

Draft Submittal

(Pink Paper)

CRYSTAL RIVER OCTOBER 2005 EXAM

05000302/2005301

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Reactor Operator Operator Written Exam

QUESTIONS REPORT
for RO - NRC 2K5 BANK

1. 001K1.05 001/2/2/RO #56/C/A 4.5/4.4/MOD/R/CR03501/4-014-005

The following plant conditions exist:

- NI-5 indicates 73% reactor power.
- NI-6 indicates 74% reactor power.
- NI-7 indicates 76% reactor power.
- NI-8 indicates 74% reactor power.
- NI-5/6 selected for control.

Which of the following describes the expected plant response if NI-6 failed high?

- A. ✓ The neutron power signal from RPS to ICS would be 76% power; SASS would transfer and select NI-7/8 for control; CRD system would initially insert control rods.
- B. The neutron power signal from RPS to ICS would be 73% power; SASS would not transfer; CRD system would initially withdraw control rods.
- C. The neutron power signal from RPS to ICS would be 76% power; SASS would transfer and select NI-7/8 for control; CRD system would maintain rod position.
- D. The neutron power signal from RPS to ICS would be 73% power; SASS would not transfer; CRD system would maintain rod position.

Reasons:

- A. Correct. SASS would transfer to NI-7/8 and send the highest signal (76%) to ICS. This would generate a >1% error and rods would insert.
- B. The power signal would be the highest of NI-7/8 (76%).
- C. Rods would insert.
- D. The power signal would be the highest of NI-7/8 (76%) because SASS will transfer. Rods will initially insert.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 4-09 Obj. 3; OPS 4-10 Obj. 5; OPS 4-09 Section 1-4.0.A.5; OPS 4-10 Section 1-4.0.C.5, OPS 4-14 Section 1-4.0.F.5

History: NRCM98

RO - Modified

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

2. 002K1.09 001/2/2/RO #57/MEM 4.1/4.1/NEW/R/CR03501/

A plant cooldown is in progress. The RPS has been placed in S/D Bypass and Control Rod Group 1 has just been withdrawn. Prior to any further actions a PZR insurge occurs. PZR temperature is now 600° F. Assuming no further operator actions which of the following will occur due to the change in RCS pressure?

- A. ✓ HPI actuation.
- B. LPI and HPI actuation.
- C. Low RCS pressure reactor trip.
- D. Variable RCS Press/Temp reactor trip.

Reasons:

- A. Correct. RCS pressure will decrease to about 1565#. This is below the 1625# HPI actuation setpoint.
- B. RCS pressure will not decrease low enough to actuate LPI.
- C. While this pressure is low enough to cause a low pressure reactor trip this function is bypassed when the RPS is taken to S/D Bypass.
- D. This function is bypassed when the RPS is taken to S/D Bypass.

OPS 4-12, Obj. 4; OPS 4-12 Section 1.3.0.C.3.a.1; OP-209 Step 4.1.6; OP-507 Step 4.14.3

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

3. 003K2.01 001/2/1/RO #28/C/A 3.1/3.1/NEW/R/CR03501/

The following plant conditions exist:

- All Unit buses are powered from the Startup transformer.
- DPDP-1C, Switch 12, has failed in the open position (feeder to DPDP-3B, Turbine Building)
- Two minutes later the reactor experiences a spurious trip from 100% power.

All RCPs need to be secured. Which of the following methods will accomplish this?

- A. Trip all RCPs with their individual control switches on the MCB.
- B. Trip "A" and "C" RCPs with their individual control switches on the MCB. De-energize the "B" 6900 volt bus from the MCB by opening breaker 3104, SU transformer feeder breaker to the "B" 6900 volt bus.
- C. Trip "A" and "B" RCPs with their individual control switches on the MCB. Trip "C" and "D" RCPs locally at their breakers.
- D. ✓ Trip "A" and "C" RCPs with their individual control switches on the MCB. Trip "B" and "D" RCPs locally at their breakers.

