, break is of a larger size and SI will provide heat removal. SG's are heat sources, not heat sinks.
- D. Incorrect. SBLOCA is not in progress.

Technical Reference(s): FR-H.1 and background (Attach if not previously provided)  
Proposed references to be provided to applicants during examination: Learning Objective: 3SQS-53.3 objective 3 (As available)

Question Source:	Bank #	<u>X</u>	
	Modified Bank #	<u></u>	(Note changes or attach parent)
	New	<u></u>	

Question History: Last NRC Exam 

Question Cognitive Level:	Memory or Fundamental Knowledge	<u></u>
	Comprehension or Analysis	<u>X</u>

10 CFR Part 55 Content:	55.41	<u>X</u>
	55.43	<u>X</u>

Comments:

Robinson 2002 Audit Exam

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 112**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	E11 EK1.3	
	Importance Rating	3.6	

Knowledge of the operational implications of the following concepts as they apply to the (Loss of Emergency Coolant Recirculation) Annunciators and conditions indicating signals, and remedial actions associated with the (Loss of Emergency Coolant Recirculation).

Proposed Question: Common 56

Given the following conditions:

- A LOCA has occurred.
- Due to multiple equipment failures, the crew is performing actions of ECA-1.1, Loss Of Emergency Coolant Recirculation.
- Two (2) Charging/HHSI pumps and two (2) LHSI pumps are running.
- RWST level is approximately 10 inches and continues to drop.

Which ONE of the following describes the action required in accordance with ECA-1.1?

- A. STOP ONLY ONE (1) HHSI and ONLY ONE (1) LHSI pump and verify NO backflow from the RWST to CTMT sump.
- B. STOP ONLY ONE (1) HHSI and ONLY ONE (1) LHSI pump and initiate secondary depressurization to facilitate SI accumulator injection.
- C. STOP ALL pumps taking a suction from the RWST and verify NO backflow from the RWST to CTMT sump.
- D. STOP ALL pumps taking a suction from the RWST and initiate secondary depressurization to facilitate SI accumulator injection.

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. RWST level is too low to leave any pumps running.
- B. Incorrect. RWST level is too low to leave any pumps running.
- C. Incorrect. Correct action for pumps, but instead of being concerned with backflow, the crew must initiate depressurization.
- D. Correct.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 113**

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Technical Reference(s): ECA-1.1 Step 36, 37 (Attach if not previously provided)  
Proposed references to be provided to applicants during examination: NONELearning Objective: 3SQS-53.3 Objective 3 (As available)Question Source: Bank #   
Modified Bank #  (Note changes or attach parent)  
New XQuestion History: Last NRC Exam Question Cognitive Level: Memory or Fundamental Knowledge   
Comprehension or Analysis X10 CFR Part 55 Content: 55.41 X  
55.43 

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 114**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	001 AA1.01	
	Importance Rating	3.5	

Ability to operate and / or monitor the following as they apply to the Continuous Rod Withdrawal: Bank select switch

Proposed Question: Common 57

The following conditions exist:

- The Unit is operating at 80%, steady state power.
- The Rod Control Selector Switch is in Automatic.
- Control Bank "D" starts to step in continuously.
- Turbine load is stable.

Which ONE of the following actions must the operator take in response to these conditions?

- A. Place the Rod Control Mode Selector Switch in Manual.
- B. Place the Rod Control Mode Selector Switch in Bank "D".
- C. Place the Rod Control Mode Selector Switch in either Shutdown Bank position.
- D. Manually trip the reactor.

Proposed Answer: **A**

Explanation (Optional):

- A. Correct. If load is stable, control rods are to be placed in Manual.
- B. Incorrect. Wrong position.
- C. Incorrect. Wrong position.
- D. Incorrect. Actions not required for this type of failure.

Technical Reference(s): AOP-2.1.3 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: \_\_\_\_\_ (As available)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 115**

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Question Source: Bank # X  
Modified Bank #                      (Note changes or attach parent)  
New                     

Question History: Last NRC Exam                     

Question Cognitive Level: Memory or Fundamental Knowledge X  
Comprehension or Analysis                     

10 CFR Part 55 Content: 55.41 X  
55.43                     

Comments:  
Western Tech Bank ID 44514



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 116**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	003 AK2.05	
	Importance Rating	2.5	

Knowledge of the interrelations between the Dropped Control Rod and the following: Control rod drive power supplies and logic circuits

Proposed Question: Common 58

Given the following conditions:

- The Unit is operating at 100% power with all systems in NSA.
- The RO recognizes that Control Bank "D", Group 2, and Control Bank "B", Group 2 control rods drop just prior to a reactor trip.

Which ONE of the following is the cause of the failure?

- A. Logic Cabinet Oscillator failure
- B. Logic Cabinet Master Cyclor failure
- C. Power Cabinet Thyristor failure
- D. Power Cabinet Logic error

Proposed Answer: **C**

Explanation (Optional):

- A. Incorrect. Causes an urgent failure and locks up control rods.
- B. Incorrect. Causes an urgent failure and locks up control rods.
- C. Correct. Could cause loss of power to stationary gripper coils, resulting in a rod drop.
- D. Incorrect. Causes an urgent failure and locks up control rods.

Technical Reference(s): 3SQS-1.3 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 3SQS-1.3 Objective 6 (As available)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 117**

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Question Source:

Bank # \_\_\_\_\_

Modified Bank # \_\_\_\_\_ (Note changes or attach parent)

New

X

Question History:

Last NRC Exam \_\_\_\_\_

Question Cognitive Level:

Memory or Fundamental Knowledge \_\_\_\_\_

Comprehension or Analysis

X

10 CFR Part 55 Content:

55.41 X

55.43 \_\_\_\_\_

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 118**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	037 AK1.02	
	Importance Rating	3.5	

Knowledge of the operational implications of the following concepts as they apply to Steam Generator Tube Leak: Leak Rate Versus Pressure Drop

Proposed Question: Common 59

During operation at power SG tube leakage is detected and estimated at 250 gpm by the Reactor Operator. The following plant indications exist:

- RCS pressure - 2000 psig and lowering
- Reactor power - 80%
- SG pressures - 800 psig
- PRZR level - 42% and lowering

The Unit is tripped and plant parameters following the trip are:

- RCS pressure - 1600 psig and lowering
- Reactor power - 0%
- SG pressures - 1000 psig
- PRZR level - 13%

Based on the two sets of given data, which ONE of the following describes the effect on primary-to-secondary leakage?

Leakage following the trip is...

- A. one half of the initial leak rate or about 125 gpm.
- B. essentially equal to the initial leak rate or about 250 gpm.
- C. approximately 70% of the initial leak rate or about 175 gpm.
- D. One third of the initial leak rate or about 83 gpm.

Proposed Answer: **C**

Explanation (Optional):

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 119**

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- A. Incorrect. The DP is approximately half.
- B. Incorrect. As DP changes, flow rate also changes.
- C. Correct. Leak rate is proportional to the square root of the DP.
- D. Incorrect. Inverse of distractor C.

Technical Reference(s): Thermo (Attach if not previously provided)  
\_\_\_\_\_

Proposed references to be provided to applicants during examination: NONE

Learning Objective: N/A (As available)

Question Source: Bank # X  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New \_\_\_\_\_

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43 \_\_\_\_\_

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 120**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	061 AA2.01	
	Importance Rating	3.5	

Ability to determine and interpret the following as they apply to the Area Radiation Monitoring (ARM) System Alarms: ARM panel displays

Proposed Question: Common 60

[2RMC\*RQ201A], Control Room Area Radiation Monitor indication on the RM-11 console grid display is backlit **YELLOW**.

Which ONE of the following describes the status of 2RMC\*RQ201A?

- A. Monitor has FAILED.
- B. Monitor is OFF-LINE.
- C. HIGH alarm setpoint has been reached.
- D. ALERT alarm setpoint has been reached.

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. Purple or Blue indicates monitor failure.
- B. Incorrect. White indicates monitor is off-line.
- C. Incorrect. Red indicates high alarm.
- D. Correct.

Technical Reference(s): 2SQS-43.1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-43.1 Objective 7 (As available)

Question Source: Bank #  
Modified Bank # X (Note changes or attach parent)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 121**

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New ☐

Question History:

Last NRC Exam ☐

Question Cognitive Level:

Memory or Fundamental Knowledge

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Comprehension or Analysis

10 CFR Part 55 Content:

55.41

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55.43

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 122**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	<u>1</u>	<u>          </u>
	Group #	<u>2</u>	<u>          </u>
	K/A #	<u>E01 G2.4.31</u>	<u>          </u>
	Importance Rating	<u>3.3</u>	<u>          </u>

Emergency Procedures / Plan Knowledge of annunciators alarms and indications, and use of the response instructions.

Proposed Question:        Common 61

Given the following conditions:

- An inadvertent Safety Injection has occurred.
- The crew has completed action to terminate SI in accordance with ES-1.1, SI Termination.
- The following annunciator is illuminated:
  - AUTO SAFETY INJECTION BLOCKED

Which ONE of the following actions is required to clear the annunciator?

- A.     Depress and hold the SI reset pushbuttons until the light clears.
- B.     Reset SI, CIA, CIB, and SI Recirc Mode Reset.
- C.     Close, and then re-open the reactor trip breakers.
- D.     Place the BB-A reactor trip switch in TRIP until the annunciator clears.

