

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

1. 001 K3.02 003/BANK/SEQUOYAH/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- Unit 1 is at 90% power.

Which ONE of the following sets of parameters will INCREASE during an inadvertent continuous control rod withdrawal event?

- A. Reactor Power and OT Delta T Setpoint
- B. RCS Hot Leg Temperature and Departure From Nucleate Boiling Ratio
- C. OT Delta T Setpoint and Main Steam Header Pressure
- D. RCS Hot Leg Temperature and Reactor Power

A-Incorrect. OTDT setpoint will decrease because temperature is increasing during the event. Credible because the parameter does change

B-incorrect because DNBR gets lower (Closer to DNB) as temperature rises. Credible because temperature does rise.

C-Incorrect. OT Delta T setpoint will decrease in relation to Tavg increasing. Credible because the parameter changes, and steam pressure does rise.

D-Correct. Hot leg temperature rises, as does reactor power, due to the positive reactivity being added. OT and OP delta T setpoints will lower as power and temperature rise

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

Question Number: 29

Tier 2 Group 2

Importance Rating: 3.4

Technical Reference: BVPS UFSAR U1, R23, pg 14.2-45, section 14.2.10.3

Proposed references to be provided to applicants during examination: None

Learning Objective: LP GO-3ATA 4.1, R4, Issue 1 section VI.A.2

10 CFR Part 55 Content: 41.5

Comments:

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for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Source: BANK
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: SEQUOYAH
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

2. 002 A1.04 001/BANK/WTSI/HIGHER//RO/BVPS-I/11/2007/NO

Given the following:

- While recovering from an inadvertent SI, the Pressurizer became water solid.
- Letdown is increased, establishing a negative net charging to return PRZR level to the indicated range.

Current conditions are:

- RCS pressure = 2235 psig
- PRZR liquid temperature = 640°F
- Core Exit temperature = 548°F

Assuming all temperatures remain steady, what will subcooling be when PRZR level comes on scale?

- A. 0°F
- B. 12°F
- C✓ 92°F
- D. 102°F

A. Incorrect. PZR will be saturated, but RCS subcooling will not be 0

B. Incorrect. 12 degrees is credible as it is within the range of logical errors using steam tables to determine subcooling

C. Correct.

D. Incorrect. 102 degrees is credible as it is within the range of logical errors using steam tables to determine subcooling, if the applicant makes an error on pressure, psia vs. psig, then they can arrive at subcooling approximately 102

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the RCS controls including: subcooling

Question Number: 30

Tier 2 Group 2

Importance Rating: 3.9

Technical Reference: Steam Tables

Proposed references to be provided to applicants during examination: None

Learning Objective: NA

10 CFR Part 55 Content: 41.14

Comments:

Source: BANK
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: WTSI
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

3. 003 AK1.17 001/BANK/PRAIRIE ISLAND/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The unit is stable at 100% power with rod control in MANUAL.
- The core is nearing end-of-cycle with boron concentration at 183 ppm.

One Shutdown Bank B rod drops, and neither an automatic trip nor crew response occurs immediately.

Which ONE of the following describes the INITIAL effect on fuel temperature coefficient?

- A. Less negative because fuel temperatures are lower.
- B. More negative because fuel temperatures are higher.
- C. Less negative because fuel temperatures are higher.
- D. More negative because fuel temperatures are lower.

A. Incorrect. Incorrect effect on FTC, but correct change on temperature

B. Incorrect. Correct effect on FTC, but incorrect effect on temperature

C. Incorrect. Incorrect effect on FTC and on temperature.

D. Correct.

Options are plausible because the transient will cause a change in both parameters, FTC as well as fuel temperature itself

Knowledge of the operational implications of the following concepts as they apply to Dropped Control Rod: Fuel temperature coefficient

Question Number: 57

Tier 1 Group 2

Importance Rating: 2.9

Technical Reference: LP-GO-GPF.R4, Rev 1, App. A Section VI.D pg 38 of 79

Proposed references to be provided to applicants during examination: None

Learning Objective: Obj 7

10 CFR Part 55 Content: 41.1

Comments:

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Source:	BANK	Source if Bank:	PRAIRIE ISLAND
Cognitive Level:	HIGHER	Difficulty:	
Job Position:	RO	Plant:	BVPS-1
Date:	11/2007	Previous NRC?:	NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

4. 003 K5.02 001/BANK/BVPS-2/LOWER//RO/BVPS-1/11/2007/NO

Which ONE of the following is the basis for the underfrequency trip of the RCP's?

- A. Ensures that the RCP motor windings will not overheat due to the increased I^2R losses at reduced operating frequencies.
- B. Ensures that the inertia of the RCP flywheel will aid in maintaining loop flow thus maintaining DNBR within acceptable limits.
- C. Aids in maintaining grid stability by reducing grid loading demands after the Normal 4KV buses have transferred to the Station System Service Transformers.
- D. Ensures that the RCP's are not operated at critical speeds which could result in severe vibrations and catastrophic failure of the RCP or an RCS LOCA.

A. Incorrect. Higher inductive reactance is only an effect for severely reduced frequency operation.

B. Correct.

C. Incorrect. Although a grid disturbance is the most likely cause of an underfrequency trip. After transfer to SSSTs, not a consideration for RCP trip.

D. Incorrect. The underfrequency trip is in an RCP speed range that would not result in any excessive vibration.

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

Question Number: 1

Tier 2 Group 1

Importance Rating: 2.8

Technical Reference: 1OM 6.1C, R7, Pg 19
TS 3.3.1 basis item 13 of applicable safety analysis

Proposed references to be provided to applicants during examination: None

Objective: 3SQS-6.1, obj 13

10 CFR Part 55 Content: 41.2

Comments:

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Source: BANK

Source if Bank: BVPS-2

Cognitive Level: LOWER

Difficulty:

Job Position: RO

Plant: BVPS-1

Date: 11/2007

Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

5. 004 A2.05 001/BANK/BVPS-1/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The plant is operating at 15% power making preparations for synchronizing to the grid.
- The following annunciator is received in the control room:
 - A3-87, Reactor Coolant Pump Seal Leakoff Flow High
- The RO determines that "B" RCP seal leakoff flow has risen to 7 GPM and is currently stable.
- The crew has entered AOP-1.6.8, Abnormal RCP Operation.

Which ONE of the following describes the effect on the plant and which ONE of the following actions is required?

- A. #1 seal is degraded. Monitor seal injection and RCP bearing temperatures to determine additional action.
- B. #2 seal is degraded. Monitor seal injection and RCP bearing temperatures to determine additional action.
- C. #1 seal has failed. Trip the reactor, enter E-0, Reactor Trip Or Safety Injection, and trip "B" RCP.
- D. #2 seal has failed. Trip the reactor, enter E-0, Reactor Trip Or Safety Injection, and trip "B" RCP.

A. Incorrect. Correct seal failure, but leakoff is too high to sustain operation. Credible because action would be performed if seal leakoff was lower

B. Incorrect. Wrong seal failure. If #2 seal failed, would have standpipe alarm or low #1 seal leakoff. Credible because seal leakoff does change and applicant must understand flowpaths

C. Correct. Higher than 6 GPM #1 seal leakoff requires a reactor trip

D. Incorrect. Wrong seal failure as describes above, but correct action.

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to (a) predict the impacts of the following malfunctions or operations on the CVCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: RCP seal failures

Question Number: 2

Tier 2 Group 1

Importance Rating: 4.0

Technical Reference: AOP-1.6.8, step 2.g RNO
ARP A3-87

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-6.3 Obj 20

10 CFR Part 55 Content: 41.10, 41.7

Comments:

Source: BANK
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: BVPS-1
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

6. 005 A4.02 001/MODIFIED/BVPS-1/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The Unit is in Mode 4, cooling down for refueling.
- RHR Pump "A" and heat exchanger are in service.
- The auto setpoint on [MOV-RH-605], RHR Heat Exchanger Bypass Flow Control Valve, drifts LOW.

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

The RCS cooldown rate...

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

A. Correct. Less bypass flow with a lower setpoint for total flow, results in higher percentage of RHR flow through the heat exchanger, which results in a lower average temperature of RHR returning to RCS.

B. Incorrect. Rate rises, but total flow decreases, not increases. Opposite effect for both parameters

C. Incorrect. Cooldown rate will rise. If setpoint drifts low, less total flow will result in more RHR heat exchanger flow.

D. Incorrect. Cooldown rate increases. Reason is incorrect; Higher flow through the heat exchanger, but not through the RHR system.

QUESTIONS REPORT
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Ability to manually operate and/or monitor in the control room: Heat exchanger bypass flow control

Question Number: 4

Tier 2 Group 1

Importance Rating: 3.4

Technical Reference: 1OM 10.1.B, pg 2

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-10.1 Obj 18

10 CFR Part 55 Content: 41.5

Comments:

Source: MODIFIED

Cognitive Level: HIGHER

Job Position: RO

Date: 11/2007

Source if Bank: BVPS-1

Difficulty:

Plant: BVPS-1

Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

7. 005 K6.03 001/BANK/BVPS-1/LOWER//RO/BVPS-1/11/2007/YES

Given the following:

- The plant is in Mode 5.
- RCS pressure is 150 psig.
- RCS temperature is 170°F
- A loss of CCR has occurred.
- The crew is currently performing actions of AOP-1.10.1, Residual Heat Removal System Loss, after transition from AOP-1.15.1, Loss of Primary Component Cooling Water.

Which ONE of the following actions will be required if CCR flow cannot be restored to the RHR Heat Exchangers prior to RHR temperatures exceeding 180 degrees F?

- A. RHR Pumps must be tripped to prevent pump seal damage.
- B. RHR Pumps must be tripped to prevent pump cavitation.
- C. RHR Pumps must be vented prior to starting.
- D. CCR to RHR Heat Exchangers must be admitted slowly to prevent water hammer.

A. *Correct.*

B. *Incorrect. Cavitation would be a concern if RCS temperature approached saturation*

C. *Incorrect. If Pumps were tripped due to cavitation, they would be vented prior to restart. In this case, they are tripped prior to cavitation occurring*

D. *Incorrect. After a loss of CCR this would be a concern if temperature was higher than saturation, or if there was a chance of steam formation.*

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Knowledge of the effect of a loss or malfunction on the following will have on the RHRS: RHR heat exchanger

Question Number: 3

Tier 2 Group 1

Importance Rating: 2.5

Technical Reference: AOP-1.10.1, step 9.c RNO

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-53C.1, Obj. 7

10 CFR Part 55 Content: 41.10

Comments:

Source: BANK
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank: BVPS-1
Difficulty:
Plant: BVPS-1
Previous NRC?: YES

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

8. 006 A1.18 001/BANK/BVPS-1/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- A LOCA has occurred.
- The crew is performing actions of ES-1.2, Post LOCA Cooldown and Depressurization.
- Pressurizer level is stable at 58%.
- RCS Pressure is stable at 1680 psig.
- The US determines that a Charging/HHSI pump can be stopped in accordance with Attachment 7-A, Criteria For Stopping 1 of 2 Running Charging/HHSI Pumps, Subcooled Conditions.

When the RO stops the first Charging/HHSI Pump, which ONE of the following describes the Pressurizer level response?

- A. PRZR level will remain at its current value.
- B. PRZR level will rise until charging is realigned to the VCT.
- C. PRZR level will drop until normal charging and letdown are restored.
- D. PRZR level will drop until RCS pressure stabilizes at a lower value, then it will stabilize.

A. Incorrect. Level would not remain stable if 1 HHSI pump is stopped while injecting through the BIT. Inventory would decrease

B. Incorrect. PRZR level would not rise, the applicant would have to confuse alignment of CVCS and SI Termination sequence to arrive at this conclusion. Level could rise if it was already rising, but conditions indicate it is stable

C. Incorrect. PRZR level does lower; however, it is due to change in inventory, not based upon status of charging and letdown at this point.

D. Correct.

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the ECCS controls including: PZR level and pressure

Question Number: 5

Tier 2 Group 1

Importance Rating: 4.0

Technical Reference: ES-1.2 and BD for step 19 note

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-53.3 Obj 4

10 CFR Part 55 Content: 41.10

Comments:

Source: BANK
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: BVPS-1
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

9. 006 K2.01 001/BANK/BVPS-1/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The Unit is operating at 100% power with all systems in their at-power, NSA configurations.
- A large break LOCA has occurred.
- When the main generator tripped, the 1A Normal 4KV bus failed to transfer to the off-site power source (SSST).
- It has been exactly 5 minutes since a CIB occurred.

Assuming all ESF equipment operated as designed, how many HHSI/Charging and Recirculation Spray pumps will be running?

	HHSI/Charging	Recirculation Spray
A. 1		0
B. 2		0
C. 1		2
D. 2		4

A. Incorrect. Even though bus 1A did not transfer, the EDG will start and load the associated 4 KV emergency bus. Time has been long enough to start RSS pumps

B. Incorrect. RSS pumps would be running after 5 minutes. HHSI would also be running

C. Incorrect. If Bus 1A resulted in loss of Bus 1AE, this would be correct. Since the EDG does operate to supply the bus, it is incorrect.

D. Correct.

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Knowledge of bus power supplies to the following: ECCS pumps

Question Number: 6

Tier 2 Group 1

Importance Rating: 3.6

Technical Reference: 1OM-13.1.C pg 9/10
1OM-13.2.B, pg 3
1OM-7.1.C Pg 2
UFSAR section 8.5.2.1 pg 85-5

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-13.1 Obj 4

10 CFR Part 55 Content: 41.7

Comments:

Source: BANK
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: BVPS-1
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

10. 007 EK1.05 001/BANK/MCGUIRE 2007/HIGHER/RO/BVPS-1/11/2007/NO

A reactor trip has occurred from 100% power.

Which ONE of the following describes (1) the MINIMUM time that it takes for the Source Range instruments to energize, and (2) the condition that would prevent the Source Range instruments from energizing automatically when required?

- A. (1) 5 - 10 minutes
(2) Undercompensated Intermediate Range
- B. (1) 5- 10 minutes
(2) Overcompensated Intermediate Range
- C✓ (1) 11 - 15 minutes
(2) Undercompensated Intermediate Range
- D. (1) 11 – 15 minutes
(2) Overcompensated Intermediate Range

A is incorrect. Time is too short. With prompt drop to about 5% power and negative 1/3 DPM thereafter, it should take about 13-15 minutes to get to the source range from 100%

B is incorrect. Same as A above, except that an overcompensated channel would cause one input to SR energization to be active earlier, not later than required. Credible because there is a common misconception about the behavior of IR compensation, and the applicant must know the actuation logic for energizing SR instruments.

C is Correct.

D is incorrect. Correct time, but incorrect compensation.

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Knowledge of the operational implications of the following concepts as they apply to the reactor trip: Decay power as a function of time

Question Number: 39

Tier 1 Group 1

Importance Rating: 3.3

Technical Reference: 3SQS-2.1 section VI.B.7

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-2.1 Obj 15

10 CFR Part 55 Content: 41.5

Comments:

Source: BANK
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: MCGUIRE 2007
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

11. 007 K3.01 010/BANK/NORTH ANNA/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- A reactor trip has occurred due to low RCS pressure.
- The crew is performing E-0, Reactor Trip or Safety Injection.
- ONE (1) PRZR Safety Valve is failed open.
- Containment Pressure is 13.7 psia and stable.
- PRT pressure is 26 psig and rising.

Which ONE of the following describes the highest indicated PRT pressure that will exist just prior to Containment pressure rising due to this event?

- A✓ 84 psig
- B. 100 psig
- C. 113.7 psig
- D. 98.7 psig

A. Correct. PRT pressure indication is relative to containment atmospheric pressure. The rupture discs actuate at 85 psid between internal tank pressure and containment atmospheric pressure. If containment is at 13.7 psia, then PRT pressure (indicated) would be at 84 psig just prior to rupture discs actuating.

B, C, and D are mathematically possible variations if the applicant has a misconception about the PRT pressure transmitter relationship with Containment, or if the applicant applies PSIA instead of PSIG for the PRT rupture pressure

Knowledge of the effect that a loss or malfunction of the PRTS will have on the following: Containment

Question Number: 7

Tier 2 Group 1

Importance Rating: 3.3

Technical Reference: 1OM-6.2.B, pg 8

Proposed references to be provided to applicants during examination: None

Learning Objective:

10 CFR Part 55 Content: 41.7

Comments:

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Source:	BANK	Source if Bank:	NORTH ANNA
Cognitive Level:	HIGHER	Difficulty:	
Job Position:	RO	Plant:	BVPS-1
Date:	11/2007	Previous NRC?:	NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

12. 008 AK2.03 001/BANK/COMANCHE PEAK 2007/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- Reactor trip and safety injection have occurred.
- The crew is performing actions of E-0, Reactor Trip or Safety Injection.
- RCS pressure is 1150 psig.
- PZR level indicates 100%.
- Containment pressure is 8 psig.
- RCS temperature is 565°F and rising slowly.

Which ONE of the following actions is required to control RCS temperature?

- A. Adjust the condenser steam dump controller setpoint in automatic to maintain current RCS temperature.
- B. Manually operate the condenser steam dumps in the Steam Pressure mode to increase heat removal.
- C. Adjust the SG atmospheric setpoints in automatic to maintain current RCS temperature.
- D. Manually operate the SG atmospheric relief valves to increase heat removal.

- A. *Incorrect. Plausible, however, steam dumps are not available based on Containment pressure. MSLI has occurred.*
- B. *Incorrect. Plausible, however, steam dumps are not available based on Containment pressure. MSLI has occurred.*
- C. *Incorrect. Plausible, however, maintaining current temperature is incorrect. Should be maintained at 547°F*
- D. *Correct.*

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Knowledge of the interrelations between the Pressurizer Vapor Space Accident and the following: Controllers and positioners

Question Number: 40

Tier 1 Group 1

Importance Rating: 2.5

Technical Reference: E-0, step 11 RNO
1OM-21.1.D, pg 2
1OM-21.2.B, pg 3

Proposed references to be provided to applicants during examination: None

Learning Objective:

10 CFR Part 55 Content: 41.10

Comments:

Source: BANK
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: COMANCHE PEAK 2007
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

13. 008 G2.1.32 001/NEW//LOWER//RO/BVPS-1/11/2007/NO

Which ONE of the following describes the flow limit associated with the CCR system, and the reason for the limit?

4700 GPM...

- A. total system flow; CCR pump runout concern.
- B. total system flow; RCP thermal barrier temperature concern.
- C. flow through any one heat exchanger; flow induced vibration on the tube bundle from excessive flow on heat exchanger shell side.
- D. flow through any one heat exchanger; flow induced vibration on the tube bundle from excessive flow on heat exchanger tube side.