Reasons:

- A. With DPDP-3B de-energized DC control power to "B" Train turbine building equipment is lost. RCPs "B" and "D" must be tripped locally.
- B. Control power to breaker 3104 is lost.
- C. Control power for the "B" RCP breaker is lost.
- D. Correct. "A" and "C" RCPs are powered from the "A" 6900V bus. Control power is available to these breakers. "B" and "D" RCP breakers have lost control power and must be opened locally.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 4-64, Obj. 7; OPS 4-64 Section 1-8.0.B.2; OP-705 Enclosure 2; OPS 4-60
Section 1-4.0.K.2

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

4. 004A2.26 001/2/1/RO #29/C/A 2.8/3.0/NEW/R/CR03501/

The following plant conditions exist:

- MUT venting is in progress.
- "MAKEUP TANK PRESS HIGH/LOW" alarm has just annunciated.
- MUT level is 80 inches.

Which of the following describes the concern with this alarm and the amount that the pressure could be increased from its current value to return the MUT to the "Preferred Region" without receiving further MUT alarms?

- A. Insufficient MUP NPSH; 14 psig above low pressure *alarm* setpoint
- B. ✓ Inadequate oxygen control; 14 psig above low pressure *alarm* setpoint
- C. Insufficient MUP NPSH; 16 psig above low pressure *alarm* setpoint
- D. Inadequate oxygen control; 16 psig above low pressure *alarm* setpoint

Reasons:

- A. MUT low pressure is not a concern for MUP operation.
- B. Correct. To ensure adequate hydrogen concentration in the RCS (dissolved oxygen control) the MUT must be operated in the "Preferred Region". The operator should know that the low pressure annunciator alarm setpoint is 3 psig. Raising pressure by 14 psig will return the MUT to the "Preferred Region" and not cause any further alarms.
- C. MUT low pressure is not a concern for MUP operation. At 19 psig the computer high pressure alarm will be actuated.
- D. At 19 psig the computer high pressure alarm will be actuated.

OPS 4-52, Obj. 3; OP-103B Curve 8C; OPS 4-52 Sections 1-4.0.P.3 & 1-4.0.P.4; AR 403 EP 1063

RO - New

Reference(s) provided: OP-103B, Curve 8

QUESTIONS REPORT
for RO - NRC 2K5 BANK

5. 005A1.03 001/2/1/RO #30/C/A 2.5/2.6/NEW/R/CR03501/

"A" Decay Heat Removal train is in service. Instrument air pressure is 85 psig and rapidly decreasing.

DCV-17 A DH Cooler Bypass Control Valve
DCV-177 A DH Cooler Outlet Control Valve

Manually throttling DCV-17 (1) and DCV-177 (2) to limit RCS (3) will be required.

	(1)	(2)	(3)
A.	closed	open	heatup
B.	open	closed	heatup
C.	closed	open	cooldown
D. ✓	open	closed	cooldown

Reasons:

- A. DCV-17 must be throttled open and DCV-17 must be throttled closed to limit RCS cooldown.
- B. The concern is RCS cooldown, not heatup.
- C. DCV-17 must be throttled open and DCV-17 must be throttled closed.
- D. Correct. Opening the **bypass** valve and closing down on the outlet valve will lower the cooling **water** flow through the heat exchanger and limit cooldown of the RCS.

OPS 5-84, Obj. 7; AP-470 Step 3.4; OPS 5-84 Section 1-4.0.D

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

6. 005AK3.01 001/1/2/RO #19/C/A 4.0/4.3/BANK/R/CR03501/5-010-001

The plant is at 100% power and 250 EFPD when, during performance of SP-333, Control Rod Exercises, rod 4-2 is discovered to be stuck. Efforts to move rod 4-2 per OP-502, Control Rod Drive System, are unsuccessful. A plant shutdown and cooldown to at least Mode 5 will be required to repair control rod 4-2. What will be the minimum RCS boron concentration to assure at least a 1% $\Delta K/K$ shutdown margin in *Mode 5*?

- A. 1283 ppm
- B. 1507 ppm
- C. 1575 ppm
- D. ✓ 1805 ppm

Reasons:

- A. This value is from Curve 18 for 532° F. With a stuck rod and cooldown to mode 5 Curve 19 and a temperature of 73° F should be used.
- B. This value is from Curve 18 for 73° F, but Curve 19 (double stuck rod) use is required.
- C. This value is from Curve 19 for a temperature of 532° F, not 73° F as needed.
- D. Correct. This value comes from Curve 19 (double stuck rod) and a temperature of 73° F.