Proposed Answer:        **C**

Explanation (Optional):

- A.     Incorrect. This action is what causes the annunciator to illuminate.
- B.     Incorrect. Resetting SI will bring in the annunciator; the other actions will have no effect.
- C.     Correct. P4 resets the auto SI circuitry, which will be actuated by cycling RTB's.
- D.     Incorrect. If the RTB's are already open, this will have no effect.

Technical Reference(s):    ES-1.1, Step 31                      (Attach if not previously provided)

Proposed references to be provided to applicants during examination:    NONE

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 123**

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Learning Objective: 3SQS-53.3 Objective 3 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43 \_\_\_\_\_

Comments:



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 124**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	E07 EK3.3	
	Importance Rating	3.8	

Knowledge of the reasons for the following responses as they apply to the (Saturated Core Cooling) Manipulation of controls required to obtain desired operating results during abnormal and emergency situations.

Proposed Question: Common 62

Select the statement that describes the purpose of the initial depressurization of the SG's in FR-C.1, Response To Inadequate Core Cooling.

- A. To prevent the SG's from acting as a source of heat to the inadequately cooled core.
- B. To reduce RCS pressure in order to allow SI accumulator and/or LHSI flow.
- C. To provide driving head for a controlled two phase natural circulation cooldown of the RCS.
- D. To minimize the possibility of lifting a secondary safety valve in the event of a SG tube rupture.

Proposed Answer: **B**

Explanation (Optional):

- A. Incorrect. If in FR-C.1, SG's are already a marginal heat sink.
- B. Correct.
- C. Incorrect. Two phase natural circulation is unlikely in this condition.
- D. Incorrect. Reducing pressure would provide this function, but is not performed for this reason in FR-C.1.

Technical Reference(s): FR-C.1 Background (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 3SQS-53.3 Objective 3 (As available)

Question Source: Bank # X  
Modified Bank #  (Note changes or attach parent)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 125**

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New             
          

Question History:

Last NRC Exam           Question Cognitive Level: Memory or Fundamental Knowledge  
Comprehension or Analysis  X    
          

10 CFR Part 55 Content:

55.41   X    
55.43           

Comments:

BVPS-1 Bank 3777

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 126**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	E08 EK3.3	
	Importance Rating	3.7	

Knowledge of the reasons for the following responses as they apply to the (Pressurized Thermal Shock) Manipulation of controls required to obtain desired operating results during abnormal and emergency situations.

Proposed Question: Common 63

Following a small break LOCA, the crew is performing action contained in FR-P.1, Response To Imminent Pressurized Thermal Shock Conditions.

Which ONE of the following describes the difference in SI Termination criteria for FR-P.1 as opposed to the criteria in ES-1.1, Safety Injection Termination?

The criteria in FR-P.1 is...

- A. less restrictive to allow for a faster reduction in RCS pressure.
- B. more restrictive to allow for a more controlled reduction in RCS pressure.
- C. less restrictive because subsequent RCP restart is likely to cause propagation of any existing flaw in the reactor vessel walls.
- D. more restrictive because subsequent RCP restart is likely to cause propagation of any existing flaw in the reactor vessel walls.

Proposed Answer: **A**

Explanation (Optional):

- A. Correct. The criteria are less restrictive so that SI reduction can aid the RCS pressure reduction. RVLIS level rather than PRZR level is used as a measure of inventory.
- B. Incorrect. Opposite of actual reason.
- C. Incorrect. RCP restart will not cause a crack to propagate under any of the conditions analyzed for this procedure. However, propagation of flaws is a major concern in a PTS event.
- D. Incorrect. RCP restart will not cause a crack to propagate under any of the conditions analyzed for this procedure. However, propagation of flaws is a major concern in a PTS event.

Technical Reference(s): FR-P.1 Background (Attach if not previously provided)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 127**

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Proposed references to be provided to applicants during examination: NONE

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Learning Objective: 3SQS-53.3 Objective 3 (As available)

Question Source: Bank # X  
Modified Bank #                      (Note changes or attach parent)  
New                     

Question History: Last NRC Exam                     

Question Cognitive Level: Memory or Fundamental Knowledge                       
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43                     

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 128**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	E13 EK2.1	
	Importance Rating	3.0	

Knowledge of the interrelations between the (Steam Generator Overpressure) and the following: Components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features.

Proposed Question: Common 64

A reactor trip has occurred. The crew has entered FR-H.2, Response To Steam Generator Overpressure based upon a **YELLOW** condition on the Heat Sink CSF Status Tree. The following conditions exist:

- SG 21A pressure indicates 1150 psig.
- SG 21B and 21C pressures indicate 1010 psig.
- SG 21A NR level is 65%.
- Instrument air header pressure has been lost.

Which ONE of the following actions is available to mitigate the SG overpressure condition?

- A. Initiate SG blowdown flow.
- B. Open condenser steam dump valves.
- C. Go to FR-H.3, Response To SG High Level to reduce pressure by reducing SG level.
- D. Manually or locally open the residual heat release valve to reduce SG pressure.

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. Initiating blowdown flow is not a procedure option.
- B. Incorrect. Condenser steam dump is not available.
- C. Incorrect. Only go to FR-H.3 if level is greater than 94%.
- D. Correct. Loss of instrument air requires use of RHR valve to lower SG pressure.

Technical Reference(s): FR-H.2 (Attach if not previously provided)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 129**

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Proposed references to be provided to applicants during examination: NONELearning Objective: 3SQSD-53.3 Objective 3 (As available)Question Source: Bank #                     Modified Bank # X (Note changes or attach parent)New                     Question History: Last NRC Exam                     Question Cognitive Level: Memory or Fundamental Knowledge                     Comprehension or Analysis X10 CFR Part 55 Content: 55.41 X55.43                     

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 130**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	068 G2.1.30	
	Importance Rating	3.9	

Conduct of Operations: Ability to locate and operate components, including local controls.

Proposed Question: Common 65

The Control Room is being evacuated to the Emergency Shutdown Panel. The crew is preparing to evacuate in accordance with AOP-2.33.1A, Control Room Inaccessibility. All equipment is operating as designed.

Which ONE of the following describes the operation of the emergency diesel generators (EDG's) during this evolution?

- A. EDG's are started and vital equipment is loaded from the Control Room. Control is transferred to the Emergency Shutdown Panel after evacuation.
- B. EDG's remain in standby status. Control is switched to the Emergency Shutdown Panel after evacuation.
- C. EDG's remain in standby status. Control is transferred to the local control panel from the Control Room prior to evacuation.
- D. EDG control is switched to the local control panel after evacuation. EDG's are started and vital equipment is loaded as soon as local control is established.

Proposed Answer: **B**

Explanation (Optional):

- A. Incorrect. EDG's are not started, unless necessary.
- B. Correct.
- C. Incorrect. EDG control is established at the ESP.
- D. Incorrect. EDG control is established at ESP, and only if needed.

Technical Reference(s): AOP-2.33.1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 131**

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Learning Objective: 2SQS-56C.1 Objective 4 (As available)

Question Source: Bank # X  
Modified Bank #                      (Note changes or attach parent)  
New                     

Question History: Last NRC Exam 2002

Question Cognitive Level: Memory or Fundamental Knowledge X  
Comprehension or Analysis                     

10 CFR Part 55 Content: 55.41 X  
55.43                     

Comments:

BVPS-2 2002 Audit Exam



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 132**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #	1	
	K/A #	G2.1.1	
	Importance Rating	3.7	

Knowledge of conduct of operations requirements.

Proposed Question: Common 66

You are a licensed Reactor Operator and have been assigned to an administrative function. You are current in maintaining qualification in the Licensed Operator Requalification Program. The date is February 23, 2005 and you are preparing to return to shift duties.

The time you were on shift since this assignment is as follows:

- 12 hours on December 24, 2004 as BOP
- 12 hours on November 23, 2004 as BOP
- 12 hours on November 22, 2004 as BOP
- 12 hours on September 19, 2004 as RO
- 12 hours on September 18, 2004 as RO

Which ONE of the following describes the status of your license in accordance with 1/2-ADM-1351, Licensed Operator Retraining Program?

- A. Your license is active. You may stand watch with no restrictions.
- B. Your license is active. You must regain qualification as RO by standing three (3) additional 12-hour shifts in the RO position.
- C. Your license is inactive. You must reactivate your license by standing five (5) 8-hour shifts under instruction in the RO position and one 8-hour shift in any one of the Non-licensed tour positions.
- D. Your license is inactive. You must reactivate your license by standing five (5) 8-hour shifts under instruction as either RO or BOP.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 133**

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Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. License is inactive due to insufficient hours last quarter.
- B. Incorrect. Proficiency is not based on board position.
- C. Incorrect. May regain proficiency in either position.
- D. Correct. Last calendar quarter did not stand 5 shifts.

Technical Reference(s): 1/2 ADM 1351 (Attach if not previously provided)  
Proposed references to be provided to applicants during examination: Learning Objective: N/A (As available)

Question Source: Bank #   
Modified Bank # X (Note changes or attach parent)  
New

Question History: Last NRC Exam 

Question Cognitive Level: Memory or Fundamental Knowledge   
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 134**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #	1	
	K/A #	G2.1.25	
	Importance Rating	2.8	

Ability to obtain and interpret station reference materials such as graphs, monographs, and tables which contain performance data.

Proposed Question: Common 67

Given the following conditions:

- The Unit has been at 100% power for 3 weeks. All systems are in NSA.
- RCS boron concentration is 1000 ppm.
- A controlled power reduction to 50% is to be performed.

