

# Final Submittal

(Blue Paper)

1. Combined RO/SRO Written Exam with KAs,  
Answers, References, and Analysis

## **BRUNSWICK EXAM**

**50-2003-301**

**50-325 & 50-324**

**FEBRUARY 10 - 13 & 19, 2003**

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

1. 201001K1.01 001/T2G1//CONTROL ROD DRIVE/MEM 3.1/3.1/N/BSEP 2003/R/TCK/R/C

Which ONE of the following is the normal supply to the suction of the CRD pumps?

- A. Condensate System upstream of the deepbed demineralizers.
- B. CST from the same line that supplies the HPCI system.
- C. Condensate System downstream of the deepbed demineralizers.
- D. CST from the same line that supplies the Core Spray systems.

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### Feedback

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References: SD-08, CRD Hydraulic System, Rev.4, pg.11

- A. Incorrect since the supply is from the Condensate System downstream of the deepbed demineralizers.
- B. Incorrect since the alternate supply is the CST from the same line as the Core Spray systems.
- C. Correct answer.
- D. Incorrect since this is the alternate supply to the CRD pump suction.

## QUESTIONS REPORT

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2. 201002A3.03 001/T2G1/T2G2/RMCS/C/A 3.2/3.2/B/BSEP 2003/C/LSM/R/C

During a reactor startup, Control Rod 34-39 is selected to be NOTCHED OUT from Position 10 to Position 12. The RWM Withdraw Limit is Position 16.

After initiating ROD OUT NOTCH Sequence, the Operator observes:

Full Core Display white select light for Control Rod 34-39 is OFF.  
4-Rod Display indicates Control Rod 34-39 STOPPING at Position 14.  
Control Rod Select Matrix Backlighting is UNCHANGED  
Rod Drift alarm is sealed in

Which ONE of the following has occurred?

- A. The RMCS Timer has failed.
- B. The RPIS Reed Switch at Position 12 has failed.
- C. UPS supply breaker to rod select power has tripped.
- D. RWM is enforcing a Withdraw Block.

### Feedback

93. LOI-CLS-LP-007-A\*06B001

A. The symptoms listed are those of a Select Block initiated by the RMCS Backup 2 Second Timer. The key to the question is understanding that the 2 Second Timer has timed out with the RMCS Solid State Timer still running. The 2 Second Timer deselected the control rod in order to cause rod withdrawal motion to cease. This type of deselection occurs with no alarms and causes the Full Core Display's White Light for that particular control rod to go out. The Select Matrix will appear as though nothing is wrong.

LESSON 2: LOI-CLS-LP-007-A  
REFERENCES: SD-07\*

LESSON 2 OBJECTIVE: 10d

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3. 201002K3.01 001/T2G1//RMCS/C/A 3.4/3.4/N/BSEP 2003/R/TCK/R/C

Which ONE of the following is the result of a total loss of 28 VDC from 120 VAC Vital UPS to Unit 1?

- A. Normal control rod movement is unavailable.
- B. Automatic Depressurization System (ADS) will not actuate automatically.
- C. The High Pressure Coolant Injection System will not actuate automatically.
- D. All SRM's and IRM's would be inoperable.

### Feedback

References: SD-07, Reactor Manual Control System, Rev.1, pg 10  
SD-51, DC Distribution System, Rev.2, pg 51

- A. Correct answer. The 28 VDC is powered from UPS and interrupts power to the select matrix.
- B. Incorrect since 125 VDC is the power supply to ADS logic.
- C. Incorrect since 125 VDC is the power supply to the HPCI System.
- D. Incorrect since 24/48 VDC is the power supply to the NI's.

## QUESTIONS REPORT

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4. 201002K402 001/T2G1/T2G2/FUEL HANDLING/MEM 3.5/3.5/B/BSEP 2003/C/LSM/TCK/R/C

Which ONE of the following describes the conditions under which the "Rod Select Permissive" light is illuminated?

- A. REFUEL only and indicates all control rods are fully inserted; rod select power is Off or rod select power is On with no rod selected.
- B. REFUEL only and indicates all control rods are fully inserted except for the selected rod; rod select power is On with only one rod selected.
- C. SHUTDOWN or REFUEL and indicates all control rods are fully inserted; rod select power is Off or rod select power is On with no rod selected.
- D. SHUTDOWN or REFUEL and indicates all control rods are fully inserted except for the selected rod; rod select power is On with only one rod selected.

### Feedback

A. Per SD-07 Section 2.1.3; Rod Motion Inhibits: The Rod Select Permissive light will be energized if all the following conditions exist:

All rods fully inserted

Mode Switch in REFUEL

Either rod select power on with no rods selected or rod select power off.

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5. 201003A2.09 001/T2G2//CRD SYSTEM/C/A 3.2/3.4/N/BSEP 2003/R/TCK/R/C

Unit 2 is in Mode 2 starting up after a refueling outage. The following conditions exist at this time:

Reactor water level	normal band
Reactor power	Range 8 on all IRM's
Reactor pressure	700 psig
Reactor temperature	505 °F
2B CRD Pump	Out-of-service

Alarm APP A-05 3-1, CRD PUMP 2A LO SUCT PRESS annunciates and the 2A CRD Pump has tripped. The operator is unable to restart the 2A CRD pump.

Which ONE of the following indicates the action that should be taken per 0AOP-02.0, *Control Rod Malfunction/Misposition* if unable to move control rods?

- A. Monitor CRD temperatures and expedite repairs of the 2B CRD Pump so that it can be started.
- B. Insert a manual scram if any control rod starts to drift.
- C. Trip both Recirc Pumps due to loss of seal purge.
- D. Insert a manual scram immediately.

### Feedback

References: SD-08, CRD Hydraulic System, Rev.4 pg 41  
AOP-02.0, Control Rod Malfunction/Misposition, Rev.11, pg 3  
APP A-05 3-1, CRD PUMP 2A LO SUCT PRESS

- A. Incorrect since you can't wait until the out-of-service pump is fixed.
- B. Incorrect since you don't manually scram until more than 1 CRD drifts.
- C. Incorrect since you can still run the Recirc pumps if you have seal cooling.
- D. Correct answer.

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6. 201003K3.01 001/T2G2//CONTROL ROD DRIVE/C/A 3.2/3.4/N/BSEP 2003/R/TCK/R/C

Unit 1 is at 90% RTP and a central control rod needs to be withdrawn from position 00 to position 24. While withdrawing the control rod it becomes uncoupled and remains at position 00.

Which ONE of the following conditions should alert the operator that the control rod is uncoupled?

- A. The operator receives a "CONTROL ROD UNCOUPLED" annunciator.
- B. ✓ Reactor power is not increasing on the LPRM bar graphs displayed on the Rod Block Monitors.
- C. The control rod withdraw time will be noticeably faster while withdrawing the control rod.
- D. The operator will receive a "ROD OVERTRAVEL." annunciator.

### Feedback

References: SD-07, Reactor Manual Control System, Rev.1

- A. Incorrect since an alarm doesn't exist for "uncoupled control rod".
- B. Correct answer.
- C. Control rod withdraw time will not change since needle valve position has not changed.
- D. Incorrect since the control rod is not being withdrawn to position 48.

## QUESTIONS REPORT

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7. 201006G2.2.12 001/T2G2//ROD WORTH MINIMIZER/C/A 3.0/3.4/N/BSEP 2003/R/TCK/R/C

Which ONE of the following describes the plant conditions required to perform the Rod Worth Minimizer Operability surveillance prior to startup?

- A. Mode Switch in REFUEL with reactor in Mode 4.
- B. Mode Switch in REFUEL with reactor in Mode 2.
- C. Mode Switch in START/HOT STBY with reactor in Mode 2.
- D. Mode Switch in START/HOT STBY with reactor in Mode 4.

### Feedback

References: OGP-01, Prestartup Checklist, Rev.156

- A. Incorrect since the Mode Switch must be in START/HOT STBY.
- B. Incorrect since the Mode Switch must be in START/HOT STBY.
- C. Correct answer.
- D. Incorrect since the reactor is in Mode 2 with Mode Switch in START/HOT STBY unless Reactor Mode Switch testing is in progress.



## QUESTIONS REPORT

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8. 202001A1.07 001/T2G2/T2G2/RECIRC SYSTEM/C/A 2.7/2.8/B/BSEP 2003/C/LSM/R/C

Unit Two was 95% power when annunciator A-07 2-2, REACTOR WATER LEVEL HIGH/LOW, alarmed. Feed pump "B" Flow Controller is in manual following erratic operation in automatic. Plant conditions are:

Reactor power	83% lowering
Reactor water level	+180 inches rising
Feedwater Flow A	5.3 Mlbs/hr
Feedwater Flow B	0.9 Mlbs/hr
Recirc Pump A Speed	63% lowering
Recirc Pump B Speed	70% lowering
Core Flow	59 Mlbs/hr lowering

Which ONE of the following describe the actions that should be taken?

- A. Lock the scoop tube for the 'A' Recirc pump; monitor for Thermal Hydraulic Instabilities.
- B. Lock the scoop tubes of both recirc pumps and then monitor for Thermal Hydraulic Instabilities.
- C. After level is restored, adjust recirc pump potentiometers to match demand and speed, and reset runback.
- D. Take manual control of recirc pump speeds and ensure that a mismatch of greater than 10% does not occur.

### Feedback

REFERENCES: OP-02, S. 8.3, R. 75, AOP-23, SECT. 2.1, REV.3  
QTRAK REF. NO: R281

45.LOI-CLS-LP-002-A\*029001

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9. 202002K4.06 001/T2G1/T2G1/RECIRC SYSTEM/C/A 3.1/3.1/M/BSEP 2003/C/LSM/TCK/R/C

Unit Two (2) is in Mode 1, in an active LCO for Recirculation Pump 2A out of service. Preparations are in progress to restart Recirculation Pump 2A per *OP-02, Reactor Recirculation System Operating Procedure*. The following data is recorded within 30 minutes of the planned start of Recirculation Pump 2A:

Reactor pressure	985 psig
Bottom head drain temp	410°F
Recirc loop A temp	486°F
Recirc loop B temp	522°F
Recirc loop B flow	25,800 gpm

Which ONE of the following is correct concerning the restart of Recirculation Pump 2A?

- A. It may continue, all requirements are met.
- B. It may NOT continue, the Delta T between the operating and the idle loop is excessive.
- C. It may NOT continue, the Delta T between the coolant in the dome and bottom head is excessive.
- D. It may NOT continue, the operating Recirc loop flow rate is excessive.

### Feedback

References: 2OP-02 Rev.110 pg 25  
SD-02, Rev.5 pg 50  
Enabling Objective CLS-LP-02 Rev.1 #22

- A. Incorrect since the operating loop flow rate is too high. The limit for restart of the idle Recirc Pump is 23,500 gpm.
- B. Incorrect since the delta T between the loops is <50°F.
- C. Incorrect since the delta T between the dome and bottom head temperature is <145°F.
- D. Correct answer since the operating loop flow rate is >23,500 gpm.

## QUESTIONS REPORT

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10. 203000A1.04 001/T2G1/T2G1/RHR SYSTEM/C/A 3.6/3.3/N/BSEP 2003/C/LSM/TCK/R/C

Unit 2 was at 100% RTP when a small break LOCA concurrent with a loss of all high pressure makeup capability to the reactor occurred. The Reactor is being depressurized using the SRVs due to level not being able to be maintained above TAF. All RHR and Core Spray pumps have started as required with normal indications. Reactor pressure is approximately 400 psig at this time.

Concerning the "A" RHR system only, which ONE of the following describes the expected system parameters and configuration?

- A. Both LPCI "A" injection valves OPEN, "A" system flow indicates 0 gpm, "A" and "C" RHR Pump discharge pressures are approximately 200 psig.
- B. Both LPCI injection valves CLOSED, "A" system flow indicates 0 gpm, "A" and "C" RHR Pump discharge pressures are approximately 200 psig.
- C. Both LPCI "A" injection valves OPEN, "A" system flow indicates 12,000 gpm, "A" and "C" Pump discharge pressures are approximately 400 psig.
- D. Both LPCI "A" injection valves CLOSED, "A" system flow indicates 2300 gpm, "A" and "C" RHR Pump discharge pressures are approximately 200 psig.

### Feedback

References: SD-17, Residual Heat Removal System, Rev.4, pg.10 & 11

- A. Correct answer since reactor pressure is < 410 psig.
- B. Incorrect since the inboard injection valve auto opens and the outboard injection valve is normally open.
- C. Incorrect since there will be no flow indicated since reactor pressure is greater than pump discharge pressure.
- D. Incorrect since there should be no indicated flow since reactor pressure is greater than pump discharge pressure. If the candidate doesn't know where the flow element is located then he may believe that the flow would indicated flow through the min flow valve.

## QUESTIONS REPORT

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11. 204000K1.06 001/T2G2/T2G2/RX LEVEL/C/A 2.8/2.8/N/BSEP 2003/C/LSM/R/C

Following a reactor scram the Reactor operator attempts to place the RWCU in the reject mode of operation to aid in level control. Following the valve manipulation you note that: valve G31-F004 has closed, and the inboard isolation valve G31-F001 is opened and you have lost condenser vacuum.

Which ONE of the following could have caused the above?

- A. BOTH the Reject to Condenser Valve, F034 AND the Reject to Radwaste Valve, G31-F035 were opened simultaneously and there was a non-regenerative heat exchanger high temperature signal.
- B. BOTH the Reject to Condenser Valve, F034 AND the Reject to Radwaste Valve, G31-F035 were closed simultaneously and there was a non-regenerative heat exchanger high temperature signal.
- C. BOTH the Reject to Condenser Valve, F034 AND the Reject to Radwaste Valve, G31-F035 were opened simultaneously and there was a Local SLC pump start signal.
- D. BOTH the Reject to Condenser Valve, F034 AND the Reject to Radwaste Valve, G31-F035 were closed simultaneously and there was a Local SLC pump start signal.

### Feedback

New derived from the questions below

55. LOI-CLS-LP-012-A\*04C001

Which of the following signal(s) will cause the Group 3 PCIS RWCU outboard isolation valve (G31-F004) to close, yet leaves the inboard isolation valve (G31-F001) open?

- A. Local SLC pump start.
- B. RPV level at low level 2 on trip channel B2 only.
- C. Non-regenerative heat exchanger high temperature.
- D. Area ventilation temperature high on trip channels A1 and A3.

C.

Answer: C

99. LOI-CLS-LP-014-A\*09F002

Following a reactor scram the Reactor operator places RWCU in the reject mode of

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- A. voiding of RWCU piping.
- B. loss of condenser vacuum.
- C. inadvertant RWCU isolation.
- D. high airborne activity in radwaste.

100. LOI-CLS-LP-014-A\*09F003

Plant conditions are:

- Shutdown in progress
- RPV pressure 200 psig
- MSIVs open
- Condenser vacuum 26" Hg.

- A. A loss of condenser vacuum.
- B. RWCU Reject FCV, F033, closure on high pressure.
- C. Reduced RWCU pressure and increased demineralizer delta-pressures.
- D. RWCU Isolation on Non Regenerative Heat Exchanger high outlet temperature.

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12. 204000K5.04 001/T2G2/T2G2/RWCU/C/A 2.7/2.7/N/BSEP 2003/C/LSM/R/C

Unit 2 is at 10% power with RWCU filter demin in service and RWCU reject flow in progress.

Which ONE of the following is correct concerning the PPC heat balance if Process Computer Point B074, RWCU Inlet Flow, is NOT available?

The PPC heat balance will be:

- A. up to 3 CMWT lower than actual reactor power because computer points only get input from RWCU filter demin flow.
- B. up to 6 CMWT lower than actual reactor power because computer points only get input from RWCU temperature.
- C. up to 3 CMWT higher than actual reactor power because computer points only get input from RWCU filter demin flow.
- D. up to 6 CMWT higher than actual reactor power because computer points only get input from RWCU temperature.

### Feedback

BSEP REVIEWER ADD NOUN NAME FOR COMPUTER POINT B074

2OP-14 Rev. 107 Page 11 of 148

5.1.2 Procedural Steps

#### CAUTION

IF Process Computer Points B074 or B075, or NUMAC LDM B21-XY-5949B is NOT available, THEN the PPC heat balance may be up to 3 CMWT lower than actual reactor power because computer points only get input from RWCU filter demin flow. Raising reactor power to rated will exceed 2558 CMWT if either of the following exist:

- RWCU is in service with G31-F044 open.
- RWCU filter demin(s) is in service with RWCU reject flow in progress.

## QUESTIONS REPORT

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13. 205000A3.01 001/T2G2//SHUTDOWN COOL/C/A 3.2/3.1/N/BSEP 2003/R/TCK/R/C

Unit 2 is in Mode 3 in the process of shutting down for a refueling outage. The following conditions are present at this time:

Reactor water level	190 inches
Reactor pressure	75 psig
Reactor coolant temperature	265°F
Shutdown cooling	In service on A Loop (B Loop in stby)

A break occurs in the Drywell which causes Drywell pressure to increase to 4.5 psig and Drywell temperature to increase to 235°F. All automatic actions occur as designed.

Which ONE of the following describes the automatic operation of the RHR System for these conditions?

A loop RHR:

- A. realigns for injection after one Shutdown Cooling suction valve closes; B loop RHR aligns for injection immediately; Both loops inject at full flow.
- B. remains aligned in Shutdown Cooling; B loop RHR aligns for injection immediately; B loop RHR injects at full flow.
- C. isolates Shutdown Cooling suction path with LPCI injection valve reopening after going closed; B loop RHR aligns for injection immediately; B loop RHR injects at full flow.
- D. realigns for injection after one Shutdown Cooling suction valve closes; B loop RHR remains in stby; A loop RHR injects at full flow.