A. Incorrect. Flow through each heat exchanger is restricted; credible because high flow could cause runout

B. Incorrect. Flow through each heat exchanger is restricted; credible because there is a different concern in the P&Ls for TBHX temperature

C. Correct.

D. Incorrect. Incorrect reason, because the issue is flow on the shell side causing vibration on the tube bundle

Conduct of Operations: Ability to explain and apply all system limits and precautions.

Question Number: 8

Tier 2 Group 1

Importance Rating: 3.4

Technical Reference: 1OM-15.2.A, Pg 3, P&L 15

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-15.1 Obj 14

10 CFR Part 55 Content: 41.5

Comments:

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Source: NEW
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

14. 009 G2.1.23 001/BANK/BVPS-1/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- A MANUAL SI was initiated in response to a LOCA.
- The operating crew is performing ES-1.2, Post LOCA Cooldown and Depressurization.
- No RCP's are running.
- Both HHSI pumps are running, injecting through the BIT.
- The crew is depressurizing the RCS to refill the pressurizer.
- RCS Pressure is 1000 PSIG.
- RCS Subcooling is at 35°F (30°F is currently required in accordance with Attachment 6-A, for SI Reinitiation criteria).

Which ONE of the following describes the required action if subcooling decreases below 30°F during the depressurization to refill the pressurizer?

- A. Continue the depressurization - subcooling will be restored after the depressurization
- B. Continue the depressurization - the goal is to maintain the RCS at saturated conditions
- C. Terminate the depressurization - to avoid bubble formation in the reactor vessel head
- D. Terminate the depressurization - to preclude uncontrolled SI accumulator discharge

A. *Correct.*

B. *Incorrect. Goal is not to maintain saturated conditions, it is to maintain minimum subcooling for cooldown and depressurization*

C. *Incorrect. Would not terminate depressurization if subcooling was too low, part of strategy to continue*

D. *Incorrect. Would not terminate, and accumulator discharge would not occur until pressure was lower.*

Options credible because there are procedures where these concerns exist during cooldown and depressurization

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

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

Question Number: 41

Tier 1 Group 1

Importance Rating: 3.9

Technical Reference: ES-1.2 step 16 basis

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-53.3, Obj 3

10 CFR Part 55 Content: 41.10

Comments:

Source: BANK
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: BVPS-1
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

15. 010 A4.02 001/BANK/WTSI/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The unit is at 100% power.
- All systems in NSA. The control Group, and the "B" and "E" Backup heaters are in AUTO AFTER ON.
- The "A" and "D" Backup heaters are in AUTO AFTER OFF.
- The controlling pressure input to the pressurizer pressure master controller fails to 2225 psig.

Which ONE of the following describes the INITIAL response of the pressurizer heaters?

- A✓ Control Group heaters and backup heaters are energized.
- B. Control Group heaters and backup heaters are deenergized.
- C. Control Group heaters are energized. Backup heaters are deenergized.
- D. Control Group heaters are deenergized. Backup heaters are energized.

A. Correct. If setpoint fails to 2225, that is the pressure that the control system will try to maintain

B. Incorrect. Control group do not deenergize, they go to half voltage. Pressure would be indicating too low to have the backup heaters deenergized

C. Incorrect. Control Group always energized at least at half voltage. Backup heaters would not be deenergized because indicated pressure is low.

D. Incorrect. Opposite effect of C. A similar condition could exist if there was an insureg and PRZR level rose above program. However, Control Group would go to half voltage

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to manually operate and/or monitor in the control room: PZR heaters

Question Number: 9

Tier 2 Group 1

Importance Rating: 3.6

Technical Reference: 2OM-6.4.IF, pg 18/23

Proposed references to be provided to applicants during examination: None

Learning Objective: 1OM-6.4 Obj 16

10 CFR Part 55 Content: 41.7/41.10

Comments:

Source: BANK
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: WTSI
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

16. 011 K2.02 001/BANK/BVPS-1/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The Unit is operating at 100% power with all systems are in their at power, NSA configurations.
- The PZR heater control switches are positioned as follows:
 - Group A: Auto-After-Stop
 - Group B: Auto-After-Stop
 - Group C: On
 - Group D: Auto-After-Start
 - Group E: Auto-After-Stop
- A loss of 480VAC emergency bus 1N then occurs.

Which ONE of the following actions must be taken to manually energize PZR backup heaters in response to the loss of the 1N bus?

- A. Place Group A or D in Auto-After-Start.
- B✓ Place Group B or E in Auto-After-Start.
- C. Reset Group C and return to ON.
- D. Reset Group D and return to Auto-After-Start.

A. Incorrect. Loss of Bus 1N would deenergize these heaters

B. Correct. B/U groups B/E would be available and must be started

C. Incorrect. This is operation of control group heaters, and would not start any backup heaters

D. Incorrect. Group D is de-energized by this failure

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Knowledge of bus power supplies to the following:PZR Heaters

Question Number: 36

Tier 2 Group 2

Importance Rating: 3.1

Technical Reference: 1OM-6.1.D, pg 10-12

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-6.4 Obj 18

10 CFR Part 55 Content: 41.7

Comments:

Source: BANK
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: BVPS-1
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

17. 012 A4.03 001/MODIFIED/BVPS-1/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- A plant startup is in progress and all Nuclear Instrumentation is observed to be operating normally.
- Power Range channel N-41 and N-42 are 9%.
- Power Range channel N-43 and N-44 are 11%.
- NO manual actions have been taken.

Which ONE of the following is correct concerning RPS trips?

- A. Power Range, high setpoint trip and Source Range high flux trip are enabled.
- B. Power Range, low setpoint trip and Source Range high flux trip are disabled.
- C. Power Range, high setpoint trip is enabled and Intermediate Range high flux trip is enabled.
- D. Power Range, low setpoint trip is enabled and Intermediate Range high flux trip is disabled.

A. Incorrect. Source Range was disabled after power rose above P-6

B. Incorrect. With power >P-10 (2 of 4 >10%), PR low setpoint trip is still enabled until manually disabled

C. Correct.

D. Incorrect. IR high flux trip is not disabled at this point, they must be manually disabled.

Ability to operate and/or monitor in the control room: Channel blocks and bypasses

Question Number: 13

Tier 3 Group 3

Importance Rating: 3.6

Technical Reference: 1OM-1.1.B pg 5, 6

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-1.1 Obj 10

10 CFR Part 55 Content: 41.5

Comments:

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Source: MODIFIED

Source if Bank: BVPS-1

Cognitive Level: HIGHER

Difficulty:

Job Position: RO

Plant: BVPS-1

Date: 11/2007

Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

18. 012 K5.01 001/BANK/IP3 2002/LOWER//RO/BVPS-1/11/2007/NO

Which ONE of the following reactor trips is designed to protect the core from a Departure From Nucleate Boiling (DNB) condition?

- A. Pressurizer High Level
- B Overtemperature Delta T
- C. Overpower Delta T
- D. Pressurizer High Pressure

A. Incorrect. PZR High level is a backup to ensure RCS Pressure SL is not exceeded

B. Correct.

C. Incorrect. OPDT protects against events causing total core power to rise, protects reactor core SL

D. Incorrect. PZR High pressure protects the RCS pressure SL

Knowledge of the operational implications of the following concepts as they apply to the RPS: DNB

Question Number: 10

Tier 2 Group 1

Importance Rating: 3.3

Technical Reference: TS 3.3.1 basis

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-1.1, Obj 16

10 CFR Part 55 Content: 43.2/41.2

Comments:

Source: BANK
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank: IP3 2002
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

19. 013 A3.01 019/BANK/VC SUMMER 2006 NRC/HIGHER//RO/BVPS-1/11/2007/NO

Pressurizer Pressure Protection Channel 455 fails and is properly removed from service.

Which ONE of the following identifies the RPS and ESF actuation logic required, from the REMAINING in-service channels, to initiate a reactor trip and safety injection on low pressurizer pressure?

- A. Reactor Trip - 1/3; Safety Injection -1/3
- B. Reactor Trip - 1/2; Safety Injection -1/2
- C. Reactor Trip - 2/3; Safety Injection -2/3
- D. Reactor Trip - 1/3; Safety Injection -1/2

B is correct. Trip and SI is normally 2/3 for Pzr pressure. Channel 455 feeds both circuits. When a protection channel is removed from service, bistables are tripped in all cases except for the AUTO CNMT Spray actuation. Thus, AUTO SI will occur if either of the two remaining bistables trip and Reactor trip will occur if either of the 2 remaining bistables trip.

1/3 and 2/3 are credible distractors because the applicant must know what state bistables will be in after action is taken, and that all other RPS functions are 2 out of 4 logic under normal conditions.

Ability to monitor automatic operation of the ESFAS including: Input channels and logic

Question Number: 11

Tier 2 Group 1

Importance Rating: 3.7

Technical Reference: 1OM-6.4.IF, pg 17, 20, 21

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-6.4 Obj 17

10 CFR Part 55 Content: 41.7

Comments:

Source: BANK

Cognitive Level: HIGHER

Job Position: RO

Date: 11/2007

Source if Bank: VC SUMMER 2006 NRC

Difficulty:

Plant: BVPS-1

Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

20. 014 A4.01 001/BANK/IP3 2002/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The plant is operating at 88% power.
- Rod Control is in MANUAL.
- Control Bank D rods are at 200 steps.
- All Tavg channels are approximately 5.5°F higher than Tref.

Which ONE of the following describes the resulting rod control operation if the Rod control System Mode Selector Switch is placed in AUTO prior to matching Tave and Tref?

- A. Step in at 8 SPM
- B. Step in at 48 SPM
- C. Step in at 64 SPM
- D. Step in at 72 SPM

D is correct. Higher deviation requires a higher rod speed, max at 72 SPM for 5 degree mismatch.

A is incorrect because 8 SPM would be minimum speed for small mismatch.

B and C are incorrect because rod speed is wrong, not high enough

Ability to manually operate and/or monitor in the control room: Rod selection control

Question Number: 31

Tier 2 Group 2

Importance Rating: 3.3

Technical Reference: 1OM-1.1.D pg 15

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-1.3 Obj 20

10 CFR Part 55 Content: 41.7

Comments:

Source: BANK
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: IP3 2002
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

21. 015 AA2.11 001/BANK/BVPS-1/LOWER//RO/BVPS-1/11/2007/NO

Which ONE of the following describes the operation of RCPs during the performance of FR-C.1, Response To Inadequate Core Cooling?

- A. An RCP is started to provide forced flow of the RCS when secondary depressurization is ineffective in restoring adequate core cooling.
- B. If RCPs are available, they are started immediately upon entry to FR-C.1 to provide forced flow ONLY if seal injection and CCR are available.
- C. If RCPs are available, they are started immediately upon entry to FR-C.1 to provide forced flow EVEN IF seal injection and CCR are NOT available.
- D. An RCP is started to provide forced flow and mixing of RCS water prior to secondary depressurization.

A. *Correct.*

B. *Incorrect. Not started as soon as FR-C.1 is entered, will most likely be tripped at that point*

C. *Incorrect. Not started as soon as FR-C.1 is entered, will most likely be tripped at that point. CCR and seal injection not required is correct*

D. *Incorrect. RCP would not be started prior, but may be started after depressurization is determined ineffective*

Ability to determine and interpret the following as they apply to the Reactor Coolant Pump Malfunctions (Loss of RC Flow): When to jog RCPs during ICC

Question Number: 42

Tier 1 Group 1

Importance Rating: 3.4

Technical Reference: FR-C.1 pg 35 step 21 basis

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-53.3, Obj 3

10 CFR Part 55 Content: 41.10

Comments:

Source: BANK
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank: BVPS-1
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

22. 017 A2.01 001/NEW//LOWER//RO/BVPS-1/11/2007/NO

Which ONE of the following describes the indication seen for a Core Exit Thermocouple with an open circuit, and when is technical specification action required?

- A. Failed LOW; TS action required if less than 4 CETs per quadrant are operable.
- B. Failed LOW; TS action required if less than 2 CETs per quadrant are operable.
- C. Failed HIGH; TS action required if less than 4 CETs per quadrant are operable.
- D. Failed HIGH; TS action required if less than 2 CETs per quadrant are operable.

A. *Correct.*

B. *Incorrect. 2 CETs per channel, meaning 4 total. Failure is correct.*

C. *Incorrect. Failure incorrect, because CET fails low. Correct number of CETs listed*

D. *Incorrect. Failure incorrect, because CET fails low. Incorrect number of CETs listed, 4 are required (2 per channel)*

Ability to (a) predict the impacts of the following malfunctions or operations on the ITM system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Thermocouple open and short circuits

Question Number: 32

Tier 2 Group 2

Importance Rating: 3.1

Technical Reference: TS section 3.3.3
3SQS-3.1, section IV.G.2, pg 16

Proposed references to be provided to applicants during examination: TS 3.3.3

Learning Objective: TS 3.3.3

10 CFR Part 55 Content: 41.10/43.2

Comments:

Source: NEW
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

23. 022 AA1.06 002/NEW//HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The plant is at 100% power.
- "A" Charging Pump is in operation.
- The following alarms are received:
 - A3-58, CHARGING PUMP DISCHARGE FLOW HIGH-LOW
 - A3-91, NON-REGEN HEAT EXCHANGER DISCHARGE TEMP HIGH
- NO other alarms are received.
- [FI-1CH-122A] indicates 0 GPM.

Which ONE of the following describes the event in progress and the FIRST action that will be required?

- A. Charging Pump trip; start a standby Charging Pump
- B. Charging Pump trip; isolate Letdown
- C. FCV-122 failure; bypass [FCV-1CH-122] to restore Charging flow
- D FCV-122 failure; isolate Letdown

A. Incorrect. Would have additional alarms. Action would be required if this was the cause

B. Incorrect. Would have additional alarms. Action would be required if this was the cause

C. Incorrect. Correct failure, but action would be taken to isolate letdown, not bypass the flow control valve

D. Correct.

Meets KA because not having some of the indications for the ka will tell what the event is

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to operate and / or monitor the following as they apply to the Loss of Reactor Coolant Pump Makeup: CVCS charging pump ammeters and running indicators

Question Number: 43

Tier 1 Group 1

Importance Rating: 2.9

Technical Reference: AOP-1.7.1, step 2, pg 4

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-53C.1 Obj 5

10 CFR Part 55 Content: 41.10

Comments:

Source: NEW
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

24. 022 K2.01 001/NEW//LOWER//RO/BVPS-1/11/2007/NO

Which ONE of the following states the power supplies available to the Containment Air Recirc Fans [1VS-F-1A, B, C]

	[1VS-F-1A]	[1VS-F-1B]	[1VS-F-1C]
A✓	Bus 1N1	Bus 1P1	Bus 1N1 or 1P1
B.	Bus 1P1	Bus 1N1	Bus 1N1 or 1P1
C.	Bus 1N1	Bus 1N1 or 1P1	Bus 1P1
D.	Bus 1P1	Bus 1N1 or 1P1	Bus 1N1

A. Correct.

B. Incorrect. Same supplies, different alignment

C. Incorrect. Same supplies, different alignment

D. Incorrect. Same supplies, different alignment

Options plausible because they all contain the same supplies

Knowledge of power supplies to the following: Containment Cooling Fans

Question Number: 12

Tier 2 Group 1

Importance Rating: 3.0

Technical Reference: 1OM-44C.3.C, pg 4/5

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-44C.1 Obj 3

10 CFR Part 55 Content: 41.5

Comments:

Source: NEW
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

25. 025 AK2.05 002/NEW//HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The Unit is in Mode 5.
- RHR Pump "B" is in service.
- Containment Sump level is slowly rising.
- The following annunciator is received:
 - [A1-126], Residual Heat Removal System Disch Flow Low
 - [RM-1RM-202], Cnmt Low Range Area Monitor, is in alarm

Which ONE of the following describes the plant condition?

- A. RHR Pump "B" has tripped.
- B. The in-service RHR flow control valve has failed closed.
- C. An RHR leak exists in Cnmt.
- D. An RHR leak exists in the Aux. Building.

A. Incorrect. Credible because alarm would be received, but other alarms would also be received for pump trip. Also, radiation would not be high

B. Incorrect. Credible because low flow would be received. Wrong because there is indication of leakage

C. Correct. Sump indication and also radiation levels

D. Incorrect. A leak exists, but in containment, not the Aux Building

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Knowledge of the interrelations between the Loss of Residual Heat Removal System and the following: Reactor building sump

Question Number: 44

Tier 1 Group 1

Importance Rating: 2.6

Technical Reference: AOP 1.10.1, pg 1/3

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-10.1 Obj 19

10 CFR Part 55 Content: 41.7

Comments:

Source: NEW
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

26. 026 AK3.04 001/NEW//HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The plant is at 100% power, all systems in NSA.
- A loss of Component Cooling Water has occurred.
- CCR Pumps have not been started.
- CCR flow cannot be reestablished.
- The crew is performing actions of AOP-1.15.1, Loss of Primary Component Cooling Water.

Which ONE of the following describes the actions required for RCP operation, and the reason for the action?

- A. Trip the reactor and trip RCPs due to loss of RCP seal cooling.
- B. Refer to AOP-1.6.8, Abnormal RCP Operation, and monitor RCP temperatures due to loss of RCP seal cooling.
- C. Trip the reactor and trip RCPs due to loss of pump and motor bearing cooling
- D. Refer to AOP-1.6.8, Abnormal RCP Operation, and monitor RCP temperatures due to loss of pump and motor bearing cooling.

A. Incorrect. Correct action but incorrect reason for action. RCPs can operate with loss of TBHX flow if seal injection is maintained

B. Incorrect. Incorrect action and incorrect reason for action. RCPs can operate with loss of TBHX flow if seal injection is maintained

C. Correct.

D. Incorrect. Incorrect action because RCPs must be tripped due to loss of CCR

C is correct. Can operate without TB cooling if seal injection is maintained

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Knowledge of the reasons for the following responses as they apply to the Loss of Component Cooling Water: Effect on the CCW/nuclear service water discharge flow header of a loss of CCW

Question Number: 45

Tier 1 Group 1

Importance Rating: 3.5

Technical Reference: AOP-1.15.1, step 2 RNO
1OM-6.1C pg 17
AOP-1.6.8, step 3

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-53C.1 Obj 1

10 CFR Part 55 Content: 41.7/10

Comments:

Source: NEW
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

27. 026 K4.08 001/NEW//HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- 0100 Reactor Trip
- 0106 Safety Injection Actuation
- 0111 CIB actuation
- 0117 RWST level 36 feet
- 0118 Containment Pressure peaked at 18 psig
- 0119 RWST level 31 feet
- 0129 Containment Pressure at 10 psig.

The current time is 0131.

Assuming no action by the crew and the trends above continue, which ONE of the following describes the equipment that will be in service for Containment Pressure reduction?