Using the references provided and maintaining control rods at their current position, assuming no change in xenon concentration, which ONE of the following describes the **MINIMUM** amount of boric acid required to initially maneuver the plant to 50% power?

- A. 700 - 800 gallons
- B. 850 - 950 gallons
- C. 1000 - 1100 gallons
- D. 1150 - 1250 gallons

Proposed Answer: **C**

Explanation (Optional):

- A. Incorrect. Low enough to allow for minor interpretation differences.
- B. Incorrect. Used to provide consistent distractor and allows for minor interpretation differences.
- C. Correct. Power defect is approximately 980 pcm (2050 – 1070). A critical boron concentration of 1000 ppm indicates approximately 9500 MWD/MTU. Differential Boron worth at this concentration is approximately – 6.5 pcm/ppm. Therefore,  $1000 / - 6.5 = 150$  ppm. Using boron addition nomograph shows approximately 1020 gallons of boric acid or less.
- D. Incorrect. High enough to provide consistent distractor and allows for minor interpretation differences.

Technical Reference(s): Curve Book CB-13, CB-21, CB- (Attach if not previously provided)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 135**

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28, CB-31, CB-31, CB-36  

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Proposed references to be provided to applicants during examination: Curve Book

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Learning Objective: 2SQS-7.1 Objective 17 (As available)Question Source: Bank #                     Modified Bank # X (Note changes or attach parent)New                     Question History: Last NRC Exam                     Question Cognitive Level: Memory or Fundamental Knowledge                     Comprehension or Analysis X10 CFR Part 55 Content: 55.41 X55.43                     

Comments:

BVPS-1 2002 NRC exam

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 136**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #	2	
	K/A #	G2.2.12	
	Importance Rating	3.0	

Knowledge of surveillance procedures.

Proposed Question: Common 68

When performing an OST procedure, which one of the following conditions **PROHIBITS** the use of "N/A" in the sign-off spaces provided?

- A. Performance of partial tests.
- B. Inability to perform the OST as written.
- C. Performing an OST that pre-establishes conditions for non-performance of steps.
- D. Non-performance of steps that cannot be performed due to plant conditions, but do not change the intent of the procedure.

Proposed Answer: **B**

Explanation (Optional):

- A. Incorrect. Partial tests allow N/A.
- B. Correct. Situation requires issuing a revision after placing equipment in a safe condition.
- C. Incorrect. N/A is specifically used for this condition.
- D. Incorrect. May use N/A as long as procedure intent is not altered.

Technical Reference(s): 1/2-ADM-0104 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 3SSG-Admin Objective 5 (As available)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 137**

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Question Source: Bank # X  
Modified Bank #                      (Note changes or attach parent)  
New                     

Question History: Last NRC Exam                     

Question Cognitive Level: Memory or Fundamental Knowledge X  
Comprehension or Analysis                     

10 CFR Part 55 Content: 55.41 X  
55.43                     

Comments:  
BVPS-1 2002 NRC exam

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 138**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #	2	
	K/A #	G2.2.25	
	Importance Rating	2.5	

Knowledge of bases in technical specifications for limiting conditions for operations and safety limits

Proposed Question: Common 69

Regarding Technical Specification **SAFETY LIMITS**, which ONE of the following core limitations does the OTΔT reactor trip prevent exceeding?

- A. Total Core Power
- B. Power Density (KW/ft)
- C. Axial Flux Difference (AFD)
- D. Departure from Nucleate Boiling (DNB)

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. Power Range and OPΔT trips provide protection for total core power.
- B. Incorrect. Power Range and OPΔT trips provide protection for power density.
- C. Incorrect. Protection is from the power range trips.
- D. Correct.

Technical Reference(s): TS Bases 3.3.1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 3SQS-1.1, Objective 16 (As available)

Question Source: Bank # X  
Modified Bank #  (Note changes or attach parent)  
New

Question History: Last NRC Exam

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 139**

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Question Cognitive Level: Memory or Fundamental Knowledge   X    
Comprehension or Analysis           

10 CFR Part 55 Content: 55.41   X    
55.43   X  

Comments:

BVPS-1 2002 NRC S36





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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 141**

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Question Cognitive Level: Memory or Fundamental Knowledge   X    
Comprehension or Analysis           

10 CFR Part 55 Content: 55.41   X    
55.43           

Comments:

Prairie Island Western Tech Bank Question ID 44573

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 142**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #	3	
	K/A #	G2.3.10	
	Importance Rating	2.9	

Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.

Proposed Question: Common 71

Given the following conditions:

- You are required to make an entry to a Locked High Radiation Area.
- Your year-to-date exposure is 2.6 Rem Total Effective Dose Equivalent (TEDE).
- The job is planned to take 20 minutes to complete, with 5 minutes transit time each way.
- Transit path radiation levels are 400 mR/hr.
- Work area radiation levels are 1200 mR/hr.

Which ONE of the following describes your eligibility to perform this task?

- A. You may perform this task provided you are signed onto a High Radiation Area RWP and have received authorization to exceed the exposure Admin Control Level.
- B. You may not perform this task because you will exceed the BVPS Admin Guide for TEDE.
- C. You may perform this task provided you are signed onto a High Radiation Area RWP with no other restrictions other than that listed on the RWP.
- D. You may not perform the task because your current year to date exposure is already within 80% of the BVPS Admin Guide for TEDE.

Proposed Answer: **A**

Explanation (Optional):

- A. Correct. Admin Control Level for BVPS is 2000 mRem.
- B. Incorrect. BVPS Admin Guide for TEDE is 4 Rem. Actual exposure results in 3067 mRem.
- C. Incorrect. Authorization to exceed the Admin Control Level is required.
- D. Incorrect. 80% of BVPS TEDE would be 3.2 Rem.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 143**

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Technical Reference(s): 1/2 ADM 1601 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective:  (As available)

Question Source: Bank # X  
Modified Bank #  (Note changes or attach parent)  
New

Question History: Last NRC Exam 2002 NRC

Question Cognitive Level: Memory or Fundamental Knowledge   
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X  
55.43 X

Comments:

BVPS-2 2002 NRC S94

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 144**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #	3	
	K/A #	G2.3.11	
	Importance Rating	2.7	

Ability to control radiation releases.

Proposed Question: Common 72

Given the following conditions:

- A rapid load reduction from 100% power to 65% power was performed approximately 3 hours ago.
- [2CHS\*RQ101A], Reactor Coolant Letdown Low Range Monitor is in HIGH alarm.
- [2CHS\*RQ101B], Reactor Coolant Letdown High Range Monitor has just reached its HIGH alarm setpoint.
- Actions of 2OM-43.4.AAC, Radiation Monitoring High have been completed.
- Chemistry confirms RCS activity exceeds TS 3.4.8 limits.

The Unit Supervisor directs a plant shutdown to be performed.

Which ONE of the following actions is subsequently performed to limit the release of radioactivity?

- A. MSIVs are closed.
- B. SG atmospheric dump valve setpoints are raised.
- C. RCS is cooled down below 500°F.
- D. Maximum condensate polishers are placed in service.

Proposed Answer: **C**

Explanation (Optional):

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 145**

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- A. Incorrect. Closing MSIV's would contribute to radiation release through the SG ADV's and safety valves if cooldown and depressurization were not performed in a timely manner.
- B. Incorrect. SG ADV setpoints are normally raised in SGTR procedure, but are operated manually at BVPS.
- C. Correct.
- D. Incorrect. Condensate polishing would help clean the secondary plant, but is not an action performed in accordance with the ARP's.

Technical Reference(s): T.S. 3.4.8 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-43.1 Objectives 9/10 (As available)

Question Source: Bank # X  
Modified Bank #                      (Note changes or attach parent)  
New                     

Question History: Last NRC Exam                     

Question Cognitive Level: Memory or Fundamental Knowledge X  
Comprehension or Analysis                     

10 CFR Part 55 Content: 55.41 X  
55.43                     

Comments:

BVPS-1 2002 NRC Western Tech Bank 46428

### Question # 146

## 2.6

Question Source: Bank # X  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New \_\_\_\_\_

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 147**

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Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge   X    
Comprehension or Analysis \_\_\_\_\_10 CFR Part 55 Content: 55.41   X    
55.43 \_\_\_\_\_

Comments:

Indian Point 3 Audit Exam; 2002 Western Technical Services, Inc. Exam Bank ID 44958.



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 148**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #	4	
	K/A #	G2.4.20	
	Importance Rating	3.3	

Knowledge of operational implications of EOP warnings, cautions, and notes.

Proposed Question: Common 74

During the performance of EOP actions, the crew observes a **NOTE** prior to Step 1 of the EOP, and a **CAUTION** prior to Step 3 of the EOP.

Which ONE of the following describes the applicability of these statements during the performance of the EOP?

- A. The NOTE is applicable throughout the entire procedure. The CAUTION applies to Step 3 ONLY.
- B. The NOTE applies to Step 1 ONLY. The CAUTION applies to Step 3 ONLY.
- C. The NOTE is applicable throughout the entire procedure. The CAUTION applies to all steps of the procedure that succeed it.
- D. The NOTE applies to Step 1 ONLY. The CAUTION applies to all steps of the procedure that succeed it.

Proposed Answer: **A**

Explanation (Optional):

- A. Correct.
- B. Incorrect. Note applies to the entire procedure.
- C. Incorrect. Caution applies only to the step it precedes.
- D. Incorrect. Opposite of actual application.