### Feedback

References: SD-17, Residual Heat Removal System, Rev.4, pg 56

- A. Incorrect since A RHR loop does not inject since there is not a suction path for the pumps.
- B. Correct answer.
- C. Incorrect since A RHR loop does not isolate in the Shutdown Cooling mode.
- D. Incorrect since A RHR loop does not inject and B RHR loop aligns and injects.

## QUESTIONS REPORT

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14. 206000K5.08 001/T2G1/T2G1/HPCI SYSTEM/MEM 3.0/3.2/N/BSEP 2003/C/TCK/R/C

Which ONE of the following components prevents water from being forced up the HPCI exhaust line as the suppression pool pressurizes during a LOCA?

- A. HPCI exhaust line vacuum breakers.
- B. HPCI exhaust line T-quencher.
- C. HPCI exhaust isolation valve.
- D. HPCI exhaust drain pot.

### Feedback

References: SD-19, High Pressure Coolant Injection (HPCI) System, Rev.7

- A. Correct answer.
- B. Incorrect since a t-quencher does not prevent water from going back up into a line.
- C. Incorrect since the exhaust isolation valve doesn't prevent backflow.
- D. Incorrect since the exhaust drain pot doesn't prevent water from going back into the exhaust line.



## QUESTIONS REPORT

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15. 209001K2.03 001/T2G1/T2G1/CORE SPRAY/C/A 2.9/3.1/B/BSEP 2003/C/LSM/R/C

With Unit 1 operating at rated conditions and Unit 2 at 75% power, Unit 2 annunciator A3 2-6, CORE SPRAY SYS 2 LOGIC PWR FAILURE, is received. Investigation reveals a tripped circuit breaker in Panel 4B which powers CORE SPRAY SYS 2 LOGIC.

Which ONE of the following describes the effect this has on a subsequent Unit 2 LOCA initiation?

- A. DIV II Emergency diesel generators will not auto start.
- B. DIV II Non Interruptible RNA isolation valve will not isolate and DIV II N2 BU isolation valve will not open.
- C. Drywell coolers B and C will not trip.
- D. DIV II RHR pumps will not auto start.

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### Feedback

BSEP BANK 132. LOI-CLS-LP-018-A\*15F003

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16. 211000A3.08 001/T2G1/T2G1/SBLC/MEM 4.2.4.2/B/BSEP 2003/C/LSM/TCK/R

Which ONE of the following contains a correct list of indications that are used to verify the Standby Liquid Control System is operating properly once the system has been initiated? (Not necessarily all the indications)

- A. Squib valve loss of continuity alarm annunciated, storage tank level decreasing, discharge pressure slightly lower than reactor pressure.
- B. Red light indicating pump is running, reactor water level will increase, squib valve status lights are illuminated.
- C. Storage tank level decreasing, RWCU suction valve G31-F004 opens, squib valve status lights are extinguished.
- D. Indicated SLC pump discharge pressure will increase to greater than reactor pressure, squib valve status lights are extinguished, RWCU suction valve G31-F004 closes.

### Feedback

References: SD-05 Rev.3 pg 23, Standby Liquid Control System

- A. Incorrect since discharge pressure should be higher than reactor pressure.
- B. Incorrect since reactor water level increasing is not an indication that SBLC is injecting. Also, neutron level should be decreasing.
- C. Incorrect since storage tank level should decrease.
- D. Correct answer.

## QUESTIONS REPORT

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17. 212000G2.1.27 001/T2G1//UNIT DIFF RX PROT/MEM 2.8/2.9/N/BSEP 2003/R/TCK/R/C

Which ONE of the following is a purpose of the Unit Two (2) Reactor Protection System?

- A. To prevent premature actuation of Emergency Core Cooling Systems.
- B. To maintain the ability to insert selected control rods when rapid power reduction is required by specific abnormal procedures.
- C. To monitor critical parameters when the Unit is in Mode 1, 2 or 3 so that Cold Shutdown can be obtained.
- D. To monitor critical parameters at all times to initiate a reactor SCRAM and initiate Emergency Core Cooling System when the nuclear process barrier is threatened.

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### Feedback

References: SD-03, Reactor Protection System Including Alternate Rod Injection System, Rev.2, pg 6.

- A. Incorrect since a Safety Limit may still be exceeded even if a reactor SCRAM occurs.
- B. Correct answer.
- C. Incorrect since RPS is required in all Modes.
- D. Incorrect since RPS does not initiate any Isolation functions.

## QUESTIONS REPORT

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18. 212000K6.04 001/T2G1/T2G1/RPS/C/A 2.8/3.1/M/BSEP 2003/C/LSM/R/C

Unit two is operating at 100% power when there is a loss of 125 VDC distribution panel 4B on the Unit 2 Reactor Protection System.

Which ONE of the following describes the direct effect of this loss on the RPS?

- A. All ARI valves fail open, venting the scram air header.
- B. Outboard ARI valves fail open, venting the scram air header through the inboard ARI bypass check valves.
- C. Both backup scram valves remain as is, scram air header remains pressurized.
- D. Upstream backup scram valve fails open, venting the scram air header through the downstream backup scram valves bypass check valve.

**Feedback**

REFERENCES: OP-03

LOI-CLS-LP-003-A\*007002

## QUESTIONS REPORT

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19. 214000K4.01 001/T2G2/T2G2/REED SWITCH/MEM 3.0/3.1/B/BSEP 2003/C/LSM/R/C

Which ONE of the following explains why a "ROD DRIFT" alarm is received after moving a control rod using the "EMERGENCY IN" switch?

- A. "EMERGENCY IN" bypasses the Rod Position Indication System.
- B. The sequence timer is bypassed causing an insert and withdraw signal at the same time.
- C. The rod is at an even reed switch and none of the selected relay busses are energized (insert, withdraw or settle).
- D. The rod is at an odd reed switch and none of the selected relay busses are energized (insert, withdraw or settle).

### Feedback

References: SI-LP-05401-00 Rev. SI-00, pg 7 & 8 of 26, Reactor Manual Control  
EO 001.010.a.12, 001.026.a.02

- A. Incorrect since this switch does not bypass RPIS.
- B. Incorrect since this does not cause an insert and withdraw signal at the same time.
- C. Incorrect since being at an even reed switch position ensures a rod drift alarm does not occur.
- D. Correct answer since this alarm is actuated when rod is at an odd position and relay buses are not energized.

## QUESTIONS REPORT

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20. 215001A2.01 001/T2G3//TIP SYSTEM/C/A 2.7/2.9/M/BSEP 2003/R/LSM/TCK/R/C

The following conditions exist on Unit 1:

Rx power	100%
Rx level	190"
Drywell pressure	0.6 psig
Rx pressure	1005 psig

The reactor engineer has selected TIP Probe 'A' for a core flux trace and the probe is currently traversing into the core. Suddenly, both reactor feed pumps trip causing water level to lower below 150".

Which ONE of the following describes how the TIP probe will respond to these conditions?

- A. Stops at its current position due to the drive motor deenergizing on a reactor scram and turbine trip signal.
- B. Retracts in slow speed until it reaches the indexer where it is left for eight hours to decay.
- C. Continues to traverse into the core until it reaches core top where it will stop.
- D. Retracts in fast speed until it reaches the in-shield position where it will stop.

### Feedback

References: SD-09.5, Traversing In-Core Probe (TIP) System, Rev.2, pg. 29  
KA change from K1 to A2

- A. Incorrect since the TIP system does not de-energize on a scram and turbine trip.
- B. Incorrect since the detector retracts at fast speed on a Group II signal (Low water level of <166").
- C. Incorrect since the detector retracts to the in-shield position upon a Group II signal.
- D. Correct answer.

## QUESTIONS REPORT

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21. 215002K6.04 001/T2G2//ROD BLOCK MONITOR/C/A 2.8/3.0/N/BSEP 2003/R/TCK/R/C

The Unit 1 operator is in the process of performing the weekly control rod exercise surveillance. A central control rod has been selected but prior to moving the rod APRM 1 fails downscale. After verifying all other APRM's are OPERABLE then APRM 1 is bypassed.

Which ONE of the following describes the status of Rod Block Monitor A and B?

- A. Rod Block Monitor A is bypassed; Rod Block Monitor B is in service.
- B. Rod Block Monitor A is in service; Rod Block Monitor B is bypassed.
- C. Rod Block Monitor A and B are both in service.
- D. Rod Block Monitor A and B are both bypassed.

### Feedback

References: 1SD-09.6, Power Range Neutron Monitoring System, Rev.0, pg 24 & 25

- A. Incorrect since RBM will AUTO select APRM 3 with APRM 1 failed downscale.
- B. Incorrect since APRM 1 is the reference APRM for RBM A so RBM B is unIncorrect since RBM A is bypassed.
- C. Correct answer since RBM will AUTO select APRM 3 with APRM 1 failed downscale.
- D. Incorrect since RBM B is not affected.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

22. 215003A4.07 001/T2G1//IRM/C/A 3.6/3.6/N/BSEP 2003/R/TCK/R/C

Unit 1 is commencing a startup with all SRM's fully inserted and reading approximately  $3 \times 10^5$  cps. The IRM's are reading the following:

IRM A	20 on Range 1	IRM E	21 on Range 1
IRM B	28 on Range 1	IRM F	19 on Range 1
IRM C	21 on Range 2	IRM G	23 on Range 2
IRM D	25 on Range 1	IRM H	20 on Range 1

The operator takes the Range Switch for IRM B to Range 3 and the Downscale light comes on but no other alarms occur.

Which ONE of the following describes the OPERABILITY of IRM B?

- A. IRM B is still OPERABLE because no other alarms should have occurred for this condition.
- B. IRM B is INOPERABLE because a rod block should have been initiated.
- C. IRM B is still OPERABLE because the power level is too low for accurate indication.
- D. IRM B is INOPERABLE because it is reading significantly higher than the other IRM's.

### Feedback

References: SD-09.1, Neutron Monitoring System (Startup and Intermediate Range), Rev.1, pg 6 & 7.

B. Correct answer since a Rod Block should have occurred due to downscale condition and on Range 2.

A, C and D. Incorrect since Range 2 should have initiated a Rod Block.



## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

23. 215004 G2.2.1 001/T2G1/T2G1/SOUREC RANGE MONITOR/MEM 3.7/3.6/N/BSEP 2003/C/TCK/R/C

Unit 1 is in the process of performing *0GP-01, Prestartup Checklist step 6.2.9, Source Range Monitor Checks*.

Which ONE of the following describes the minimum requirements for the SRM's?

- A. Ensure at least 2 SRM channels are OPERABLE and indicate  $\geq 5$  cps.
- B. Ensure at least 2 SRM channels are OPERABLE and indicate  $\geq 10$  cps.
- C. Ensure at least 3 SRM channels are OPERABLE and indicate  $\geq 5$  cps.
- D. Ensure at least 3 SRM channels are OPERABLE and indicate  $\geq 10$  cps.

### Feedback

References: 0GP-01, Prestartup Checklist, Rev.156, pg 25

- A. Incorrect since 3 SRM's are required to be operable prior to entering Mode 2.
- B. Incorrect since 3 SRM's are required to be operable prior to entering Mode 2 and the minimum count rate is  $\geq 5$  cps.
- C. Correct answer.
- D. Incorrect since the minimum count rate is  $\geq 5$  cps.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

24. 215005A4.06 001/T2G1/T2G1/APRM SYSTEM/C/A 3.6/3.8/N/BSEP 2003/C/TCK/R/C

Unit 1 is in Mode 2 with the Mode Switch in START/HOT STBY. Annunciator APP A-05 2-2, ROD OUT BLOCK, is in alarm. APRM readings are as follows:

APRM 1	13%
APRM 2	Downscale
APRM 3	15%
APRM 4	14%

Which ONE of the following describes the effect on the plant for these conditions and the reason for the response?

- A. A scram should have occurred due to APRM 2 being Downscale and APRM 3 at the Upscale Trip setpoint.
- B. A 1/2 scram should have occurred on RPS Channel A due to APRM 3 at the Upscale Trip setpoint.
- C. A 1/2 scram should have occurred on RPS Channel B due to APRM 2 being downscale.
- D. The ROD OUT BLOCK alarm is the only expected actuation due to the position of the Mode Switch.

### Feedback

References: APP A-05 2-2 Rod Out Block, Rev.43  
APP A-05 4-7 Neutron Mon Sys Trip, Rev.43

- A. Incorrect since the APRM Downscale is not an RPS Trip signal with the Mode Switch in Start/Hot Stby.
- B. Incorrect since only APRM 3 at or exceeding the APRM UPSCL setpoint, downscale is not a RPS trip, two concurrent APRM trips required for full scram.
- C. Incorrect since a 1/2 Scram should have occurred due to APRM 3 at the upscale trip setpoint.
- D. Correct answer.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

25. 216000K2.01 001/T2G1/T2G1/INSTRUMENTATION/MEM 2.8/2.8/B/BSEP 2003/C/LSM/R/C

If the Topaz Inverter in Analog Trip Cabinet XU-68 (RPS B-2) had an open circuit and failed, then which ONE of the following should occur?

- A. There will be no interruption of power to cabinet XU-68 as the power supply in XU-67 (RPS B-1) will provide power to both cabinets.
- B. There will be no interruption of power to cabinet XU-68 as there is a second Topaz Inverter in panel XU-68 that is in parallel with the Topaz Inverter that failed.
- C. All associated instruments will lose power generating a trip signal. There will be a 1/2 scram and Group 1 PCIS as well as valve actuation for PCIS Groups 2, 6 and 8.
- D. All associated instruments will lose power but will not generate any trip signals. The plant will continue to operate, but Tech Specs should be addressed for each instrument.

### Feedback

A. Ans b is wrong because no power is lost. Ans c is correct for ECCS trip cabinets. Ans d is wrong since no power is lost. (Modified from bank #1437 H)

LOI-CLS-LP-118-A\*009004

REFERENCES: SD-02,

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

26. 217000G2.1.28 001/T2G1/T2G1/RCIC SYSTEM/MEM 3.2/3.3/N/BSEP 2003/C/TCK/R/C

Which ONE of the following is correct concerning the RCIC Steam Supply Inboard Isolation Valve (E51-F007)?

- A. AC powered due to less likely to spark during operation and more reliable in a hostile environment.
- B. DC powered due to less likely to spark during operation and more reliable in a hostile environment.
- C. Cannot be powered from an Alternate Safe Shutdown Feeder since the valve is normally in the Open position.
- D. May be throttled closed or open if isolation signal is not present to slowly warm the RCIC steam line.

### Feedback

References: SD-16, Reactor Core Isolation Cooling (RCIC) System, Rev.4, pg 14 & 26

- A. Correct answer.
- B. Incorrect since the valve is AC powered.
- C. Incorrect since the valve may be powered from an ASSD Feeder.
- D. Incorrect since the valve may only be throttled in the open direction.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

27. 217000K1.01 001/T2G1/T2G1/RCIC/C/A 3.5/3.5/B/BSEP 2003/C/LSM/R/C

Unit 2 is operating at 80% RTP. The RCIC system is in standby with a suction from the CST. The quarterly HPCI flow rate test is in progress and is taking longer than expected. Torus level has reached -24" and preparations are being made to pump the torus down to normal level within the 2 hour Tech Spec time limit.

Which ONE of the following describes the effect high Torus level had on RCIC?

- A. No effect since the RCIC suction valves do not transfer on high torus level.
- B. The Torus suction valves (F029 & F031) received an open signal and once both valves were full open then the CST suction valve (F010) received a closed signal.
- C. The Torus suction valves (F029 & F031) received an open signal at the same time the CST suction valve (F010) received a closed signal.
- D. The CST suction valve (F010) received a closed signal and when it was full closed then the Torus suction valves (F029 & F031) received an open signal.

### Feedback

References: SI-LP-03901 Rev. SI-00 pg 10 of 37

- A. Correct answer.
- B. Incorrect since RCIC suction does not transfer on high torus level at BNP.
- C. Incorrect since the CST and Torus suction valves do not get a signal to change position at the same time. The CST gets a closed signal "After" the Torus suction valves are full open.
- D. Incorrect since the Torus suction valves come open before the CST suction valve goes closed.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

28. 218000A4.02 001/T2G1/T2G1/ADS/C/A 4.2/4.2/B/BSEP 2003/C/LSM/R/C

Unit Two just entered a shutdown LCO due to HPCI and RCIC being inop, when a Loss of Off-site Power occurs. EDGs 3 and 4 fail to start. Unit One buses E1 and E2 remain energized throughout the event. Pressure is being maintained 800 - 1000 psig using SRVs. Level has been below 45 inches for 5 minutes and is currently +25 on the N026's.

Assuming ADS was NOT inhibited, which ONE of the following describes how ADS would respond to #4 EDG starting?

7 ADS valves would auto open \_\_\_\_\_ seconds after the diesel tied to E4.

- A. 10
- B. 15
- C. 83
- D. 93

### Feedback

BSEP BANK 142. LOI-CLS-LP-020-A\*007005 Rearranged answers

A. as soon as 2B RHR pump starts, assuming 2D already running.

REFERENCES: SD-20

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

29. 219000A2.03 001/T2G2/T2G2/RHR SYSTEM/C/A 3.1/3.2/N/BSEP 2003/C/LSM/R/C

Unit Two is in RHR/LPCI suppression pool cooling mode with an elevated suppression pool temperature of 180 °F. The VITAL Service Water Header supply valve was inadvertently closed. The valve was manually opened 10 minutes later.