OPS 5-10, Obj. 2; OP-103C Curve 19

RO - Bank

Reference(s) provided: OP-103C

QUESTIONS REPORT
for RO - NRC 2K5 BANK

7. 006A1.13 001/2/1/RO #31/C/A 3.5/3.7/NEW/R/CR03501/

The following plant conditions exist:

- "CF TANK A LEVEL LOW" alarm has just annunciated.
- CFT-1A boron concentration is 3000 ppmb.

Which of the following additions would meet TS requirements and clear all CFT level alarms?

- A. 450 gal @ 12,000 ppmb
- B.✓ 500 gal @ 0 ppmb
- C. 550 gal @ 12,000 ppmb
- D. 600 gal @ 0 ppmb

QUESTIONS REPORT
for RO - NRC 2K5 BANK

Reasons:

OP-103F	CFT Low Level alarm	12.14 ft	7338.23 gallons
OP-103F	CFT High Level alarm	13.27 ft	7912.70 gallons
CFT TS level			> 7255 gal and < 8005 gal
CFT TS boron			> 2,270 ppmb and < 3,500 ppmb

$$C1V1 + C2V2 = C3V3$$

- A. 7338.23 gal + 450 gal = 7788.23 gal. **this is within level limits**
(3,000 ppmb)(7338.23 gal) + (12,000 ppmb)(450 gal) = (C3) 7788.23 gal
22,014,690 ppmb(gal) + 5,400,000 ppmb(gal) = (C3) 7788.23 gal
27,414,690 ppmb(gal)/7788.23 gal = (C3)
(C3) = 3520 ppmb **this is above ppmb limits**
- B. **Correct**
7338.23 gal + 500 gal = 7838.23 gal. **this is within level limits**
(3,000 ppmb)(7338.23 gal) + (0 ppmb)(500 gal) = (C3) 7838.23 gal
22,014,690 ppmb(gal) + 0 = (C3) 7838.23 gal
22,014,690 ppmb(gal)/7838.23 gal = (C3)
(C3) = 2808 ppmb **this is within ppmb limits**
- C. 7338.23 gal + 550 gal = 7888.23 gal. **this is within level limits**
(3,000 ppmb)(7338.23 gal) + (12,000 ppmb)(550 gal) = (C3) 7888.23 gal
22,014,690 ppmb(gal) + 6,600,000 ppmb(gal) = (C3) 7888.23 gal
28,614,690 ppmb(gal)/7888.23 gal = (C3)
(C3) = 3627 ppmb **this is above ppmb limits**
- D. 7338.23 gal + 600 gal = 7938.23 gal.
this is within TS level limits, but above the high level alarm setpoint
(3,000 ppmb)(7338.23 gal) + (0 ppmb)(600 gal) = (C3) 7938.23 gal
22,014,690 ppmb(gal) + 0 = (C3) 7938.23 gal
22,014,690 ppmb(gal)/7938.23 gal = (C3)
(C3) = 2773 ppmb **this is within ppmb limits**

OPS 4-53, Obj. 6 & 10; OP-103F, Figure 14; TS 3.5.1

RO - New

Reference(s) provided: OP-103F

QUESTIONS REPORT
for RO - NRC 2K5 BANK

8. 007A3.01 001/2/1/RO #32/MEM 2.7/2.9/BANK/R/CR03501/4-059-005

The plant is in Mode 5 with a drain of the Reactor Coolant System (RCS) in progress. While reviewing control board indications part way through your shift you notice that the level in the Reactor Coolant Drain Tank (RCDT) has increased since the beginning of the shift.

Which of the following describes a possible source for this fluid?

- A. ✓ A Core Flood Tank was drained to the RCDT.
- B. Leakoff from the Makeup Pumps was directed to the RCDT.
- C. Reactor coolant letdown is directed to the RCDT.
- D. The Miscellaneous Waste Storage Tank was pumped to the RCDT.