Technical Reference(s): EOP User's Guide (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 3SQS-53.1 Objective 1 (As available)

Question Source: Bank #

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 149**

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Modified Bank # \_\_\_\_\_ (Note changes or attach parent)

New   X  

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge   X    
Comprehension or Analysis \_\_\_\_\_10 CFR Part 55 Content: 55.41   X    
55.43 \_\_\_\_\_

Comments:

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 150**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #	4	
	K/A #	G2.4.48	
	Importance Rating	3.5	

Ability to interpret control room indications to verify the status and operation of system, and understand how operator actions and directives affect plant and system conditions.

Proposed Question: Common 75

Given the following conditions:

- A reactor trip and safety injection have occurred.
- All equipment is operating as designed.
- The crew is performing diagnostic actions of E-0, Reactor Trip Or Safety Injection.
- Containment pressure is 19 psig and LOWERING.
- RCS pressure is 1250 psig and STABLE.
- RCS subcooling margin is 46°F and STABLE.
- RWST level is 700 inches and dropping slowly
- PRZR level is 4% and RISING.
- All AFW pumps are running with 400 gpm flow.
- All RCP's are STOPPED.

Based upon conditions above, which ONE of the following procedures will the crew transition to, which will then provide guidance to start a reactor coolant pump, if it is desired?

- A. ES-1.3, Transfer to Cold Leg Recirculation
- B. ES-0.1, Reactor Trip Response
- C. E-1, Loss Of Reactor Or Secondary Coolant
- D. ES-1.2, Post-LOCA Cooldown And Depressurization

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. Use of ES-1.3 is not appropriate for these conditions.
- B. Incorrect. SI is actuated
- C. Incorrect. E-1 does not start an RCP.
- D. Correct. ES-1.2 is performed which will start RCP's during the RCS cooldown.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 151**

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Technical Reference(s): ES-1.2 (Attach if not previously provided)  
Proposed references to be provided to applicants during examination: NONELearning Objective: 3SQS-53.3 Objective 3 (As available)Question Source: Bank # X  
Modified Bank #  (Note changes or attach parent)  
New Question History: Last NRC Exam Question Cognitive Level: Memory or Fundamental Knowledge   
Comprehension or Analysis X10 CFR Part 55 Content: 55.41 X  
55.43 X

Comments:

Byron Western Technical Services, Inc. Exam Bank ID 42085

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 152**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		1
	Group #		1
	K/A #	025 AA2.02	
	Importance Rating		3.8

Ability to determine and interpret the following as they apply to the Loss of Residual Heat Removal System: Leakage of reactor coolant from RHR into closed cooling water system or into reactor building atmosphere

Proposed Question: SRO 76

Given the following conditions:

- The Unit is in Mode 5.
- RHS Train "B" is in service.
- The following annunciator is received:
  - [A1-5H], Residual Heat Removal System Trouble
- [2RMR\*RQ303A], Containment Airborne Monitor is in alarm.
- RHS flow is oscillating slowly.

Which ONE of the following describes the plant condition and action required under these conditions?

- A. An RHS leak exists in containment. Enter AOP-2.6.5, Shutdown LOCA.
- B. An RHS leak exists in the Auxiliary Building. Enter AOP-2.6.7, Excessive Primary Plant Leakage.
- C. An RHS leak exists in containment. Enter AOP-2.10.1, Residual Heat Removal System Loss.
- D. An RHS leak exists in the Auxiliary Building. Enter AOP-2.6.5, Shutdown LOCA.

Proposed Answer: **C**

Explanation (Optional):

- A. Incorrect. AOP-1.6.5 applies in Modes 3 and 4.
- B. Incorrect. AOP-1.6.7 applies in Modes 1 and 2, and with purge exhaust in alarm, the leak is in containment.
- C. Correct.
- D. Incorrect. AOP-1.6.5 is for Modes 3 and 4, and leak is in containment.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 153**

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Technical Reference(s): AOP-2.10.1 (Attach if not previously provided)  
Proposed references to be provided to applicants during examination: NONELearning Objective: 2SQS-53C.1 Objective 5 (As available)Question Source: Bank #   
Modified Bank #  (Note changes or attach parent)  
New XQuestion History: Last NRC Exam Question Cognitive Level: Memory or Fundamental Knowledge   
Comprehension or Analysis X10 CFR Part 55 Content: 55.41   
55.43 X

Comments:

10CFR55.43(b) item 5 because the SRO must assess plant conditions and choose the correct procedure and action.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 154**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		1
	Group #		1
	K/A #	029 EA2.01	
	Importance Rating		4.7

Ability to determine or interpret the following as they apply to a ATWS: Reactor nuclear instrumentation

Proposed Question: SRO 77

Given the following conditions:

- A manual reactor trip is attempted by the RO.
- Reactor Trip Breaker "B" indicates closed on PSMS.
- All lights on the DRPI display are extinguished.
- Reactor power indicates 6% and stable.
- The crew has entered E-0, Reactor Trip Or Safety Injection.

Which ONE of the following describes the condition of the reactor and the appropriate action?

- A. The reactor is tripped. Continue in E-0, Reactor Trip Or Safety Injection.
- B. The reactor is NOT tripped. Emergency boration is required per ES-0.1, Reactor Trip Response.
- C. The reactor is NOT tripped. Transition to FR-S.1, Response To Nuclear Power Generation - ATWS.
- D. The reactor is NOT tripped. Dispatch an operator to locally trip the reactor and initiate a turbine trip per E-0, Reactor Trip Or Safety Injection.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. Power Range indication does not show prompt drop as expected post-trip.
- B. Incorrect. The reactor is not tripped, transition is to FR-S.1, not ES-0.1.
- C. Correct.
- D. Incorrect. E-0 does not dispatch anyone to locally trip the reactor.

Technical Reference(s): E-0, FR-S.1 (Attach if not previously provided)

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Proposed references to be provided to applicants during examination: NONE

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 155**

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Learning Objective: 3SQS-53.3 Objective 3 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 \_\_\_\_\_  
55.43 X

**Comments:**

10CFR55.43(b) item 5 because the SRO must assess plant conditions and choose the correct procedure.



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 156**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		1
	Group #		1
	K/A #	038 G2.2.25	
	Importance Rating		3.7

Equipment Control Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.

Proposed Question: SRO 78

With the plant in Mode 1, 2, or 3, Technical Specifications limit the RCS activity to  $\leq 0.35 \mu\text{Ci/gm}$  Dose Equivalent I-131.

Which ONE of the following describes the basis for this limit?

- A. In the case of a steam break-induced steam generator tube leakage, ensures offsite dose does not exceed a small fraction of 10CFR100 guidelines.
- B. In case of a LOCA, ensures offsite dose does not exceed a small fraction of 10CFR100 guidelines.
- C. In case of a steam break-induced steam generator tube leakage, ensures offsite dose rates do not exceed 10CFR20 limits.
- D. In case of a LOCA, ensures offsite dose rates do not exceed 10CFR20 limits.

Proposed Answer: A

Explanation (Optional):

- A. Correct.
- B. Incorrect. LOCA is not the concern for RCS activity.
- C. Incorrect. 10CFR20 limits are for normal operation.
- D. Incorrect. LOCA is not the concern, and 10CFR20 limits are for normal operation.

Technical Reference(s): T.S. 3.4.8 Bases (Attach if not previously provided)

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Proposed references to be provided to applicants during examination: NONE

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Learning Objective: 3SQSTS.3 Objective 5.B (As available)

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Question Source: Bank # X

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 157**

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Modified Bank # \_\_\_\_\_ (Note changes or attach parent)

New \_\_\_\_\_

Question History:

Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge

X

Comprehension or Analysis \_\_\_\_\_

10 CFR Part 55 Content: 55.41 \_\_\_\_\_

55.43 X

Comments:

BV-2 Audit 2002

10CFR55.43(b) item 2 because the SRO must understand Technical Specification Bases.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 158**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		1
	Group #		1
	K/A #	058 G2.2.25	
	Importance Rating		3.7

Equipment control Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.

Proposed Question: SRO 79

Given the following conditions:

- The Unit is in Mode 6.
- Refueling is in progress with an irradiated fuel assembly movement in progress in containment.
- Train "A" is the Protected Train.
- Train "B" 125V DC Bus 2-2 is out-of-service for battery replacement.

125VDC Bus 2-3 sustains a fault and is de-energized. The Refueling crew is ordered to complete the move in progress and then suspend refueling operations.

Which ONE of the following describes the reason that **Technical Specifications** requires suspending fuel movement?

- A. The failure of DC Bus 2-3 also makes 120V AC distribution inoperable.
- B. Failure of protected train DC power raises the Shutdown Risk level to an unacceptable RED status.
- C. The plant no longer meets the initial conditions assumed in the safety analysis of a redundant set of AC and DC power sources operable during an assumed loss of off-site AC power and single failure of 1 other AC source.
- D. There is insufficient instrumentation and control power available to recover from a postulated event, such as a Fuel Handling Accident.