- A. Quench Spray only.
- B. Recirc Spray only.
- C. Quench Spray and Recirc Spray
- D. Quench Spray, Recirc Spray, and Containment Air Recirculation Fans.

A. Incorrect. Time delay for recirc spray is satisfied

B. Incorrect. At 31 feet in RWST, Quench Spray would still be in operation

C. Correct.

D. Incorrect. Containment Air Recirc Fans would be tripped due to CIB actuation

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Knowledge of CSS design feature(s) and/or interlock(s) which provide for the following: Automatic swapper to containment sump suction for recirculation phase after LOCA

Question Number: 14

Tier 2 Group 1

Importance Rating: 4.1

Technical Reference: 1OM-13.1.C pg 8-10
1OM-13.2.B, pg 3

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-13.1 Obj 17

10 CFR Part 55 Content: 41.5

Comments:

Source: NEW
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

28. 027 G2.1.32 001/NEW//HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The plant is at 100% power.
- The PZR Master Pressure Controller is in AUTO.
- BOTH PZR Spray Valves are in MANUAL and CLOSED due to a previous malfunction.
- PZR pressure is currently 2260 psig and stable.

Which ONE of the following describes the effect on the PZR pressure control system?

- A. ✓ PORV 455C will open even though pressurizer pressure is only slightly higher than normal.
- B. PORVs 455D and 456 will open even though pressurizer pressure is only slightly higher than normal.
- C. PORV 455C will NOT open even though pressurizer pressure is slightly higher than normal.
- D. PORVs 455D and 456 will NOT open even though pressurizer pressure is slightly higher than normal.

A. Correct. Controller windup will cause the PORV that is controlled by the master controller to open at a low pressure

B. Incorrect. Wrong PORVs. These PORVs are controlled directly by pressure transmitters and are not affected by controller windup

C. Incorrect. The effect is opposite of what would actually happen. PORV would open, would not remain closed

D. Incorrect. Same as B. PORVs unaffected by controller windup

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Conduct of Operations: Ability to explain and apply all system limits and precautions.

Question Number: 46

Tier 1 Group 1

Importance Rating: 3.4

Technical Reference: 1OM-6.2.A, pg 7, P&L 54

Proposed references to be provided to applicants during examination: None

Learning Objective: 1OM-6.4 Obj 9

10 CFR Part 55 Content: 41.7

Comments:

Source: NEW
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

29. 027 K1.01 001/BANK/MCGUIRE 2007/LOWER//RO/BVPS-1/11/2007/NO

Which ONE of the following describes the pumps that provide for iodine removal from the Containment atmosphere following a LOCA, and the mechanism for removal of iodine?

- A. Removed by Quench Spray AND Recirc Spray; the temperature of the borated water keeps iodine in solution.
- B. Removed by Quench Spray AND Recirc Spray; the alkaline pH of the spray water keeps iodine in solution.
- C. Removed by Recirc Spray ONLY; the temperature of the borated water keeps iodine in solution.
- D. Removed by Recirc Spray ONLY; the alkaline pH of the spray water keeps iodine in solution.

B is correct.

A and C are incorrect because iodine removal is facilitated by an alkaline pH. The temperature of the water is important to design basis, but not for iodine removal

D is incorrect because injection phase also contains sodium hydroxide, which will maintain a high pH to facilitate iodine removal. NaOH is provided to the suction of Quench Spray

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

Question Number: 33

Tier 2 Group 2

Importance Rating: 3.4

Technical Reference: 1OM-13.1.B, pg 2

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-13.1, Obj 1

10 CFR Part 55 Content: 41.5

Comments:

Source: BANK
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank: MCGUIRE 2007
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

30. 028 K5.03 001/BANK/WTSI/LOWER//RO/BVPS-1/11/2007/NO

Given the following:

- A LOCA has occurred.
- The crew was required to perform the actions of FR-C.1, Response to Inadequate Core Cooling.
- Core Exit Thermocouples indicate off-scale high.

Which ONE of the following will be the major source of hydrogen buildup in containment for the first 12 hours following this event?

- A. Radiolysis of water
- B. Zirc-Water reaction
- C. Aluminum corrosion reaction
- D. RCS hydrogen from the VCT and CVCS

A. Incorrect. Most significant long term effect comes from radiolysis of water

B. Correct. With clad temperatures exceeding 1800 degrees, Zirc Water reaction is most significant

C. Incorrect. Contributor, but more significant long term

D. Incorrect. Contributor, but minor in relation to Zirc-Water if clad temperatures exceed 1800

Knowledge of the operational implications of the following concepts as they apply to the HRPS: Sources of hydrogen within containment

Question Number: 34

Tier 2 Group 2

Importance Rating: 2.9

Technical Reference: LP-GO-3ATA-4.2, pg 81

Proposed references to be provided to applicants during examination: None

Learning Objective: LP GO-3ATA

10 CFR Part 55 Content: 41.5

Comments:

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Source: BANK
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank: WTSI
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

31. 029 A3.01 001/NEW//HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The plant is in Mode 6.
- Refueling Activities are in progress.
- Containment Purge is in service.
- Radiation levels are rising on the Containment Purge Exhaust Radiation Monitors.
 - [RM-VS-104A] has reached the HI setpoint.
 - [RM-VS-104B] has reached the HI-HI setpoint.

Which ONE of the following describes the effect on the plant, if any, in this condition?

- A. NO effect at this time; Containment Purge will isolate if [RM-VS-104A] reaches the HI-HI setpoint.
- B. Containment Purge Exhaust Fan, [VS-F-5], stops. The Main Filter Bank is placed in service. Containment Purge Supply Heating Ventilation Unit, [VS-HV-5], remains in service. Containment Evacuation alarm sounds.
- C. Containment Purge Supply Heating and Ventilation Unit, [VS-HV-5], stops. The Main Filter Bank is placed in service. Containment Purge Exhaust Fan, [VS-F-5], remains in service.
- D. Containment Purge Exhaust Fan, [VS-F-5], stops. The Main Filter Bank is placed in service. Containment Purge Supply Heating and Ventilation Unit, [VS-HV-5], stops. Containment Evacuation alarm sounds.

D is correct. Either rad monitor in HI-HI initiates isolation

A is incorrect because it does not require 2 of 2

B and C are incorrect because fans stop and HVU stops when alarm received. Credible because a signal from RM-VS-215, Ctmt particulate, provides a separate signal to close dampers, and the applicant may believe that signal is required

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to monitor automatic operation of the Containment Purge System including: CPS isolation

Question Number: 35

Tier 2 Group 2

Importance Rating: 3.8

Technical Reference: 1OM 43.4, AEH pg 2

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-44C.1 Obj 11

10 CFR Part 55 Content: 41.5

Comments:

Source: NEW
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

32. 029 EK1.02 002/BANK/CATAWBA/LOWER//RO/BVPS-1/11/2007/NO

Per the EOP Basis Document, which ONE of the following statements describes the reason for immediately tripping the turbine in FR-S.1, Response to Nuclear Power Generation/ATWS?

A✓ Prevents adding positive reactivity due to an uncontrolled RCS cooldown.

B. Prevents Pressurized Thermal Shock due to an uncontrolled RCS cooldown.

C. Generates a redundant automatic reactor trip signal.

D. Minimizes the peak pressure transient for the event.

A. Correct: The basis in the EOPs is to prevent an uncontrolled cooldown and causing a positive reactivity addition

B. Incorrect: Cooldown correct, but PTS is not the concern for this event

C. Incorrect: Does generate a redundant automatic reactor trip signal, however, this is not the reason for tripping the Turbine per the background document.

D. Incorrect: The peak pressure will actually be greater if the turbine is tripped early in the transient, but minimizing peak pressure is a goal of FRP-S.1.

Knowledge of the operational implications of the following concepts as they apply to the ATWS: Definition of reactivity

Question Number: 47

Tier 1 Group 1

Importance Rating: 2.6

Technical Reference: FR-S.1 BD steps 1/5

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-53.3 Obj 4

10 CFR Part 55 Content: 41.10

Comments:

Source: BANK
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank: CATAWBA
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

33. 032 AA2.05 001/NEW//HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- A reactor startup is in progress.
- IR channel N-35 indicates 4×10^{-11} amps and stable
- IR channel N-36 indicates 7×10^{-11} amps and stable
- The crew is verifying proper overlap and preparing to block Source Range High Flux Trips.
- The reactor trips on Source Range High Flux.

Which ONE of the following caused the reactor trip?

- A. SR channel N-31 HV Manual ON/OFF switch was placed in HV OFF.
- B. SR channel N-31 pulse height discriminator failed, causing an artificially high indication.
- C. IR channel N-35 was overcompensated and caused the trip prior to P-6 being satisfied.
- D. IR channel N-36 was undercompensated and caused the trip prior to P-6 being satisfied.

A. Incorrect. Placing switch in OFF will provide the opposite effect

B. Correct.

C. Incorrect. Both of the Intermediate Range channels indicate correctly, and an overcompensated channel would result in lower indication

D. Incorrect. Both of the Intermediate Range channels indicate correctly, although an undercompensated channel would result in higher indication and would cause a trip

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to determine and interpret the following as they apply to the Loss of Source Range Nuclear Instrumentation: Nature of abnormality, from rapid survey of control room data

Question Number: 58

Tier 1 Group 2

Importance Rating: 2.9

Technical Reference: ITS 3.3.3 Function 5
1OM-2.1.B, pg 4

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-2.1 Obj 2

10 CFR Part 55 Content: 41.7

Comments:

Source: NEW
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

34. 033 AA1.02 001/BANK/WTSI/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- A reactor startup is in progress.
- IR power indicates 5×10^{-11} amps on both channels.
- SR High Flux Trip has NOT been blocked.

For the switch positions listed below, describe the Reactor Protection System response to a blown control power fuse on Intermediate Range channel N-35.

	IR Level Trip Bypass - NORMAL	IR Level Trip Bypass - BYPASS
A.	NO reactor trip	NO reactor trip
B.	Reactor trip	NO reactor trip
C.	NO reactor trip	Reactor Trip
D✓	Reactor trip	Reactor trip

A. Incorrect. Control Power fuse blowing would result in a reactor trip if the Trip Bypass was in normal. Loss of Control power would trip the RPS bistable

B. Incorrect. This would be correct for an instrument power fuse on the channel

C. Incorrect. This is opposite to the actual effect if an instrument power fuse were to blow on an IR drawer

D. Correct.

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to operate and / or monitor the following as they apply to the Loss of Intermediate Range Nuclear Instrumentation: Level trip bypass

Question Number: 59

Tier 1 Group 2

Importance Rating: 3.0

Technical Reference: 3SQS-2.1 PP slide 51
Permanent caution on IR drawer

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-2.1 Obj 4

10 CFR Part 55 Content: 41.6/41.7

Comments:

From WTSI Generic Bank

Source: BANK
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: WTSI
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

35. 039 K4.08 001/NEW//HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The plant is in Mode 3.
- RCS temperature is 440°F.
- RCS pressure is 650 psig.
- Cooldown to Mode 5 is in progress using Condenser Steam Dumps.

Which ONE of the following choices describes the signals that will cause MSIVs to automatically close for these conditions?

- A. Low Main Steam Line pressure only.
- B. High Negative Rate of Main Steam Line pressure only.
- C. Low Main Steam Line pressure only AND High-2 Containment pressure.
- D. High Negative Rate of Main Steam Line pressure AND High-2 Containment pressure.

A. Incorrect. Low Steam Pressure would have been blocked below P-11

B. Incorrect. Partially correct, but High-2 will also close MSIVs

C. Incorrect. Low Main Steam Pressure is incorrect. High-2 is correct.

D. Correct. High-2 is always active. High Negative Rate is manually inserted when low steam pressure is blocked below P-11

Knowledge of MRSS design feature(s) and/or interlock(s) which provide for the following: Interlocks on MSIV and bypass valves

Question Number: 15

Tier 2 Group 1

Importance Rating: 3.3

Technical Reference: 1OM-21.1.D, pg 1

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-21.1 Obj 9

10 CFR Part 55 Content: 41.6

Comments:

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Source: NEW
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

36. 040 AK1.06 001/MODIFIED/BVPS-1/HIGHER/RO/BVPS-1/11/2007/NO

Given the following:

- The plant was at 100% power when the following occurred.
 - Reactor trip, all rods fully inserted.
 - 'B' Steam Generator pressure 550 psig and continuing to lower rapidly.
 - 'A' AND 'C' Steam Generator pressures stable at 750 psig.
 - Containment pressure 5 psig and rising.

Which ONE of the following describes the valve(s) that is (are) closed? (Assume all feedwater is isolated)

- A. The Main Steam Isolation Valve on the affected SG.
- B. The Non-Return Valves on the unaffected SGs.
- C✓ The Non-Return Valve on the affected SG.
- D. The Main Steam Isolation Valves on the unaffected SGs.

A. Incorrect. Affected MSIV will close at 500 psig or 7 psig in CNMT

B. Incorrect. Unaffected NRVs will remain open, as the pressure of the unaffected SGs is higher than the pressure of the affected SG

C. Correct. Affected SG pressure is lower, so the NRV will be closed to prevent steam flow through the break

D. Incorrect. Unaffected SGs will not isolate until 500 psig steam pressure or 7 psig CNMT pressure

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Knowledge of the operational implications of the following concepts as they apply to Steam Line Rupture: High-energy steam line break considerations

Question Number: 48

Tier 1 Group 1

Importance Rating: 3.7

Technical Reference: 1OM 21.1D, pg 2/3

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-21.1 Obj 8

10 CFR Part 55 Content: 41.5

Comments:

Modified to lower Containment Pressure, asked which valve is closed already

Source: MODIFIED

Cognitive Level: HIGHER

Job Position: RO

Date: 11/2007

Source if Bank: BVPS-1

Difficulty:

Plant: BVPS-1

Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

37. 055 EK3.01 002/BANK/SEQUOYAH 2004 NRC EX/LOWER//RO/BVPS-1/11/2007/NO

Which ONE of the following describes the minimum amount of time and reason why the station batteries are designed to ensure DC power is available after a loss of all AC power?

	Time	Reason
A✓	2 Hours	Station Blackout
B.	2 Hours	License Requirement Manual
C.	1 Hour	Station Blackout
D.	1 Hour	License Requirement Manual

a. Correct.

b. *Incorrect, batteries are rated for 2 hours, without chargers to provide necessary DC power to maintain reactor at hot shutdown after a loss of ALL AC sources*

c. *Incorrect, batteries are rated for 2 hours, without chargers to provide necessary DC power to maintain reactor at hot shutdown after a loss of ALL AC sources*

d. *Incorrect, batteries are rated for 2 hours, without chargers to provide necessary DC power to maintain reactor at hot shutdown after a loss of ALL AC sources*

Knowledge of the reasons for the following responses as they apply to the Station Blackout: Length of time for which battery capacity is designed

Question Number: 49

Tier 1 Group 1

Importance Rating: 2.7

Technical Reference: FSAR ch 8, section 8.4

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-53.3 Obj 3

10 CFR Part 55 Content: 41.8

Comments:

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Source: BANK
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank: SEQUOYAH 2004 NRC EX
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

38. 056 G2.1.2 001/MODIFIED/BVPS-1/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- Unit 1 was operating at 98% power when a loss of off-site power occurred.
- Twenty minutes later, the following plant conditions exist:
 - RCS pressure is 2235 psig and stable.
 - RCS Loop T_{HOT} is 596°F in all 3 loops and stable.
 - RCS Loop T_{COLD} is 552°F in all 3 loops and lowering.
 - Core exit TCs indicate approximately 600°F and lowering slowly.
 - Steam Generator pressures are approximately 1045 psig and stable.

Which ONE of the following describes the current plant conditions and the action required?

(Steam Tables are provided.)

- A. Natural Circulation does not exist. Heat removal must be established by opening the condenser steam dumps.
- B. Heat removal is being maintained by condenser steam dumps. Verify that Natural Circulation exists.
- C. Natural Circulation does not exist. Heat removal must be established by opening the atmospheric relief valves.
- D✓ Heat removal is being maintained by atmospheric relief valves. Verify that Natural Circulation exists.

A. Incorrect. Condenser steam dumps are not available because off-site power is lost and Circ Water is unavailable

B. Incorrect. Condenser steam dumps are not available.

C. Incorrect. With SG pressure stable just above ARV setpoint and temperatures stable or lowering, heat removal is occurring

D. Correct. ARVs are open, and Natural Circulation is setting up

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Conduct of Operations: Knowledge of operator responsibilities during all modes of plant operation.

Question Number: 50

Tier 1 Group 1

Importance Rating: 3.0

Technical Reference: ES-0.2
1OM-21.2.B pg 2/3

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-53.3 Obj 5

10 CFR Part 55 Content: 41.10

Comments:

Source: MODIFIED
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: BVPS-1
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

39. 057 AK3.01 001/BANK/BVPS-1/LOWER//RO/BVPS-1/11/2007/YES

Given the following:

- A Loss of power to Vital Bus II has occurred.
- The crew is attempting to restore power.

In accordance with AOP-1.38.1B, Loss of Vital Bus II, which ONE of the following describes the reason for placing the Vital Bus transfer toggle switch in the TO BYPASS position under these circumstances?

- A✓ Provides for manual transfer of the inverter static switch.
- B. Allows operation of the rectifier manual bypass switch.
- C. Bypasses the inverter synchronization relay to allow re-energization of the inverter from its normal source.
- D. Isolates the inverter static switch from the alternate power source in the case of a vital bus inverter failure

A. *Correct.*

B. *Incorrect. Inverter would be off to perform this transfer. Toggle switch not required for this.*

C. *Incorrect. The inverter could be transferred if in synch using a reverse transfer PB on inverter. Switch not required to bypass*

D. *Incorrect. The inverter would be placed in OFF. This switch will not isolate the alternate source. Manual Bypass would perform function to isolate alternate source from inverter*

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Knowledge of the reasons for the following responses as they apply to the Loss of Vital AC Instrument Bus: Actions contained in EOP for loss of vital ac electrical instrument bus

Question Number: 51

Tier 1 Group 1

Importance Rating: 4.1

Technical Reference: AOP-1.38.1, step 8
1OM-38.1.D, pg 2

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-53C.1, Obj 4

10 CFR Part 55 Content: 41.10

Comments:

Source: BANK
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank: BVPS-1
Difficulty:
Plant: BVPS-1
Previous NRC?: YES

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

40. 059 A1.03 001/NEW//HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The plant is at 68% power.
- Both Main Feedwater Pumps are running.
- The following alarm is received:
 - A7-37, STEAM GEN FEED PP AUTO STOP
- The RO determines that Main Feedwater Pump A has tripped.

Which ONE of the following describes the action required?