Which ONE of the following occurred before the valve was reopened?

- A. ONLY RHR Pump Seal temperatures increased.
- B. ONLY RHR SW Pump Motor temperatures increased.
- C. BOTH RHR Pump Seal temperatures and RHR SW Pump Motor temperatures increased.
- D. NEITHER RHR Pump Seal temperatures NOR RHR SW Pump Motor temperatures all have increased.

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### Feedback

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Solution : Has no effect on RHR SW Pump Motor temperatures

Reference - the following Bank question:

((27. LOI-CLS-LP-043-A\*003001

The VITAL Service Water Header provides cooling water to all of the following components EXCEPT the:

- A. RHR Room Coolers
- B. RHR Pump Seal Coolers
- C. Core Spray Room Coolers
- D. RHR SW Pump Motor Coolers

Answer: D)))

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

30. 223001A2.01 001//T2G1/CONTAINMENT/C/A 4.3.4.4/B/BSEP 2003/S/LSM/R/C

Following a LOCA, Unit Two has been Emergency Depressurized during a high power ATWS and all control rods are now fully inserted. Injection with the only available injection systems (2A Core Spray, and B Loop RHR) has been maximized to raise RPV level and adequate core cooling is assured.

Plant conditions are:

Torus Pressure	19 psig, slowly lowering
Torus Level	-5.5 feet, slowly lowering
Torus Water Temp.,	220 °F, steady
Drywell Avg. Temp.	287 °F, lowering
Reactor Level	-35 ", rapidly rising
Reactor Pressure	50 psig

The operating crew should do which ONE of the following per Emergency Operating Procedures?

- A. Continue with maximum injection until above the top of active fuel.
- B. Secure the B Loop of RHR and continue to raise level with the 2A Core Spray Pump.
- C. Reduce injection flow from Core Spray to maintain the minimum containment cooling requirements.
- D. Secure the 2A Core Spray Pump and continue to raise level with the B Loop of RHR.

### Feedback

258. LOI-CLS-LP-300-B\*018001



## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

31. 223001G2.1.7 001//T2G1/DIFFERENTIAL PRES/C/A 3.7/4.4/B/BSEP 2003/S/LSM/R

Unit 2 was in an extended shutdown. A startup has been conducted and reactor power is at 47%. A position indicator for one of the Suppression Chamber-to-Drywell Vacuum Breakers indicates that the vacuum breaker is OPEN. Alternate vacuum breaker position indication is not available.

Which ONE of the following statements is correct?

- A. Continued operation is allowed as long as the other vacuum breakers indicate closed and the containment differential pressure test is proven acceptable within 4 hours.
- B. Begin a normal reactor shutdown within 8 hours. Be in HOT SHUTDOWN within the next 12 hours. Initiate repairs to the vacuum breaker to restore the breaker to operation prior to restart.
- C. Immediately begin a plant shutdown and cooldown. Be in HOT SHUTDOWN within 12 hours and be in COLD SHUTDOWN within the next 24 hours. Initiate repairs to restore the vacuum breaker to operation.
- D. Initiate a manual reactor scram. Conduct a drywell entry to initiate repairs to the vacuum breaker as soon as possible. If repairs are not completed within 8 hours, place the plant in COLD SHUTDOWN within the next 24 hours.

### Feedback

REFERENCES: TECH SPEC 3.6.4.1 /AM 159\*

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

32. 223001K4.03 001/T2G1//PRIMARY CONTAINMENT/C/A 3.7/3.8/N/BSEP 2003/R/TCK/R/C

Unit 1 has experienced a small LOCA with the following conditions present:

Drywell pressure	4.5 psig
Drywell temperature	201 °F
Reactor water level	145 inches
Reactor Bldg Exhaust Rad	8 mR/hr

Per the EOP's the CAC Div I and CAC Div II AC and DC Isolation (Soft) Override switches have been initiated to allow sampling of containment parameters. The RHR Process Sampling valves (E11-F079A,B and F080A,B) have been opened to allow for sampling.

If reactor water level was to increase to 180 inches and then drop back down to 145 inches, which ONE of the following indicates the status of the RHR Process Sampling valves?

- A. All valves would remain open due to the Override switches being actuated.
- B. The Inboard valves would close and the Outboard valves would remain open.
- C. All valves would close when reactor vessel level dropped below 166 inches.
- D. The Inboard valves would remain open and the Outboard valves would close.

### Feedback

References: SD-12, Primary Containment Isolation System, Rev.1 pg 24 & 52

- A. Incorrect since all valves would close when subsequent Group II isolation signal is generated.
- B. Incorrect since all valves would close.
- C. Correct answer.
- D. Incorrect since all valves would close.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

33. 223002A3.02 001/T2G1/T2G1/MSIV/C/A 3.5/3.5/M/BSEP 2003/C/LSM/R/C

An Instrument Tech mistakenly throttles the bypass valves on an MSIV's hydraulic dash pot.

Which ONE of the following describes the effect of this manipulation?

It will result in a change in:

- A. closing torque.
- B. packing leakage.
- C. closing time.
- D. closing setpoint.

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### Feedback

205.

LOI-CLS-LP-025-A\*004001 (Modified stem and all 4 distractors)

original question:

205. LOI-CLS-LP-025-A\*004001 (Modified C and D)

The MSIV closure time is adjusted by:

- A. regulating the closure piston air pressure.
- B. adjusting or replacing the valve packing.
- C. throttling the bypass valves on the hydraulic dash pot.
- D. relapping or replacing the Stellite on the valve seat.

Answer: C

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

34. 223002K1.07 001/T2G1/T2G1/RCIC/C/A 3.4/3.6/B/BSEP 2003/C/LSM/R/C

U-2 RCIC System is running with the following conditions present 10 minutes after the event:

Reactor Water Level	-38 inches
Drywell Pressure	+1.5 psig
Suppression Chamber Ambient Temp.	170°F
RCIC Steam Line pressure	900 psig
RCIC Emergency Area Cooler Temp	100°F and rising slowly

An operator has been sent to the RCIC room and reports that there is a small steam leak on the line upstream of the Trip and Throttle valve. The Shift Supervisor orders the Reactor Operator to manually isolate RCIC.

Which ONE of the following describes the effect on RCIC when the manual isolation pushbutton is depressed?

- A. Inboard and Outboard Steam Supply Isolation valves F007 and F008 close and the RCIC turbine trips.
- B. Inboard Steam Supply Isolation valve F007 closes and the RCIC turbine trips.
- C. Outboard Steam Supply Isolation valve F008 closes and the RCIC turbine trips.
- D. No effect on RCIC since the system should already be isolated.

### Feedback

#### Reference:

- A. Incorrect since only the F008 valve is affected by the "Manual Isolation" pushbutton while there is an initiation signal present.
- B. Incorrect since the F007 valve is not affected by the "Manual Isolation" pushbutton while there is an initiation signal present.
- C. Correct answer.
- D. Incorrect since the only isolation signal could be Suppression Chamber Ambient Temp but it has a 30 minute time delay when temp is  $\geq 165^{\circ}\text{F}$  and this is 10 minutes into the event.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

35. 230000A2.15 001/T2G2//RHR SYSTEM/C/A 4.0/4.1/N/BSEP 2003/R/TCK/R/C

Unit 2 has experienced a large LOCA with the following conditions present:

Reactor Pressure	10 psig
Drywell pressure	25 psig steady
Torus pressure	24 psig steady
Drywell Temperature	275 °F steady
Reactor water level	-30 inches

The Unit Supervisor has ordered Torus and Drywell sprays to be initiated.

Which ONE of the following describes the minimum actions necessary per *OEOP-01-SEP-02, Drywell Spray Procedure*, to initiate Drywell sprays after verifying Recirc Pumps and Drywell Coolers are off?

Verify or start an RHR pump and:

- A. Place 2/3 Core Height LPCI Initiation Override switch E11-CS-S18 to the "Manual Overrd" position. Open Drywell Spray **Inbd** Isol Valve, E11-F021, then throttle Drywell Spray **Outbd** Isol Valve, E11-F016.
- B. Place Containment Spray Valve Control switch E11-CS-S17 to the "Manual" position. Open Drywell Spray **Inbd** Isol Valve, E11-F021, then throttle Drywell Spray **Outbd** Isol Valve, E11-F016.
- C. Place Containment Spray Valve Control switch E11-CS-S17 to the "Manual" position. Open Drywell Spray **Outbd** Isol Valve, E11-F016, then throttle open Drywell Spray **Inbd** Isol Valve, E11-F021.
- D. Place Containment Spray Valve Control switch E11-CS-S17 to the "Manual" position and the 2/3 Core Height LPCI Initiation Override switch E11-CS-S18 to the "Manual Overrd" position. Open Drywell Spray **Inbd** Isol Valve, E11-F021, then throttle Drywell Spray **Outbd** Isol Valve, E11-F016.

**QUESTIONS REPORT**  
**for FINAL BSEP 2003-301 Written Exam**

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**Feedback**

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References: SD-01, Nuclear Boiler System, Rev.4, Figure 01-02  
OOEP-01-SEP-02, Drywell Spray Procedure, Rev.13, pg 3  
SD-17, Residual Heat Removal System, Rev.4, pg

- A. Incorrect since you don't need to reposition the 2/3 Core Height switch yet. Level is not down that low yet.
- B. Correct answer.
- C. Incorrect since you don't have to reposition both switches.
- D. Incorrect since the spray valves are operated backwards.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

36. 233000K2.02 001/T2G3//SDC/MEM 2.8/2.9/N/BSEP 2003/R/LSM/R/C

Unit 1 is on Shutdown Cooling using RHR Loop 1B. I&C Techs are working on the RPS logic power supply. During the repair work the Techs cause an inadvertent loss of Division II 125/250 VDC electrical distribution.

Which ONE of the following describes the effect of this loss of Shutdown Cooling?

- A. Group 8 outboard SDC suction valve remains OPEN. LPCI injection valves will fail CLOSED.
- B. Group 8 outboard SDC suction valve and LPCI injection valves will fail CLOSED.
- C. Group 8 outboard SDC suction valve remains OPEN. LPCI injection valves remain OPEN.
- D. Group 8 outboard SDC suction valve fails CLOSED. LPCI injection valves remain OPEN.

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### Feedback

NEW

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## QUESTIONS REPORT

—for FINAL BSEP 2003-301 Written Exam

37. 239001K3.16 001/T2G2/T2G3/MAIN STEAM/MEM 3.6/3.6/B/BSEP 2003/C/LSM/R/C

Unit 1 was operating at 100%, when a loss of EHC caused a turbine trip without bypass valves. SRVs operated as required, and pressure crested at 1142 psig.

Disregarding the setpoint drift tolerance, which ONE of the following indicates how many SRVs opened in response to the pressure transient?

- A. 4
- B. 7
- C. 8
- D. 11

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### Feedback

BSEP BANK 135. LOI-CLS-LP-020-A\*003001



## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

38. 239002A1.01 001/T2G1/T2G1/SRV/C/A 3.3/3.4/B/BSEP 2003/C/LSM/R/C

During an overpressure transient, an operator has opened an SRV to control pressure. RPV pressure is 1005 psig.

Which ONE of the following is the expected tail pipe temperature for the SRV that is open, as indicated on ERFIS?

A. 212 °F

B. 300 °F

C. 350 °F

D. 545 °F

### Feedback

b. Ans a is based on saturated conditions for atmospheric pressure. Ans c is based on moving from sat conditions to the other side of the saturation curve at 1000 psig on the Mollier diagram. Ans d is based on saturated conditions for 1015 psia steam.

104. LOI-CLS-LP-110-A\*03A002

## QUESTIONS REPORT

for FINAL-BSEP 2003-301 Written Exam

39. 239002K6.05 001/T2G2//VACUUM BRKR/C/A 3.0/3.2/M/BSEP 2003/R/LSM/TCK/R/C

During normal power operation of Unit 1, SRV F013H lifted.

Which ONE of the following describes the consequences of SRV F013H tailpipe vacuum breaker (F037H) failing open prior to the SRV actuation?

- A. Steam will discharge directly to the suppression pool airspace.
- B. Steam will discharge directly to the drywell.
- C. Water from the suppression chamber will draw into the SRV tailpipe following actuation.
- D. A redundant vacuum breaker will open with no operational consequences.

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### Feedback

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REFERENCES: SD-20  
163.  
LOI-CLS-LP-020-A\*07D001

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

40. 241000K6.05 001/T2G1/T2G1/CONDENSER VACUUM/MEM 3.4/3.4/B/BSEP 2003/C/LSM/R/C

Unit 2 is holding load at 75% Reactor Power when the operator receives the "Turbine Vacuum Low" alarm.

Which ONE of the following describes the expected sequence of actions as condenser vacuum continues to decrease from 24.7" Hg Vac (alarm setpoint) to 0" Hg Vac?

- A. 1st - Main Turbine trips.  
2nd - Main Turbine Bypass Valves close.  
3rd - MSIV's close.
- B. 1st - MSIV's close.  
2nd - Main Turbine trips.  
3rd - Main Turbine Bypass Valves close.
- C. 1st - Main Turbine trips.  
2nd - MSIV's close.  
3rd - Main Turbine Bypass Valves close.
- D. 1st - Main Turbine Bypass Valves close.  
2nd - MSIV's close.  
3rd - Main Turbine trips.

### Feedback

Reference: SI-LP-02501-00 Rev. SI-00 Pg 7 of 13.  
EO 200.087.a.01

- A. Incorrect since Main Turbine trip at 22.3" Hg Vac., MSIV's close at 10" Hg Vac and Bypass valves close at 7" Hg Vac.
- B. Incorrect since Main Turbine trip at 22.3" Hg Vac., MSIV's close at 10" Hg Vac and Bypass valves close at 7" Hg Vac.
- C. Correct answer since Main Turbine trip at 22.3" Hg Vac, MSIV's close at 10" Hg Vac and Bypass valves close at 7" Hg Vac.
- D. Incorrect since Main Turbine trips prior to the MSIV's closing.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

41. 245000A4.10 001/T2G2/T2G2/MAIN TURBINE/C/A 2.6/2.6/B/BSEP 2003/C/LSM/R/C

Assume the Unit 2 Main Generator is operating with the following conditions:

- 800 MWe
- 400 MVARs out
- 60 psig Hydrogen Pressure

To facilitate an on-line adjustment to the Hydrogen Sealing system the Hydrogen pressure is lowered to 48 psig.

Which ONE of the following describes the effect on the Main Generator?

- A. Main Generator operation will be unaffected.
- B. Main Generator armature will begin to overheat.
- C. Main Generator armature core end will begin to overheat.
- D. Main Generator field windings will begin to overheat.

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### Feedback

245000 A4.10

398. LOI-CLS-LP-027-D\*05D002

Reference required \*\*\*Generator Estimated Capability Curves (spider web graph)

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

42. 256000K2.01 001/T2G2/T2G3/CONDENSATE/MEM 2.7/2.8/B/BSEP 2003/C/LSM/R/C

Unit One and Unit Two are operating at 100% power. The following annunciators are received on Unit One.

UA-13 3-9 SAT Fault Pressure

UA-13 1-9 SAT Lockout

Which ONE of the following describes which Condensate Transfer Pump(s) will have power?

- A. Unit One only.
- B. Unit Two only.
- ☒ C. Both Unit One and Unit Two.
- D. Neither Unit One nor Unit Two.

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### Feedback

406. LOI-CLS-LP-031-B\*07B001

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

43. 259001A2.07 001/T2G1/T2G2/FEEDWATER/MEM 3.7/3.8/B/BSEP 2003/C/LSM/R/C

Unit One is at 100% power with Feedwater level control (FWLC) in 3 ELEM and the Reactor Water Level Select Switch in LEVEL A (N004A).

Which ONE of the following describes how the DFWLC system will respond to the B level instrument (N004B) failing high?

- A. Transfer to 1 ELEMENT and utilize the C level instrument (N004C) for level control.
- B. Remain in 3 ELEMENT control and continue utilizing the A level instrument (N004A) for level control.
- C. Transfer to 1 ELEMENT control and continue utilizing the A level instrument (N004A) for level control.
- D. Remain in 3 ELEMENT and utilize the C level instrument (N004C) for level control.

### Feedback

418. LOI-CLS-LP-032-C\*003004  
REFERENCES: OBJ 2C

## QUESTIONS REPORT

for FINAL BSEP 2003-301-Written Exam

44. 261000K3.04 001/T2G1/T2G1/SBGT SYSTEM/MEM 3.1/3.1/N/BSEP 2003/C/LSM/R/C

Which ONE of the following describes the effect that a loss of SBGT would have on the RCIC and HPCI systems?

- A. There would be no effect since the SBGT system is not connected to HPCI or RCIC.
- B. Both the RCIC Barometric Condenser and the HPCI Vacuum Pump Discharge line would be effected.
- C. Only the RCIC Barometric Condenser would be effected.
- D. Only the HPCI Vacuum Pump Discharge line would be effected.

### Feedback

#### System description

##### 1.1.1 Reactor Core Isolation Cooling

The RCIC test return line is shared with the HPCI System via redundant test return valve E41-F011. RCIC cannot be operated in the flow test (pressure control) mode if HPCI has an initiation signal or if either HPCI suppression pool suction valve is open.