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. Even though the statement is true, it is not the reason that fuel movement is suspended.
- B. Incorrect. May be a true statement, but Shutdown Risk and TS are not interdependent.
- C. Incorrect. Basis for operability in Modes 1 - 4. Plant is in Mode 6.
- D. Correct.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 159**

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Technical Reference(s): TS 3.8.2.4 Basis (Attach if not previously provided)  
Proposed references to be provided to applicants during examination: NONELearning Objective: 3SQSTS.3 Objective 5.B (As available)Question Source: Bank #   
Modified Bank #  (Note changes or attach parent)  
New XQuestion History: Last NRC Exam Question Cognitive Level: Memory or Fundamental Knowledge X  
Comprehension or Analysis 10 CFR Part 55 Content: 55.41   
55.43 X

Comments:

10CFR55.43(b) item 2 because the SRO must understand Technical Specification Bases.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 160**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		1
	Group #		1
	K/A #	062 G2.4.31	
	Importance Rating		3.4

Emergency Procedures / Plan Knowledge of Annunciators alarms and indications, and use of the response instructions.

Proposed Question: SRO 80

Given the following conditions:

The Unit is at 100% power with all systems in NSA.

The following annunciators are in alarm:

- [A1-4F], Service Water Pump Auto Start/Auto Stop
- [A1-4G], Service Water Header Pressure Low
- [A1-5F], Standby Service Water Pump Auto Start/Auto Stop

Additionally, the operators note the following conditions:

- [2SWS\*P21A], Service Water Pump is tripped (previously running).
- [2SWE-P21A], Service Water Pump remains in Standby.

Which ONE of the following actions is required to restore the Service Water System?

- A. Start 2SWE-P21A, remove 2SWS\*P21A from service, and place 2SWS\*P21C on the 2AE Bus in accordance with the ARP's and the applicable section of 2OM-30.
- B. Start 2SWE-P21A, remove 2SWS\*P21A from service, and place 2SWS\*P21C on the 2DF Bus in accordance with the ARP's and the applicable section of 2OM-30.
- C. Align 2SWS\*P21B to the "A" header, and place 2SWS\*P21C on the 2AE Bus in accordance with AOP-2.30.1, Service Water/Normal Intake Structure Loss.
- D. Align 2SWS\*P21B to the "A" header, and place 2SWS\*P21C on the 2DF Bus in accordance with AOP-2.30.1, Service Water/Normal Intake Structure Loss.

Proposed Answer: **A**

Explanation (Optional):

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 161**

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- A. Correct. Start the standby pump and place the swing pump on the bus with the pump that is inoperable.
- B. Incorrect. 2DF Bus already has a running SW pump.
- C. Incorrect. Wrong action for the given failure, and wrong procedure use.
- D. Incorrect. Wrong action and wrong bus for the failure given, and wrong procedure usage.

Technical Reference(s): 2OM-30.4.AAA, AAB, AAF (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-30.1 Objective 9 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 \_\_\_\_\_  
55.43 X

**Comments:**

10CFR55.43(b) item 5 because the SRO must assess plant conditions and choose the procedure and actions for mitigation.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 162**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		1
	Group #		1
	K/A #	E11 EA2.1	
	Importance Rating		4.2

Ability to determine and interpret the following as they apply to the (Loss of Emergency Coolant Recirculation) Facility conditions and selection of appropriate procedures during abnormal and emergency operations.

Proposed Question: SRO 81

A reactor trip and safety injection have occurred.

ECA-1.2, LOCA Outside Containment has been entered from E-0, Reactor Trip Or Safety Injection.

After closing the valves listed in ECA-1.2, the following conditions exist:

- RCS pressure is 1400 psig and STABLE.
- ECCS flow is STABLE.

Which ONE of the following describes the status of the LOCA and required action?

- A. The LOCA is isolated. Transition to E-1, Loss Of Reactor Or Secondary Coolant.
- B. The LOCA is NOT isolated. Transition to ECA-1.1, Loss Of Emergency Coolant Recirculation.
- C. The LOCA is NOT isolated. Transition to E-0, Reactor Trip Or Safety Injection.
- D. The LOCA is isolated. Transition to ES-1.1, SI Termination.

Proposed Answer: **B**

Explanation (Optional):

- A. Incorrect. LOCA is NOT isolated with RCS pressure and SI flow stable.
- B. Correct. Unisolable LOCA, use ECA-1.1.
- C. Incorrect. E-0 is the wrong transition.
- D. Incorrect. LOCA is not isolated.

Technical Reference(s): ECA-1.2 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 163**

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Learning Objective: 3SQS-53.3 Objective 3 (As available)

Question Source: Bank # X  
Modified Bank #                      (Note changes or attach parent)  
New                     

Question History: Last NRC Exam                     

Question Cognitive Level: Memory or Fundamental Knowledge                       
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41                       
55.43 X

**Comments:**

BVPS-2 Audit Exam 2002 Western Technical Services, Inc. Exam Bank ID 47439.

10CFR55.43(b) item 5 because the SRO must assess plant conditions and choose the appropriate procedure.



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 164**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		1
	Group #		2
	K/A #	037 G2.4.30	
	Importance Rating		3.6

Emergency Procedures / Plan Knowledge of which events related to system operations/status should be reported to outside agencies.

Proposed Question: SRO 82

Which ONE of the following events requires a **1 HOUR** report to the NRC in accordance with 10CFR50.72?

- A. Initiation of a plant shutdown in accordance with T.S. 3.0.3
- B. Initiation of a Licensee Event Report (LER)
- C. Confirmed violation of Fitness for Duty requirements
- D. Declaration of an Unusual Event

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. 4 Hours
- B. Incorrect. 4 Hours
- C. Incorrect. Within 24 hours
- D. Correct.

Technical Reference(s): 10CFR50.72, BVBP-SITE-0016 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: \_\_\_\_\_ (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 165**

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Question Cognitive Level: Memory or Fundamental Knowledge   X    
Comprehension or Analysis           

10 CFR Part 55 Content: 55.41             
55.43   X  

Comments:

10CFR55.43(b) item 5 because the SRO must assess the event and reportability, and determine the correct time to meet the NRC commitment.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 166**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		1
	Group #		2
	K/A #	E09 EA2.2	
	Importance Rating		3.8

Ability to determine and interpret the following as they apply to the Natural Circulation Operations: Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments

Proposed Question: SRO 83

Given the following conditions:

- A reactor trip has occurred due to a loss of offsite power.
- The crew is performing actions of ES-0.2, Natural Circulation Cooldown.
- RVLIS is **NOT** available.
- The crew has commenced RCS depressurization to 1950 psig.

The following conditions are indicated:

- RCS pressure is 2030 psig and trending DOWN slowly.
- RCS Tav<sub>g</sub> is 547°F and trending DOWN slowly.
- PRZR level is 21% and trending DOWN slowly.

Which ONE of the following actions is required?

- A. Continue depressurization to 1950 psig and block Safety Injection.
- B. Initiate Safety Injection and go to E-0, Reactor Trip Or Safety Injection.
- C. Stop the cooldown, Block SI, and initiate depressurization to 1950 psig.
- D. Stop the depressurization and go to ES-0.4, Natural Circulation Cooldown With Steam Void In Vessel (Without RVLIS).

Proposed Answer: **A**

Explanation (Optional):

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 167**

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- A. Correct. Plant conditions are consistent with maintaining the cooldown.
- B. Incorrect. SI actuation criteria are not met.
- C. Incorrect. SI block does not occur until 1950 psig.
- D. Incorrect. Indications of voiding, or conditions that may cause voiding, do not exist.

Technical Reference(s): ES-0.2 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 3SQSD-53.3 Objective 3 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # X (Note changes or attach parent)  
New \_\_\_\_\_

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 \_\_\_\_\_  
55.43 X

**Comments:**

10CFR55.43(b) item 5 because the SRO must evaluate plant conditions and select the appropriate procedural action.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 168**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		1
	Group #		2
	K/A #	E01 EA2.1	
	Importance Rating		4.0

Ability to determine and interpret the following as they apply to the (Reactor Trip or Safety Injection Rediagnosis) Facility conditions and selection of appropriate procedures during abnormal and emergency operations.

Proposed Question: SRO 84

Given the following conditions:

- A reactor trip and Safety Injection have occurred.
- The crew was performing action contained in E-1, Loss of Reactor or Secondary Coolant.
- The Unit Supervisor was concerned about conflicting indications and the crew entered ES-0.0, Rediagnosis.
- The crew determines that there is an increasing trend on secondary plant radiation monitors.

Which one of the following describes how the crew will transition to the correct procedure?

- A. Go directly to the appropriate E-3 or ECA-3 series procedure.
- B. Return to E-0 diagnostic steps to verify indications that will confirm the event in progress.
- C. Return to E-1 step in effect and use the Symptomatic Response/Unexpected Conditions page to direct entry to E-3.
- D. Direct Chemistry sample of steam generators to confirm radiation monitor readings prior to making a determination of appropriate procedure entry.

Proposed Answer: **A**

Explanation (Optional):

- A. Correct. ES-0.0, Step 3.
- B. Incorrect. Once in ES-0.0, transition back to E-0 will not be made.
- C. Incorrect. Once E-1 is exited, ES-0.0 will direct entry to the appropriate procedure.
- D. Incorrect. Procedure is entered without confirmatory sample.

### Question # 169

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NONE

### 3SQS-53.3 Objective 3

Bank #	X
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**Modified Bank #** (Note changes or attach parent)

**New**

**BVPS-1 2002 NRC Exam #55**

### Comprehension or Analysis

X

55.41

55.43 X

10CFR55.43(b) item 5 because the SRO must determine plant conditions and select appropriate procedure response.