- A. Trip the reactor and enter E-0 to avoid an automatic reactor trip on SG LO-LO Level.
- B Reduce power to less than 50% to maintain power within the capacity of 1 Main Feedwater Pump.
- C. Trip the reactor and enter E-0 to avoid a challenge to the RCS pressure safety limit due to loss of secondary inventory.
- D. Reduce power to less than 50% to maintain feedwater reg valves in their normal operating range.

A. Incorrect. Would be correct if power was above 70%

B. Correct.

C. Incorrect. Would be partially correct if power was above 70%, but reason is incorrect. Credible because a loss of feed ATWS discusses this concern

D. Incorrect. Correct action but incorrect reason. FRVs are able to operate uniformly throughout travel

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the MFW controls including: Power level restrictions for operation of MFW pumps and valves.

Question Number: 16

Tier 2 Group 1

Importance Rating: 2.7

Technical Reference: 1AOP-24.1, step 2.b RNO

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-53C.1, Obj 4

10 CFR Part 55 Content: 41.10

Comments:

Source: NEW
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

41. 061 A2.07 001/NEW//HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The unit is in Mode 3.
- RCS temperature is 547°F.
- RCS pressure is 2235 psig.
- A loss of Instrument Air has occurred.
- Instrument Air pressure has NOT been restored.

Which ONE (1) of the following describes the effect on the AFW system and the action required, in accordance with AOP-1.34.1, Loss of Instrument Air?

- A. AFW recirc valves fail closed; reduce AFW flow to the TDAFW pump running ONLY.
- B✓ AFW recirc valves fail closed; start or stop AFW pumps based on AFW system flow rate.
- C. AFW recirc valves fail open; Reduce AFW flow to the TDAFW pump running ONLY.
- D. AFW recirc valves fail open; start or stop AFW pumps based on AFW system flow rate.

A. *Incorrect. Correct failure but TDAFW may be secured for this event*

B. *Correct.*

C. *Incorrect. Incorrect failure Incorrect action*

D. *Incorrect. Incorrect failure. Correct action*

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

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

Question Number: 18

Tier 2 Group 1

Importance Rating: 3.4

Technical Reference: AOP 1.34.1, Attachment A

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-53C.1 Obj 5

10 CFR Part 55 Content: 41.10

Comments:

Source: NEW
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

42. 061 AK3.02 001/BANK/BVPS-1/LOWER/RO/BVPS-1/11/2007/NO

The annunciator response procedure for [RM-1RM-218A(B)], Control Room Area Radiation Monitor High alarm requires the Operator to ensure [1VS-F-41A,B], Control Room Emergency Supply Fans are in the "STOP" position.

Which ONE of the following is the reason that these fans are required to be in the "STOP" position rather than in the "AUTOMATIC" position?

- A. The auto start of [1VS-F-41A or B] will cause [1VS-D-40-1A or B], Control Room Air Intake Damper to open.
- B. The auto start of [1VS-F-41A or B] will de-activate CREVS on Unit 2.
- C. The lead fans for a CREVS actuation are the Unit 2 fans, [2HVC-FN-241A(B)]; Unit 1 fans, [1VS-F-41A and B], are for manual backup only.
- D. Maintaining [1VS-F-41A(B)] in "STOP" ensures that their associated timers are not started

A. Incorrect. Damper not opened by fan operation

B. Incorrect. CREVS on Unit 2 is still going to actuate if a signal is received. If Unit 1 Fans are running, it is because Unit 2 fans are not running

C. Correct.

D. Incorrect. The CREVS actuation signal is not reset by the Fan control switch. Timers are reset by reset of the actuation signal

Knowledge of the reasons for the following responses as they apply to the Area Radiation Monitoring (ARM) System Alarms: Guidance contained in alarm response for ARM system

Question Number: 60

Tier 1 Group 2

Importance Rating: 3.4

Technical Reference: 1OM-43.4ADP probable cause #2

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-43.1 Obj 7

10 CFR Part 55 Content: 41.7

Comments:

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Source: BANK
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank: BVPS-1
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

43. 061 K6.02 001/NEW//HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The plant is at 100% power.
- The TDAFW Pump is OOS.
- A loss of off-site power occurs.
- Bus 1DF has an overcurrent lockout.
- No action has been taken by the crew.

Which ONE of the following describes the performance of the Auxiliary Feedwater system for these conditions?

- A. All 3 SGs fed at a total AFW flow of approximately 700 GPM.
- B. All 3 SGs fed at a total AFW flow of approximately 350 GPM.
- C. Two SGs fed at a total AFW flow of approximately 700 GPM.
- D. Two SGs fed at a total AFW flow of approximately 350 GPM.

A. Incorrect. This reflects the capacity of the TDAFW pump

B. Correct.

C. Incorrect. Capacity of TDAFW pump, and all 3 SGs will be fed, as current alignment requires

D. Incorrect. Current alignment will feed all 3 SGs at capacity of 1 MDAFW pump

Knowledge of the effect of a loss or malfunction of the following will have on the AFW components: Pumps

Question Number: 17

Tier 2 Group 1

Importance Rating: 2.6

Technical Reference: 1OM-24.1.B, pg 2

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-24.1 Obj 12

10 CFR Part 55 Content: 41.7

Comments:

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Source: NEW

Source if Bank:

Cognitive Level: HIGHER

Difficulty:

Job Position: RO

Plant: BVPS-1

Date: 11/2007

Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

44. 062 A2.16 001/NEW//HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The plant is operating at 55% power.
- The following alarms are received:
 - A7-107, GENERATOR FIELD FORCING
 - A7-109, GENERATOR FIELD OVERCURRENT

Which ONE of the following conditions is indicated by these alarms, and what action is required?

- A✓ Degraded grid voltage; Reduce generator excitation by placing Main Gen Volt Adjust to LOWER.
- B. Degraded grid voltage; Place SSST Tap Changers to MANUAL.
- C. High grid voltage; Reduce generator excitation by placing Main Gen Volt Adjust to LOWER.
- D. High grid voltage; Place SSST Tap Changers to MANUAL.

A. *Correct.*

B. *Incorrect. Correct effect but tap changers are not adjusted. VR will trip and Generator will trip if conditions last for approximately 1 minute*

C. *Incorrect. Incorrect effect but correct action*

D. *Incorrect. Incorrect effect. VR will trip and Generator will trip if conditions last for approximately 1 minute*

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

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

Question Number: 19

Tier 2 Group 1

Importance Rating: 2.5

Technical Reference: A7-107, A7-109 (10M-35.4.AAU)

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-35.2 Obj 12

10 CFR Part 55 Content: 41.10

Comments:

Source: NEW
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

45. 062 A3.04 001/BANK/WTSI/LOWER//RO/BVPS-1/11/2007/NO

Which ONE of the following describes the availability of 120 VAC Vital bus 1-1 during a loss of off-site power?

- A Is initially available from Battery 1-1 through the inverter, then automatically returns to the normal source after Diesel Generator #1 starts.
- B. The static switch initially transfers the supply to the alternate source, then automatically returns to the normal source after Diesel Generator #1 starts.
- C. Is initially available from Battery 1-1 through the inverter, then is manually returned to the normal source after Diesel Generator #1 starts.
- D. The static switch initially transfers the supply to the alternate source, then is manually returned to the normal source after Diesel Generator #1 starts.

A. Correct.

B. Incorrect. Static switch will not transfer if battery is available to supply

C. Incorrect. Battery will supply but when EDG starts and reenergizes bus, normal supply will again supply inverter because voltage is higher than the battery

D. Incorrect. Static switch will not transfer on loss of power if battery is available.

Ability to monitor automatic operation of the ac distribution system, including: Operation of inverter (e.g., precharging synchronizing light, static transfer)

Question Number: 20

Tier 2 Group 1

Importance Rating: 2.7

Technical Reference: 10M-38.4.A

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 3SQS-35.2 Obj 3

10 CFR Part 55 Content: 41.7

Comments:

Source: BANK
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank: WTSI
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

46. 062 AA2.01 001/BANK/WTSI/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The plant is at 100% power.
- All systems in NSA with 'B' Charging Pump in service.
- The crew was attempting to locate and isolate a leak in accordance with AOP-1.15.1, Loss of Primary Component Cooling Water.
- CCR Surge Tank level was rising with makeup isolated.

Which ONE of the following describes the location of the leak?

- A. CCR Heat Exchanger tube
- B. RHR Heat Exchanger tube
- C. Non-Regenerative Heat Exchanger tube
- D. RCP Seal Return Heat Exchanger tube

A. Incorrect. River Water is at a lower pressure, meaning that CCR Surge Tank would lower

B. Incorrect. RHR heat exchanger is not in service at 100% power, but would be correct in lower mode.

C. Correct. Higher pressure than CCR

D. Incorrect. Lower pressure than CCR and VCT level would be changing also

Ability to determine and interpret the following as they apply to the Loss of nuclear service water Location of a leak in the CCWS

Question Number: 52

Tier 1 Group 1

Importance Rating: 2.9

Technical Reference: AOP-1.5.1, att 2

Proposed references to be provided to applicants during examination: None

10 CFR Part 55 Content: 41.7

Comments:

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Source: BANK
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: WTSI
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

47. 063 G2.1.32 001/NEW//LOWER//RO/BVPS-1/11/2007/NO

Given the following:

- The plant is at 100% power.
- All systems NSA
- DC Control Power to 4KV Bus 1A is being transferred from the normal to the alternate supply.

Which ONE of the precautions must be observed for this evolution?

- A. RCP low flow trip will actuate if more than 1 DC control power source is de-energized at a time.
- B. RCP undervoltage trip will actuate if more than 1 DC control power source is de-energized at a time.
- C. Transfer must be performed rapidly because all Bus 1A protection is disabled during the transfer.
- D. Transfer must be performed rapidly because all RCP 1A protection is disabled during the transfer.

A. Incorrect. Low flow is similar to undervoltage trip and provides same protection, but will not actuate for this evolution

B. Correct.

C. Incorrect. Transfer is performed rapidly but all protection is not actually lost. Overcurrent still exist, but indication is lost

D. Incorrect. Indication, but not protection, is lost

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Conduct of Operations: Ability to explain and apply all system limits and precautions.

Question Number: 21

Tier 2 Group 1

Importance Rating: 3.4

Technical Reference: 1OM-39.4.E, pg 3 caution prior to step 5

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-39.1 Obj 17

10 CFR Part 55 Content: 41.10

Comments:

Source: NEW
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

48. 064 A4.08 001/NEW//HIGHER//RO/BVPS-1/11/2007/NO

The unit is at 100% power.

Which ONE of the following faults will start an Emergency Diesel Generator?

- A. Main Generator trip
- B. SSST 1A overpressure fault
- C Bus 1DF normal feeder trip
- D. Bus 1C undervoltage

A. Incorrect. By itself, a generator trip would not start the EDG because fast transfer to SSSTs would occur

B. Incorrect. At 100%, the SSST would not be supplying the 4KV emergency busses, so the feeder would not open and cause the EDG to start

C. Correct.

D. Incorrect. Bus 1C does not supply a feed to the 4 KV bus, either Bus 1A or Bus 1D do. Bus 1B and 1C do not

Ability to manually operate and/or monitor in the control room: Opening of the ring bus

Question Number: 22

Tier 2 Group 1

Importance Rating: 3.2

Technical Reference: BVPS UFSAR pg 8.5-12

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-36.1 Obj 12

10 CFR Part 55 Content: 41.7

Comments:

Source: NEW
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

49. 065 AA2.07 001/NEW//HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The reactor is tripped.
- The crew is performing actions of E-0, Reactor Trip or Safety Injection.
- Station Instrument Air header pressure and Containment instrument air pressure are 20 psig and lowering.
- Attempts to restore Instrument Air pressure have failed.

Which ONE of the following components is available for RCS OR Secondary pressure control from the control room?

- A. PZR Normal Spray
- B. PZR PORVs
- C. SG PORVs
- D. SG Residual Heat Release Valve

A. Incorrect. Requires instrument air to operate

B. Correct. N2 is valved in and will supply PORVs as necessary

C. Incorrect. Requires instrument air for operation

D. Incorrect. Requires instrument air for operation

Ability to determine and interpret the following as they apply to the Loss of Instrument Air: Whether backup nitrogen supply is controlling valve position

Question Number: 53

Tier 1 Group 1

Importance Rating: 2.8

Technical Reference: 10M-11.1.C, pg 8

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-11.1 Obj 3

10 CFR Part 55 Content: 41.7

Comments:

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Source: NEW
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

50. 068 K6.10 001/MODIFIED/BVPS-1/HIGHER//RO/BVPS-1/11/2007/NO

A liquid waste release is in progress from LW-TK-7A, SG Drain Tank, to the cooling tower blowdown, when the following annunciator alarms:

- [A4-70], Radiation Monitor Power Supply Failure

The BOP determines that [RM-1LW-104], Liquid Waste Effluent Monitor is failed downscale.

Which ONE of the following describes the effect on the liquid waste release?

- A. The release will continue and must be manually terminated; RM-1LW-104 must be repaired and operable within 30 days
- B. The release will be automatically terminated; the release may be restarted using RM-1LW-116, Liquid Waste Contaminated Drain Monitor as an alternate indication.
- C. The release will be automatically terminated; It may not be restarted until two (2) samples are independently analyzed and two (2) technically qualified personnel verify valve lineups and verify release rate calculations.
- D✓ The release will continue and must be manually terminated; It may not be restarted until two (2) samples are independently analyzed and two (2) technically qualified personnel verify valve lineups and verify release rate calculations.

A. Incorrect. Correct effect but rad monitor not required. 30 days is for a report to be issued

B. Incorrect. Release will not terminate automatically. Alternate indication may be used but not RM-1LW-116. Also must perform ODCM action

C. Incorrect. Release will not be automatically terminated but actions are correct

D is correct.

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Knowledge of the effect of a loss or malfunction on the following will have on the Liquid Radwaste System : Radiation monitors

Question Number: 37

Tier 2 Group 2

Importance Rating: 2.5

Technical Reference: ODCM 3.0.3 att E, action 23

Proposed references to be provided to applicants during examination: None

Learning Objective: NA

10 CFR Part 55 Content: 41.11

Comments:

Source: MODIFIED
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: BVPS-1
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

51. 069 AA2.01 007/BANK/HARRIS/LOWER//RO/BVPS-1/11/2007/NO

Which ONE of the following would be a loss of CONTAINMENT INTEGRITY?

- A. Mode 5 and it is discovered that the Phase 'B' isolation valve for CCR to the RCPs will not close.
- B. ✓ Mode 4 and review of Integrated Leak Rate test results show that leakage is not within limits.
- C. Mode 3 and Containment Atmosphere Purge Makeup valve will not open.
- D. Mode 6 and one of the Emergency Airlock (EAL) doors will not close.

A. Incorrect. Containment Integrity not required in Mode 5

B. Correct.

C. Incorrect. Purge Makeup Valve should not open in Mode 3, would not be a loss of integrity if it does not open

D. Incorrect. In Mode 6, 1 airlock door may remain open

See definition in TS

Ability to determine and interpret the following as they apply to the Loss of Containment Integrity: Loss of containment integrity

Question Number: 61

Tier 1 Group 2

Importance Rating: 3.7

Technical Reference: TS 5.5.12

Proposed references to be provided to applicants during examination: None

Learning Objective: NA

10 CFR Part 55 Content: 41.10/43.2

Comments:

Source: BANK
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank: HARRIS
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

52. 073 G2.1.28 001/NEW//LOWER//RO/BVPS-1/11/2007/NO

Which ONE of the following radiation monitors will provide the FIRST indication of a small Steam Generator Tube Leak (<10 GPD)?

- A. [RM-1MS-100A, B, C], Main Steam Relief Monitor
- B. [RM-1BD-101], High Capacity SG Blowdown Liquid Monitor
- C. [RM-1SV-100], Condenser Air Ejector
- D. [RM-1MS-102A, B, C], N16 Steam Generator Leak Monitors

- A. *Incorrect. Will pick up radiation, but not as quickly as N16 monitors*
- B. *Incorrect. Will pick up radiation, but not as quickly as N16 monitors*
- C. *Incorrect. Will pick up radiation, but not as quickly as N16 monitors*
- D. *Correct.*

Conduct of Operations: Knowledge of the purpose and function of major system components and controls.

Question Number: 24

Tier 2 Group 1

Importance Rating: 3.2

Technical Reference: AOP-1.6.4., pg 3

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-43.1 Obj 7

10 CFR Part 55 Content: 41.5

Comments:

Source: NEW
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

53. 073 K3.01 001/BANK/BVPS-1/LOWER//RO/BVPS-1/11/2007/NO

Which ONE of the following identifies the RMS channel that is capable of closing [TV-1GW-103], Waste Tank Discharge Header Cooling Tower Isolation Valve?

- A. [RM-1LW-116], Liquid Waste Contaminated Drain Monitor
- B. [RM-1GW-108A], Gaseous Waste Particulate Monitor
- C. [RM-1VS-101A], Ventilation Vent Particulate Monitor
- D. [RM-1VS-106], Waste Gas Tank Vault Ventilation Monitor

A. Incorrect. Contaminated Drain monitor closes a different effluent valve, does not close TV-1GW-103

B. Correct.

C. Incorrect. No input to TV-1GW-03,

D. Incorrect. No input to TV-1GW-103

Each of the options is credible because they monitor effluent release

Knowledge of the effect that a loss or malfunction of the PRM system will have on the following: Radioactive effluent releases

Question Number: 23

Tier 2 Group 1

Importance Rating: 3.6

Technical Reference: 1OM-43.4.ACO pg 1

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-43.1 Obj 6

10 CFR Part 55 Content: 41.11

Comments:

Source: BANK
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank: BVPS-1
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

54. 076 A3.02 001/NEW//HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The reactor has tripped.
- Safety Injection is actuated.
- RCS pressure is 700 psig and lowering.
- Containment pressure is 12.5 psig and rising.

Which ONE of the following describes the position of the River Water System components listed below?

	[MOV-1RW-114A/B, 106A/B] CCR HX RW SUPPLY	[MOV-1RW-103A-D] RSS HX RW SUPPLY
A.	OPEN	OPEN
B.	OPEN	CLOSED
C.	CLOSED	OPEN
D.	CLOSED	CLOSED

A. *Incorrect. CIB has occurred, so CCR heat exchangers will be isolated*

B. *Incorrect. Opposite of actual, would be in this condition if CIB had not occurred*

C. *Correct.*

D. *Incorrect. Correct position for CCR heat exchanger, but incorrect position for RSS heat exchanger*

CIB/CS actuation, RSS HX aligns. CCR isolates

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to monitor automatic operation of the SWS, including: Emergency heat loads

Question Number: 25

Tier 2 Group 1

Importance Rating: 3.7

Technical Reference: 1OM-30.1.D, pg 9/10

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-30.2 Obj 13

10 CFR Part 55 Content: 41.5

Comments:

Source: NEW
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

55. 076 G2.1.28 001/NEW//LOWER//RO/BVPS-1/11/2007/NO

Which ONE of the following radiation monitors provides DIRECT indication of elevated activity in the RCS?