The RCIC Barometric Condenser Discharge Line was rerouted to the SBGT to prevent air injection to the containment during an emergency response. This reroute was made by connecting a tee to the HPCI Vacuum Pump discharge to the SBGT. A check valve was installed in the HPCI Vacuum Pump discharge line to allow isolation of the HPCI Barometric Condenser from the RCIC Vacuum Pump exhaust.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

45. 261000K4.01 001/T2G1//SBGT SYSTEM/C/A 3.7/3.8/M/BSEP 2003/R/LSM/R/C

Standby Gas Treatment control switches on Unit One are aligned as follows:

Train A is in the STBY position.

Train B in the PREF B position.

Emergency Bus E1 is de-energized due to a bus fault.

Which ONE of the following describes how the Standby Gas Treatment system will respond?

- A. SBGT A will IMMEDIATELY start.
- B. SBGT B will IMMEDIATELY start.
- C. SBGT A will start following a 10 second time delay.
- D. SBGT B will start following a 10 second time delay.

**Feedback**

Bank - LOI-CLS-LP-010-A\*02G003



## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

46. 262001A2.03 001//T2G1/AC/C/A 3.//4.3/B/BSEP 2003/S/LSM/R

The following conditions exist on Unit 2:

Reactor Power	50%
Stator Water Coolant Pumps A/B	De-energized 3 minutes ago
Rapid power reduction	In-progress for 3 minutes
Generator output	400 MWe
Stator amps	9800 A
Turbine Bypass Valves	CLOSED

Which ONE of the following describes how the plant would respond if all four of the Unit 2 incoming 230 KV lines were suddenly lost?

- A. A turbine trip due to failure to meet runback criteria, and a reactor scram.
- B. A generator load reject will occur but the reactor will stay on line.
- C✓ A generator load reject causes a TCV fast closure and a reactor scram.
- D. A TCV fast closure causes an APRM setdown and an SRI initiation, but the reactor will stay on line.

Feedback

References: LOI-CLS-LP-003-A\*008018

## QUESTIONS REPORT

for FINAL-BSEP 2003-301 Written Exam

47. 262001A4.05 001/T2G2/T2G1/AC/C/A 3.3/3.3/B/BSEP 2003/C/LSM/R

Unit One is operating at 100% and the following annunciators are received:

GEN LOSS OF EXC (UA-13 3-1)  
VOLT BALANCE RELAY A OPERATION (UA-23 6-6)  
GENERATOR AUTO TRIP TO MANUAL (UA-13 1-4)

Which ONE of the following describes the plant response to these conditions?

- A. The generator remains on line and the voltage regulator will maintain generator field voltage constant.
- B. A generator lockout is received with a turbine trip. Four EDGs AUTO start and a reactor scram occurs.
- C. The generator remains on line. The voltage regulator will maintain generator terminal voltage constant.
- D. A generator lockout is received with a turbine trip. No EDGs AUTO start and a reactor scram occurs.

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### Feedback

381. LOI-CLS-LP-027-A\*11F001

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

48. 263000K2.01 001/T2G2/T2G2/DC SYSTEMS/MEM 3.1/3.4/N/BSEP 2003/C/TCK/R/C

Which ONE of the following is the power supply to the Outboard MSIV's DC solenoids on Unit One (1)?

- A. Div 1 Switchboard 21A.
- B. Div 2 Switchboard 22B.
- C. Div 1 Switchboard 1A.
- D. Div 2 Switchboard 1B.

### Feedback

References: SD-51, DC Distribution System, Rev.2, pg 39-43

A, B and C. Incorrect since none of these cause the outboard MSIV's to close.

D. Correct answer.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

49. 264000K4.05 001/T2G1/T2G1/SPRAY/C/A 3.2/3.5/B/BSEP 2003/C/LSM/R/C

During an ATWS on Unit Two (2), RPV level is being controlled at Top of Active Fuel (TAF).

Actions to terminate and prevent RHR injection have been completed. A fault on Bus 2C results in LOSS of Bus E4.

Which ONE of the following describe the RHR pump response as DG4 re-energizes bus E4?

- A. RHR pumps 2B and 2D both remain overridden off.
- B. RHR pumps 2B and 2D both restart 10 seconds later.
- C. RHR pump 2D restarts 10 seconds later, RHR pump 2B remains off.
- D. RHR pump 2B restarts 10 seconds later, RHR pump 2D remains off.

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### Feedback

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256.

LOI-CLS-LP-017-A\*007020

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

50. 264000K5.06 001/T2G1/T2G1/EDG/C/A 3.4/3.5/B/BSEP 2003/C/LSM/R/C

Unit 2 experiences a Loss of Off-Site Power (LOOP) with EDG #4 under clearance.

Which ONE of the following describes how the Nuclear Service Water (NSW) and Conventional Service Water (CSW) pumps will respond as EDG #3 output breaker closes and energizes bus E3?

- A. NSW pump 2A and CSW pump 2A start immediately.
- B. NSW pump 2A starts immediately and CSW pump 2A does not start.
- C. NSW pump 2A and CSW pump 2A start after a 5 second time delay.
- D. NSW pump 2A starts after a 5 second time delay and CSW pump 2A does not start.

Feedback

LOI-CLS-LP-043-A\*006001

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

51. 268000A1.01 001/T2G3/T2G3/RADWASTE/C/A 2.7/3.1/N/BSEP 2003/C/LSM/R/C

During a radwaste discharge to the Unit One weir, a Radwaste Effluent RAD Hi Hi alarm annunciates. Which one of the following describe the actions, if any, that must be taken if you desire to close both Unit's Radwaste Discharge valves (D12-V27A and D12-V27B) and the Radwaste Flow Control valve (G16-FCV-189)?

- A. Valves D12-V27A, D12-V27B, and G16-FCV-189 must be closed manually, no auto signal.
- B. Valves D12-V27A and D12-V27B receive a close signal. Valve FCV-189 must be manually closed, no auto signal.
- C. Valve FCV-189 receives a close signal. D12-V27A and D12-V27B must be manually closed, no auto signal.
- D. No actions required, all three valves receive a close signal.

### Feedback

B: Both Units discharge valves receive a close signal. FCV-189 must be manually closed, no auto signal.

REFERENCES: APP UA-03, 2-8

Answer: B

new question based on LOI-CLS-LP-011\*B-08E001

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

52. 271000A3.02 001/T2G2//OFF GAS SYSTEM/C/A 2.9/2.8/N/BSEP 2003/R/TCK/R/C

The following indications are noted by the operator regarding the Off-Gas System:

Off-Gas flows	increasing
Off-Gas filter Dp's	increasing
Recombiner temperature	increasing
Oxygen concentration	increasing
Hydrogen concentration	decreasing

Which ONE of the following describes the probable cause for these conditions and the consequence of Off-Gas flow increasing above 150 scfm?

- A. Fuel element failure is the problem; The Off-Gas flow will be routed to the filter train and cause filter radiation levels to increase.
- B. ✓ Air intrusion is the problem; The Off-Gas flow will go directly to the Main Stack causing Main Stack Effluent Radioactivity to increase.
- C. Low Recombiner temperature is the problem; The Off-Gas flow will be routed to the filter train and cause filter radiation levels to increase.
- D. Charcoal Adsorber bed high Dp is the problem; The Off-Gas flow will go directly to the Main Stack causing Main Stack Effluent Radioactivity to increase.

### Feedback

References: SD-30, Condenser Air Removal and Off-Gas Recombiner System, Rev.4, pg. 46.

- A. Incorrect since a fuel element failure causes rad levels to increase significantly vice off-gas flows.
- B. Correct answer.
- C. Incorrect since low Recombiner temperature basically results in higher Hydrogen concentrations only.
- D. Incorrect since this does not cause high Off-Gas system flows.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

53. 272000K1.02 001/T2G2/T2G2/RAD MONITORING/MEM 3.2/3.5/B/BSEP 2003/C/LSM/R/C

During Unit One operation at 100% power, the control operator is performing OPT-04.1.7, Main Condenser Air Ejector Radiation Monitor Functional Test. The backpanel operator places the "A" Steam Jet Air Ejector (SJAE) rad monitor NUMAC drawer (D12-RM-K601A) "INOP/OPER" keylock switch to the "INOP" position.

Which one of the following is the expected plant response?

- A. AOG bypass valve, HCV-102, immediately closes ONLY.
- B. AOG bypass valve, HCV-102, immediately closes AND main condenser vacuum begins to degrade.
- C. PROCESS OFFGAS RAD MONITOR DOWNSCALE/INOP alarm is received and the process offgas timer initiates.
- ☒ D. PROCESS OFFGAS RAD MONITOR DOWNSCALE/INOP alarm is received and the process offgas timer does NOT initiate.

### Feedback

BSEP REVIEWER - THIS CAME FROM THE BANK, PLEASE VERIFY THE CORRECT ANSWER IS MARKED. THANK YOU

404. LOI-CLS-LP-030-A\*03I001

It requires any combination of train A and train B rad monitor trip signals (hi-hi, downscale, or inop) initiates closure of AOG bypass valve.



## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

54. 288000A2.02 001//T2G3/CAD/C/A 3.4/3.6/M/BSEP 2003/S/LSM/R/C

You are the Shift Supervisor on Unit 1. Following a LOCA, plant conditions are:

Reactor water level	+200 inches
Drywell pressure	28 psig
Rx Bldg Vent Radiation	12 mR/hr
Primary Containment H <sub>2</sub> O <sub>2</sub>	Cannot be determined

You direct a containment purge using the CAD system. The CAC DIV I and DIV II Isolation (Soft) Override Switches and the CAC Purge Vent Isolation (Hard) Override Switch, CAC-CS-5519, are placed in OVERRIDE.

The CAC isolation valves that you directed opened earlier are still under override to OPEN, but have closed automatically.

Which ONE of the following caused this to occur?

- A. ☒ Reactor water level has dropped an additional 50 inches.
- B. ☐ Main stack radiation has risen to the Hi-Hi setpoint.
- C. ☐ Reactor Building ventilation radiation has increased by an additional 8 mR/hr.
- D. ☐ Reactor Building ventilation exhaust temperature has risen to 140 °F.

### Feedback

A.

Lesson 2: LOI-CLS-LP-012-A

Lesson 2 Objectives: 06

References: SD-12

185.

LOI-CLS-LP-024-A\*008004

## QUESTIONS REPORT

for FINAL-BSEP-2003-301-Written Exam

55. 295001AK2.02 001/T1G2/T1G2/RECIRC SYSTEM/MEM 3.2/3.3/N/BSEP 2003/C/TCK/R/C

Unit 2 is in single loop operation at 45% RTP. Preparations are being made to restart the idle Recirculation Pump. The Control Operator reduces the operating Recirc Pump speed so that core flow is less than 40% rated core flow prior to starting the idle Recirc Pump.

Which ONE of the following describes the effect on the plant if this condition is maintained for an extended period of time?

- A. The operating recirc pump seals may be damaged due to operating at the lower pump speed.
- B. Thermal hydraulic instabilities may develop due to the increased natural circulation at the lower core flow.
- C. The bottom head temperature will increase due to increased natural circulation at the lower core flow.
- D. The idle loop temperature may decrease such that the 50 °F differential temperature limit between the operating loop and idle loop is exceeded.

### Feedback

References: 2OP-02 Rev.110, Reactor Recirculating System Operating Procedure

- A. Incorrect since the lower Recirc Speed is procedurally limited to 28% speed to prevent seal damage.
- B. Incorrect since the region for instabilities is not entered prior to starting the idle recirc pump.
- C. Incorrect since the bottom head temperature tends to decrease at the lower core flows.
- D. Correct per caution statement on page 27.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

56. 295002AK2.08 001/T1G2/T1G2/CONV SERVICE WATER/C/A 3.1/3.2/N/BSEP 2003/C/TCK/R/C

The reactor is at 30% power. Which ONE of the following describes the impact on continued plant operation during a complete loss of the Conventional Service Water system?

- A. The plant should commence a shutdown immediately due to loss of cooling water to all of the ECCS Room coolers.
- B. The plant should commence a shutdown immediately due to loss of cooling to the RBCCW Heat Exchangers.
- C. The plant should reduce power as necessary to maintain equipment operating that is supplied by TBCCW.
- D. The reactor must be scrammed due to imminent loss of condenser vacuum.

### Feedback

References: 0AOP-19.0 Rev.13, Conventional Service Water System Failure

- A. Incorrect since Conventional Service Water does not supply cooling to the ECCS Room Coolers.
- B. Incorrect since Conventional Service Water does not supply cooling to the RBCCW Heat Exchangers.
- C. Incorrect since there is no guidance to reduce load to prevent overheating equipment supplied by TBCCW.
- D. Correct answer since Conventional Service Water supplies bearing lubrication to the C.W. pumps.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

57. 295002AK3.02 001/T1G2/T1G2/CONDENSER VACUUM/MEM 3.4/3.4/N/BSEP 2003/C/TCK/R/C

Which ONE of the following describes why the Main Turbine automatically trips on lowering condenser vacuum?

- A. Lowering condenser vacuum decreases the NPSH to the condensate pumps and the turbine is tripped to prevent a loss of feedwater to the reactor due to the Condensate pumps tripping on low suction pressure.
- B. Lowering condenser vacuum reduces the amount of energy that can be removed from steam entering the turbine which causes increased dynamic loading on the last stage blades and increases turbine vibration.
- C. The turbine is tripped on lowering condenser vacuum to prevent a steam leak into Secondary Containment due to a positive pressure occurring within the condenser and rupturing the turbine casing overpressure discs.
- D. The turbine is tripped on lowering condenser vacuum to prevent damage to the turbine shaft due to increased torque from trying to push the steam through the turbine.

### Feedback

References: SD-26 Rev.5, Turbine System

A. Incorrect since lowering condenser vacuum will not affect the suction pressure to the condensate pumps enough to trip the pumps.

B. Correct answer.

C and D. Incorrect since the reason the turbine is tripped is due to higher vibrations and increased loading on the last turbine blades.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

58. 295003AK1.02 001/T1G2/T1G1/LOSS OF AC/MEM 3.1/3.4/N/BSEP 2003/C/TCK/R/C

A LOCA has occurred on Unit 1 which requires the E1 Emergency Bus to be supplied by Diesel Generator #1.

Which ONE of the following describes the sequence of events that prevents the Diesel Generator from being overloaded?

- A. Bus E1 load shed occurs and then the following pumps start in the given order at 5 second intervals: RHR pump 1C, Core Spray pump 1A, NSW pump 1A.
- B. Bus E1 load shed occurs and then the following pumps start in the given order at 5 second intervals: NSW pump 1A, RHR pump 1C, Core Spray pump 1A.
- C. Bus E1 sheds all loads except RHR pump 1C and then the following pumps start in the given order at 5 second intervals: Core Spray pump 1A and NSW pump 1A.
- D. Bus E1 sheds all loads except Core Spray pump 1A and then the following pumps start in the given order at 5 second intervals: RHR pump 1C and NSW pump 1A.

### Feedback

References: SD-50.1 Rev.4, 4160 VAC Electrical Distribution System  
SD-39 Rev.2, Emergency Diesel Generators

- A. Incorrect since the order that the pumps start is incorrect.
- B. Correct answer.
- C. Incorrect since the load shed occurs prior to the pumps starting.
- D. Incorrect since the load shed occurs prior to the pumps starting and the order that the pumps start is incorrect.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

59. 295003G2.1.10 001//T1G1/LOSS OF ALL AC/MEM 2.7/3.9/B/BSEP 2003/S/LSM/R/C

During a Station Blackout, RPV cooldown is in progress on the Blacked Out Unit with the following RPV pressures recorded at the indicated times:

0100	540 psig
0115	420 psig
0130	300 psig
0145	210 psig
0200	150 psig

Per AOP-36.2, the cooldown rate is:

- A. satisfactory but the cooldown must be stopped.
- B. satisfactory and the cooldown should be continued.
- C. too low and the cooldown rate should be increased.
- D. excessively high and the cooldown rate should be lowered.

### Feedback

Cooldown rate is 120 degrees per hour which meets requirements of >100 degrees per hour, but required pressure band is 150-300 psig and the cooldown should be stopped.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

60. 295004AA2.02 001/T1G2/T1G2/DC SYSTEMS/MEM 3.5/3.9/N/BSEP 2003/C/TCK/C

The following conditions exist on Unit 1:

- HPCI system will not auto initiate, HPCI flow controller indication is lost.
- B logic is lost for the ADS system.
- RCIC will not trip on Hi water level and the inboard isolation logic is lost.
- Core Spray Loop A will not auto initiate.
- Inboard MSIV DC solenoids de-energize.

Which ONE of the following 125 VDC Distribution Panels was lost?

- A. 3A.
- B. 11A.
- C. 1XDA.
- D. 1XDB.

### Feedback

References: 0AOP-39.0 Rev.15, Loss of DC Power  
0OI-50 Rev.24, 125/250 VDC Electrical Load List

A. Correct answer.

B,C and D. Incorrect since these buses do not supply power that affects all of the listed items.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

61. 295005AA1.05 001/T1G1/T1G2/TURBINE TRIP/MEM 3.6/3.6/B/BSEP 2003/C/LSM/R/C

Unit 2 was operating at 100% RTP when the reactor scrammed due to a turbine trip.

In addition to the Turbine Stop Valves closing, which ONE of the following correctly describes the remaining turbine valve response?