Reasons:

- A. Correct. The CFT is drained to the RCDT when the RCS is drained.
- B. Only leakoff from the RCPs can be directed to the RCDT.
- C. RCS letdown is directed to the MUT.
- D. Check valves prevent this flowpath.

OPS 4-59, Obj. 2 & 3; OPS 4-59 Section 1-3.0.A.1.c

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

9. 008AA2.19 001/1/1/RO #2/C/A 3.4/3.6/NEW/R/CR03501/

A plant trip has occurred from 100% power due to the loss of the "B" MFWP. Fifteen minutes later the following indications are observed:

- PZR level is 100 inches and stable.
- Makeup flow is normal and stable.
- Tave is 549° F and stable.
- RCS pressure is 1900 psig and slowly decreasing.
- RCDT level and pressure are stable.

Which of the following describes the cause of these indications and the operator response required, if any?

- A. The PORV is leaking by. The PORV block valve should be closed.
- B. ✓ The Spray valve is leaking by. The Spray block valve should be closed.
- C. An overcooling event has occurred. EOP-5, Excessive Heat Transfer, should be entered.
- D. These indications are normal plant values following a reactor trip. RCS pressure will automatically return to its normal value. No additional operator actions are required.

Reasons:

- A. If the PORV was leaking by RCDT level and/or pressure should be rising.
- B. Correct. While RCS pressure and temperature will decrease following a reactor trip the plant will have recovered to normal operating values within 15 minutes.
- C. Even though Tave is a little low the rest of the plant parameters don't support an overcooling event.
- D. 15 minutes after a reactor trip RCS pressure will be close to its normal setpoint of 2155 psig.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 3-20, Obj. 4; OPS 3-20 Section 2-2.0.C

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

10. 008G2.4.4 001/2/1/RO #34/MEM 4.0/4.3/BANK/R/CR03501/ROT 5-061-017

Which of the following would require entry into AP-330, Loss of Nuclear Services Cooling?

- A. Power is lost to the "A" Emergency SW pump while SWP-1C is out of service.
- B. ✓ A piping leak in the SW system results in reduced flow to components; numerous components have high temperature alarms and the temperatures are increasing.
- C. Loss of make-up capabilities to the SW surge tank coupled with normal system leakage have resulted in the tank level decreasing to 8 feet.
- D. A partially plugged CRD filter has resulted in a low flow auto start of the back-up SW booster pump and a high delta-P condition on the cooling line to the CRDs.

Reasons:

A., C. & D. Entry conditions for AP-330 are:

Temps of SW cooled components are high and rising,
SW flow is lost and can NOT be restored,
SW RW flow is lost and can NOT be restored,
Surge tank level < 7 feet.

- B. Correct. With component temperatures high and rising entry into AP-330 is required.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 5-61, Obj. 2; AP-330

History: NRCN99

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

11. 008K4.02 001/2/1/RO #33/C/A 2.9/2.7/BANK/R/CR03501/4-077-002

The following plant conditions exist:

- SCV-146 (automatic fill valve to SCT-1) opened due to a valid low level in SCT-1.
- When SCT-1 level was restored SCV-146 failed to receive a close signal.
- SCV-146 is manually isolated by the operator 5 minutes after the malfunction.

Which of the following problems will occur if no other operator actions are taken in the next two hours?

- A. The temperature of SC cooled components will begin to increase.
- B. ✓ SC System chemistry parameters will be taken out of specified ranges.
- C. SCT-1 level will continue to increase and exceed its maximum specified level.
- D. SCV-145 (SC pumps pressure regulating valve) will be unable to maintain SC System pressure at 60 psig.

Reasons:

- A. Isolation of DW to SCT-1 will have no effect on the cooling capability of the SC System.
- B. Correct. SCP-2, chemical injection pump, will auto-start when SCV-146 opens and will not automatically shutdown until SCV-146 closes. This will cause chemicals to be continually injected into the SC System until operator action shuts down the pump or the chemicals are depleted.
- C. If SCV-146 is properly isolated SCT-1 level should not increase.
- D. Isolation of DW to SCT-1 will have no effect on the ability of SCV-145 to control SC System pressure.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 4-77, Obj. 4 & 7; OPS 4-77 Section 1-4.0.F.2 and 1-4.0.H.2; AR-402 EP 0333

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

12. 009EA1.11 001/1/1/RO #3/C/A 4.1/4.1/MOD/R/CR03501/3-025-004

The following plant conditions exist:

- A Small Break LOCA has occurred.
- Lowest RCS pressure during this event was 1385 psig.
- Current RCS pressure is 1435 psig.
- Incore thermocouples indicate 500° F.