### Question # 170

Technical Reference(s): CSF Status Trees (Attach if not previously provided)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 171**

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Proposed references to be provided to applicants during examination: NONELearning Objective: 3SQS-53.3 Objective 5 (As available)

Question Source: Bank # X  
Modified Bank #                      (Note changes or attach parent)  
New                     

Question History: Last NRC Exam                     

Question Cognitive Level: Memory or Fundamental Knowledge                       
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41                       
55.43 X

**Comments:**

10CFR55.43(b) item 5 because the SRO must evaluate plant conditions and determine the appropriate procedure selection.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 172**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		2
	Group #		1
	K/A #	003 G2.1.33	
	Importance Rating		4.0

Conduct of Operations: Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.

Proposed Question: SRO 86

Given the following conditions:

- The Unit is in Mode 3 during a plant heatup with all RCP's in operation.
- RCP 21B has been stopped due to vibration concerns.
- While investigating the high vibration on RCP 21B, the Unit Supervisor determines that RCP 21C should also be stopped due to vibration concerns.
- RCP 21A is unaffected.

Which ONE of the following actions is required?

- A. Correct the cause of the high vibration on "B" and "C" RCP's or be in Cold Shutdown within 12 hours.
- B. Correct the cause of the high vibration on at least ONE of the affected RCP's or be in Cold Shutdown within 12 hours.
- C. Immediately suspend any operations involving a reduction in RCS boron concentration and initiate corrective action to restore at least ONE RCP to service.
- D. Immediately de-energize control rod drive mechanisms or align the rod control system so it is incapable of control rod withdrawal.

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. Action for Hot Shutdown with loop not operable.
- B. Incorrect. Action for Hot Shutdown with loop not operable.
- C. Incorrect. Action for all loops inoperable, or none in operation.
- D. Correct.

Technical Reference(s): TS 3.4.1.2 (Attach if not previously provided)

### Question # 173

10CFR55.43(b) item 2 because the SRO must understand Technical Specification LCO's.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 174**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		2
	Group #		1
	K/A #	010 G2.2.22	
	Importance Rating		4.1

Equipment Control: Knowledge of limiting conditions for operations and safety limits.

Proposed Question: SRO 87

With the Unit in Mode 1, the relief capacity of \_\_\_\_\_ pressurizer safety valve(s) is greater than the maximum surge rate resulting from a complete loss of load WITHOUT immediate reactor trip, assuming \_\_\_\_\_ operation.

- A. all no PORV or Steam Dump
- B. all PORV and Steam Dump
- C. each no PORV or Steam Dump
- D. each PORV and Steam Dump

Proposed Answer: **A**

Explanation (Optional):

- A. Correct.
- B. Incorrect. No PORV or steam dump assumed.
- C. Incorrect. All safety valves combined, not each.
- D. Incorrect. All safety valves combined, not each, and no PORV or steam dump assumed.

Technical Reference(s): Tech Spec 3.4.3 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: \_\_\_\_\_ (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 175**

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Question Cognitive Level: Memory or Fundamental Knowledge   X    
Comprehension or Analysis           

10 CFR Part 55 Content: 55.41             
55.43   X  

**Comments:**

10CFR55.43(b) item 2 because the SRO must understand the basis for operability of equipment required by Technical Specifications.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 176**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		2
	Group #		1
	K/A #	039 A2.05	
	Importance Rating		3.6

Ability to (a) predict the impacts of the following mal-functions or operations on the MRSS; and (b) based on predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Increasing steam demand, its relationship to increases in reactor power

Proposed Question: SRO 88

Given the following conditions:

- The plant is at 100% power with all systems in NSA.
- The RO has recently performed a small dilution for Tavg control.
- The following indications are available in the Control Room:
  - Power Range NI's are increasing.
  - Tavg is decreasing.
  - Steam flow and feed flow are slightly elevated.

Reactor power is 101% and rising slowly.

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

- A. Main steam line leak; reduce power by reducing turbine load as necessary.
- B. Inadvertent RCS dilution; reduce power and Tavg by inserting control rods.
- C. Main steam line leak; trip the reactor and enter E-0, Reactor Trip Or Safety Injection.
- D. Inadvertent RCS dilution; trip the reactor and enter E-0, Reactor Trip Or Safety Injection.

Proposed Answer: A

Explanation (Optional):

- A. Correct. Power increasing and temperature decreasing mean the transient is induced by the secondary (steam demand).
- B. Incorrect. Temperature would be rising if a dilution was occurring.
- C. Incorrect. No requirement for a reactor trip.
- D. Incorrect. Not a dilution, and no reactor trip requirement is met.

Technical Reference(s): Simulator Response (Attach if not previously provided)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 177**

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Proposed references to be provided to applicants during examination: NONE

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Learning Objective: \_\_\_\_\_ (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 \_\_\_\_\_  
55.43 X

Comments:

10CFR55.43(b) item 5 because the SRO must evaluate plant conditions and determine appropriate procedural action.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 178**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		2
	Group #		1
	K/A #	078 A2.01	
	Importance Rating		2.9

Ability to (a) predict the impacts of the following malfunctions or operations on the IAS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Air dryer and filter malfunctions

Proposed Question: SRO 89

Given the following conditions:

- The Unit is at 100% power with all systems in NSA.
- [2IAS-PI106], Instrument Air Pressure has been slowly decreasing and is reading 85 psig.
- The crew enters AOP-2.34.1, Loss Of Station Instrument Air.
- All station air compressors are running. No reports of air leakage have been received.

Which one of the following actions will be performed next in accordance with AOP-2.34.1, Loss Of Station Instrument Air?

- A. Place the instrument air dryer bypass filters in service.
- B. Place feedwater regulating valve control in MANUAL.
- C. Start the motor driven AFW pumps.
- D. Trip the reactor and enter E-0, Reactor Trip Or Safety Injection.

Proposed Answer: **A**

Explanation (Optional):

- A. Correct.
- B. Incorrect. Air pressure not low enough.
- C. Incorrect. Have not lost control of MFP's, no need to start MDAFW pumps.
- D. Incorrect. Reactor trip criteria on low air pressure is not met.

Technical Reference(s): AOP-2.34.1 (Attach if not previously provided)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 179**

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Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-53C.1 Objective 5 (As available)

Question Source: Bank # X  
Modified Bank #                      (Note changes or attach parent)  
New                     

Question History: Last NRC Exam 2002

Question Cognitive Level: Memory or Fundamental Knowledge X  
Comprehension or Analysis                     

10 CFR Part 55 Content: 55.41                       
55.43 X

Comments:

10CFR55.43(b) item 5 because the SRO must evaluate plant conditions and determine appropriate procedural action.



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 180**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		2
	Group #		1
	K/A #	103 G2.1.12	
	Importance Rating		4.0

Conduct of Operations: Ability to apply Technical Specifications for a system

Proposed Question: SRO 90

While operating in Mode 4, which ONE of the following is required to be operable for each containment airlock?

- A. Both doors
- B. Only the inner door
- C. Only the outer door
- D. Only one door, either the inner or outer door

Proposed Answer: **A**

Explanation (Optional):

- A. Correct. Modes 1 – 4, CTMT integrity requires 2 airlock doors.
- B. Incorrect. Two doors are required.
- C. Incorrect. Two doors are required.
- D. Incorrect. Two doors are required.

Technical Reference(s): Tech Spec 3.6.3 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: \_\_\_\_\_ (As available)

Question Source: Bank # X  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New \_\_\_\_\_

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 181**

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Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge   X    
Comprehension or Analysis \_\_\_\_\_

10 CFR Part 55 Content: 55.41 \_\_\_\_\_  
55.43   X  

Comments:

BVPS-2 2002 NRC exam

10CFR55.43(b) item 2 because the SRO must know basis for equipment operability.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 182**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		2
	Group #		2
	K/A #	001 G2.1.32	
	Importance Rating		3.8

Conduct of Operations: Ability to explain and apply all system limits and precautions.

Proposed Question: SRO 91

The Unit is in Mode 1 at 89% power. Control Bank "D" Group 1 indicates the following:

- Group step counter position is 196 steps.
- DRPI indicates the following:
  - Control Rod H02 at 194 steps.
  - Control Rod H14 at 205 steps.
  - Control Rod P08 at 182 steps.
  - Control Rod B08 at 180 steps.

Which ONE of the following describes the action(s) required by Technical Specifications and AOP-2.1.8, Rod Inoperability?

- A. Immediately trip the reactor and emergency borate the RCS.
- B. Reduce thermal power to less than 80% within 1 hour and restore both control rods to within alignment within 2 hours.
- C. Restore both control rods to within alignment in 2 hours or be in Hot Standby within 6 hours.
- D. Verify shutdown margin is within the limits within 1 hour and be in Hot Standby within 6 hours.