- A. Letdown Radiation Monitor, [RM-1CH-101A/B]
- B. Containment Particulate Monitor, [RIS-RM-215A]
- C. Aux Bldg Bot Flr North Monitor, [RIS-RM-209]
- D. Manipulator Crane Monitor, [RIS-RM-203]

A. Correct. Most direct indication and used as primary indication for RCS activity

B. Incorrect. May be used as a backup indication

C. Incorrect. May be used as a backup indication

D. Incorrect. May be used as a backup indication

Conduct of Operations: Knowledge of the purpose and function of major system components and controls.

Question Number: 62

Tier 1 Group 2

Importance Rating: 3.2

Technical Reference: AOP-1.6.6, pg 1

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-43.1 Obj 7

10 CFR Part 55 Content: 41.11

Comments:

Source: NEW
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

56. 078 K1.04 001/NEW//LOWER//RO/BVPS-1/11/2007/NO

Which ONE of the following describes the cooling water alignment to Instrument Air Compressor 1A when it is aligned for STANDBY operation?

- A. CCT normally aligned and flowing to the intercooler and aftercooler.
- B. CCT normally aligned but isolated by a solenoid valve.
- C. Filtered Water normally aligned and flowing to the intercooler and aftercooler.
- D. Filtered Water normally aligned but isolated by a solenoid valve.

A. Incorrect. Water is not flowing, it is isolated if Air Compressor is in standby

B. Correct.

C. Incorrect. Filtered water is backup to CCT, and not aligned. Would be isolated

D. Incorrect. Filtered Water is a backup

Knowledge of the physical connections and/or cause-effect relationships between the IAS and the following systems: Cooling water to compressor

Question Number: 26

Tier 2 Group 1

Importance Rating: 2.6

Technical Reference: 1OM-34.1.D pg 2

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-34.1 Obj 1

10 CFR Part 55 Content: 41.4

Comments:

Source: NEW
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

57. 078 K2.01 001/NEW//HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The plant is at 100% power.
- 1A Station Air Compressor is operating with 1B Station Air Compressor in Standby.
- A loss of off-site power occurs.
- #1 EDG trips upon starting.
- NO operator actions have been taken.

Which ONE of the following describes the Station Air Compressors that are supplying air?

- A. 1A and 1B Station Air Compressors
- B. 1A Station Air Compressor and Diesel Air Compressor
- C. 1B Station Air Compressor and Diesel Air Compressor
- D Diesel Air Compressor ONLY

A. Incorrect. Both IACs are non-safety powered. They will not be powered post trip, so the Diesel Air Compressor will start and run

B. Incorrect. Diesel ONLY, IACs are not ESF

C. Incorrect. Diesel ONLY

D. Correct.

Both IACs are non-safety powered. They will not be powered post trip, so the Diesel Air Compressor will start and run

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Knowledge of bus power supplies to the following: Instrument Air compressor

Question Number: 27

Tier 2 Group 1

Importance Rating: 3.3

Technical Reference: 1OM-34.3.C, pg 5

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-34.1 Obj 11

10 CFR Part 55 Content: 41.4

Comments:

Source: NEW
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

58. 079 K4.01 001/NEW//LOWER//RO/BVPS-1/11/2007/NO

Which ONE of the following describes the operation of Station Air Header Isolation Valve [TV-1SA-105]?

- A. Automatically closes at 95 psig decreasing; automatically reopens at 95 psig increasing.
- B. Automatically closes at 105 psig decreasing; automatically reopens at 105 psig increasing.
- C. Automatically closes at 95 psig decreasing; must be manually reset and reopened.
- D. Automatically closes at 105 psig decreasing; must be manually reset and reopened.

A. Incorrect. Correct pressure, but valve does not automatically reopen at 95 psig

B. Incorrect. Backup compressor starts but valve does not close at this pressure. Does not automatically realign

C. Correct.

D. Incorrect. Backup compressor starts but valve does not close at this pressure. Operation of valve is correct

Knowledge of SAS design feature(s) and/or interlock(s) which provide for the following: Cross-connect with IAS

Question Number: 38

Tier 2 Group 2

Importance Rating: 2.9

Technical Reference: 1OM-34.4.A, pg 6

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-34.1 Obj 10

10 CFR Part 55 Content: 41.4

Comments:

Source: NEW
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

59. 103 A1.01 002/BANK/WTSI/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- The plant is in Mode 5.
- Containment Purge is in operation.
- The Personnel Airlock and Equipment Hatch are closed.
- The Containment Purge Exhaust Isolation valve is inadvertently closed.
- NO other components reposition.

Which ONE of the following describes the containment parameter IMMEDIATELY affected by this failure?

- A. Pressure
- B. Temperature
- C. Radiation Level
- D. Humidity Level

A. *Correct.*

B. *Incorrect. Temperature will remain constant since the Purge system does not provide a cooling function*

C. *Incorrect. Radiation levels would only rise to cause a purge isolation, they would not rise because of an isolation*

D. *Incorrect. Humidity is a function of the containment temperature and dewpoint, which are unaffected by purge control operation.*

Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the containment system controls including: Containment pressure, temperature, and humidity

Question Number: 28

Tier 2 Group 1

Importance Rating: 3.7

Technical Reference: 10M-44C.5.A.15

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-44C Obj 4

10 CFR Part 55 Content: 41.7

Comments:

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Source: BANK
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: WTSI
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

60. E02 EK2.2 001/BANK/SALEM 2001/LOWER/RO/BVPS-1/11/2007/NO

Given the following :

- A manual safety injection was initiated when RCS leakage exceeded charging capability.
- The crew has progressed through the EOP's and is now in ES-1.1, Safety Injection Termination.
- "A" Charging/HHSI Pump is running.

Which ONE of the choices correctly identifies the parameters monitored to ensure proper RCS makeup flow is maintained in accordance with ES-1.1?

- A. RCS subcooling and RVLIS.
- B. RCS subcooling and PZR level.
- C. Core Exit Thermocouples (CET's) trend and RCS Pressure.
- D. CET trend and PZR level.

A. Incorrect. RCS pressure is a component of subcooling, but not monitored

B. Correct.

C. Incorrect. CETs and pressure provide input to subcooling, but in ES-1.1, not monitored

D. Incorrect. PZR level is monitored, but CETs are not directly monitored

Knowledge of the interrelations between the (SI Termination) and the following: Facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of the facility.

Question Number: 63

Tier 1 Group 2

Importance Rating: 3.5

Technical Reference: ES-1.1, pg 6

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-53.3 Obj 2

10 CFR Part 55 Content: 41.10

Comments:

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Source: BANK

Source if Bank: SALEM 2001

Cognitive Level: LOWER

Difficulty:

Job Position: RO

Plant: BVPS-1

Date: 11/2007

Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

61. E04 EA1.3 078/BANK/WTSI/LOWER/RO/BVPS-1/11/2007/NO

Given the following:

- A LOCA outside containment has occurred.
- The crew is performing the actions in ECA-1.2, LOCA Outside Containment.

Which ONE of the following indications is used to determine if the leak has been isolated in accordance with ECA-1.2, and why?

- A. RCS pressure, because when the break is isolated, SI flow will repressurize the RCS.
- B. Pressurizer level, because when the break is isolated, RCS inventory will rapidly rise.
- C. Safety injection flow, because when the break is isolated, it is the first parameter that will change.
- D. RVLIS indication, because when the break is isolated, vessel head voiding will immediately be reduced.

A. Correct. RCS pressure is the primary means of determining whether the leak is isolated, as well as visual observation of isolation.

B. Incorrect. RCS inventory will increase, but may not immediately show up on PRZ level

C. Incorrect. SI Flow is a good confirmatory indication when RCS pressure rises, because it will be reduced, but RCS pressure rise is the only immediate indication

D. Incorrect. RVLIS may indicate 100% at the start, so may not provide indication of isolation at all

Ability to operate and/or monitor the following as they apply to the LOCA outside Containment: Desired operating results during abnormal and emergency operations

Question Number: 54

Tier 1 Group 1

Importance Rating: 3.8

Technical Reference: ECA-1.2, step 4 pg 3

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-53.3, Obj 3

10 CFR Part 55 Content: 41.10

Comments:

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Source: BANK
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank: WTSI
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

62. E05 EA1.1 001/BANK/BVPS-1/HIGHER//RO/BVPS-1/11/2007/YES

Given the following:

- The crew is responding to a Loss of Heat Sink per FR-H.1, Response to Loss of Secondary Heat Sink
- All steam generator wide range levels are approximately 5% wide range.
- RCS temperature is approximately 580F and stable.

Which ONE of the following describes the preferred method of initiating Auxiliary Feed flow for these conditions?

- A. Feed any or all SGs at the maximum rate to reestablish SG inventory and secondary heat sink.
- B. Feed 1 SG at the maximum rate to establish conditions for Natural Circulation.
- C Feed 1 SG at the minimum required flow to prevent possible SG tube failures.
- D. Feed any or all SGs at the minimum required flow to establish a controllable cooldown rate and prevent loss of RCS inventory.

A. Incorrect. Heat Sink has been lost, SGs are dry at this point

B. Incorrect. May perform if 1 or 2 SGs were dry and other SG was available

C. Correct.

D. Incorrect. Would feed at minimum rate if SGs were dry, but would only feed 1 SG

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Knowledge of the reasons for the following responses as they apply to the (Loss of Secondary Heat Sink) Components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features.

Question Number: 55

Tier 1 Group 1

Importance Rating: 4.1

Technical Reference: FR-H.1 and BD

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-53.3, Obj 3

10 CFR Part 55 Content: 41.10

Comments:

Source: BANK
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: BVPS-1
Difficulty:
Plant: BVPS-1
Previous NRC?: YES

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

63. E07 EK3.2 003/BANK/ROBINSON/LOWER//RO/BVPS-1/11/2007/NO

Given the following:

- A Steam Generator Tube Rupture has occurred.
- During the performance of E-3, Steam Generator Tube Rupture, additional failures occurred.
- The crew is performing ECA-3.2, SGTR with Loss of Reactor Coolant - Saturated Recovery Desired.
- The STA determines that yellow conditions exist on the Core Cooling and Inventory CSF Status Trees.

Which ONE of the following describes the required procedure use for this condition?

- A ✓ Remain in ECA-3.2 because it maintains a higher priority than yellow path FRPs.
- B. Transition to FR-C.3, Response to Saturated Core Cooling.
- C. Transition to FR-I.2, Response to High Pressurizer Level.
- D. Remain in ECA-3.2 and perform EITHER FR-C.3 OR FR-I.2 concurrently.

A. *Correct.*

B. *Incorrect. Would not transition because a conflict exists between procedure and Yellow Path*

C. *Incorrect. Would not transition because a conflict exists between procedure and Yellow Path*

D. *Incorrect. Would not perform concurrently. If a saturated recovery is in progress after a SGTR, FR-C.3 and FR-I.2 would not be performed, as they would provide action contrary to ECA-3.2*

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Knowledge of the reasons for the following responses as they apply to the (Saturated Core Cooling) Normal, abnormal and emergency operating procedures associated with (Saturated Core Cooling).

Question Number: 64

Tier 1 Group 2

Importance Rating: 3.2

Technical Reference: ECA-3.2, FR-C.3
User's Guide

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-53.3 Obj 5

10 CFR Part 55 Content: 41

Comments:

Source: BANK
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank: ROBINSON
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

64. E08 EK2.2 002/BANK/MCGUIRE 2007/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- A large break LOCA has occurred.
- The crew has entered FR-P.1, Response to Imminent Pressurized Thermal Shock, due to a RED condition on the Integrity CSF Status Tree.

Which ONE of the following describes the parameter that determines whether FR-P.1 will be performed or if the crew will return to procedure in effect?

- A. RVLIS level
- B. SG pressure
- C. LHSI flow rate
- D. RCS temperature

C is correct. LHSI flow rate indicates there is a large break LOCA in progress

A is incorrect. RVLIS would be an indicator of a LBLOCA, but could also be abnormal for a SBLOCA, which is a significant PTS concern.

B is incorrect. SG pressure may be going down for either event, whether a secondary break or primary break.

D is incorrect. Temperature will be reduced for LBLOCA due to ECCS flow as well as in a PTS event

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Knowledge of the interrelations between the (Pressurized Thermal Shock) and the following: Facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of the facility.

Question Number: 65

Tier 1 Group 2

Importance Rating: 3.6

Technical Reference: FR-P.1 step 2 RNO

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-53.3, Obj 3

10 CFR Part 55 Content: 41.10

Comments:

Source: BANK
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: MCGUIRE 2007
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

65. E11 EK2.2 003/MODIFIED//LOWER//RO/BVPS-1/11/2007/NO

Which ONE of the following describes the reason and requirements for depressurizing the RCS IAW ECA-1.1, Loss of Emergency Coolant Recirculation?

- A✓ To minimize RCS leakage, depressurize the RCS maintaining minimum RCS subcooling, then reduce HHSI pump flow.
- B. To ensure SI Accumulator injection, depressurize the RCS maintaining minimum RCS subcooling, then terminate HHSI pump flow.
- C. To minimize RCS leakage, depressurize the RCS maintaining maximum RCS subcooling, then stabilize RCS temperature while attempting to restore makeup sources.
- D. To ensure SI Accumulator injection, depressurize the RCS maintaining maximum RCS subcooling, then stabilize RCS temperature while attempting to restore makeup sources.

A Correct. The depressurization is performed to decrease leakage, therefore decreasing makeup requirements.

B Incorrect. Setup for accumulator injection is performed later in the procedure after SG depressurization.

C Incorrect. Will not stabilize RCS temperature

D Incorrect. Setup for accumulator injection is performed later in the procedure after SG depressurization, and will not stabilize RCS temperature.

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Knowledge of the interrelations between the (Loss of Emergency Coolant Recirculation) and the following: Facility's heat removal systems, including primary coolant, emergency coolant, the decay heat removal systems, and relations between the proper operation of these systems to the operation of the facility.

Question Number: 56

Tier 1 Group 1

Importance Rating: 3.9

Technical Reference: ECA-1.1 basis for step 28

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-53.3, Obj 5

10 CFR Part 55 Content: 41.10

Comments:

Source: MODIFIED

Cognitive Level: LOWER

Job Position: RO

Date: 11/2007

Source if Bank:

Difficulty:

Plant: BVPS-1

Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

66. G2.1.19 001/NEW//LOWER//RO/BVPS-1/11/2007/NO

Which ONE of the following describes the system or component status for a value displayed in YELLOW on the IPC?

- A. Denotes a static or reference value
- B. Denotes a dynamic or important value.
- C~~✓~~ Indicates that the data quality value is NOT good.
- D. Indicates that a process value has exceeded an alarm setpoint.

C is correct.

A is a blue indication

B is a green indication

D is a red indication

Ability to use plant computer to obtain and evaluate parametric information on system or component STATUS

Question Number: 69

Tier 3 Group 1

Importance Rating: 3.0

Technical Reference: 1OM-5C.1.B, pg 2

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-5C.1 Obj 1

10 CFR Part 55 Content: 41.5

Comments:

Source: NEW
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

67. G2.1.20 001/BANK/BVPS-1/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- A Small Break LOCA has occurred.
- The crew is performing the actions of ES-1.2, Post LOCA Cooldown and Depressurization.
- All SI pumps are running.
- All RCPs are running.
- RCS cooldown via Main Steam Dumps is ongoing.
- RCS Tave is 510°F and lowering at a rate of 50°F/Hr.
- RCS pressure is 1350 psig and stable.
- Pressurizer level indicates 38% and rising.

Which ONE of the following describes the NEXT major action to be implemented in the EOP to mitigate the current conditions?

- A. Depressurize the RCS using normal spray to collapse voids and refill the PZR
- B. Transition to ES-1.1, SI Termination, to immediately stop all SI pumps
- C✓ Stop all but one RCP and begin the SI flow reduction process by stopping ECCS pumps
- D. Stop the cooldown. Energize all pressurizer heaters to collapse voids and stabilize pressurizer level

A. Incorrect. There are no voids with RCPs running, this is normal system response

B. Incorrect. ES-1.1 would not be performed once a cooldown is started in ES-1.2

C. Correct.

D. Incorrect. No voids exist at the current time. This would be performed if a void existed in ES-0.2 or ES-0.3

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to execute procedure steps.

Question Number: 68

Tier 3 Group 1

Importance Rating: 4.3

Technical Reference: ES-1.2, steps 17,18

Proposed references to be provided to applicants during examination: NONE

Learning Objective: 3SQS-53.3 Obj 5

10 CFR Part 55 Content: 41.10

Comments:

Source: BANK
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: BVPS-1
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

68. G2.1.30 001/NEW//LOWER//RO/BVPS-1/11/2007/NO

Given the following:

- The Control Room has been evacuated due to a fire.
- The crew is performing the actions of 1OM-56C.4, Alternate Safe Shutdown Outside Control Room.

Which ONE of the following actions is time critical in accordance with 1OM-56C.4?

- A. Locally opening the 480V Bus 1Q DC Control Power Breaker.
- B. Locally opening a MDAFW Pump Breaker at the associated 4160V Emergency Bus.
- C. Locally closing a River Water Pump Breaker at the associated 4160V Emergency Bus.
- D. Locally defeat the CO2 System for the West Cable Vault by placing the lockout switch in OFF.

A. Incorrect. Action is performed but is not time critical

B. Incorrect. Action is performed but is not time critical

C. Correct.

D. Incorrect. Action is performed but is not time critical

Ability to locate and operate components, including local controls.

Question Number: 66

Tier 3 Group 1

Importance Rating: 3.9

Technical Reference: 1OM-56.4.B

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-56C.2 Obj 3

10 CFR Part 55 Content: 41.10

Comments:

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Source: NEW
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

69. G2.1.31 008/BANK/SEQUOYAH BANK/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- One Shutdown Bank-A, Group 2 Rod has dropped into the core.
- The crew is recovering the dropped rod.
- The following alarm is received in the control room:
 - A4-105, ROD CONTROL SYSTEM URGENT

Which ONE of the following describes the reason for the alarm and the plant response?

- A. Withdrawing the rod while the unaffected Shutdown Bank A Group-2 Lift Coils are deenergized. Rod withdrawal is frozen until the alarm is reset.
- B. Initiation of a Bank-Select "out" signal to Bank-A Shutdown Rods, and its Group-1 rods fail to move. Rod withdrawal is frozen until the alarm is reset.
- C. Withdrawing the rod while the unaffected Shutdown Bank A Group-2 Lift Coils are deenergized. Rod withdrawal is unaffected and recovery may continue.
- D Initiation of a Bank-Select "out" signal to Bank-A Shutdown Rods, and its Group-1 rods fail to move. Rod withdrawal is unaffected and recovery may continue.