- A. Turbine Control Valves - Closed  
Intercept Valves - Closed  
Intermediate Stop Valves - Open  
Bypass Valves - One or more may be open depending on throttle pressure
- B. Turbine Control Valves - Open  
Intercept Valves - Closed  
Intermediate Stop Valves - Closed  
Bypass Valves - All open initially; throttle closed to control Rx pressure.
- C. Turbine Control Valves - Closed  
Intercept Valves - Open  
Intermediate Stop Valves - Closed  
Bypass Valves - One or more may be open depending on throttle pressure
- D. Turbine Control Valves - Closed  
Intercept Valves - Closed  
Intermediate Stop Valves - Closed  
Bypass Valves - All open initially; throttle closed to control Rx pressure.

### Feedback

References: SI-LP-01901-00 Rev. 3 pg 44-46 of 79  
SI-LP-01701-00 Rev. SI-00 pg 17 of 36  
EO 019.010.a.01

- A. Incorrect since all valves close except bypass valves on a turbine trip.
- B. Incorrect since all valves close except bypass valves on a turbine trip.
- C. Incorrect since all valves close except bypass valves on a turbine trip.
- D. Correct answer.



## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

62. 295006AA2.05 001//T1G1/EOP ENTRY/C/A 4.6/4.6/N/BSEP 2003/S/TCK/R/C

The following conditions exist on Unit 2:

Reactor power	23%
Reactor water level	160 inches
Reactor pressure	980 psig
Drywell pressure	1.3 psig
Drywell temperature	145 °F
Reactor Bldg Vent Exhaust Rad Monitor	2.5 mR/hr
Main Steam Line Rad Monitor	1.3 times normal full power reading

Which ONE of the following indicates which EOP's should be entered at this time?

- A. EOP-01-LPC, Level/Power Control;  
EOP-03-SCCP, Secondary Containment Control Procedure.
- B. EOP-01-LPC, Level/Power Control ONLY.
- C. EOP-01-RVCP, Reactor Vessel Control Procedure ONLY.
- D. EOP-01-RVCP, Reactor Vessel Control Procedure;  
EOP-04-RRCP, Radioactivity Release Control Procedure.

### Feedback

References: APP-UA-23 Annunciator  
EOP's

- A. Incorrect since entry into EOP-03 is 3 mR/hr for Rx bldg vents.
- B. Correct answer since scram should have occurred due to low water level and reactor power is still above 3%.
- C. Incorrect since power is above APRM setpoint.
- D. Incorrect since entry into EOP-04 is 1.4 times normal rad levels for MSIV's.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

63. 295006AA2.06 001/T1G1//REACTOR SCRAM/C/A 3.5/3.8/N/BSEP 2003/R/TCK/R/C

Unit 2 is in Mode 1 with the following conditions present:

Reactor Power	34% RTP
Reactor Pressure	1050 psig
Reactor Water Level	168 inches
MSIV A and B	94% open
Turbine Control Valve Fast Closure	500 psig (Disk dump oil pressure)

Which ONE of the above conditions should have resulted in a full Reactor Scram?

- A. Reactor Pressure of 1050 psig.
- B. Turbine Control Valve Fast Closure disk dump oil pressure of 500 psig.
- C. MSIV A and B not full open.
- D. Reactor Water Level of 168 inches.

### Feedback

References: SD-03, Reactor Protection System Rev.2

- A. Incorrect since the Reactor Scram setpoint is  $\geq 1060$  psig.
- B. Correct answer since reactor power is  $>30\%$  RTP.
- C. Incorrect since the MSIV's need to be 90% full open to cause a scram signal.
- D. Incorrect since the Reactor Water Level scram setpoint is 166".

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

64. 295006G2.2.20 001//T1G1/SCRAM/C/A 2.2/3.3/B/BSEP 2003/S/LSM/R/C

Unit Two has inserted a manual Reactor scram due to lowering condenser vacuum. Control rods failed to insert on the scram. Plant conditions:

Reactor power	31%
Steam flow	3.2 Mlbm/hr.
Reactor pressure	960 psig, controlled by EHC
Drywell pressure	0.6 psig
Mode Switch	RUN
Main Turbine	Tripped on low vacuum

The operator is performing LEP-02, Section 3 to reset and scram the Reactor. Jumpers to bypass RPS trip signals have been requested but NOT yet installed.

Which ONE of the following would prevent the operator from resetting RPS prior to jumper installation?

- A. Scram discharge volume Hi Hi level RPS trip sealed in.
- B. Turbine stop valves closed with reactor power above 30%.
- C. Reactor water level is controlling at the setdown setpoint.
- D. IRMs upscale Hi Hi due to being inserted but not ranged up.

### Feedback

Bank

LOI-CLS-LP-003-A\*008011

A. SDV hi hi trip can be bypassed only if the Mode switch is in Shutdown or Refuel. Turbine stop valve closure bypass sensed by turbine 1st stage pressure(isolated). Setdown setpoint is 170", 4" above scram setpoint, IRM trips bypassed in RUN.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

65. 295007AK3.06 001/T1G1/T1G1/REACTOR PRESSURE/C/A 3.7/3.8/B/BSEP 2003/C/TCK/R

Unit 2 is operating at 80% power when INBOARD MSIV B21-F022A fails closed.

Which ONE of the following describes the effect on Reactor Pressure and Pressure Averaging Manifold (PAM) Pressure after conditions stabilized, relative to the 80% power?

- A. Reactor pressure would have increased, and PAM Pressure would have increased.
- B. Reactor pressure would have remained the same, and PAM Pressure would have increased.
- C. ☒ Reactor pressure would have increased, and PAM Pressure would have remained the same.
- D. Reactor pressure would have remained the same, and PAM Pressure would have remained the same.

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### Feedback

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- A. Incorrect
- B. Incorrect
- C. Correct
- D. Incorrect

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

66. 295008AK3.04 001/T1G2/T1G2/MAIN TURBINE/MEM 3.3/3.5/N/BSEP 2003/C/TCK/R

Which ONE of the following is the reason the Reactor Feed Pumps are required by Technical Specifications to automatically trip on high reactor water level?

- A. Tripping the feedwater pumps prevents vessel level from exceeding the high level trip setpoints for HPCI and RCIC only, so that they remain available if necessary.
- B. Tripping the feedwater pumps prevent damage to the feedwater pump turbines by limiting water addition to the vessel.
- C. Tripping the feedwater pump turbines limits further vessel level increase thereby terminating the overfeed event.
- D. Tripping the feedwater pump turbines limits further vessel level increase and is the only means of preventing water from entering the main turbine.

### Feedback

References: Tech Spec Sectin 3.3.2.2 Bases.

- A. Incorrect since HPCI and RCIC have their own trip setpoints for vessel level and they are still available for operation since the high level trip automatically resets.
- B. Incorrect since the primary reason to trip the turbines is to terminate the event.
- C. Correct answer.
- D. Incorrect since the Main Turbine has a seperate trip which also closes the turbine stop valves to protect the turbine from water.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

67. 295009AK1.05 002/T1G1/T1G1/RPV/MEM 3.3/3.4/B/BSEP 2003/C/LSM/R/C

Which ONE of the following is the basis for lowering RPV water level during an ATWS condition?

- A. Reduces reactor power by reducing the natural circulation driving head.
- B. Reduces steam generation rate which reduces the moderator temperature.
- C. Prevents thermal stratification which prevents localized power peaks.
- D. Reduces reactor pressure which allows more injection from low pressure systems.

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### Feedback

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Reference: LR-LP-20327 Rev. 10 Pg 42 of 53

Revised correct answer IAW lesson plan.

A. Correct answer.

B, C or D. Incorrect answer.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

68. 295009G2.4.1 001//T1G1/EOP ENTRY/C/A 4.3/4.6/N/BSEP 2003/S/LSM/R/C

Reactor water level has just dropped suddenly to 158 inches. Control rod position indications are unavailable. APRMs are down scale and periods indicate -80 seconds.

Which one of the following describes correct EOP pathway(s) that must be executed?

- A. Enter RSP then go to RVCP.
- B. ☒ Enter RSP then go to L/PC.
- C. Enter L/PC then go to RVCP and execute RC/L and RC/P concurrently.
- D. Enter RVCP then execute L/PC, RC/L and RC/P concurrently.

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### Feedback

Per 1-EOP-UG

B is the correct answer

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

69. 295010AA1.01 002/T1G1/T1G1/DRYWELL VENTILATION/C/A 3.4/3.5/N/BSEP 2003/C/TCK/R/C

The following conditions exist on Unit 1:

Drywell pressure	2.0 psig
Drywell temperature	180 °F
Reactor water level	+55 inches
Reactor pressure	400 psig
Drywell Cooler Override Switch position	NORMAL

Which ONE of the following describes the condition of the Drywell Cooler fans?

- A. All cooling fans are tripped.
- B. Div I cooling fans tripped, Div II cooling fans running.
- C. Div I cooling fans running, Div II cooling fans tripped.
- D. All cooling fans running.

### Feedback

References: SD-04, Primary Containment Rev.1 pg 17-19.  
SD-18, Core Spray Rev.0 pg 21

- A. Correct answer. Drywell coolers trip on Core Spray Initiation Logic (Hi Drywell Pressure concurrent with Low Reactor Pressure).
- B. Incorrect since all the Drywell coolers trip.
- C. Incorrect since all the Drywell coolers trip.
- D. Incorrect since the Override switches are in NORMAL.



**QUESTIONS REPORT**  
for FINAL BSEP 2003-301 Written Exam

70. 295010AA2.06 001//T1G1/DRYWELL PRESSURE/C/A 3.6/3.6/M/BSEP 2003/S/LSM/TCK/C

A DBA LOCA has occurred on Unit 2 and the following conditions exist:

Drywell Pressure	62 psig and increasing at 2 psig/min
Reactor Water Level	-20 inches and increasing at 10 "/min with RHR pumps
Average Drywell Temp	280 °F
PC Water Level	20 ft and increasing slowly

Which ONE of the following should be ordered by the Shift Supervisor?

- A. Vent the Torus. Do not exceed ODCM limits for radiological release rates.
- B. Vent the Drywell IRRESPECTIVE of offsite radiological release rates.
- C. Spray the Drywell after verifying within Drywell Spray Initiation Limit.
- D. Enter the Severe Accident Guidelines (SAG's).

**Feedback**

Reference: PC-1 Primary Containment Control  
Drywell Spray Initiation Limit (Graph 8)  
(Consider providing PC-1 and Graph 8)

- A. Incorrect since Torus water level is above 6 feet.
- B. Correct answer.
- C. Incorrect since the Torus to Drywell vacuum breakers are submerged and can spray.
- D. Incorrect since EOP's have direction to cover this situation.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

71. 295012AA1.02 001/T1G2/T1G2/DRYWELL TEMPERATURE/MEM 3.8/3.8/N/BSEP 2003/C/TCK/R/C

Following a reactor scram, drywell temperature is 225 °F. Which ONE of the following describes the position of the MIN/MAX control switch on Panel XU-3 for the Drywell Lower Vent dampers, the reason it is in that position, and the actual damper position?

Assume NO operator actions:

- A. MIN position so that the Reactor Building Closed Cooling Water system is not overloaded. Dampers will actually be in the MIN position.
- B. MAX position to minimize DP between the torus and the drywell. Dampers will actually be in the MIN position.
- C. MIN position to prevent extreme temperature excursions in the upper drywell regions during normal operation. Dampers will actually be in the MAX position.
- D. MAX position to maximize drywell cooling AND to distribute the air flow in all portions of the drywell evenly. Dampers will actually be in the MAX position.

### Feedback

References: SD-04 Rev.1, Primary Containment

- A. Incorrect since running the fans in MAX position will not overload RBCCW System.
- B. Incorrect since the normal position for the switch is MIN position.
- C. Correct answer.
- D. Incorrect since the normal position for the switch is MIN position.

## QUESTIONS REPORT

for FINAL-BSEP 2003-301 Written Exam

72. 295013AA2.02 001//T1G1/TORUS TEMP/MEM 3.2/3.5/M/BSEP 2003/S/LSM/R/C

During Unit 1 operation at rated power, annunciator A-03 1-1, SAFETY OR DEPRESS VLV LEAKING was received. SRV sonics indicate the valve is OPEN. A check of the Suppression Pool parameters indicate an average temperature of 93 °F with a steady, rising trend.

Which one of the following describe the actions that should be immediately taken?

- A. Cycle the control switch of the affected SRV to OPEN and CLOSE/AUTO several times while maintaining Suppression Pool temperature below 110 °F.
- B. Commence a reactor shutdown per OGP-05 and perform an inspection of the drywell and suppression pool in the area of the failed SRV prior to startup.
- C. Manually scram the reactor and enter EOP-01 and 0AOP-14.0 due to the increasing Suppression Pool temperature from the stuck open SRV.
- D. Commence a reactor shutdown per OGP-05 and place RHR Suppression Pool Cooling in service as required.

### Feedback

LESSON 2: LOI-CLS-LP-302-M  
LESSON 3: LOI-CLS-LP-302-D  
LOI-CLS-LP-004-A\*15M001

LESSON 2 OBJECTIVES: 03c  
LESSON 3 OBJECTIVES: 02

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

73. 295013AK1.03 001/T1G2/T1G1/SUPPRESSION POOL TEM/C/A 3.0/3.3/N/BSEP 2003/C/TCK/R/C

Unit 1 has been operating at 75% RTP with a leaking Safety/Relief valve (the valve is still OPERABLE). This has caused the local Suppression Pool temperature in the area around the T-quencher to reach 111°F. The average Suppression Pool temperature is steady at 93°F.

Which ONE of the following describes the effect, if any, on continued plant operation?

- A. The Tech Spec limit for Suppression Pool average temperature has been exceeded. Average temperature must be lowered to  $\leq 90$  °F within 24 hours.
- B. No TS limit has been exceeded. However, Supression Pool Cooling **MUST** be placed in service to restore the T-quencher to  $\leq 110$  °F.
- C. The Suppression Pool temperature Tech Spec limit of 110 °F has been exceeded. The reactor must be scrammed immediately.
- D. No TS limit has been exceeded.

### Feedback

References: Tech Spec section 3.6.2.1

- A. Incorrect since the Tech Spec limit for Suppression Pool temperature is 95°F average pool temperature. This has not been exceeded.
- B. Incorrect since there is not a spec for ANY temperature. The spec is for AVERAGE pool temperature.
- C. Incorrect since the Tech Spec limit of 110°F is for AVERAGE pool temperature.
- D. Correct answer.

## QUESTIONS REPORT

for FINAL-BSEP 2003-301 Written Exam

74. 295014AA2.03 001//T1G1/REACTIVITY/C/A 4.0/4.3/M/BSEP 2003/S/LSM/R/C

During a Unit 2 main turbine trip, reactor pressure peaked at 1145 psig and reactor water level lowered to 125 inches. While responding to the transient, the reactor operator reports both Reactor Recirculation pumps are running. He is directed to trip both pumps. Which one of the following is the basis for these actions?

- A. Add negative reactivity counteracting the positive reactivity addition resulting from the pressure rise during the turbine trip ONLY.
- B. Promote level swell in the reactor vessel counteracting the level shrink effects caused by the turbine trip ONLY.
- C. Add negative reactivity counteracting the positive reactivity addition resulting from the pressure rise AND promote level swell in the reactor vessel counteracting the level shrink effects caused by the turbine trip.
- D. Protect the recirculation pumps from inadequate NPSH due to the level shrink caused by the turbine trip.

### Feedback

Answer: A

63.

LOI-CLS-LP-002-A\*161001

## QUESTIONS REPORT

for FINAL-BSEP 2003-301 Written Exam

75. 295014AK2.03 001/T1G1/T1G1/FUEL TEMPERATURE/C/A 3.3/3.4/B/BSEP 2003/C/LSM/R/C

Which ONE of the following describes the Abnormal Operating Occurances (Plant Transients) which increase fuel temperature?

- A. Recirc Flow Control Failure-Increasing Flow, Loss of Feedwater Heating, Inadvertent start of HPCI.
- B. Loss of Shutdown Cooling, Loss of Condenser Vacuum, Recirc Flow Control Failure-Decreasing Flow.
- C. Loss of Feedwater Heating, Trip of one Recirc Pump, Startup of idle Recirc Pump.
- D. Recirc Flow Control Failure-Increasing Flow, Loss of Condenser Vacuum, Turbine Trip with Bypass Valves available.

### Feedback

References: FSAR section 15.2

A. Correct answer - all occurances increase reactor power and fuel temperature.

B, C and D. Incorrect since at least one occurrence decreases reactor power and fuel temperature.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

76. 295015AK1.02 001/T1G1/T1G1/ATWS/MEM 3.9/4.1/N/BSEP 2003/C/TCK/R/C

Which ONE of the following describes the reason a cooldown is NOT initiated prior to the Cold Shutdown Boron Weight (CSBW) being injected during an ATWS condition?

- A. The cooldown will cause an increase in reactor power which will require more boron to be injected to maintain the reactor in an analyzed condition.
- B. Initiating a cooldown while injecting boron is an uncontrolled reactivity manipulation and it will prevent the boron from being uniformly mixed.
- C. Core reactivity response is unpredictable in a partially borated core and subsequent EOP steps may not provide the correct actions for such conditions.
- D. Cooldown is not allowed at this time to ensure that low pressure injection systems cannot inject into the vessel and add positive reactivity.

### Feedback

References: 00I-37.5, Level/Power Control Basis Document Rev.4

- A. Incorrect since this action will not cause more boron to be added. The CSBW will ensure that the reactor stays shutdown at any temperature.
- B. Incorrect since it does not prevent the boron from being uniformly mixed.
- C. Correct answer.
- D. Incorrect since EOP guidance directs the prevention of injection from Condensate and ECCS during an ATWS condition.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

77. 295016AK3.01 001/T1G2/T1G1/REMOTE SHUTDOWN/MEM 4.1/4.2/B/BSEP 2003/C/TCK/R/C

A chlorine tank car rupture has made the Control Room inaccessible. If possible, prior to leaving the Control Room the Control Operator inserts a manual Scram per 0AOP-32.0, *PLANT SHUTDOWN FROM OUTSIDE CONTROL ROOM*.