Which of the following is the minimum required setpoint for OTSG level?

- A. ✓ > 20" EFIC Lo Range.
- B. > 65% EFIC Hi Range.
- C. > 70% EFIC Hi Range.
- D. > 90% EFIC Hi Range.

Reasons:

- A. Correct. Adequate SCM does exist. RCPs should still be running. EFIC should be controlling at LLL, or > 20" as required by Rule 3.
- B. This is the actual EFIC setpoint if no RCPs are running.
- C. This is the required level per Rule 3 if no RCPs are running.
- D. This is the required level per Rule 3 if adequate SCM does not exist.

OPS 5-116, Obj. 1; EOP-13, Rule 3

History: NRCM98

RO - Modified

Reference(s) provided: Steam Tables

QUESTIONS REPORT
for RO - NRC 2K5 BANK

13. 010A4.02 001/2/1/RO #36/C/A 3.6/3.4/MOD/R/CR03501/4-009-006

The following plant conditions exist:

- Plant startup in progress with PZR level at 100".
- RC-1-LT1 (selected PZR level transmitter) slowly fails to 0".
- MUV-31 is selected to manual and PZR level is maintained at 100".

What affect, if any, will this failure have on PZR heater control?

- A. There will be a loss of all automatic and manual PZR heater control.
- B. SASS will transfer to the alternate level transmitter and PZR heater control will not be affected.
- C. ✓ There will be a loss of automatic PZR heater control of the SCR controlled heaters. Manual control of PZR heater bank "E" is available.
- D. There will be a loss of automatic PZR heater control of the SCR controlled heaters. Manual control of the SCR controlled heaters and PZR heater bank "E" is available.

Reasons:

- A. Manual and automatic control of PZR heater bank "E" is still available.
- B. SASS will not transfer due to the slow failure. Heater control will be affected.
- C. Correct. The selected PZR level inputs to the SCR controlled heaters. All automatic and manual control of these heaters is locked out on low level. Since LT3 is still indicating 100" heater bank "E" will function normally.
- D. Manual control of the SCR controlled heaters is not available.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 4-9, Obj. 4 & 7; OPS 4-9 Section 1-4.B & Figure 4

History: NRCM98

RO - Modified

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

14. 010K5.02 001/2/1/RO #35/C/A 2.6/3.0/MOD/R/CR03501/2-034-002

The following plant conditions exist:

- RCS pressure is 885 psig.
- RCDT pressure 5 psig.
- RCDT level 84 inches and slowly increasing.
- RCDT temperature 110° F and slowly increasing.
- Operations and Engineering have determined that the PORV is leaking by.

Which of the following PORV tailpipe temperatures would be expected for these plant conditions?

- A. $\approx 110^{\circ} \text{ F}$
- B. $\approx 228^{\circ} \text{ F}$
- C. ✓ $\approx 310^{\circ} \text{ F}$
- D. $\approx 532^{\circ} \text{ F}$

Reasons:

- A. This is RCDT temperature.
- B. This is Tsat for the RCDT.
- C. Correct. Using the Mollier diagram and a constant enthalpy process, a leaking valve at 885 psig (900 psia) would produce a downstream temperature of approximately 310° F if going to a 5 psig (20 psia) tank.
- D. This is Tsat for 885 psig (900 psia) if using Steam Tables.

OPS 2-34, Obj. 15; OPS 2-34 Section 1-7.0; Mollier Diagram

RO - Modified

Reference(s) provided: Steam Tables with Mollier diagram

QUESTIONS REPORT
for RO - NRC 2K5 BANK

15. 011EA2.09 001/1/1/RO #4/C/A 4.2/4.3/BANK/R/CR03501/ROT 3-003-042

After a loss of coolant accident the following plant conditions exist:

- RCS pressure is 435 psig
- OTSG pressure is 140 psig
- Subcooling margin is 40° F

Based on these conditions which of the following parameter values indicate that Natural Circulation has been established?