A is incorrect. Incorrect reason and requirement for alarm reset. Credible because the reason for the alarm may not be readily apparent; it requires system knowledge to determine why the alarm occurred. Therefore, the alarm will occur while the rods are being withdrawn

B is incorrect. Credible because failure is correct. Wrong because the alarm does not have to be reset for withdrawal

C is incorrect. Credible because rod withdrawal is unaffected. Wrong because failure is incorrect.

D is Correct. Urgent failure occurs when opposite group does not respond to command. The alarm freezes rod motion in auto or manual but not in bank select.

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to locate control room switches, controls and indications and to determine that they are correctly reflecting the desired plant lineup.

Question Number: 67

Tier 3 Group 1

Importance Rating: 4.2

Technical Reference: 1SQS-1
1OM-1.4.X, pg 10

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-1.3, Obj 24

10 CFR Part 55 Content: 41.7

Comments:

Source: BANK
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: SEQUOYAH BANK
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

70. G2.2.30 001/BANK/BVPS-1/LOWER//RO/BVPS-1/11/2007/YES

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

- A. Maintain a 1/M plot during core fuel shuffle.
- B. Monitor source range count rate during core reload, and remain cognizant of 1/M plot results.
- C. Maintain continuous communication between the control room and refueling deck.
- D. Update the Control Room status board for each core alteration as it is performed.

B. Correct.

A. Incorrect. Performed by Refueling Group.

C. Incorrect. Reactivity monitoring function performed by Refueling Group.

D. Incorrect. Status updates performed by Refueling Group.

Knowledge of RO duties in the control room during fuel handling such as alarms from fuel handling area, communication with fuel storage facility, systems operated from the control room in support of fueling operations, and supporting instrumentation.

Question Number: 71

Tier 3 Group 2

Importance Rating: 3.5

Technical Reference: NOP-OP-1004 section 4.2.23

Proposed references to be provided to applicants during examination: None

Learning Objective: NA

10 CFR Part 55 Content: 41.10

Comments:

Source: BANK
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank: BVPS-1
Difficulty:
Plant: BVPS-1
Previous NRC?: YES

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

71. G2.2.34 002/BANK/SEQUOYAH 2004/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- Reactor tripped from 100% RTP.
- ECP has been calculated for 12 hours after the trip.
- Estimated critical rod position is Control Bank D at 100 steps.
- Startup is delayed for TWO (2) hours.

What is the effect on 1/M plot data taken during the approach to critical?

The 1/M plot will predict criticality at a.....

- A✓ LOWER rod height due to Xenon concentration less than that assumed in ECP calculation.
- B. HIGHER rod height due to Xenon concentration greater than that assumed in ECP calculation.
- C. HIGHER rod height due to Xenon concentration less than that assumed in ECP calculation.
- D. LOWER rod height due to Xenon concentration greater than that assumed in ECP calculation.

A: Correct. Delay will affect core reactivity since Xenon is decaying, reducing the negative reactivity in the core. Rods will not have to be withdrawn as far to make the reactor critical.

B: Incorrect. Rods will not have to be withdrawn as far to make the reactor critical. Delay will affect core reactivity since Xenon is decaying, reducing the negative reactivity in the core. Candidate needs to demonstrate an understanding of the time that it takes Xenon to peak from a full power trip, which is typically the square root of the equilibrium power level.

C: Incorrect. Higher rod height is incorrect. Xenon concentration will be less but will be adding positive reactivity which will result in a lower rod height for criticality to be obtained.

D: Incorrect. Lower rod height is correct. Xenon concentration greater is incorrect. Xenon concentration will be less but will be adding positive reactivity which will result in a lower rod height for criticality to be obtained.

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Knowledge of the process for determining the internal and external effects on core reactivity.

Question Number: 70

Tier 3 Group 2

Importance Rating: 2.8

Technical Reference: Plant Curve Book, CB 23
Reactor Theory CH 6

Proposed references to be provided to applicants during examination: None

Learning Objective: NA

10 CFR Part 55 Content: 41.1

Comments:

Source: BANK
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: SEQUOYAH 2004
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

72. G2.3.1 098/BANK/WTSI/LOWER/RO/BVPS-1/11/2007/NO

Which ONE of the following parameter limits is established to ensure that radiation releases will remain within the limits of 10CFR20?

- A. RCS Activity
- B. Secondary Activity
- C. Primary to Secondary Leakage
- D. Liquid Waste Discharge Activity

D is correct. Liquid radwaste activity is controlled per 10CFR20, App. 2 table 2, release to unrestricted waters.

A, B, and C are controlled by 10CFR100 limits for accident conditions. The primary activity and primary to secondary leakage limits ensure conformance to 10CFR100 limits.

Knowledge of 10 CFR: 20 and related facility radiation control requirements

Question Number: 73

Tier 3 Group 3

Importance Rating: 2.6

Technical Reference: 10CFR20
BVPS U1 UFSAR section 11.2.4.1

Proposed references to be provided to applicants during examination: None

Learning Objective: NA

10 CFR Part 55 Content: 41.13

Comments:

Source: BANK
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank: WTSI
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

73. G2.3.4 001/NEW//HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- A Beaver Valley employee has received 600 mr total exposure for the year.
- NO exposure was received at Davis Besse OR Perry for the year.
- NO dose was received outside of FENOC.

Which ONE of the following describes the additional dose he may receive at BVPS for the remainder of the year without additional authorization prior to exceeding the BVPS Administrative Control Limit, and the MAXIMUM additional dose he may receive for the year with additional authorization prior to exceeding the 10CFR TEDE Limit?

- A. 400 mr; 1400 mr
- B. 400 mr; 4400 mr
- C. 1400 mr; 3400 mr
- D. 1400 mr; 4400 mr

A. Incorrect. The second half is incorrect, but is the former dose control limit at BVPS

B. Correct.

C. Incorrect. First half incorrect and 2 half incorrect. Former admin control limit and former BVPS dose limit.

D. Incorrect. First half is incorrect but second half is correct.

Knowledge of radiation exposure limits and contamination control, including permissible levels in excess of those authorized.

Question Number: 72

Tier 3 Group 3

Importance Rating: 2.5

Technical Reference: FEN-RWT
1/2 ADM-1601-Table 7.2
1/2 HPP-3.05.001

Proposed references to be provided to applicants during examination: 1/2 HPP-3.05.001

Learning Objective: NA

10 CFR Part 55 Content: 41.12

Comments:

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Source: NEW
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

74. G2.4.10 001/NEW//LOWER//RO/BVPS-1/11/2007/NO

Which ONE of the following describes the requirement for referring to Annunciator Response Procedures for action?

Procedures must be referenced for...

- A. all control room annunciators at any time.
- B. all control room annunciators, when in 'Transient Alarm Response' mode.
- C. all unexpected control room annunciators.
- D. all unexpected or nuisance annunciators, except when in "Transient Alarm Response' mode.

A. Incorrect. Nuisance annunciators or expected annunciators not required if already addressed

B. Incorrect. In Transient Response, annunciator Response Procedure use may be suspended until conditions permit referring to them

C. Correct.

D. Incorrect. Nuisance annunciators do not require referral once they are determined to be nuisance annunciators

Knowledge of annunciator response procedures.

Question Number: 75

Tier 3 Group 4

Importance Rating: 3.0

Technical Reference: NOP-OP-1002, pg 37-42

Proposed references to be provided to applicants during examination: None

Learning Objective: NA

10 CFR Part 55 Content: 41.10

Comments:

Source: NEW
Cognitive Level: LOWER
Job Position: RO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

75. G2.4.2 002/BANK/VOGTLE/HIGHER//RO/BVPS-1/11/2007/NO

Given the following:

- Unit is at 5% reactor power following a start up.
- A Pressurizer Spray valve fails open.

Which ONE of the following would be the FIRST to trip the reactor? (Assume no operator action).

- A. Pressurizer Pressure Low Reactor Trip.
- B. OT Delta T Reactor Trip.
- C. Pressurizer High Water Level Reactor Trip.
- D~~✓~~ Pressurizer Pressure Low Safety Injection.

A INCORRECT This would trip the reactor first if reactor power was greater than 10%.

B INCORRECT With the RCS delta T at a very low power level it would take a very long time and pressure would have to decrease to much less than the 1850 psig setpoint.

C INCORRECT This trip is disabled when less than 10% reactor power (P-7).

D CORRECT With the plant in this condition this will be the first setpoint that will trip the reactor.

Knowledge of system set points, interlocks and automatic actions associated with EOP entry conditions.

Question Number: 74

Tier 3 Group 4

Importance Rating: 3.9

Technical Reference: 1OM-1.1

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-1.1 Obj 7

10 CFR Part 55 Content: 41.7

Comments:

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Source: BANK
Cognitive Level: HIGHER
Job Position: RO
Date: 11/2007

Source if Bank: VOGTLE
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

1. 001 G2.1.33 004/BANK/VC SUMMER 2007 NRC/HIGHER//SRO/BVPS-1/11/2007/NO

Given the following:

- Following a turbine runback, the crew is stabilizing the plant in accordance with the appropriate procedure.
- Control Bank "D" Group Counters are at 180 steps.
- On IRPI, one Control Bank "D" rod indicates 196 steps; all others indicate 182 steps.
- The affected rod has a blown movable gripper fuse and has been determined to be trippable.

Which ONE of the following describes the technical specification implications of this event?

A. The rod is INOPERABLE AND NOT within alignment limits;

Realign the rod within 1 hour to ensure acceptable power distribution limits are maintained.

B. The rod is INOPERABLE AND NOT within alignment limits;

Realign the rod within 1 hour to ensure Shutdown Margin is maintained.

C. The rod is OPERABLE, BUT NOT within alignment limits;

Realign the rod within 1 hour to ensure acceptable power distribution limits are maintained.

D. The rod is OPERABLE, BUT NOT within alignment limits;

Realign the rod within 1 hour to ensure Shutdown Margin is maintained.

*A Incorrect. 1 hour is required by T.S. 3.1.4 Condition A, but rod is **not** inoperable if it is trippable. If the rod were untrippable, then SDM would be affected. Power distribution limits are the correct reason*

B Incorrect. Would be true if the rod were untrippable

C Correct. 1 hour is required by T.S. 3.1.4 Condition B. Misalignment limits are based on impact on power distribution limits.

D Incorrect. Correct call on operability, but the concern for the situation presented is not shutdown margin

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Conduct of Operations: Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.

Question Number: 91

Tier 2 Group 2

Importance Rating: 4.0

Technical Reference: TS 3.1.4, Condition B, and basis

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS1.3, Obj 27

10 CFR Part 55 Content: 43.2

Comments:

This item meets the 10CFR55.43 (b) 2 SRO criteria because it requires the applicant to apply technical specification action with knowledge of the basis for that action

Source: BANK
Cognitive Level: HIGHER
Job Position: SRO
Date: 11/2007

Source if Bank: VC SUMMER 2007 NRC
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

2. 003 AA2.05 002/NEW//HIGHER//SRO/BVPS-1/11/2007/NO

Given the following:

- The plant is at 100% power.
- While withdrawing Control Bank D rods to maintain Tave, ONE (1) Group 2 rod decouples from its drive shaft and drops to the bottom of the core.

Which ONE (1) of the following describes how the dropped rod may be identified, the effect on the plant, and action required if the condition continues to exist?

- A✓ In-core thermocouple map will determine the area of the dropped rod. Radial flux distribution may exceed design limits. If QPTR limits are exceeded, reactor power must be reduced.
- B. In-core thermocouple map will determine the area of the dropped rod. Axial flux distribution may exceed design limits. If AFD limits are exceeded, Mode 3 entry is required.
- C. AFD will be more negative for the NI in the area of the dropped rod. Radial flux distribution may exceed design limits. If QPTR limits are exceeded, reactor power must be reduced.
- D. AFD will be more negative for the NI in the area of the dropped rod. Axial flux distribution may exceed design limits. If AFD limits are exceeded, Mode 3 entry is required.

A is correct. A single misaligned rod will create radial power distribution problems, resulting in QPTR problems. AFD problems are associated with control rod bank alignment. If QPTR is exceeding limits, then power must be reduced.

AFD exceeding limits requires power reduction also, but does not require Mode 3 entry. Rod misalignment greater than 1 hour (Or less than 1 hour) requires power reduction, not reactor trip.

More than 1 rod misaligned will require reactor trip. Simulator test shows that AFD will likely become more positive in the area of the dropped rod.

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to determine and interpret the following as they apply to the dropped rod: Interpretation of computer in-core TC map for dropped rod location

Question Number: 82

Tier 1 Group 2

Importance Rating: 3.2

Technical Reference: TS 3.2.4 basis

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS 1.3, Obj 27

10 CFR Part 55 Content: 41.1/5, 43.2

Comments:

Meets criteria for 10CFR55.43(b) item 2 because the SRO must determine tech spec action between 2 choices, based on plant effects of a dropped rod

Source: NEW
Cognitive Level: HIGHER
Job Position: SRO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

3. 008 AA2.03 001/BANK/WTSI/HIGHER//SRO/BVPS-1/11/2007/NO

Given the following:

- The plant is operating at 100% power.
- An instrument failure causes PORV 455C to lift.
- The RO places the PORV control switch in CLOSE.
- PORV 455C was manually closed and position indication currently indicates both red and green.
- PZR spray valves are closed and PZR heaters are energized.
- Pressurizer pressure is 2050 psig and lowering very slowly.

Which ONE of the following describes the required actions in accordance with Technical Specifications?

- A. Close and remove power from associated block valve within one hour, restore RCS pressure to > required by COLR within 1 hour.
- B✓ Close and remove power from associated block valve within one hour, restore RCS pressure to > required by COLR within 2 hours.
- C. Close and maintain power available to associated block valve, restore RCS pressure to > required by COLR within 1 hour.
- D. Close and maintain power available to associated block valve, restore RCS pressure to > required by COLR within 2 hours.

A. Incorrect. RCS pressure not required to be restored within 1 hour. Restoration required within 2 hours

B. Correct. PORV 455C is inoperable and must be isolated

C. Incorrect. Would not maintain power to a block valve for a PORV that cannot be cycled, or that cannot maintain pressure

D. Incorrect. Would not maintain power to a block valve for a PORV that cannot be cycled, or that cannot maintain pressure

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to determine and interpret the following as they apply to the Pressurizer Vapor Space Accident: PORV position indicators and acoustic monitors

Question Number: 76

Tier 1 Group 1

Importance Rating: 3.9

Technical Reference: TS 3.4.11, Condition A
TS 3.4.1, Condition A
LRM 5.1.10

Proposed references to be provided to applicants during examination: TS 3.4.11

Learning Objective: 1SQS-6.4, Obj. 26

10 CFR Part 55 Content: 43.2

Comments:

Meets criteria for 10CFR55.43(b) item 2 because the SRO must apply tech specs for a given plant condition

Source: BANK
Cognitive Level: HIGHER
Job Position: SRO
Date: 11/2007

Source if Bank: WTSI
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

4. 009 EA2.04 002/BANK/WTSI/HIGHER//SRO/BVPS-1/11/2007/NO

Given the following:

- A LOCA has occurred.
- The crew is performing actions of ES-1.2, Post LOCA Cooldown and Depressurization.
 - One RCP is running.
 - Containment pressure is 2.4 psig and increasing slowly.
 - Both HHSI Pumps are running.
 - The RO is depressurizing the RCS using Normal Spray.
 - RCS Subcooling indicates 52°F
 - Pressurizer Level comes on scale and is increasing at 4% per minute.
 - Current pressurizer level indicates 36%.

Which ONE of the following describes the actual status of RCS inventory and the action required?

Pressurizer level indication is:

- A. a valid measure of RCS inventory. Continue RCS depressurization IAW ES-1.2 until pressurizer level reaches the required value or RCS subcooling goes below the required value.
- B✓ a valid measure of RCS inventory. Stop the RCS depressurization in preparation for stopping HHSI Pumps IAW ES-1.2.
- C. NOT a valid measure of RCS inventory due to voiding in the reactor vessel head. RVLIS and RCS Subcooling must be used to determine when to stop the RCS depressurization IAW ES-1.2.
- D. NOT a valid measure of RCS inventory due to voiding in the reactor vessel head. Stop the RCS depressurization and transition to FR-C.3, Response to Saturated Core Cooling.

A-Incorrect. Depressurization stopped at 31%. Adverse containment value does not exist at this time

B-Correct. It is the purpose of the procedure to depressurize to refill pzs.

C-Incorrect. Unlikely to void with RCP operating. Subcooling is adequate, and RVLIS not required for current plant conditions.

D-Incorrect. Unlikely to void with RCP operating. Subcooling is adequate, and at this point, SI has not been stopped, so no reinitiation required or transition to c.3 required.

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to determine or interpret the following as they apply to a small break LOCA: PZR level

Question Number: 77

Tier 1 Group 1

Importance Rating: 4.0

Technical Reference: ES-1.2, step 16

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-53.3 Obj 4

10 CFR Part 55 Content: 43.5

Comments:

Meets criteria of 10CFR55.43(b) item 5 because the SRO must assess conditions and determine appropriate procedure guidance

Source: BANK

Source if Bank: WTSI

Cognitive Level: HIGHER

Difficulty:

Job Position: SRO

Plant: BVPS-1

Date: 11/2007

Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

5. 011 G2.4.49 007/BANK/WTSI/HIGHER//SRO/BVPS-1/11/2007/NO

Given the following:

- SI actuated due to a LOCA.
- BOTH HHSI Pumps are TRIPPED.
- RCS temperature is 400°F.
- RCS pressure is 250 PSIG.
- Containment pressure is 47 psig.
- The crew is performing actions of E-0, Reactor Trip or Safety Injection.

Which ONE of the following describes (1) the required action and reason for the action with respect to the Reactor Coolant Pumps, and (2) the FIRST procedure transition required from E-0?

- A. Stop all RCPs to minimize fluid mass loss out of the break;
E-1, Loss of Reactor or Secondary Coolant.
- B. Stop all RCPs to prevent mechanical damage to the pump and motor;
E-1, Loss of Reactor or Secondary Coolant.
- C. Stop all RCPs to minimize fluid mass loss out of the break;
FR-Z.1, Response to High Containment Pressure.
- D. Stop all RCPs to prevent mechanical damage to the pump and motor;
FR-Z.1, Response to High Containment Pressure.