Which ONE of the following describes why the procedure also has steps to Scram the reactor by de-energizing the RPS EPA's?

- A. The Technical Requirements Manual requires the capability to Scram the reactor from outside the Control Room.
- B. The Technical Specifications require that Reactor Scram capability from outside the Control Room be maintained.
- C. The FSAR requires the ability for prompt hot shutdown of the reactor from locations outside the Control Room.
- D. The capability for prompt hot shutdown of the reactor from outside the Control Room is not required but is a safe operating practice.

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### Feedback

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References: 0AOP-32.0 Rev.35, *PLANT SHUTDOWN FROM OUTSIDE CONTROL ROOM*:  
FSAR Section 7.2.1

- A. Incorrect since the Technical Requirements Manual does not describe how to shutdown the plant from outside the control room.
- B. Incorrect since the Technical Specifications do not describe how to shutdown the plant from outside the control room.
- C. Correct answer.
- D. Incorrect since it is a requirement to be able to perform a prompt hot shutdown from outside the control room.



## QUESTIONS REPORT

for FINAL-BSEP-2003-301 Written Exam

78. 295017G2.1.2 001/T1G2/T1G1/OFFSITE RELEASE/MEM 3.0/4.0/N/BSEP 2003/C/TCK/R/C

Fuel bundles are being moved in the Unit 1 Fuel Pool when alarm *UA-03 3-5, PROCESS RX BLDG. VENT RAD HI-HI* is received followed by a report that an irradiated fuel assembly has been dropped and damaged. The Control Operator notes that the Reactor Building ventilation failed to isolate on Unit 1 and manual actions to close the isolation valves have been unsuccessful. Radiation levels at the site boundary have started to increase.

Which ONE of the following is an **immediate** operator action for these conditions per 0AOP-05.0, Radioactive Spills, High Radiation, High Airborne Activity?

- A. ✓ Ensure the Control Room Emergency Ventilation System (CREVS) is in operation.
- B. Notify E&RC to perform surveys, post the area and control access to the affected area.
- C. Evacuate unnecessary personnel from the affected area.
- D. Stop all fuel movements.

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### Feedback

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Reference: 0OAP-05.0 Rev. 14

A. Correct answer.

B, C and D. Incorrect since these actions are all subsequent actions.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

79. 295019AA1.01 001/T1G2/T1G2/INSTRUMENT AIR/MEM 3.5/3.3/N/BSEP 2003/C/TCK/R/C

The Unit 2 Reactor Instrument Air Non-Interruptible/Pneumatic Nitrogen Supply (RNA/PNS) header pressure has dropped to 70 psig.

Which ONE of the following describes the effect this will have on the Inboard MSIV's?

- A. The Inboard MSIV's will not be affected due to the Backup Nitrogen valves SV-5481 and SV-5482 opening.
- B. The Inboard MSIV's should not be affected due to the accumulators associated with the valve operators.
- C. The Inboard MSIV's may start drifting closed due to a sustained low header pressure.
- D. The Inboard MSIV's will close immediately after RNA/PNS header pressure drops below 80 psig.

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### Feedback

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References: SD-46 Rev.4, Pneumatic Systems

- A. Incorrect since Backup Nitrogen does not supply the MSIV's.
- B. Incorrect since the accumulators maintain pressure for a short time.
- C. Correct answer.
- D. Incorrect since the MSIV's will not close immediately due to the accumulators associated with the valves.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

80. 295020AA2.06 001/T1G2/T1G2/CONTAINMENT ISOL/C/A 3.4/3.8/N/BSEP 2003/C/TCK/R/C

A partial Group 2 isolation has just occurred on Unit 2.

Which ONE of the following conditions initiated the isolation?

- A. Drywell pressure at 1.5 psig.
- B. Reference leg leaks that lower reference leg pressure for Reactor Vessel Water Level LL#1 transmitters, *LT-N017C-1* and *LT-N017D-1*.
- C✓ A variable leg leak that lowers variable leg pressure for Reactor Vessel Water Level LL#1 transmitters, *LT-N017A-1* and *LT-N017B-1*.
- D. Drywell temperature at 155 °F.

### Feedback

References: SD-01.2 Rev.2, Reactor Vessel Instrumentation.

- A. Incorrect since the Group II Isolation setpoint is  $\geq 1.7$  psig.
- B. Incorrect since a reference leg leak would cause the instrumentation to read a higher level.
- C. Correct answer since a variable leg leak would indicate a lower level and the two instruments are from different divisions to cause the actuations.
- D. Incorrect since high Drywell temperature does not cause a Group II Isolation.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

81. 295021AA2.01 001//T1G2/SHUTDOWN COOL/MEM 3.5/3.6/B/BSEP 2003/S/LSM/R/C

Which ONE of the following indications is used to monitor plant heatup/cooldown rate while in Alternate Shutdown Cooling with the SRVs?

- A. Recirculation loop suction line temperature.
- B. ☒ Safety relief valve tailpipe temperature.
- C. Steam dome pressure using steam table conversion.
- D. The running ECCS pump local suction temperature.

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### Feedback

- B. Correct  
SRO ONLY

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

82. 295021AK2.01 001/T1G3/T1G2/SHUTDOWN COOL/C/A 3.6/3.7/N/BSEP 2003/C/TCK/R/C

Unit 1 is in Mode 4 with Shutdown Cooling established with the A Loop of RHR. Both Recirc Pumps are out of service at this time. A spurious signal has caused a Group 8 isolation which cannot be reset. Reactor vessel water level has been raised to +210".

Which ONE of the following describes the the most accurate method for determining if a Mode Change has occurred under these conditions?

- A. Verifying that the bottom head temperature is less than 212 °F ensures the Unit has not entered Mode 3.
- B. Verifying that the recirc loop suction temperatures are less than 212 °F ensures the Unit has not entered Mode 3.
- C. Verifying an increasing trend in reactor pressure has not been established ensures the Unit has not entered Mode 3.
- D. Verifying reactor vessel level has been raised to > 200" ensures natural circulation has been established and the Unit has not entered Mode 3.

### Feedback

References: 0AOP-15.0, Loss of Shutdown Cooling, Rev.13

- A. Incorrect since the vessel bottom head temperature may not be indicative of average vessel coolant temperature.
- B. Incorrect since the recirc loop suction temperatures may not be indicative of average vessel coolant temperature.
- C. Correct answer. If an increasing trend in vessel pressure is established then it must be assumed that 212°F has been exceeded and a Mode change has occurred.
- D. Incorrect since natural circulation cannot be relied upon to establish enough circulation to provide accurate temperature indication.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

83. 295022G2.1.30 001/T1G2/T1G2/CRD SYSTEM/MEM 3.9/3.4/N/BSEP 2003/C/TCK/R/C

The Unit 1 Control Operator is walking down his panels when he notices that the CRD Flow Control Valve controller, C11-FC-R600 has failed such that the demand is 0 gpm. Flow Control Valve C11-F002A was in automatic at 60 gpm prior to the failure.

Which ONE of the following describes how Flow Control Valve C11-F002A can be controlled under these conditions?

- A. The Flow Control Valve will continue to operate at 60 gpm due to the local controller taking over control automatically.
- B. The Flow Control Valve will close until local controller C11-FK-D009A is taken to manual and adjusted as necessary.
- C. The Flow Control Valve will fully open until local controller C11-FK-D009A is taken to manual and adjusted as necessary.
- D. The Flow Control Valve will close and cannot be operated until controller C11-FC-R600 is repaired.

### Feedback

References: SD-08 Rev.4, CRD Hydraulic System

- A. Incorrect since the flow control valve will go closed since it is in automatic.
- B. Correct answer.
- C. Incorrect since the valve cannot be operated in the automatic mode locally without input from C11-FC-R600.
- D. Incorrect since the valve can be operated in the manual mode locally.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

84. 295023AA2.02 001/T1G3/T1G1/FUEL POOL/C/A 3.4/3.7/N/BSEP 2003/C/TCK/R/C

Unit 2 is in Mode 5 with the fuel pool gates removed. Fuel Handlers are verifying the Refueling Interlocks after maintenance on the refuel bridge. 2A Core Spray pump is running for a flow rate surveillance when the operator inadvertently opens the Core Spray Injection Valve F005B. (Assume F004B is open)

Which ONE of the following describes the effect on the plant under these conditions?

- A. Fuel Pool water level will fill the skimmer surge tanks and cause the Fuel Pool Cooling Pumps to trip on high level.
- B. Reactor cavity water will drain to Radwaste through adjustable weirs located around the cavity walls.
- ☒ C. Fuel Pool water level will overflow into the Reactor Building Ventilation system.
- D. Fuel Pool water level will rise to the high level alarm setpoint at which time the Fuel Pool Cooling Pumps will trip.

### Feedback

References: SD-13 Rev.2 pg 41

- A. Incorrect since the Fuel Pool Cooling Pumps do not trip on skimmer surge tank high level.
- B. Incorrect since the adjustable weirs do not drain to Radwaste.
- C. Correct answer.
- D. Incorrect since the Fuel Pool Cooling Pumps do not trip on Fuel Pool high level.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

85. 295024EK3.01 001/T1G1/T1G1/DRYWELL SPRAYS/MEM 3.6/4.0/N/BSEP 2003/C/TCK/R/C

Which ONE of the following describes why Drywell Sprays are not initiated until Suppression Chamber pressure reaches 11.5 psig?

- A. This ensures that Suppression Chamber sprays are attempted before operation of Drywell sprays.
- B. This ensures that 100% of the non-condensibles are in the Suppression Chamber.
- C. This prevents opening of the Suppression Chamber to Drywell vacuum breakers when sprays are initiated.
- D. This prevents opening of the Reactor Building to Suppression Chamber vacuum breakers when Drywell sprays are initiated in a 100% steam atmosphere.

### Feedback

References: CLS-LP-300-L Rev.1 pg 21,22,27-30

- A. Correct answer.
- B. Incorrect since only 95% of the non-condensibles are assumed to be in the Suppression Chamber.
- C. Incorrect since the Suppression Chamber to Drywell vacuum breakers will open and the non-condensibles will be transferred back to the Drywell when sprays are initiated.
- D. Incorrect since the Suppression Chamber spray interlock for low pressure will prevent the Reactor Building to Suppression Chamber vacuum breakers from opening.



## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

86. 295025EA1.02 001/T1G1/T1G1/MAIN TURBINE/C/A 3.8/3.8/N/BSEP 2003/C/TCK/R/C

Unit 1 was operating at 80% RTP when a loss of feedwater heating occurred.

Which ONE of the following describes the effect on the main turbine controls provided no operator action is taken?

PAM (Throttle) Pressure will \_\_\_\_\_ and send a signal to the Control Valves to \_\_\_\_\_.

- A. increase, close
- B. ☒ increase, open
- C. decrease, close
- D. decrease, open

### Feedback

References: SD-26.3 Rev. 2, EHC Electrical

A. Incorrect since the increase in PAM Pressure sends a signal to the control valves to open.

B. Correct answer.

C. Incorrect since the PAM Pressure increases due to the increase in Reactor Power from the loss of feedwater heating.

D. Incorrect since the PAM Pressure increases due to the increase in Reactor Power from the loss of feedwater heating. Also, a decrease in PAM Pressure would cause the control valves to close down.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

87. 295025G2.1.20 001/T1G1//REACTOR PRESSURE/MEM 4.3/4.2/N/BSEP 2003/R/TCK/R

Unit 2 is operating at 75% RTP when alarm *APP A-05 3-5, REACTOR VESS HI PRESS* is received. After verifying that pressure peaked at 1065 psig you note that "C" Main Steam Line Flow indicates downscale. No other abnormal indications exist.

Which ONE of the following describes the next action that should be taken for this condition?

- A. Close the MSIV's associated with the blocked steam line.
- B. Immediately SCRAM the reactor.
- C. Reduce reactor pressure to 1030 psig.
- D. Initiate a WR/JO for the Main Steam Line Flow indicator.

### Feedback

References: APP A-05 3-5 Rev.43

- A. Incorrect, since pressure peak requires a scram.
- B. Correct answer.
- C. Incorrect, since pressure peak requires a scram.
- D. Incorrect since you only initiate a WR/JO for the indicator if it is suspected that it malfunctioned.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

88. 295025G2.4.4 001//T1G1/EOP ENTRY/C/A 4.0/4.3/N/BSEP 2003/S/TCK/R/C

Which ONE of the following conditions would require entry in the Emergency Operating Procedures?

- A. Unit 1 Reactor Water Level at +168 inches following a Reactor Feed Pump trip.
- B. Unit 2 HPCI flow rate test in progress and Suppression Pool temperature at 102 °F.
- C. Unit 1 Reactor Pressure at 1065 psig following a spurious Group 1 isolation.
- D. Units 1 and 2 in Mode 4 with new fuel being moved into Unit 2 fuel pool and Reactor Building pressure cannot be maintained negative.

### Feedback

References: EOP entry conditions

- A. Incorrect since reactor water level is above +166 inches.
- B. Incorrect since entry condition for Suppression Pool temperature with testing in progress is 105°F.
- C. Correct answer. Entry condition is reactor pressure >1060 psig.
- D. Incorrect since Secondary Containment is not required even though new fuel is being moved in containment. If irradiated fuel was being moved in containment then this would be an entry condition.

## QUESTIONS-REPORT

for FINAL BSEP 2003-301 Written Exam

89. 295026EK2.04 001/T1G2/T1G1/SUPPRESSION POOL/MEM 2.5/2.8/N/BSEP 2003/C/TCK/R

Unit 2 is operating at 100% RTP. The HPCI system is currently running for an OPERABILILTY flow test after maintenance has been performed. The Control Operator notes that Suppression Pool temperature is 96 °F.

Which ONE of the following indicates the event status and the color code displayed by the Safety System Parameter Display System (SPDS) with regards to the Suppression Pool temperature?

Event Status = \_\_\_\_\_; Color Code = \_\_\_\_\_

- A. Safe; Green.
- B. Caution; Yellow.
- C. Alarm; Red.
- D. Inactive; Cyan.

### Feedback

Reference: SD-60 Rev.2, ERFIS DATA ACQUISITION, PROCESSING, AND DISPLAY

- A. Incorrect since the temperature of the suppression pool is  $\geq 92^{\circ}\text{F}$ .
- B. Incorrect since Temperature of the suppression pool is not  $> 95^{\circ}\text{F}$ .
- C. Correct answer since the temperature of the suppression pool is  $> 95^{\circ}\text{F}$ .
- D. Incorrect since all of the inputs to SPDS are operable.

## QUESTIONS REPORT

for FINAL-BSEP 2003-301 Written Exam

90. 295028EK1.01 001/T1G2/T1G2/DRYWELL TEMPERATURE/MEM 3.5/3.7/N/BSEP 2003/C/TCK/R

Unit 2 was operating at 100% RTP when a LOCA occurred. Water level is being maintained above TAF with the HPCI system. The following conditions exist in the Drywell:

Drywell pressure	8.0 psig
Suppression Chamber pressure	7.5 psig
Drywell temperature	275 °F
Reactor pressure	700 psig
Suppression Chamber sprays	in progress

Which ONE of the following describes the effect on the indicated water level?

Assume the fuel zone level instrument reference leg piping height is longer than the variable leg piping height in the Drywell.

- A. Level indication will be reading lower than actual water level due to the reference leg having more water in it.
- B. Level indication will be reading lower than actual water level due to Drywell temperature being above 212 °F.
- ☒ C. Level indication will be reading higher than actual water level due to Drywell temperature being above 212 °F.
- D. Level indication will still read accurate level since the high Drywell temperature affects both the reference and variable legs equally.

### Feedback

References: SD-01.2 Rev.2 pg 38 and 39, Reactor Vessel Instrumentation  
CLS-LP-01.2 Rev.1 Enabling Objective 5c

- A. Incorrect since both instrument lines are the same length in the Drywell and the indicated level error will be zero.
- B. Incorrect since higher temperatures would cause the level to indicate higher since there is less density. Since the instrument lines are of equal length then the level error is zero.
- C. Incorrect since both instrument lines are the same length in the Drywell and the indicated level error will be zero.
- D. Correct answer.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

91. 295030EA1.05 001/T1G2/T1G1/SUPPRESSION POOL/MEM 3.5/3.5/N/BSEP 2003/C/TCK/R/C

Unit 2 has developed an unisolable leak on the ECCS Suction header. Suppression Pool level continues to lower.

Which ONE of the following corresponds to the minimum level at which the HPCI System must be isolated irrespective of adequate core cooling?