- A. T_{incore} is 456° F; T_{cold} is 428° F.
- B. T_{incore} is 416° F; T_{cold} is 428° F.
- C. T_{incore} is 456° F; T_{cold} is 360° F.
- D. ✓ T_{incore} is 416° F; T_{cold} is 360° F.

Reasons:

T_{incore} should be at saturation temperature for RCS pressure; T_{cold} should be at saturation temperature for OTSG pressure.

- A. This is the correct temperature for T_{incore} if the RCS was not 40° F subcooled. T_{cold} is not coupled to the OTSG.
- B. T_{cold} is not coupled to the OTSG.
- C. This is the correct temperature for T_{incore} if the RCS was not 40° F subcooled.
- D. Correct. A T_{incore} indication of 416° F is correct for RCS pressure of 450 psia and 40° F subcooled. T_{cold} indication of 360° F is saturation temperature for the existing OTSG pressure.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 3-03, Obj. 3; OPS 3-03 Section 1-2.0.G

History: NRCN99

RO - Bank

Reference(s) provided: Steam Tables

QUESTIONS REPORT
for RO - NRC 2K5 BANK

16. 012K4.02 001/2/1/RO #37/C/A 3.9/4.3/BANK/R/CR03501/4-012-022

With the plant at 100% power which of the following explains why a reactor trip occurs due to the loss of a reactor coolant pump?

- A. The RCS pressure increase, due to the decreasing RCS flow, is faster than the power decrease from the plant runback. This results in a reactor trip on high RCS pressure.
- B. ✓ The RCS flow decrease lowers the calculated power trip setpoint faster than the power decrease from the plant runback. This results in a flux/delta flux/flow trip.
- C. The RCS pressure increase, due to the decreasing feedwater flow, is faster than the power decrease from the plant runback. This results in a reactor trip on high RCS pressure.
- D. The RCS flow decrease, combined with the control rods running in, drives imbalance negative outside of the trip envelope. This results in a flux/delta flux/flow trip.

Reasons:

- A. RCS pressure will not increase to the high pressure trip setpoint with this failure.
- B. Correct. The function generator calculates the new high flux trip setpoint faster than plant power can be reduced by the plant runback.
- C. Feedwater flow will initially decrease faster than power but the FW Limited by Rx cross-limit will maintain FW flow high enough to limit the RCS pressure increase.
- D. While the rods running in will increase the negative imbalance it will never take imbalance outside the trip envelope on a power decrease to 75%.

OPS 4-12, Obj. 4 & 6; OPS 4-12 Section 1-5.0.F

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

17. 013A4.03 001/2/1/RO #39/C/A 4.5/4.7/MOD/R/CR03501/4-013-002

With the plant at full power a LOOP occurs. An overcooling event following the reactor trip has resulted with RCS pressure at 450 psig and RB pressure at 2.5 psig.

Which of the following describes the status of DHP-1A, DHV-5 and BSV-3?

- | | | |
|------|--------|-----------|
| A. | DHP-1A | Off |
| | DHV-5 | Closed |
| | BSV-3 | Open |
| | | |
| B. | DHP-1A | Off |
| | DHV-5 | Open |
| | BSV-3 | Closed |
| | | |
| C. | DHP-1A | Running |
| | DHV-5 | Open |
| | BSV-3 | Throttled |
| | | |
| D. ✓ | DHP-1A | Running |
| | DHV-5 | Open |
| | BSV-3 | Closed |

Reasons:

- A. DHP-1A will be running and DHV-5 will be open. BSV-3 will not open until an RBIC actuation occurs.
- B. DHP-1A will be running.
- C. BSV-3 will remain closed until an RBIC actuation occurs. It will throttle when a building spray actuation occurs.
- D. Correct. Even with a LOOP, actuation of the 500# bistable will start DHP-1A. BSV-3 will remain closed until an RBIC actuation occurs.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 4-13, Obj. 2; OPS 4-13 Section 1-5.0.F.14 and Table 6

History: NRCN99

RO - Modified

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

18. 013K6.01 001/2/1/RO #38/C/A 2.7/3.1/NEW/R/CR03501/

RC-3A-PT3 (RCS pressure transmitter) rapidly fails to its mid-scale value of 1250 psig. Which of the following describes the resulting plant response/condition?