A/C Incorrect. SBLOCA, RCS mass loss is the concern. LBLOCA, loss of cooling on Phase B actuation. E-1 would be performed after FR-Z.1 is performed for these conditions

D Incorrect. Wrong procedure, FR-Z.1 would be performed after a complete check of CSFs

B. Correct. RCPs would be tripped for this reason because CCW is isolated and Phase B and Spray is flowing at this Ctmt pressure. E-1 would be performed until CSF status checks send the crew to FR-Z.1

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Emergency Procedures / Plan Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.

Question Number: 78

Tier 1 Group 1

Importance Rating: 4.0

Technical Reference: E-0/FR-Z.1, Status Tree F.05
1OM-15.1.D, pg 1/2

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-53.3 Obj 4

10 CFR Part 55 Content: 43.5

Comments:

Meets criteria for 10CFR55.43(b) item 5 because the SRO must assess conditions and determine appropriate procedure selection and EOP strategy

Source:	BANK	Source if Bank:	WTSI
Cognitive Level:	HIGHER	Difficulty:	
Job Position:	SRO	Plant:	BVPS-1
Date:	11/2007	Previous NRC?:	NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

6. 026 G2.1.33 090/BANK/WTSI/HIGHER//SRO/BVPS-1/11/2007/NO

Given the following:

The plant is in Mode 1.

- 1200 Quench Spray Pump "A" declared INOPERABLE due to a failed surveillance.
- 1227 Quench Spray Pump "B" also declared INOPERABLE due to the results of a common cause failure analysis.
- 1254 Plant Shutdown to Mode 3 commenced.
- 1319 Quench Spray Pump "A" returned to OPERABLE status.
- 1338 Quench Spray Pump "B" returned to OPERABLE status.

Which ONE of the following describes the Technical Specification requirements for operation of the plant?

Plant conditions...

- A. allow the plant shutdown to be terminated no earlier than 1319.
- B. allow the plant shutdown to be terminated no earlier than 1327.
- C. allow the plant shutdown to be terminated no earlier than 1338.
- D. require that the Shutdown to Mode 3 be completed by 1927.

A. Correct. When the LCO action is no longer 3.0.3, actions may be terminated

B. Incorrect. Termination of shutdown could occur earlier. Credible because this is when both pumps are restored

C. Incorrect. Credible because the applicant may misunderstand entry and exit to TS 3.0.3

D. Incorrect. Credible because the applicant may misunderstand entry and exit to TS 3.0.3

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.

Question Number: 86

Tier 2 Group 1

Importance Rating: 4.0

Technical Reference: TS 3.0.3, 3.6.6

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-13.1, Obj 28

10 CFR Part 55 Content: 43.2

Comments:

Meets criteria of 10CFR55.43(b) item 2 because the SRO must apply equipment operability against the requirements of ITS section 3.6 as well as ITS section 3.0.

Source: BANK

Source if Bank: WTSI

Cognitive Level: HIGHER

Difficulty:

Job Position: SRO

Plant: BVPS-1

Date: 11/2007

Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

7. 029 EA2.09 001/BANK/GINNA 2007/HIGHER//SRO/BVPS-1/11/2007/NO

Given the following:

- An ATWS has occurred.
- The crew is performing FR-S.1, Response to Nuclear Power Generation/ATWS.
- SI has actuated.
- All SG pressures are approximately 550 psig and trending down.
- RCS Temperature is approximately 460°F and trending down.
- Reactor Power indicates approximately 4% and trending down slowly.
- Intermediate Range Startup Rate is slightly negative.
- Reactor Trip Breakers were locally opened.

Which ONE of the following describes the mitigation strategy for the current conditions and the event in progress?

- A. Remain in FR-S.1 and isolate the faulted SGs. Transition to E-0, Reactor Trip or Safety Injection when isolation is complete.
- B. Remain in FR-S.1 and isolate the faulted SGs. Transition to E-0, Reactor Trip or Safety Injection when adequate Shutdown Margin is verified.
- C. Exit FR-S.1; Transition to E-0, Reactor Trip or Safety Injection, and subsequently isolate the faulted SG using E-2, Faulted Steam Generator Isolation.
- D. Exit FR-S.1; Transition to E-2, Faulted Steam Generator Isolation, and isolate the faulted SG. Perform steps of subsequent EOPs that do not contradict the actions taken in FR-S.1.

A is incorrect. FR-S.1 has guidance to isolate a faulted SG, but transition when power is below 5%

B is incorrect. Would go to E-0 after FR-S.1 is complete and directed by FR-S.1 (Power <5%)

C is Correct.

D is incorrect. Would not transition to E-2 directly from FR-S.1

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to determine or interpret the following as they apply to a ATWS: Occurrence of a main turbine/reactor trip

Question Number: 79

Tier 1 Group 1

Importance Rating: 4.5

Technical Reference: FR-S.1, step 7

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS 53.3 Obj 5

10 CFR Part 55 Content: 43.5

Comments:

Meets 10CFR55.43(b) item 5 criteria because the SRO must assess current conditions and determine appropriate procedural direction based upon existing plant conditions

Source: BANK

Source if Bank: GINNA 2007

Cognitive Level: HIGHER

Difficulty:

Job Position: SRO

Plant: BVPS-1

Date: 11/2007

Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

8. 035 A2.05 001/NEW//HIGHER//SRO/BVPS-1/11/2007/NO

Given the following:

- A reactor trip and safety injection have occurred.
- Prior to the trip, activity level in "1A" SG was rising rapidly.

Current Conditions:

- RCS pressure is 1600 psig and DECREASING.
- PRZR level is offscale LOW.
- Tavg is 500°F and DECREASING.
- Containment pressure is 3 psig and INCREASING.
- SG "1A" pressure is 620 psig and DECREASING.
- SG "1B" and "1C" pressures are 900 psig and STABLE.
- AFW flow to "1A" SG is 300 GPM
- SG "1A" NR level is off-scale LOW
- AFW flow to "1B" and "1C" SGs are 150 GPM
- SG "1B" and "1C" NR levels are 5% and INCREASING
- The crew is performing E-0, Reactor Trip Or Safety Injection

Which ONE of the following describes the action required, and procedure flowpath upon transition from E-0, Reactor Trip Or Safety Injection?

- A. Isolate AFW flow to "1A" SG; E-2 to E-3
- B. Isolate AFW flow to "1A" SG; E-3 to ECA-3.1
- C. Throttle AFW flow to "1A" SG to 150 GPM; E-2 to E-3
- D. Throttle AFW flow to "1A" SG to 150 GPM; E-3 to ECA-3.1

A. Correct. Flow isolated, not throttled

B. Incorrect. Action is correct but procedure selection is incorrect. E-2 would be the first procedure performed.

C. Incorrect. Isolate instead of throttle, but procedure flowpath is correct.

D. Incorrect. Isolate instead of throttle. Procedure flowpath is incorrect. Would be correct if the fault developed after entry to E-3

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to (a) predict the impacts of the following mal-functions or operations on the GS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Unbalanced flows to the 5/Gs

Question Number: 92

Tier 2 Group 2

Importance Rating: 3.4

Technical Reference: E-2, step 5.b
E-0, step 15

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-53.3 obj 5

10 CFR Part 55 Content: 43.5

Comments:

Meets criteria of 10CFR55.43(b) item 5 because the SRO must assess plant conditions, determine appropriate action, and determine procedure flowpath following the action

Source: NEW

Source if Bank:

Cognitive Level: HIGHER

Difficulty:

Job Position: SRO

Plant: BVPS-1

Date: 11/2007

Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

9. 038 G2.1.32 001/NEW//HIGHER//SRO/BVPS-1/11/2007/NO

Given the following:

- A SGTR has occurred.
- The crew is preparing to isolate 1B SG in accordance with E-3, Steam Generator Tube Rupture.
- BOTH MDAFW Pumps are tripped and cannot be restarted.
- The Steam Driven AFW Pump, 1FW-P-2, is running.

Which ONE of the following describes the requirement for operation of the TDAFW pump, and the procedure entered upon transition from E-3?

- A. Isolate the 1B SG steam supply to TDAFW prior to initiating RCS cooldown; FR-H.1, Response to Loss of Secondary Heat Sink.
- B. Isolate the 1B SG steam supply to TDAFW prior to initiating RCS cooldown; ES-3.1, Post SGTR Cooldown using Backfill
- C. The steam supply from 1B SG to TDAFW should remain aligned; ES-3.3, Post SGTR Cooldown using Steam Dump.
- D. The steam supply from 1B SG to TDAFW should remain aligned; ES-3.1, Post SGTR Cooldown using Backfill

A. Incorrect. Isolating the steam supply would not actually stop the TDAFW pump, and there is a caution in E-3 not to isolate the only source of steam to TDAFW. Credible procedure because the MDAFW pumps are tripped.

B. Correct.

C. Incorrect. Would not leave supply open because there is no indication that there is no alternate supply. Steam Dump is not preferred because there could be radioactive release

D. Incorrect. Would not leave supply open because there is no indication that there is no alternate supply

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Conduct of Operations: Ability to explain and apply all system limits and precautions.

Question Number: 80

Tier 1 Group 1

Importance Rating: 3.8

Technical Reference: E-3, Multiple steps (attached)

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-53.3 Obj 5

10 CFR Part 55 Content: 43.5

Comments:

Meets criteria for 10CFR55.43(b) item 5 because the SRO must assess plant conditions and determine appropriate action as well as preferred procedure selection

Source: NEW

Source if Bank:

Cognitive Level: HIGHER

Difficulty:

Job Position: SRO

Plant: BVPS-1

Date: 11/2007

Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

10. 039 G2.1.12 001/BANK/WTSI/HIGHER/SRO/BVPS-1/11/2007/NO

Given the following:

- Mode 1 at 100% power.
- RCS Boron Concentration is 112 ppm, End of Life.
- Two (2) Steam Generator safety valves have been declared inoperable on the "1A" Steam Generator.
- All other safety valves are operable.

Which ONE of the following provides the correct crew response? (ITS PROVIDED)

- A. Reduce power to = 50% RTP within 4 hours and reduce PR HI Flux trip to at least 50 % RTP within 4 hours.
- B. Reduce power to = 34% RTP within 4 hours and reduce PR HI Flux trip to at least 34 % RTP within 4 hours.
- C. Reduce power to = 50% RTP within 4 hours and reduce PR HI Flux trip to at least 50 % RTP within 36 hours.
- D. Reduce power to = 34% RTP within 4 hours and reduce PR HI Flux trip to at least 34 % RTP within 36 hours.

A/C. Incorrect. More than 1 Safety Valve is Inoperable on an SG. Power must be reduced to 34%

B. Incorrect. 36 hours are allowed for reducing the High Flux Trip setpoint.

D. Correct. Additionally, SRO should know that MTC is negative at EOL.

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Conduct of Operations: Ability to apply technical specifications for a system.

Question Number: 87

Tier 2 Group 1

Importance Rating: 4.0

Technical Reference: TS 3.7.1 Condition B, Table 3.7.-1

Proposed references to be provided to applicants during examination: ITS 3.7.1

Learning Objective: 1SQS-21.1 Obj 19

10 CFR Part 55 Content: 43.2

Comments:

Meets criteria for 10CFR55.43(b) item 2 because the SRO must evaluate plant conditions and refer to tech specs to determine appropriate action

Source: BANK

Source if Bank: WTSI

Cognitive Level: HIGHER

Difficulty:

Job Position: SRO

Plant: BVPS-1

Date: 11/2007

Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

11. 051 G2.1.33 001/NEW//HIGHER//SRO/BVPS-1/11/2007/NO

Given the following:

- The plant is operating at 80% power when air leakage into the condenser resulted in a rising condenser backpressure.
- A load reduction is initiated at a rate of 5% per minute in accordance with AOP-1.51.1, "Emergency Shutdown."

- Five minutes after the load reduction was commenced, condenser backpressure has risen to 3.5 In. Hg. Abs.
- Ten minutes after the load reduction was commenced, condenser backpressure has risen to 4 In. Hg. Abs. and is continuing to rise.
 - ROD INSERTION LIMIT LO is alarming
 - ROD INSERTION LIMIT LO-LO is alarming

- The RO immediately places Rod Control in MANUAL

Which ONE of the following describes the status of Bank D rods, and the action required for the current plant condition?

- A. Rods are APPROACHING the technical specification insertion limit; Trip the Reactor and go to EOP E-0, Reactor Trip or Safety Injection.
- B. Rods are APPROACHING the technical specification insertion limit; Initiate Emergency boration of the RCS to restore rods to within technical specification limits.
- C. Rods are BELOW the technical specification insertion limit; Trip the Reactor and go to EOP E-0, Reactor Trip or Safety Injection.
- D. Rods are BELOW the technical specification insertion limit; Within 1 hour verify Shutdown Margin or initiate boration to restore Shutdown Margin to within limits. Restore the control bank to within limits.

A. Incorrect. Rods will already be below insertion limits if LO-LO is received. Not required to trip

B. Incorrect. Rods will already be below insertion limits if LO-LO is received. Correct action IAW TS

C. Incorrect. Trip not required, even though backpressure is rising, it is not above limit for trip

D. Correct. Rod Insertion Lo-Lo means that TS insertion limits are exceeded. Actions are IAW TS

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Conduct of Operations: Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications.

Question Number: 83

Tier 1 Group 2

Importance Rating: 4.0

Technical Reference: TS 3.1.6, Condition A
1OM-1.4ABF

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-53C.1 Obj 1

10 CFR Part 55 Content: 43.2

Comments:

Meets criteria of 10CFR55.43(b) item 5 and item 2. SRO must diagnose event and determine applicable action with a loss of vacuum associated with RIL being violated.

Source: NEW
Cognitive Level: HIGHER
Job Position: SRO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

12. 059 G2.2.25 002/NEW//HIGHER//SRO/BVPS-1/11/2007/NO

Given the following:

- A Main Steam Safety Valve has failed open on "A" SG.
- The reactor is tripped.
- Main Steam Line Isolation has actuated.

Which ONE of the following describes the technical specification basis for MAXIMUM required closure time of the Main Feedwater Isolation Valves IN THIS EVENT?

- A. Provide the primary means of feedwater isolation to minimize the pressure rise in containment.
- B✓ Provide the primary means of feedwater isolation to minimize the reactivity effect of the RCS cooldown.
- C. Provide the backup means of feedwater isolation, after Main Feedwater Reg Valve closure, to minimize the pressure rise in containment.
- D. Provide the backup means of feedwater isolation, after Main Feedwater Reg Valve closure, to minimize the reactivity effect of the RCS cooldown.

A. Incorrect. Containment not a concern because the safety valve is outside of containment.

B. Correct.

C. Incorrect. Containment not a concern because the safety valve is outside of containment.

D. Incorrect. Main Feed Reg valves provide backup means of isolation, MFIVs are primary

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Equipment Control Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.

Question Number: 88

Tier 2 Group 1

Importance Rating: 3.7

Technical Reference: TS Basis 3.7.3

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-24.1 Obj 23

10 CFR Part 55 Content: 43.2

Comments:

Meets criteria for 10CFR55.43(b) item 2 because the SRO must understand the design basis for components that realign on ESF signals. Also a limitation of facility license in accordance with 10CFR55.43(b) item 1

Source: NEW
Cognitive Level: HIGHER
Job Position: SRO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

13. 060 EA2.02 001/NEW//HIGHER//SRO/BVPS-1/11/2007/NO

Given the following:

- The plant is at 100% power.
- The following radiation monitors are in HIGH-HIGH alarm
 - RM-1VS-107A and B, SLCRS Effluent

Which ONE of the following describes the location of the leak, and the action required?

- A. Gas Decay Tank Rupture Disc failure; verify the main filter banks automatically align.
- B. Gas Decay Tank Rupture Disc failure; manually align the main filter banks.
- C. Charging Pump seal failure; verify the main filter banks automatically align.
- D. Charging Pump seal failure; manually align the main filter banks.

A. Incorrect. Rupture disc failure would provide indication on RM-1VS-106. Filter Banks would align for this failure

B. Incorrect. Rupture disc failure would provide indication on RM-1VS-106. Would not require manual alignment

C. Incorrect. Correct failure but RM-1VS-107 will not automatically realign filter banks. Action is required

D. Correct.

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to determine and interpret the following as they apply to the Accidental Gaseous Radwaste: The possible location of a radioactive-gas leak, with the assistance of PEO, health physics and chemistry personnel

Question Number: 84

Tier 1 Group 2

Importance Rating: 4.0

Technical Reference: 10M-43.4.AEK, pg 2

Proposed references to be provided to applicants during examination: Ventilation P&IDs

Learning Objective: NA

10 CFR Part 55 Content: 43.4

Comments:

Meets requirement for 10CFR55.43(b) item 4 because the SRO must identify a radiation hazard from indications on radiation monitors that are not readily apparent, and determine that action that will be required

Source: NEW

Source if Bank:

Cognitive Level: HIGHER

Difficulty:

Job Position: SRO

Plant: BVPS-1

Date: 11/2007

Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

14. 062 G2.4.31 001/BANK/BVPS-1/HIGHER//SRO/BVPS-1/11/2007/YES

Given the following:

- The plant is at 100% power with all systems in NSA.
- The following annunciators are in alarm:
 - [A1-40], CC WTR HT EXCH RIVER WTR PP DISCH LINE A PRESS LOW
 - [A1-48], CC WTR HT EXCH RIVER WTR PP DISCH LINE B PRESS LOW
 - [A1-59], INTAKE STRUCT RIVER WATER PP DISCH LINE A PRESS LOW
 - [A1-67], INTAKE STRUCT RIVER WATER PP DISCH LINE B PRESS LOW
 - [A1-82], RIVER WATER PP AUTO START-STOP
- Additionally, the operators note the following conditions:
 - [WR-P-1A], River Water Pump is tripped (previously running).
 - [WR-P-1B], River Water Pump remains in Standby.

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

- A✓ Start WR-P-1B, remove WR-P-1A from service, and place WR-P-1C on the 1AE Bus in accordance with these ARP's and the applicable section of 1OM-30.
- B. Start WR-P-1B, remove WR-P-1A from service, and place WR-P-1C on the 1DF Bus in accordance with these ARP's and the applicable section of 1OM-30.
- C. Start WR-P-9A or WR-P-9B, Aux River Water Pumps and place WR-P-1C on the 1AE Bus in accordance with AOP-1.30.2, River Water/Normal Intake Structure Loss.
- D. Start WR-P-9A or WR-P-9B, Aux River Water Pumps and place WR-P-1C on the 1DF Bus in accordance with AOP-1.30.2, River Water/Normal Intake Structure Loss.

- A. *Correct. Start the standby pump and place the swing pump on the bus with the pump that is inoperable.*
- B. *Incorrect. 1DF bus already has a running RW pump.*
- C. *Incorrect. Wrong action for the given failure, and wrong procedure usage.*
- D. *Incorrect. Wrong action and wrong bus for the failure given, and wrong procedure usage.*

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Emergency Procedures / Plan Knowledge of annunciators alarms and indications, and use of the response instructions.