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. A reactor trip is required for 2 dropped rods. Boration for stuck rods.
- B. Incorrect. Power reduction is not required for rod misalignment.
- C. Incorrect. More than 1 rod is misaligned. No opportunity provided for restoration.
- D. Correct.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 183**

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Technical Reference(s): AOP-2.1.8 (Attach if not previously provided)  
Tech Spec 3.1.3.1

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-53C.1 Objective 5 (As available)

Question Source: Bank # X  
Modified Bank #                      (Note changes or attach parent)  
New                     

Question History: Last NRC Exam 2002

Question Cognitive Level: Memory or Fundamental Knowledge                       
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41                       
55.43 X

**Comments:**

10CFR55.43(b) item 2 and item 5 because the SRO must choose the appropriate action for the plant condition in accordance with Technical Specifications.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 184**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		2
	Group #		2
	K/A #	035 A2.01	
	Importance Rating		4.5

Ability to (a) predict the impacts of the following malfunctions or operation on the SG/S system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Faulted or Ruptured SG

Proposed Question: SRO 92

Given the following conditions:

- A reactor trip and safety injection have occurred.
- RCS pressure is 1600 psig and DECREASING.
- PRZR level is offscale LOW.
- Tavg is 500°F and DECREASING.
- Containment pressure is 3 psig and INCREASING.
- SG 21A pressure is 620 psig and DECREASING.
- SG 21B and 21C pressures are 900 psig and STABLE.

Which ONE of the following procedures will be used immediately following transition from E-0, Reactor Trip Or Safety Injection?

- A. ES-1.1, SI Termination
- B. ES-1.2, Post LOCA Cooldown And Depressurization
- C. E-2, Faulted Steam Generator Isolation
- D. ES-0.1, Reactor Trip Response

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. Criteria is not met for SI Termination.
- B. Incorrect. Transition to ES-1.2 occurs from E-1.
- C. Correct.
- D. Incorrect. SI is actuated, ES-0.1 would not apply.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 185**

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Technical Reference(s): E-2 Entry, E-0 (Attach if not previously provided)  
Proposed references to be provided to applicants during examination: NONELearning Objective: 3SQS-53.3, Objective 3 (As available)Question Source: Bank #   
Modified Bank # X (Note changes or attach parent)  
New Question History: Last NRC Exam Question Cognitive Level: Memory or Fundamental Knowledge   
Comprehension or Analysis X10 CFR Part 55 Content: 55.41   
55.43 X

Comments:

BVPS-1 2002 Audit Exam

10CFR55.43(b) item 5 because the SRO must assess conditions and choose the correct procedure for the event in progress.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 186**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		2
	Group #		2
	K/A #	056 G2.4.50	
	Importance Rating		3.3

Emergency Procedures / Plan Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.

Proposed Question: SRO 93

The Unit is at 72% power with all systems in NSA.

The following annunciators are in alarm:

- [A6-5D], Condensate Pump Auto Start-Stop
- [A6-10B], Steam Generator Feed Pump 21A/B Suction Press Low

The BOP determines that Condensate Pump 21B has tripped. The control switch bright white indication is LIT.

Condensate Pump 21C trips on overcurrent when a manual start is attempted.

Which ONE of the following describes the action required?

- A. Verify all heater drain and separator drain receiver pumps are running and maintain current power level until at least two condensate pumps are running.
- B. Reset and attempt ONE (1) restart of Condensate Pump 21B.
- C. Reduce power to less than 65% in accordance with AOP-2.24.1, Loss Of Main Feedwater.
- D. Reduce load in accordance with AOP-2.24.1, Loss Of Main Feedwater, until Annunciator [A6-10B] is clear.

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. Reactor will trip if current conditions are maintained.
- B. Incorrect. Bright white indication would preclude restart of the pump.
- C. Incorrect. Action is for a loss of a main feed pump.
- D. Correct.

Technical Reference(s): 2OM-22A.4.AAC (Attach if not previously provided)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 187**

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2OM-24.4.AAF

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Proposed references to be provided to applicants during examination: NONE

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Learning Objective: 2SQS-53C.1 Objective 5 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 \_\_\_\_\_  
55.43 X

Comments:

10CFR55.43(b) item 5 because the SRO must assess plant conditions and choose the appropriate procedure.



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 188**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		3
	Group #		1
	K/A #	G2.1.20	
	Importance Rating		4.2

Ability to execute procedure steps.

Proposed Question: SRO 94

Given the following conditions:

- The crew is performing E-0, Reactor Trip Or Safety Injection.
- The BOP has been directed to perform Attachment A-0.11, Verification Of Automatic Actions.
- While performing Attachment A-0.11, the US determines that a transition to E-1, Loss Of Reactor Or Secondary Coolant is necessary.

Which ONE of the following actions is required?

- A. Discontinue action in Attachment A-0.11 until directed by E-1.
- B. Continue action in Attachment A-0.11, but do not perform actions of any other Attachment until directed by E-1.
- C. Complete the action in Attachment A-0.11 prior to transitioning to E-1.
- D. Transition to E-1 and continue action as necessary in Attachment A-0.11.

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. Attachment A-0.11 is in progress and must be completed.
- B. Incorrect. If other attachments become necessary, they will be performed as resources are available.
- C. Incorrect. Performance of Attachment A-0.11 will not delay the actions of E-1.
- D. Correct.

Technical Reference(s): EOP User's Guide (Attach if not previously provided)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 189**

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Proposed references to be provided to applicants during examination: NONE

Learning Objective: 3SQS-53.1 Objective 1 (As available)

Question Source: Bank # X  
Modified Bank #                      (Note changes or attach parent)  
New                     

Question History: Last NRC Exam                     

Question Cognitive Level: Memory or Fundamental Knowledge X  
Comprehension or Analysis                     

10 CFR Part 55 Content: 55.41                       
55.43 X

**Comments:**

BVPS-1 2002 Audit Exam

10CFR55.43(b) item 5 because the SRO must evaluate plant conditions and determine the correct procedural response.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 190**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		3
	Group #		1
	K/A #	G2.1.14	
	Importance Rating		3.3

Knowledge of system status criteria which require the notification of plant personnel.

Proposed Question: SRO 95

You are the Unit Supervisor on night shift, Saturday evening.

You receive a report from the Outside Tour Operator that a safety related component is mispositioned and there is indication of tampering.

Which ONE of the following describes the action required in accordance with 1/2-ADM-0701, Reporting and Notification of Potential Mispositioning or Tampering Events?

- A. Direct the Operator to reposition the component and immediately report to the Control Room. Notify the Security Shift Supervisor.
- B. Direct the Operator to reposition the component and immediately report to the Control Room. Direct the PAB Tour Operator to second check the component position.
- C. Direct the Operator to leave the component in its current position and remain in the area. Direct the PAB Tour Operator to verify the mispositioning.
- D. Direct the Operator to leave the component in its current position and remain in the area. Notify the Security Shift Supervisor.

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. The component must not be repositioned.
- B. Incorrect. The component must not be repositioned, thus no second check either.
- C. Incorrect. A second verification is not required; Security must be notified.
- D. Correct.

Technical Reference(s): 1/2-ADM-0701 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: \_\_\_\_\_

Learning Objective: \_\_\_\_\_ (As available)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 191**

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Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge X  
Comprehension or Analysis \_\_\_\_\_

10 CFR Part 55 Content: 55.41 \_\_\_\_\_  
55.43 X

Comments:

10CFR55.43(b) item 5 because the SRO must determine the event and evaluate procedural action.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 192**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		3
	Group #		2
	K/A #	G2.2.28	
	Importance Rating		3.5

Knowledge of new and spent fuel movement procedures.

Proposed Question: SRO 96

Given the following conditions:

- The Unit is in Mode 6.
- Core reload is being initiated in accordance with 1/2RP-3.24, Core Reload.
- Prior to an assembly being placed on the manipulator crane, it is desired to reposition a fuel assembly loading guide (shoehorn).
- A bridge and trolley interlock must be defeated to access and reposition the loading guide.

Which ONE of the following describes the requirement(s) that must be met in order to defeat interlocks required to reposition the loading guide?

- A. Refueling SRO only must grant permission.
- B. Shift Manager and Refueling SRO must grant permission.
- C. The evolution must be governed by a written procedure and the Hoist interlock may NOT be bypassed.
- D. The evolution must be governed by a written procedure and the Refueling SRO must grant permission.

Proposed Answer: **A**

Explanation (Optional):

- A. Correct.
- B. Incorrect. Shift Manager permission not required.
- C. Incorrect. Hoist interlock restriction does not exist, and a written procedure only required for defeating interlocks when not moving lights or positioning loading guides.
- D. Incorrect. Written procedure not required if only positioning lights or loading guides.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 193**

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Technical Reference(s): 1/2 RP-3.24 (Attach if not previously provided)  
Proposed references to be provided to applicants during examination: NONELearning Objective:  (As available)Question Source: Bank #   
Modified Bank #  (Note changes or attach parent)  
New XQuestion History: Last NRC Exam Question Cognitive Level: Memory or Fundamental Knowledge X  
Comprehension or Analysis 10 CFR Part 55 Content: 55.41   
55.43 X**Comments:**

10CFR55.43(b) item 6 and item 7 because the SRO must understand responsibilities of Refueling personnel related to bypassing interlocks on Refueling Equipment

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 194**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		3
	Group #		2
	K/A #	G2.2.22	
	Importance Rating		4.1

Knowledge of limiting conditions for operations and safety limits.

Proposed Question: SRO 97

During hydrostatic testing of the RCS in Mode 5, RCS pressure is increased to 2770 psig.

Which ONE of the following describes the **MAXIMUM** time allowed in accordance with Technical Specifications to reduce pressure below the Safety Limit?

- A. 5 minutes
- B. 15 minutes
- C. 30 minutes
- D. 1 hour

Proposed Answer: **A**

Explanation (Optional):

- A. Correct.
- B. Incorrect. Corresponds to time allotted to notify local authorities.
- C. Incorrect. Time frame is not relevant, used for symmetry.
- D. Incorrect. Corresponds to time allotted to notify the NRC.