- A. -2 feet and 7 inches
- B. -5 feet and 6 inches
- C. -6 feet and 5 inches
- D. -9.0 feet

### Feedback

References: CLS-LP-300-L Rev.1 Figure 4  
0-EOP-02-PCCP, Primary Containment Control Procedure  
Enabling Objective CLS-LP-300-L Rev.1 #13

- A. Incorrect since this is the level that is an entry condition to 0-EOP-02-PCCP.
- B. Incorrect since this is the level at which the downcomers are uncovered. The HPCI Exhaust line is still covered.
- C. Correct answer. This is the level at which the HPCI Exhaust line is uncovered.
- D. Incorrect since this is the level at which the Tee Quenchers are uncovered.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

92. 295031G2.1.1 001/T1G1/T1G1/REACTOR WATER LEVEL/C/A 3.7/3.8/N/BSEP 2003/C/TCK/R/C

Unit 2 experienced a scram due to the loss of the Reactor Feedwater Pumps. Reactor water level initially dropped to +90 inches and has been restored to +150 inches and increasing slowly. The following conditions are present at this time:

HPCI system	currently injecting
RCIC system	in Standby alignment
Secondary Containment	isolated
SBGT system	operating normally
Group 2	isolated
Group 3	RWCU system in operation
Group 6	isolated
Group 8	isolated

Which ONE of the following describes the actions that should be taken at this time?

- A. Continue to monitor HPCI operation and restore reactor water level to the normal band. RCIC operation is not required.
- B. Start RCIC manually and then secure HPCI. Increase reactor water level to the normal operating band. All required PCIS Group isolations have occurred.
- C. Reset the Group 2 isolation immediately to prevent high drywell pressure and continue to monitor HPCI while restoring reactor water level to the normal band.
- D. Isolate the RWCU System, start RCIC manually, if possible, and continue to monitor reactor water level to ensure the normal operating band is obtained.

**QUESTIONS REPORT**  
for FINAL BSEP 2003-301 Written Exam

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**Feedback**

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References: Conduct of Operations

- A. Incorrect since RCIC failed to start and RWCU failed to isolate. Expectations are to ensure automatic actions occurred or make them happen. RCIC operation is required.
- B. Incorrect since RWCU system should be isolated thus, all required PCIS groups have not isolated. HPCI may or may not be secured.
- C. Incorrect since the Gr 2 isolation cannot be reset immediately due to reactor water level. Also, RCIC and RWCU not addressed.
- D. Correct answer. RCIC should have started automatically and RWCU should have isolated automatically. Even though level is above the isolation or start level the actions that should have happened still need to be taken.



## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

93. 295032EK3.01 001/T1G3/T1G2/SECONDARY CONTAIN/MEM 3.5/3.8/B/BSEP 2003/C/LSM/R/C

Secondary Containment Control Procedure, EOP-03-SCCP, requires Emergency Depressurization if 2 or more areas exceed the Maximum Safe Operating Temperature and a primary system is discharging reactor coolant into secondary containment.

Which ONE of the following statements explain the reason for this action?

- A. The rise in secondary containment parameters indicate a wide-spread problem which may pose a potential threat to secondary containment integrity or preclude personnel access required for the safe operation of the plant.
- B. The rise in secondary containment parameters indicate substantial degradation of the primary system and may lead to fuel failure if the leaks are not isolated.
- C. The rise in secondary containment parameters indicate a wide-spread problem which may pose a direct and immediate threat to secondary containment integrity or equipment located in secondary containment.
- D. The rise in secondary containment parameters indicate substantial degradation of the primary system and emergency depressurization effectively isolates the leak.

### Feedback

References: LR-LP-20325 Rev. 05, pg 19 and 20 of 40  
EO 201.077.a.14, 201.078.a.15, 201.079.a.19

- A. Incorrect since condition pose a DIRECT threat to containment, not an INDIRECT threat.
- B. Incorrect since this condition does not indicate substantial primary system degradation.
- C. Correct answer.
- D. Incorrect since this condition does not indicate substantial primary system degradation.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

94. 295033G2.3.10 001//T1G2/SECONDARY CONTAIN/C/A 2.9/3.3/N/BSEP 2003/S/TCK/R/C

Unit 2 is operating at 50% RTP when alarm AREA RAD RX BLDG HIGH annunciates. Upon investigation the operator notes that the alarm is received from the Spent Fuel Cooling System (Channel 30) which is reading 95 mR/HR. Reactor Building Exhaust Radiation levels are 2 mR/HR with the system unisolated. The Equipment Operator reports that the Fuel Pool Heat Exchanger is leaking approximately 50 gpm from the end bell.

Which ONE of the following describes the actions required for this situation?

- A. ☒ Isolate all systems discharging into the area except those required to shutdown the reactor, assure adequate core cooling, or suppress a fire.
- B. Emergency Depressurize the reactor per the RC/P section of EOP-01.
- C. Shutdown the reactor by manual scram or GP-05 as directed by the SRO.
- D. Perform actions required by the Annunciator Response procedure since an entry condition to the EOP's does not exist.

### Feedback

References: EOP-03-SCCP Rev.5

A. Correct answer. EOP-03-SCCP is entered at 90 mR/HR for ARM Channel 30. Since no primary system is discharging into the reactor building then isolate systems as required.

B. Incorrect since 2 or more areas are required to be above max safe with a primary system discharging into the reactor building.

C. Incorrect since a primary system must be discharging into the reactor building.

D. Incorrect since an entry condition exists for EOP-03-SCCP (>90 mR/HR for ARM channel 30).

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

95. 295033G2.3.2 001/T1G2//RADIATION CONTROL/MEM 2.5/2.9/N/BSEP 2003/R/TCK/R/C

Unit 1 has just entered Mode 4 for a refueling outage. A set of TIP traces were run approximately 24 hours ago for the Nuclear Engineer. You note that a clearance for the TIP system has not been performed as required by OE&RC 0040, *Administrative Controls for High Radiation Areas, Locked High Radiation Areas and Very High Radiation Areas*.

Which ONE of the following is required prior to entering the TIP room?

- A. RC Supervision can waive this prerequisite after reviewing the scope of the work.
- B. The Operations Shift Superintendent can waive this prerequisite due to the impact on the outage.
- C. The TIP system must be under clearance prior to entering the TIP room.
- D. The TIP room cannot be entered for 48 hours since entry into the room is prohibited for 72 hours after TIP traces being performed.

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### Feedback

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References: OE&RC 0040, *Administrative Controls for High Radiation Areas, Locked High Radiation Areas and Very High Radiation Areas*, Rev.22, pg 3 and 4.

- A. Incorrect since RC Supervision cannot waive this prerequisite for 72 hours.
- B. Incorrect since the Operations Shift Superintendent cannot waive this prerequisite unless an emergency exists.
- C. Correct answer.
- D. Incorrect since there is not a requirement that the TIP room cannot be entered for 72 hours after a TIP trace has been performed.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

96. 295034EK1.02 001/T1G2/T1G2/SECONDARY CONTAIN/C/A 4.1/4.4/N/BSEP 2003/C/TCK/R/C

Unit 1 is operating at 100% RTP when a high radiation condition occurs in the Reactor Building. The following conditions exist in the Reactor Building:

Reactor Building Supply and Exhaust Fans	tripped
Both SBGT trains	running
Reactor Building vent isolation dampers (BFIVs)	open
Reactor Building Dp	zero

Which ONE of the following describes the impact on the plant due to the above conditions?

- ☒ A. An elevated release of radioactivity from the main stack could occur.
- ☐ B. A release of radioactivity outside containment will NOT occur due to both SBGT trains running.
- ☐ C. A release of radioactivity outside containment will NOT occur since the Reactor Building Supply and Exhaust fans have tripped.
- ☒ D. A ground level release of radioactivity could occur.

### Feedback

References: SD-37.1, Rev.4 pg 35, Reactor Building HVAC

- A. Incorrect since the only path to the chimney is through SBGT and this is filtered exhaust.
- B. Incorrect since the isolation dampers are open and Rx Bldg Dp is zero.
- C. Incorrect since the isolation dampers are still open and Rx Bldg Dp is zero.
- D. Correct answer.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

97. 295035EK1.01 001/T1G3//SECONDARY CONTAIN/MEM 3.9/4.2/N/BSEP 2003/R/TCK/R/C

Unit 1 is in Mode 1 at 50% RTP. Unit 2 is in Mode 5 with preparations in progress to commence core offload. Secondary containment has experienced a high differential pressure and a blowout panel on Unit 2 has relieved the pressure. The panel will require 40 hours to be repaired and tested.

Which ONE of the following describes the impact to both units for this condition?

- A. Unit 1 must be in Mode 3 within 12 hours and in Mode 4 within 36 hours; Unit 2 cannot commence fuel movement until the blowout panel is repaired and tested.
- B. Unit 1 is unaffected by the blowout panel on Unit 2; Unit 2 cannot commence fuel movement until the blowout panel is repaired and tested.
- C. Unit 1 must be in Mode 3 within 20 hours; Unit 2 cannot commence fuel movement until the blowout panel is repaired and tested.
- D. Unit 1 must be in Mode 3 within 12 hours; Unit 2 can commence fuel movement for up to 8 hours at which time fuel movement must be stopped.

### Feedback

References: Tech Spec Section 3.6.4.1

- A. Incorrect since Unit 1 can stay in Mode 1 for 20 hours.
- B. Correct answer.
- C. Incorrect BSEP does not have a common refuel floor.
- D. Incorrect since Unit 2 cannot commence fuel moves until the blowout panel is repaired and tested.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

98. 295037EK2.05 001/T1G1/T1G1/CRD/MEM 4.0/4.1/B/BSEP 2003/C/LSM/R/C

Unit 2 has scrammed due to low reactor water level. Multiple control rods did not insert and the ATWS procedure is being directed by the Shift Supervisor. Current power level following the ATWS is 12% RTP. The Shift Supervisor has ordered the RO to insert control rods by increasing CRD cooling water differential pressure (dp).

Which ONE of the following describes how this action causes control rods to insert?

Increased cooling water dp:

- A. ✓ puts additional pressure on the underside of the CRDM drive pistons.
- B. puts additional pressure on the top of the CRDM drive pistons.
- C. causes driving flow to increase.
- D. causes driving flow to decrease.

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### Feedback

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Reference: LR-LP-20314 Rev. 03 pg 13  
EO 001.034.a.01

- A. Correct answer.
- B. Incorrect. Additional pressure is placed on the underside of the drive piston.
- C. Incorrect answer. Increasing cooling water Dp has no effect on drive flow.
- D. Incorrect answer. Increasing cooling water Dp has no effect on drive flow.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

99. 295038EA2.03 001//T1G1/HIGH RAD LEVEL/MEM 3.5/4.3/N/BSEP 2003/S/LSM/R/C

Unit 2 is executing EOP-04, Radiation Release Control Procedure. During the release, the radiation level has exceeded the ALERT Emergency level. The crew is directed to restart the Turbine Building Air Filtration Unit. Which one of the following is the reason for this action?

To ensure:

- A. any release to the Turbine Building can be routed through Standby Gas Treatment.
- B. any release to the Turbine Building is exhausted via an elevated release path.
- C. that the integrity of the Turbine Building is maintained.
- D. that accessibility to the Turbine Building is preserved.

Feedback

New

LESSON 2: LOI-CLS-LP-300-N

LESSON 2 OBJECTIVE: 07a, 11

Answer:

D

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

100. 300000K3.02 001/T2G2/T2G2/INSTRUMENT AIR/C/A 3.3/3.4/M/BSEP 2003/C/LSM/R/C

A loss of the Interruptible Instrument Air System has just occurred.

Which ONE of the following describe how the Reactor Feed Pump (RFP) recirculation valves and Startup Level Control Valve (SULCV) will be affected?

The RFP recirculation valves:

- A. and the SULCV fail open.
- B. and the SULCV fail closed.
- C. fail open and the SULCV fails closed.
- D. fail closed and the SULCV fails open.

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### Feedback

416. LOI-CLS-LP-032-A\*09A003



## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

101. 400000G2.2.18 001//T2G2/MAINTENANCE/C/A 2.3/3.6/N/BSEP 2003/S/LSM/R/C

Unit One is in shutdown. You are reviewing a proposed special test of a Circulating Water Ocean Discharge (CWOD) Pump. The test has the Caswell Beach Local Control Panel control switch placed in the STOP position. The next step requires that an operator place the LOCAL/REMOTE control switch for the operating CWOD Pump in the LOCAL position.

Which ONE of the following describes the consequences of this action?

This will initiate:

- A. pump discharge valve closure with a pump trip when the discharge valve is less than 50% open.
- B. pump discharge valve closure with a pump trip when the discharge valve is less than 90% open.
- C. an immediate pump trip due to undervoltage but will NOT close pump the discharge valve.
- D. an immediate pump trip due to undervoltage and will close the pump discharge valve.

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### Feedback

LOI-CLS-LP-029-A\*02H001

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

102. 500000EA2.01 001/T1G1/T1G1/CONTAINMENT HYDROGEN/C/A 3.1/3.5/N/BSEP 2003/C/TCK/R/C

Unit 1 experienced a LOCA with the following conditions present:

Drywell pressure	8.5 psig
Drywell temperature	255 °F
Reactor water level	+100 inches
Hydrogen concentration	Unknown

No operator action has been taken up to this point.

Which ONE of the following describes the method for monitoring containment Hydrogen concentration in accordance with EOP-02-PCCP?

- A. Notify E&RC to coordinate with Chemistry to obtain containment atmosphere samples manually. Hydrogen monitors are isolated and cannot be overridden.
- B. Place CAC Div I/II AC ISOL OVRD switches, CS-4178 and CS-4179, to the Override position and re-open the CAM sample valves. Depress the "Sample Start" pushbutton.
- C. Place CAM Div I/II ISOL OVRD switches, CS-2986 and CS-3452, to the "ON" position. Place associated valve control switches to "close" and then to "open". Depress the "Sample Start" pushbutton.
- D. The containment is not required to be sampled for Hydrogen concentration unless reactor water level drops below Top of Active Fuel (TAF).

### Feedback

References: SD-24 Rev.3, Containment Atmospheric Control System

- A. Incorrect since the CAM system is available for sampling and is required to be placed in service per EOP-02-PCCP.
- B. Incorrect since these control switches do not allow the CAM sample valves to be re-opened.
- C. Correct answer.
- D. Incorrect since EOP-02-PCCP require hydrogen monitoring regardless of water level.

## QUESTIONS REPORT

for FINAL-BSEP 2003-301 Written Exam

103. 600000AA2.02 001/T1G2//CONTROL ROOM VENTS/MEM 2.8/2.9/N/BSEP 2003/R/TCK/R/C

Smoke has been detected in an area that causes the Control Room Ventilation System dampers to reposition.

Which ONE of the following describes the expected damper positions for this situation?

- A. Washroom exhaust damper closes; emergency recirc damper closes; normal makeup damper opens.
- B. Washroom exhaust damper opens; emergency recirc damper opens; normal makeup damper closes.
- C. Washroom exhaust damper opens; emergency recirc damper closes; normal makeup damper opens.
- D. Washroom exhaust damper closes; emergency recirc damper opens; normal makeup damper closes.

### Feedback

References: SD-37, Control Building Heating, Ventilation and Air Conditioning System, Rev.4, pg.34

A, B and C are incorrect since the washroom exhaust damper closes, the emergency recirc damper opens and the normal makeup damper closes.

D. Correct answer.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

104. 600000AA2.06 001//T1G2/FIRE PROTECTION/MEM 2.5/2.8/N/BSEP 2003/S/TCK/R

Which ONE of the following conditions will cause the Control Room ventilation system to enter into Fire Protection mode?

- A. Smoke detected in Unit 2 Electronic Equipment room.
- B. ✓ Smoke detected in the Unit 1 Electronic Equipment room AND the manual pull station tripped in the Unit 2 Electronic Equipment Room.
- C. Manual pull station tripped in Unit 1 Electronic Equipment room.
- D. Manual pull station tripped in Unit 2 Cable Spread room.

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### Feedback

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References: SD-37, Rev.4 pg 27 and 34

B. Correct answer.

A, C and D. Incorrect since it takes a combination of smoke or manual pull stations in zone C4 and C5.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

105. GEN 2.1.1 001/T3/T3/FLOW MAP/MEM 3.7/3.8/M/BSEP 2003/C/LSM/R/C

If operating in the Scram Avoidance Region of the Flow Control Operational Map, which one of the following will reduce the likelihood of an instability event?

- A. Control rod withdrawal.
- B. Reducing recirculation flow.
- C. Increasing recirculation flow.
- D. Removing a feedwater heater string from service.

### Feedback

C: Rod withdrawal would raise power and move you vertically on the map; reducing flow would drive you toward the Restricted Region; removing a feedwater string would increase the chance for instability where you are in the map (flux tilt).

Not modified.

REFERENCES: 0ENP-24.0

Answer: C

LOI-CLS-LP-201-G\*03E001

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

106. GEN 2.1.10 002/T3/T3/COLR/C/A 2.7/3.9/B/BSEP 2003/C/LSM/R/C

Which ONE of the following changes in plant operating conditions will result in a higher MCPR operating limit as specified in the COLR?

- A. Operation at the end of cycle vs. the beginning of cycle.
- B. Operation at 90% power vs. 100% power for a given core flow.
- C. Operation at 100% core flow vs. 90% core flow for a given power.
- D. Setting the mechanical stop of the Reactor Recirculation Pumps to a lower setpoint.

### Feedback

References: CLS-LP-106-A\*013 001

MCPR OL increases with exposure since rod density is lower at EOC, therefore longer time to complete a scram in the event of a transient.

Operation at lower power w/ flow given increases MCPR OL since operation is further away from APRM flow bias scram setpoint. (MCPRp higher @ lower power)

MCPRf is lower at higher flow to protect against a recirc pump runaway transient. Same reasoning is true for the mechanical stop setpoint.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

107. GEN 2.1.12 001//T3/MAINTENANCE/C/A 2.9/4.0/N/BSEP 2003/S/LSM/TCK/R/C

Unit 2 is operating at 14% power with the Drywell de-inerted for mechanical maintenance to repack a valve. When exiting the Primary Containment Air Lock the outer door was damaged such that the door cannot be closed at this time.