Question Number: 81

Tier 1 Group 1

Importance Rating: 3.4

Technical Reference: 10M-30.4 AAC, AAF

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-30.2 Obj 19

10 CFR Part 55 Content: 43.5

Comments:

Meets criteria for 10CFR55.54(b) item 5 because the SRO must assess conditions and select the appropriate procedure to mitigate the event

Source: BANK

Source if Bank: BVPS-1

Cognitive Level: HIGHER

Difficulty:

Job Position: SRO

Plant: BVPS-1

Date: 11/2007

Previous NRC?: YES

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

15. 063 A2.01 001/NEW//HIGHER//SRO/BVPS-1/11/2007/NO

Given the following:

- The plant is at 100% power.
- A 100 volt ground exists on DC Bus 1-1.
- The crew is attempting ground isolation in accordance with 1OM-39.4.E, Clearing Grounds 125 VDC Busses 1-1 and 1-2.

Which ONE of the following describes the sequence for attempting ground isolation, and the technical specification impact if the ground is discovered on the Battery?

- A. Isolate Charger, then Battery; Technical Specification entry is required if the battery is grounded.
- B. Isolate Charger, then Battery; Technical Specification entry is NOT required if the charger remains operable.
- C. Isolate Battery, then Charger; Technical Specification entry is required if the battery is grounded.
- D. Isolate Battery, then Charger; Technical Specification entry is NOT required if the battery remains operable.

A. *Correct.*

B. *Incorrect. If battery is inoperable, then TS entry is required even if charger is operable*

C. *Incorrect. Wrong sequence but correct applicability of TS*

D. *Incorrect. Wrong sequence and incorrect applicability of TS, except that there can be additional circumstances that would make the second half correct. (Spare charger)*

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to (a) predict the impacts of the following malfunctions or operations on the dc electrical systems; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Grounds.

Question Number: 89

Tier 2 Group 1

Importance Rating: 3.2

Technical Reference: 10M-39.4.E

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-39.1 Obj 17

10 CFR Part 55 Content: 43.5/43.2

Comments:

Meets 10CFR55.43(b) item 2 criteria because the SRO must make a TS operability call in regard to equipment availability based on results of ground isolation.

Source: NEW
Cognitive Level: HIGHER
Job Position: SRO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

16. 073 G2.4.4 001/NEW//HIGHER//SRO/BVPS-1/11/2007/NO

Given the following:

- The plant is in Mode 6.
- All systems in NSA.
- Refueling in progress.
- The Containment Equipment Hatch is closed.
- [RM-1RM-203], Manipulator Crane Area Monitor, is in Hi-Hi alarm.

Which ONE of the following indications will provide confirmation of the event in progress, and which ONE of the following procedures will be entered?

- A✓ [RIS-1RM-215A], Containment Particulate monitor; AOP-1.49.1, Irradiated Fuel Damage
- B. [RIS-1RM-215A], Containment Particulate monitor; AOP-1.6.5, Shutdown LOCA.
- C. [RM-1RM-218A], Control Room Radiation monitor; AOP-1.49.1, Irradiated Fuel Damage.
- D. [RM-1RM-218A], Control Room Radiation monitor; AOP-1.6.5, Shutdown LOCA.

A. Correct.

B. Incorrect. Aop-1.6.5 would be entered if the plant was in Mode 4, will not be entered in Mode 6

C. Incorrect. Wrong radiation monitor. If equipment hatch was open, this would be correct, and 2nd half is also correct.

D. Incorrect. Wrong radiation monitor. Incorrect procedure entry

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Emergency Procedures / Plan Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.

Question: 90

Tier 2 Group 1

Importance Rating: 4.3

Technical Reference: AOP-1.49.1, pg 1

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-53C.1 Obj 2

10 CFR Part 55 Content: 43.4/43.5/43.6

Comments:

Meets criteria for 10CFR55.43(b) item 5 and item 6 because the SRO must determine the effect of the failure and determine the appropriate procedure action based on plant conditions

Source: NEW

Source if Bank:

Cognitive Level: HIGHER

Difficulty:

Job Position: SRO

Plant: BVPS-1

Date: 11/2007

Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

17. 086 A2.04 001/NEW//HIGHER//SRO/BVPS-1/11/2007/NO

Given the following:

- Smoke detectors are alarming in the Process Instrumentation Room.
- Spurious annunciators are received in the control room.
- Control room Instrumentation is behaving erratically.
- Security reports smoke from the Process Instrumentation Room.
- The following alarm is received:
 - A13-03, PROCESS INST RM UNDERFLOOR CABLE AREA FIRE
- The SM determines that the control room is uninhabitable.

Which ONE of the following describes the action required?

- A✓ Implement 1OM-56C.4, Safe Shutdown From Outside the Control Room; Initiate Safe Shutdown using Train A components.
- B. Implement 1OM-56C.4, Safe Shutdown From Outside the Control Room; Initiate Safe Shutdown using Train B components.
- C. Implement AOP-1.33.1.A, Control Room Inaccessibility; Trip the reactor and proceed to the Emergency Shutdown Panel.
- D. Implement AOP-1.33.1.A, Control Room Inaccessibility; Trip the reactor and place control room ventilation in Recirc Mode. Proceed to the Backup Indicating Panel.

A. Correct.

B. Incorrect. Correct procedure, but Train A components will be used if the fire is in the Process Instrument Room.

C. Incorrect. Incorrect procedure, but tripping the reactor and performing additional actions are contained in the procedure

D. Incorrect. Incorrect procedure, but tripping reactor and performing additional actions are contained in the procedure

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Ability to (a) predict the impacts of the following malfunctions or operations on the Fire Protection System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Failure to actuate the FPS when required, resulting in fire damage

Question Number: 93

Tier 2 Group 2

Importance Rating: 3.9

Technical Reference: 1OM-56C.4

Proposed references to be provided to applicants during examination: None

Learning Objective: 1SQS-56C.1 Obj 6

10 CFR Part 55 Content: 43.5

Comments:

Meets 10CFR55.43(b) item 5 criteria because the SRO must assess plant conditions and select the appropriate action as well as procedure for the event proposed

Source: NEW
Cognitive Level: HIGHER
Job Position: SRO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

18. E06 G2.1.28 001/BANK/BVPS-1/HIGHER//SRO/BVPS-1/11/2007/YES

Given the following:

- A LOCA has occurred.
- ECCS has NOT functioned as required.
- All RCP's are TRIPPED.
- CET's indicate 626°F.
- RVLIS Full Range is 39%.
- Containment pressure is 6 psig and rising slowly.
- All SG pressures are approximately 1070 psig and stable.
- Total AFW flow is 380 gpm.
- SG NR levels are 13%, 11%, and 17%, respectively.

Which ONE of the following procedures should the crew implement for these conditions, and how will the PZR PORVs be operated?

- A. FR-C.1, Response To Inadequate Core Cooling; PORVs are isolated to prevent RCS inventory loss.
- B. FR-C.2, Response To Degraded Core Cooling; PORVs are isolated to prevent RCS inventory loss.
- C. FR-C.1, Response To Inadequate Core Cooling; PORVs are allowed to operate in AUTO for RCS pressure control.
- D. FR-C.2, Response To Degraded Core Cooling; PORVs are allowed to operate in AUTO for RCS pressure control.

A. Incorrect. Wrong procedure entry and also wrong action for PORV operation

B. Incorrect. Correct procedure entry but wrong action for PORV operation.

C. Incorrect. Incorrect entry but correct action with respect to PORVs

D. Correct.

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Conduct of Operations: Knowledge of the purpose and function of major system components and controls.

Question Number: 85

Tier 1 Group 2

Importance Rating: 3.3

Technical Reference: FR-C.2, step 4
Status tree F.02

Proposed references to be provided to applicants during examination: None

Learning Objective: 3SQS-53.3 Obj 5

10 CFR Part 55 Content: 43.5

Comments:

Meets criteria for 10CFR55.43(b) item 5 because the SRO must evaluate conditions and select procedure as well as action within the procedure

Source:	BANK	Source if Bank:	BVPS-1
Cognitive Level:	HIGHER	Difficulty:	
Job Position:	SRO	Plant:	BVPS-1
Date:	11/2007	Previous NRC?:	YES

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

19. G2.1.13 001/NEW//LOWER//SRO/BVPS-1/11/2007/NO

Given the following:

- A diesel fuel oil makeup to [EE-1TK-1A] from [EE-1TK-6] is planned.
- An operator must access the fuel oil transfer valves.

Which ONE of the following describes the requirements that must be satisfied to provide access to the fuel oil transfer valves?

- A✓ Submit a Security Work Permit; obtain a key from the SM/US or have a Security escort.
- B. Submit a Security Work Permit; once authorized, use key card access.
- C. Submit a Beaver Valley Temporary Access Level Request; obtain a key from the SM/US or have a Security escort.
- D. Submit a Beaver Valley Temporary Access Level Request; once authorized, use key card access.

A. *Correct.*

B. *Incorrect. Correct action, but area has no card reader so the SM/US must provide a key, and/or security must provide access.*

C. *Incorrect. Wrong authorization document. Temporary Access is for visitors or employees that will need access for a defined period of time, rather than to perform a single task*

D. *Incorrect. Wrong authorization, and no card access to area*

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Knowledge of facility requirements for controlling vital / controlled access.

Question Number: 94

Tier 3 Group 1

Importance Rating: 2.9

Technical Reference: NOBP-LP-1203-01, NOBP-LP-1203-03

Proposed references to be provided to applicants during examination: None

Learning Objective: None

10 CFR Part 55 Content: 43.5

Comments:

Meets requirements of 10CFR55.43(b) item 5 because the SRO is responsible for approving or submitting authorization for access to vital areas with no key card access, or areas that are locked.

Source: NEW
Cognitive Level: LOWER
Job Position: SRO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

20. G2.1.14 001/NEW//LOWER//SRO/BVPS-1/11/2007/NO

Given the following:

- It is Sunday afternoon evening shift.
- A Fire Protection System impairment causes a portion of the system to be rendered inoperable.

Which ONE of the following describes the notifications required in accordance with BVBP-SITE-0016, Reporting Requirements?

- A. The control room must immediately notify the Fire Protection System Engineer
- B. The control room must immediately notify National Electric Insurance Limited. (NEIL)
- C✓ The control room must notify the Fire Protection System Engineer by the next business day.
- D. The control room must notify NEIL by the next business day.

A. Incorrect. Immediate notification is not required, since not during normal hours

B. Incorrect. Immediate notification is not required.

C. Correct.

D. Incorrect. Control Room does not notify NEIL

Knowledge of system status criteria which require the notification of plant personnel.

Question Number: 95

Tier 3 Group 1

Importance Rating: 3.3

Technical Reference: BVBP-SITE-0016

Proposed references to be provided to applicants during examination: None

Learning Objective: NA

10 CFR Part 55 Content: 43.5

Comments:

Meets criteria for 10CFR55.43(b) item 5 because the SRO must assess conditions and determine appropriate action in accordance with plant procedures. Additionally, this particular notification is strictly SRO responsibility

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Source: NEW
Cognitive Level: LOWER
Job Position: SRO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

21. G2.2.19 001/NEW//LOWER//SRO/BVPS-1/11/2007/NO

Which ONE of the following describes the requirement for work start authorization of Work Orders for an order that has NOT been pre-authorized for Lead Work Group Supervisor authorization in accordance with NOP-WM-4300, Order Execute Process?

- A. Lead Work Group Supervisor shall process order to work start authorization and sign/date hard copy order.
- B. Lead Work Group Supervisor shall process order to work start authorization and an Operations SRO will sign/date hard copy order.
- C. Operations SRO will review order and process order to work start authorization status and sign/date hard copy order.
- D. Operations SRO will review order and process order to work start authorization status. Lead Work Group Supervisor will sign/date hard copy order.

A. Incorrect. Lead Group Supervisor does not authorize work under these conditions

B. Incorrect. Start work authorized by Ops SRO, not Lead Group Supervisor

C. Correct.

D. Incorrect. Hard Copy signed and dated by SRO

Knowledge of maintenance work order requirements

Question Number: 97

Tier 3 Group 2

Importance Rating: 3.1

Technical Reference: NOP-WM-4300, section 4.6.4

Proposed references to be provided to applicants during examination: None

Learning Objective: NA

10 CFR Part 55 Content: 43.3

Comments:

Meets criteria of 10CFR55.43(b) item 3 for SRO because the SRO must know the conditions and approvals necessary to perform work on operable and inoperable systems

Source: NEW
Cognitive Level: LOWER
Job Position: SRO
Date: 11/2007

Source if Bank:
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

22. G2.2.9 002/BANK/SEQUOYAH BANK/HIGHER//SRO/BVPS-1/11/2007/NO

Given the following:

- The unit is in Mode 3.
- Engineering has requested that the 1A HHSI pump be started with the discharge valve throttled to 75% open to determine starting current.
- The Operations Manager has determined that a Procedure change is required to support the outage critical path schedule.
- The test is NOT described in the current test procedure or the Updated Final Safety Analysis Report.

The Shift Manager may authorize the performance of the test _____.

- A. without any restrictions.
- B. with concurrence from another SRO.
- C. after licensing concurrence is obtained.
- D✓ after a 10CFR 50.59 screening, and if required, a safety evaluation has been approved.

A. Incorrect; Not described in FSAR, then the SM cannot approve by him(her)self.

B. Incorrect; 2 SROs can approve normal procedure changes.

C. Incorrect; Licensing concurrence is not required, results of a review would be sent through Licensing.

D. Correct; The screening review will result in a 50.59 review.

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Knowledge of the process for determining if the proposed change, test or experiment increases the probability of occurrence or consequences of an accident during the change, test or experiment.

Question Number: 96

Tier 3 Group 2

Importance Rating: 3.3

Technical Reference: NOP-LP-4003

Proposed references to be provided to applicants during examination: None

Learning Objective: NA

10 CFR Part 55 Content: 43.3

Comments:

Meets criteria for 10CFR55.43(b) item 3 because the SRO must know the requirements for approving plant changes in accordance with 10CFR50.59

Source: BANK
Cognitive Level: HIGHER
Job Position: SRO
Date: 11/2007

Source if Bank: SEQUOYAH BANK
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

23. G2.3.2 077/BANK/ROBINSON/LOWER//SRO/BVPS-1/11/2007/NO

Given the following:

- The plant is in Mode 5 in preparation for a startup.
- Operators are performing valve lineups in the Auxiliary Building.
- The initial positioning of a non-safety related valve requiring independent verification will result in 80 millirem of radiation exposure to the operator.

Which ONE of the following guidelines shall be followed for the independent verification of this valve?

- A. Perform a pre-job brief and ALARA plan prior to the valve alignment. Perform independent verification as required.
- B. Perform a pre-job brief and ALARA plan prior to the valve alignment. Concurrent verification may be performed for this valve
- C. Suspend independent verification for this valve due to ALARA concerns.
- D. Perform independent OR concurrent verification accompanied by an HP Technician that has surveyed the area prior to entry.

A. Incorrect. Non-safety related valve with exposure >10mr does not require independent verification

B. Incorrect. Non-safety related valve with exposure >10mr does not require independent OR concurrent verification

C. Correct.

D. Incorrect. HP coverage not required, as described in A and B above

QUESTIONS REPORT
for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

Knowledge of facility ALARA program.

Question Number: 98

Tier 3 Group 3

Importance Rating: 2.9

Technical Reference: 1/2OM-48.3.D Step VI.8.f.1
NOP-OP-1002 pg 58

Proposed references to be provided to applicants during examination: None

Learning Objective: NA

10 CFR Part 55 Content: 43.4

Comments:

Meets criteria for 10CFR55.43(b) item 4 because the SRO must know the requirements for minimizing radiation exposure while performing routine operations. For this topic, the SRO would decide whether to waive the valve lineup requirements.

Source: BANK
Cognitive Level: LOWER
Job Position: SRO
Date: 11/2007

Source if Bank: ROBINSON
Difficulty:
Plant: BVPS-1
Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

24. G2.3.3 001/NEW//LOWER//SRO/BVPS-1/11/2007/NO

In accordance with 1/2-HPP-3.06.006, Batch Radioactive Discharge Authorization - Gas, Computer Calculation Method, which ONE of the following is the MINIMUM authorization requirement for a Gaseous batch release?

A. EITHER Unit's Shift Manager.

B. An SRO from each unit.

C. EITHER Unit's Unit Supervisor.

D. A Radiation Protection Supervisor from each unit.

A. *Incorrect. Must be BOTH units*

B. *Correct.*

C. *Incorrect. Must be BOTH units*

D. *Incorrect. Part of approval process but not final authorization for the release*

Knowledge of SRO responsibilities for auxiliary systems that are outside the control room (e.g., waste disposal and handling systems).

Question Number: 99

Tier 3 Group 3

Importance Rating: 2.9

Technical Reference: 1/2-HPP-3.06.006

Proposed references to be provided to applicants during examination: None

Learning Objective: NA

10 CFR Part 55 Content: 43.4

Comments:

Meets criteria for 10CFR55.43(b) item 4 because the SRO must understand the requirements and approval authority for radioactive release

Source: NEW

Source if Bank:

Cognitive Level: LOWER

Difficulty:

Job Position: SRO

Plant: BVPS-1

Date: 11/2007

Previous NRC?: NO

QUESTIONS REPORT

for BEAVER VALLEY 2007 - NRC WORKSHEET REV B

25. G2.4.30 001/NEW//LOWER//SRO/BVPS-1/11/2007/NO

Which ONE of the following events requires 1 hour notification to the NRC in accordance with 10CFR50.72?

- A✓ Reactor trip that required reactor trip breakers opened locally.
- B. Inadvertent Safety Injection.
- C. Confirmed violation of fitness for duty requirements.
- D. A car accident causing injuries in the Owner Controlled Area.

A is correct. It is a classifiable event, so report due in 1 hour

B and C are 4 hour reports

D is not reportable; therefore, KA met because the applicant must distinguish between reportable and non-reportable events

Knowledge of which events related to system operations/status should be reported to outside agencies.

Question Number: 100

Tier 3 Group 4

Importance Rating: 3.6

Technical Reference: 10CFR50.72, 1/2 ADM 2202

Proposed references to be provided to applicants during examination: None

Learning Objective: NA

10 CFR Part 55 Content: 41.10/43.5

Comments:

Meets criteria for 10CFR55.43(b) item 5 by virtue of the fact that the SRO will make the call on reportability and must know which events are required for 1 hour reports

Source: NEW

Cognitive Level: LOWER

Job Position: SRO

Date: 11/2007

Source if Bank:

Difficulty:

Plant: BVPS-1

Previous NRC?: NO