- A. ✓ ES Channel 1 trips.
- B. RPS Channel A trips.
- C. Actual RCS pressure increases.
- D. SASS will transfer to the alternate transmitter prior to any plant upset occurring.

Reasons:

- A. Correct. With a failure mid-scale of 1250 psig then the range of this transmitter is 0 to 2500 psig. This is a wide range transmitter and only feeds an ES channel. ES Channel 1 will trip but no ES actuation will occur.
- B. RPS is fed by narrow range transmitters.
- C. Since no ES actuation occurred there will be no change in actual RCS pressure.
- D. These transmitters do not input to a SASS module.

OPS 4-09, Obj. 4 & 7; OPS 4-09 Section 1-4.0.D.1 and Figure 6

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

19. 014K4.06 001/2/2/RO #58/C/A 3.4/3.7/BANK/R/CR03501/4-028-006

The following information is available from the CRD PI panel and the computer for Absolute Position Indication (API) and Relative Position Indication (RPI):

Control Rod	RPI (PI Panel)	API (PI Panel)
7-1	92	93
7-2	93	92
7-3	88	85
7-4	93	93
7-5	94	94
7-6	91	92
7-7	91	92
7-8	92	92

From the above information evaluate the rod position indication with regard to Asymmetric conditions/faults and determine which of the following is the correct indication?

- | | | |
|------|--|-----|
| A. | PI panel - Asymmetric Fault | OFF |
| | Diamond Control panel - Asymmetric Fault | OFF |
| B. | PI panel - Asymmetric Fault | OFF |
| | Diamond Control panel - Asymmetric Fault | ON |
| C. | PI panel - Asymmetric Fault | ON |
| | Diamond Control panel - Asymmetric Fault | OFF |
| D. ✓ | PI panel - Asymmetric Fault | ON |
| | Diamond Control panel - Asymmetric Fault | ON |

Reasons:

- A., B., C. Rod 7-3 is 6.625% below the group average (7.57% without the bad rod in the group average). An Asymmetric condition ($6.5\% = 9''$) does exist and both the Asymmetric Fault lights should be lit. (PI Panel and Diamond Control Panel)
- D. Correct. See above.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 4-28, Obj. 3 & 4; OPS 4-28 Section 1-4.0.F.6.c

History: NRCM98

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

20. 015/017AA1.22 001/1/1/RO #5/C/A 4.0/4.2/BANK/R/CR03501/4-060-009

The plant is operating at 100% power when the following conditions are observed for the "B" Reactor Coolant Pump (RCP-1B).

- Second stage seal cavity pressure is 1055 psig.
- Third stage seal cavity pressure is 1055 psig.

Which of the following describes the condition of RCP-1B's mechanical seal package?

- A. Only the first stage seal has failed.
- B. ✓ Only the second stage seal has failed.
- C. Both the first and the second stages have failed.
- D. Both the second and the third stages have failed.

Reasons:

- A. If the first stage seal had failed then the second stage seal cavity pressure would be \approx 2100 psig and the third stage seal cavity pressure would be \approx 1100 psig.
- B. Correct. With the second stage seal failed the second stage seal cavity pressure would be \approx 1055 psig and the third stage seal cavity pressure would be \approx 1055 psig.
- C. If both the first and second stages had failed then the second stage seal cavity pressure would be \approx 2100 psig and the third stage seal cavity pressure would be \approx 2100 psig.
- D. If both the second and third stages had failed then the second stage seal cavity pressure would be \approx 20 psig and the third stage seal cavity pressure would be \approx 20 psig.

OPS 4-60, Obj. 3 & 7; OPS 4-60 Section 1-4.0.J.7.c

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

21. 015K6.02 001/2/2/RO #59/C/A 2.6/2.9/BANK/R/CR03501/4-010-004

While performing a plant startup a power surge occurred in VBDP-5. The following conditions exist for NI-3:

- The detector power supply is operating normally.
- The auxiliary power supply is dead.