Technical Reference(s): Tech Spec 2.1.2 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: \_\_\_\_\_

Learning Objective: \_\_\_\_\_ (As available)

Question Source:	Bank #	X	
	Modified Bank #		(Note changes or attach parent)
	New		

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 195**

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Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge   X    
Comprehension or Analysis \_\_\_\_\_10 CFR Part 55 Content: 55.41 \_\_\_\_\_  
55.43   X  

Comments:

10CFR55.43(b) item 2 because the SRO must evaluate an action requirement when a safety limit has been violated.



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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 196**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		3
	Group #		3
	K/A #	G2.3.9	
	Importance Rating		3.4

Knowledge of the process for performing a containment purge.

Proposed Question: SRO 98

The Unit is in Mode 5. Containment purge through the SLCRS unfiltered flow path is being initiated.

[2HVR\*MOD23A], CNMT Purge Discharge Isol Damper, [2HVR\*MOD21, 22], Containment Purge Exhaust Motor Operated Dampers, and [2HVR\*MOD25A], CNMT Purge Supply Damper are in their correct positions.

Which ONE of the following describes the correct sequence for completing the Containment purge lineup in accordance with 2OM-44C.4.A, Containment Air Purge And Exhaust System Startup?

- A. Place the NORMAL/PURGE control switch for containment purge air supply to PURGE. Start 2HVS-FN263B, Leak Collection Normal Exhaust Fan and throttle 2HVR\*MOD23B to obtain the desired flow rate required by the RWDA permit.
- B. Start 2HVS-FN263B, Leak Collection Normal Exhaust Fan. Place the NORMAL/PURGE control switch for containment purge air supply to PURGE and throttle 2HVR\*MOD23B to obtain the desired flow rate required by the RWDA permit.
- C. Throttle 2HVR\*MOD23B to obtain the setpoint required by the RWDA permit. Place the NORMAL/PURGE control switch for containment purge air supply to PURGE. Start 2HVS-FN263B, Leak Collection Normal Exhaust Fan.
- D. Place the NORMAL/PURGE control switch for containment purge air supply to PURGE. Throttle 2HVR\*MOD23B to obtain the setpoint required by the RWDA permit. Start 2HVS-FN263B, Leak Collection Normal Exhaust Fan.

Proposed Answer: A

Explanation (Optional):

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 197**

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- A. Correct.
- B. Incorrect. Place switch in PURGE first.
- C. Incorrect. No setpoint, actual flow rate is obtained. Also, out of order sequence.
- D. Incorrect. No setpoint, actual flow rate is obtained. Also, out of order sequence.

Technical Reference(s): 2OM-44C.4.A (Attach if not previously provided)  
\_\_\_\_\_

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-44C.1 Objective 1 (As available)

Question Source: Bank # \_\_\_\_\_  
Modified Bank # X (Note changes or attach parent)  
New \_\_\_\_\_

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge \_\_\_\_\_  
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 \_\_\_\_\_  
55.43 X

**Comments:**

10CFR55.43(b) item 4 because the SRO must know the proper procedure to line up containment systems related to radioactive release.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 198**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	_____	3
	Group #	_____	4
	K/A #	G2.4.35	_____
	Importance Rating	_____	3.5

Knowledge of local auxiliary operator tasks during emergency operations including system geography and system implications.

Proposed Question: SRO 99

Given the following conditions:

- You are the Shift Manager.
- The Control Room is being evacuated due to a fire.
- The affected fire area is CB-1, Cable Spreading Area.
- You are assigning responsibilities.
- The Outside Tour Operator is available to perform 2OM-56C.4.E, Nuclear Operator #2.

Which ONE of the following actions will the Outside Tour Operator perform?

- A. Go to the Alternate Shutdown Panel and initiate equipment transfer to LOCAL.
- B. Manual feed SG's using the turbine driven AFW pump.
- C. Align charging pump control for manual local operation.
- D. Align valves in the PAB by isolating and venting their air supplies.

Proposed Answer: **D**

Explanation (Optional):

- A. Incorrect. Unit Supervisor will go to the ASP.
- B. Incorrect. This is performed from the ASP.
- C. Incorrect. This is performed from the ASP.
- D. Correct.

Technical Reference(s): 2OM-56C.4.E (Attach if not previously provided)  
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Proposed references to be provided to applicants during examination: NONE

Learning Objective: 2SQS-56C.1 Objective 2 (As available)

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 199**

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Question Source: Bank # \_\_\_\_\_  
Modified Bank # \_\_\_\_\_ (Note changes or attach parent)  
New X

Question History: Last NRC Exam \_\_\_\_\_

Question Cognitive Level: Memory or Fundamental Knowledge X  
Comprehension or Analysis \_\_\_\_\_

10 CFR Part 55 Content: 55.41 \_\_\_\_\_  
55.43 X

**Comments:**

10CFR55.43(b) item 5 because the SRO must direct the actions of Operators during an emergency requiring control room evacuation.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 200**

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Examination Outline Cross-reference:	Level	RO	SRO
	Tier #		3
	Group #		4
	K/A #	G2.4.4	
	Importance Rating		4.3

Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.

Proposed Question: SRO 100

Given the following conditions:

- The Unit is operating at 100% power.
- EDG 2-2 is out of service and is expected to return to service in two (2) hours.
- A loss of offsite power occurs.
- The reactor is tripped and the crew enters E-0, Reactor Trip Or Safety Injection.
- SI is **NOT** actuated.
- The crew made a transition to FR-H.1, Loss Of Secondary Heat Sink based on a CSFST RED Path.

Subsequently, EDG 2-1 output breaker trips on a bus fault.

Which ONE of the following actions will be taken?

- A. Immediately transition to ECA-0.0, Loss Of All 4KV Emergency Power.
- B. Restore feed flow in FR-H.1, and then return to E-0 to restore EDG 2-1.
- C. Remain in FR-H.1 until directed to return to procedure in effect, and then transition to ECA-0.0.
- D. Remain in FR-H.1 unless a higher priority RED condition is observed. When directed to return to procedure in effect, return to E-0. Restore EDG 2-1 or 2-2 in ES-0.1, Reactor Trip Response.

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**BVPS - 2LOT5 NRC Written Exam**

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**Question # 201**

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Proposed Answer: **A**

Explanation (Optional):

- A. Correct.
- B. Incorrect. No AC power is available, therefore transition to ECA-0.0 is required.
- C. Incorrect. Transition to ECA-0.0 immediately, even if a RED condition exists.
- D. Incorrect. This would be correct if only one EDG was tripped.

Technical Reference(s): ECA-0.0, EOP User's Guide (Attach if not previously provided)  
Proposed references to be provided to applicants during examination: NONELearning Objective: 3SQS-53.1 Objective 1 (As available)

Question Source: Bank # X  
Modified Bank #  (Note changes or attach parent)  
New

Question History: Last NRC Exam 

Question Cognitive Level: Memory or Fundamental Knowledge   
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41   
55.43 X

Comments:

Robinson 2002 NRC Exam

10CFR55.43(b) item 5 because the SRO must assess facility conditions and determine the appropriate procedural action during a loss of all 4KV AC power.

## BVPS - 2LOT5 NRC Written Exam

03/07/05

«FirstName» «LastName»

SSN «SSN»

- |             |             |             |             |
|-------------|-------------|-------------|-------------|
| 1. A B C D  | 26. A B C D | 51. A B C D | 76. A B C D |
| 2. A B C D  | 27. A B C D | 52. A B C D | 77. A B C D |
| 3. A B C D  | 28. A B C D | 53. A B C D | 78. A B C D |
| 4. A B C D  | 29. A B C D | 54. A B C D | 79. A B C D |
| 5. A B C D  | 30. A B C D | 55. A B C D | 80. A B C D |
| 6. A B C D  | 31. A B C D | 56. A B C D | 81. A B C D |
| 7. A B C D  | 32. A B C D | 57. A B C D | 82. A B C D |
| 8. A B C D  | 33. A B C D | 58. A B C D | 83. A B C D |
| 9. A B C D  | 34. A B C D | 59. A B C D | 84. A B C D |
| 10. A B C D | 35. A B C D | 60. A B C D | 85. A B C D |
| 11. A B C D | 36. A B C D | 61. A B C D | 86. A B C D |
| 12. A B C D | 37. A B C D | 62. A B C D | 87. A B C D |
| 13. A B C D | 38. A B C D | 63. A B C D | 88. A B C D |
| 14. A B C D | 39. A B C D | 64. A B C D | 89. A B C D |
| 15. A B C D | 40. A B C D | 65. A B C D | 90. A B C D |
| 16. A B C D | 41. A B C D | 66. A B C D | 91. A B C D |
| 17. A B C D | 42. A B C D | 67. A B C D | 92. A B C D |
| 18. A B C D | 43. A B C D | 68. A B C D | 93. A B C D |
| 19. A B C D | 44. A B C D | 69. A B C D | 94. A B C D |
| 20. A B C D | 45. A B C D | 70. A B C D | 95. A B C D |
| 21. A B C D | 46. A B C D | 71. A B C D | 96. A B C D |
| 22. A B C D | 47. A B C D | 72. A B C D | 97. A B C D |
| 23. A B C D | 48. A B C D | 73. A B C D | 98. A B C D |
| 24. A B C D | 49. A B C D | 74. A B C D | 99. A B C D |
| 25. A B C D | 50. A B C D | 75. A B C D | 100.        |