Which ONE of the following describes the actions that are required?

- A. The Inner Air Lock door must be verified closed and locked. Be in MODE 3 within 12 hours and in MODE 4 within 36 hours.
- B✓ The Inner Air Lock door must be verified closed and locked. Operation may continue until the next overall airlock leakage test provided the operable door is verified locked every 31 days.
- C. Either door must be verified closed. Action must be initiated to verify overall containment leakage immediately. The Primary Containment Air Lock door must be restored to OPERABLE status within 24 hours.
- D. The Inner Air Lock door must be verified closed and locked. The outer door must have a security guard posted or must be blocked to prevent entry. Repair the inoperable door within 31 days or be in MODE 3 within 12 hours.

### Feedback

References: Tech Spec 3.6.1.2  
LOI-CLS-LP-004

- A. Incorrect since you do not have to go to Mode 3 within 12 hours.
- B. Correct answer.
- C. Incorrect since the interlock is not inoperable for other reasons than for a door.
- D. Incorrect since you do not have the option to post a guard and you do not have to have the door repaired within 24 hours.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

108. GEN 2.1.28 001/T3/T3/TS/MEM 3.2/3.3/B/BSEP 2003/C/LSM/R/C

Which ONE of the following describes why the plant must be placed in HOT SHUTDOWN with an inoperable jet pump?

- A. There is an increased possibility of thermal hydraulic instabilities outside the defined region.
- B. An inoperable jet pump is sufficient reason to declare the recirculation loop inoperable.
- C✓ Blowdown area is increased or reflood capability eliminated in the event of a DBA.
- D. To prevent undue stress on the reactor vessel nozzles and in the bottom head region.

**Feedback**

References: LOI-CLS-LP-002-A\*035001



## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

109. GEN 2.2.12 001/T3//SURVEILLANCE/MEM 3.0/3.4/N/BSEP 2003/R/LSM/R/C

You have been directed to perform OPT-12.6, Breaker Alignment Surveillance step 7.39, Outside Area - 125Volt DC Panel Interlock Check.

On distribution panel 7A you find the normal feeder breaker from the 125/250 Vdc 1A in the closed position. Which one of the following describes the reason you find the Alternate feeder breaker in the open position?

- A✓ The mechanical interlock is working properly.
- B. The mechanical interlock has been improperly installed on the breakers.
- C. The knife switch breaker is working properly.
- D. The knife switch breaker has been improperly installed on the breakers.

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### Feedback

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- A. This is the correct configuration
- B. The mechanical interlock is not working incorrectly
- C. This is not a knife switch breaker
- D. This is not a knife switch breaker

Switchyard Panels 7A, 7B, 8A, and 8B have walking beam type interlocks externally mounted to the back of the breakers. When one of the breakers is closed, the walking beam interlock forces the alternate breaker to open.

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

110. GEN 2.2.13 001/T3//TAGGING/MEM 3.6/3.8/N/BSEP 2003/R/LSM/R/C

You have been asked to place a boundary device tag on a butterfly valve. This valve is air operated, fails closed, and is primarily used for flow control. According to OPS-NGGC-1301, which one of the following describe the restrictions associated with using this valve for a tagging boundary?

- A. Cannot be used for a tagging boundary.
- B. Should be monitored for seat leakage.
- C. Should be monitored for drift.
- D. A mechanical positioning device or a gag is REQUIRED.

### Feedback

OPS-NGGC-1301 rev 10 pages 68 - 70

- A. Per OPS-NGGC-1301 butterfly valves and flow control valves require that you monitor for seat leakage. Can not be used as isolation.
- B. Correct
- C. Limitorque valve
- D. Hydraulic Operated valve

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

111. GEN 2.2.14 001//T3/ADMIN/MEM 2.1/3.0/B/BSEP 2003/S/LSM/R/C

You are the SCO and have just given interim approval of a temporary procedure change.

Which ONE of the following describes the expiration date?

The date shall not to exceed:

- A. 14 days from the interim approval date.
- B. 14 days from the procedure's periodic review date.
- C. 4 months from the interim approval date.
- D. 4 months from the procedure's periodic review date.

---

### Feedback

REFERENCES: PRO-NGGC-0204 rev. 2

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

112. GEN 2.2.17 001//T3/MAINTENANCE/C/A 2.3/3.5/N/BSEP 2003/S/LSM/R/C

You are the Unit 2 SS. During movement of material through the HPCI Room, insulation has been damaged. A repair crew has been assembled.

The wet-bulb temperature is 103.1 °F

The work requires single cotton Blend PCs.

The work will take 2 man hours.

You have 3 mechanics plus an HP available.

Assume that HP will not participate in the repairs and that the actual exposure time to the hot environment is the actual stay time.

Using the recommended action times of OAI-107, which ONE of the following is the shortest duration for this task?

- A. 20 minutes
- B. 35 minutes
- C. 80 minutes
- D. 100 minutes

---

### Feedback

Reference allowed -

OAI-107

Per attachment 2 for moderate work (this meets the definition of moderate work per attachment 1) in this temperature, the maximum stay time is 20 minutes. Three workers at 20 minutes is 1 man hour- required rest period is 1 hour (per formula on page 12). There is still one man hour of work to be completed which will take 20 minutes for the three workers. Total time 20 minutes + 1 hour rest + 20 minutes = 1 hour 40 minutes

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

113. GEN 2.2.27 001//T3/REFUELING/C/A 2.6/3.5/M/BSEP 2003/S/LSM/R/C

You are the refueling floor SRO. Unit 1 is in refueling with all but four assemblies off loaded.

Supplemental Spent Fuel Pool Cooling System is operating as follows:

Primary Pump P-74A and both heat exchangers are in service

Secondary pump P-82A and both cooling towers are in service

P-82A tripped due to a flexible coupling failure. Following the trip P-74A also tripped.

Which ONE of the following conditions must be satisfied prior to restarting P-74A?

- A. Secondary loop pressure must be restored.
- B. Primary pump seal water must be restored.
- C. One heat exchanger must be taken out of service.
- D. One fire pump must be started and aligned to the supplemental cooling header.

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### Feedback

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References: based on LOI-CLS-LP-013-A\*16B

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

114. GEN 2.2.3 001/T3/T3/UNIT DIFFERENCES/MEM 3.1/3.3/N/BSEP 2003/C/LSM/R/C

Which one of the following is a feature of Unit 1 only?

- A. Select Rod Insert may be manually initiated by the operator at P603 by use of a single pushbutton.
- B. The fixed Scram point is setdown from 116% to 90%.
- C. The EOC-RPT is manually bypassed via administratively controlled key switches on P609 and P611.
- D. When not in "Run" an IRM upscale will provide an RPS trip. There is no APRM downscale RPS trip.

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### Feedback

SD - 03

Solution - A, B, and C are Unit 2 only features

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

115. GEN 2.3.1 001/T3/T3/RADWASTE/MEM 2.6/3.0/B/BSEP 2003/C/LSM/R/C

A rupture has occurred on the end-bell (tube side) of a TBCCW heat exchanger.

Which ONE of the following color floor drain hubs should leakage be routed to?

A. YELLOW

B. BLACK

C. GREEN

D. RED

**Feedback**

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

116. GEN 2.3.11 001/T3//RAD RELEASE/MEM 2.7/3.2/M/BSEP 2003/R/LSM/R/C

Unit 2 is at 89% power when the Reactor Building Vent Exhaust Rad Monitor N010A fails upscale. Shortly after you override the CAC isolation due to the Rad Monitor N010A failing upscale, a Unit 1 Main Stack Rad Hi Hi signal initiates. Assuming all automatic actions occur, which one of the following describe how you would isolate the CAC system?

- A. All group 6 CAC valves would remain open, and would require manual closure.
- B. Only inboard group 6 CAC valves would close and the outboard valves would require manual closure.
- C. Only outboard group 6 CAC valves would close and the inboard would require manual closure.
- D. All group 6 CAC valves would automatically close.

Feedback



## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

117. GEN 2.3.4 001//T3/RAD MONITORING/CA 2.5/3.1/N/BSEP 2003/S/LSM/R/C

You are the Site Emergency Coordinator. Following a LARGE Break LOCA you are considering attempting to save a 4 Million Dollar test rig that is just inside the containment access hatch. The task can be accomplished with a projected dose of approximately 7.5 REM TEDE.

Which ONE of the following statements regarding this task is correct?

- A. This exceeds the exposure limit listed in EPA 400 Emergency Work Limits to protect valuable equipment.
- B. While this exceeds the exposure limit listed in EPA 400 Emergency Work Limits to protect valuable equipment you can authorize a single exposure for this purpose.
- C. This does not exceed the exposure limit listed in EPA 400 Emergency Work Limits to protect valuable equipment and you have the authority to grant permission for this task.
- D. This does not exceed the exposure limit listed in EPA 400 Emergency Work Limits to protect valuable equipment. However, you do not have the authority to grant permission for this task, it must be granted by the site VP or his designee.

**QUESTIONS REPORT**  
for FINAL BSEP 2003-301 Written Exam

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**Feedback**

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**SRO ONLY**

Based on a previous bank question

LOI-CLS-LP-102-A\*11B001

The exposure limit listed in EPA 400 Emergency Work Limits to protect valuable equipment is 10 Rem TEDE. The approval to receive this dose while performing an onsite function can be granted by the Site Emergency Coordinator (SEC)

EPA 400 Emergency Work Limits		Approval Required
A.	5 Rem TEDE	Site Emergency Coordinator (SEC)
B.	5 Rem TEDE	Emergency Response Manager (ERM)
C.	10 Rem TEDE	Site Emergency Coordinator (SEC)
D.	10 Rem TEDE	Emergency Response Manager (ERM)

Answer: C

LOI-CLS-LP-102-A\*11B001

The exposure limit listed in EPA 400 Emergency Work Limits to protect valuable equipment is . The approval to receive this dose while performing an onsite function can be granted by the

EPA 400 Emergency Work Limits		Approval Required
A.	5 Rem TEDE	Site Emergency Coordinator (SEC)
B.	5 Rem TEDE	Emergency Response Manager (ERM)
C.	10 Rem TEDE	Site Emergency Coordinator (SEC)
D.	10 Rem TEDE	Emergency Response Manager (ERM)

Answer:

C

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

118. GEN 2.4.1 001/T3/T3/SHUTDOWN/C/A 4.3/4.6/B/BSEP 2003/C/LSM/R/C

Following an incomplete Reactor scram, the operating crew is executing EOP-01-LPC, Level/Power Control. A decision step is reached asking "Is The Reactor Shutdown?".

Which one of the following conditions would satisfy the definition of "SHUTDOWN" as it applies to the Reactor?

- A. All operable APRMs are downscale.
- B. The Reactor is subcritical on range 6 of IRMs.
- C. The entire SLC tank has been injected to the Reactor.
- D. Hot Shutdown Boron Weight has been injected to the Reactor.

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### Feedback

Answer: B  
bank - LOI-CLS-LP-300-B\*008001

## QUESTIONS REPORT

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119. GEN 2.4.11 001/T3//RPIS/MEM 3.4/3.6/B/BSEP 2003/R/LSM/R/C

A Unit 2 startup is in progress per GP-02. The reactor has been declared critical. The control operator is withdrawing control rods to achieve a stable positive period of 100 seconds.

Circuit Breaker #1 on Distribution Panel V10A trips resulting in a loss of power to the RPIS cabinet. The control operator should immediately do which one of the following?

- A. Stop any power changes in progress.
- B. Insert a manual reactor scram and enter EOP-01-RSP.
- C. Use the Process Computer to determine Control Rod position.
- D. Insert Control Rods to shutdown the Reactor by inserting 10 control rods past where it was declared critical.

Feedback

A.

REFERENCES: AOP-02.0 R7

Answer: A

Bank - LOI-CLS-LP-302-B\*003001

## QUESTIONS REPORT

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120. GEN 2.4.11 002//T3/CRD/C/A 3.4/3.6/N/BSEP 2003/S/LSM/R/C

Unit heatup and pressurization is in progress per GP-02. Current plant conditions:

Reactor power	Range 9 on IRM's
RPV pressure	750 psig
RPV water level	187 inches

The operating CRD Pump trips on overcurrent. The operator attempts to start the standby CRD Pump, which fails to start.

Which ONE of the following describes why AOP-02.0 requires a manual scram if CRD pressure cannot be restored?

- A. Control rods may fail to fully insert on a reactor scram if the HCU accumulator pressure is lost.
- B. Control rods cannot be inserted by normal means in the event of a positive reactivity addition.
- C. Control rod drive temperatures will rise and may result in a measurable delay in scram response time.
- D. Recirculation pump seal temperatures will rise to the point requiring both Recirculation pumps to be tripped.

### Feedback

Scram normally combination of HCU and RPV pressure during normal operation. At low RPV pressure, scram relies only on HCU pressure, therefore if CRD cannot maintain HCU pressure, a manual scram is required before HCU pressure bleeds off through check valves

## QUESTIONS REPORT

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121. GEN 2.4.18 001/T3/T3/EOP BASIS/C/A 2.7/3.6/B/BSEP 2003/C/LSM/R/C

Emergency Operating Procedure guidance is provided to trip the reactor recirculation pumps during an ATWS condition.

Which ONE of the following is the basis for taking this action?

- A. To rapidly reduce reactor power and potentially reduce the amount of heat that would be added to the containment.
- B. To avoid the area of thermal hydraulic instability.
- C. To promote the dispersion of the boron from Standby Liquid Control System.
- D. To decrease reactor pressure which increases CRD drive differential pressure.

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### Feedback

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References: LOI-CLS-LP-002-A\*019002

## QUESTIONS REPORT

for FINAL BSEP 2003-301 Written Exam

122. GEN 2.4.2 001/T3/T3/BLACKOUT/C/A 3.9/4.1/B/BSEP 2003/C/LSM/R/C

During a Station Blackout on Unit One HPCI, RCIC and LPCI have all become unavailable for injection to the RPV. Plant conditions:

RPV water level	-55 inches (N036)
RPV pressure	300 psig
Drywell ref leg temp	315 °F
Injection sources	None available

Which one of the following describes the current RPV water level?

- A. Above the Minimum Steam Cooling Reactor Water Level, adequate core cooling is assured.
- B. ☒ Above the Minimum Zero-Injection Reactor Water Level, adequate core cooling is assured.
- C. Below the Minimum Steam Cooling Reactor Water Level, adequate core cooling is NOT assured.
- D. Below the Minimum Zero-Injection Reactor Water Level, adequate core cooling is NOT assured.

### Feedback

BSEP PROVIDE APPROPRIATE REFERENCE IF REQUIRED

5.  
LOI-CLS-LP-300-B\*008004

## QUESTIONS REPORT

—for FINAL BSEP 2003-301 Written Exam

123. GEN 2.4.27 002//T3/SAFE SHUTDOWN/C/A 3.0/3.5/N/BSEP 2003/S/LSM/R/C

A fire in the Control Building requires Control Room evacuation and entry into ASSD-02.

ASSD-02 directs the Diesel Generator Operator to trip the Unit Two RPS MG Set output breakers and open the DC supply breakers to Distribution Panels 4A and 4B.

Failure to perform this action could result in which ONE of the following?

- A. misoperation of RCIC.
- B. loss of drywell cooling.
- C. inability to operate SRVs.
- D✓ spurious operation of MSIVs.

### Feedback

Opening specified breakers disables HPCI flow control circuitry to prevent uncontrolled injection, removes power from SRV solenoids (but does not prevent operation from alternate circuitry @ RSDP) and MSIV solenoids to establish high/low pressure interface. Will remove power from normal RCIC circuitry, but alternate power @ RSDP, has no impact on drywell coolers



## QUESTIONS REPORT

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124. GEN 2.4.3 001/T3/T3/SCRAM/C/A 3.5/3.8/M/BSEP 2003/C/LSM/R/C

Following a steam leak in the Unit Two Secondary Containment, a manual Reactor Scram has been inserted. Plant conditions:

RPV pressure	1000 psig
Drywell ref leg area temp	197 °F
Rx Bldg 50' temp	145 °F
Recirculation Pump	Running
RPV water level	+150" (N036/N037)
RPV water level	+170" (N026A/B)
RPV water level	+155" (N004A/B/C)
RPV water level	+160" (N027A/B)

RPV water level may be determined using which ONE of the following?

- A. N004A/B/C only.
- B. N004A/B/C and N026A/B only.
- C. N004A/B/C and N027A/B only.
- D. N004A/B/C and N036/N037 only.

### Feedback

Bank LOI-CLS-LP-300-B\*016001

N026A/B cannot be used with Rx Bldg 50' temp above 140 degrees F. N027A/B are below minimum indicated level, N036/37 cannot be used with Recirc Pumps running. EOP-01-UG Attachment 6 (Caution 1) to be provided as reference.

Answer: A

## QUESTIONS REPORT

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125. GEN 2.4.48 001//T3/INDICATIONS/C/A 3.5/3.8/N/BSEP 2003/S/LSM/R

Unit 1 is operating at 100% power. The unit receives a Group 6 isolation and did NOT receive a Secondary Containment Isolation.

Which ONE of the following may have occurred?

- A. High Drywell Pressure.
- B. Rx Bldg Exhaust Radiation High.
- C. Rx Vessel Water Level Low LL2.
- D. Rx Vessel Water Level Low LL1.

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### Feedback

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References: LOI-CLS-LP-012-A  
LOI-CLS-LP-004-B