If NI-4 reads 6.0×10^{-11} amps which of the following are the most likely readings for NI-3?

- A. ✓ 2.9×10^{-10} amps with a lower SUR than NI-4.
- B. 2.9×10^{-10} amps with a higher SUR than NI-4.
- C. 2.9×10^{-11} amps with a lower SUR than NI-4.
- D. 2.9×10^{-11} amps with a higher SUR than NI-4.

Reasons:

- A. Correct. With a failed auxiliary power supply there will be no gamma compensation. NI-3 will read higher than NI-4 with a lower SUR than NI-4.
- B. SUR will be lower than NI-4.
- C. NI-3 will read higher than NI-4.
- D. NI-3 will read higher than NI-4 with a lower SUR than NI-4.

OPS 4-10, Obj. 5; OPS 4-10 Section 1-4.0.B

RO - Bank

Reference(s) required: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

22. 017K5.03 001/2/2/RO #60/C/A 3.7/4.1/MOD/R/CR03501/4-011-004

An Inadequate Core Cooling event is in progress. The following are the Core Exit Thermocouple values being input to the "A" SPDS:

- | | |
|-----------|-----------|
| 1. 880° F | 5. 420° F |
| 2. 540° F | 6. 400° F |
| 3. 500° F | 7. 400° F |
| 4. 420° F | 8. 220° F |

Based on these input values what temperature will SPDS use to determine the Inadequate Core Cooling region for current RCS conditions?

- A. 414° F
- B. 473° F
- C. 552° F
- D. ✓ 880° F

Reasons:

- A. The SPDS uses the highest of the 8 incore input values. If the student has the misconception that the highest reading is unreliable and is disregarded by SPDS, the average of the remaining readings would equal this value.
- B. If the student averages all of the 8 input values this will be the temperature used.
- C. If the student averages the 5 highest incore readings this will be the temperature used.
- D. Correct. The highest reading is now used by SPDS.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 4-11, Obj. 2; OPS 4-11 Section 1-1.0.A.1.b

History: NRCN99

RO - Modified

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

23. 022A2.05 001/2/1/RO #40/C/A 3.1/3.5/NEW/R/CR03501/

During normal full power operation the following annunciator alarms are received:

- "REACTOR BLDG SW SYSTEM LEAK"
- "RB FAN A/B/C CLG WTR FLOW LOW"

Based on these alarms which of the following describes the appropriate procedure to be used and actions to be taken?

- A. Enter AP-330, Loss of Nuclear Service Cooling, to swap RB fans to CI cooling. Check/fill SW surge tank.
- B. Enter AP-330, Loss of Nuclear Service Cooling, to isolate affected component(s). Check/fill CI surge tank.
- C. Use AR-303, ESC Annunciator Response, to swap RB fans to CI cooling. Check/fill SW surge tank.
- D. ✓ Use AR-303, ESC Annunciator Response, to isolate affected component(s). Check/fill CI surge tank.

Reasons:

- A. During normal full power operation the RB fans are aligned to CI. AP-330 should not be entered for a CI leak. SW surge tank level will not lower.
- B. During normal full power operation the RB fans are aligned to CI. AP-330 should not be entered for a CI leak.
- C. During normal full power operation the RB fans are aligned to CI. SW surge tank level will not lower.
- D. Correct. AR-303 guidance will isolate affected components. Since the RB fans are normally on CI the CI surge tank will need to be refilled.

OPS 4-63, Obj. 2-7 & 8; AR-303, EPs 1844 & 1841

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

24. 022G2.4.45 001/1/1/RO #6/C/A 3.3/3.6/NEW/R/CR03501/

During normal full power operation the following annunciator alarms are received:

- "RC PUMP SEAL FLOWS LOW"
- "MAKEUP PP B GEAR OIL PRESS LOW"

Which of the following describes a condition that will cause these alarms?

- A. MUP-1B breaker trip.
- B. ✓ MUP-1B sheared shaft.
- C. MUP-1B shaft driven gear oil pump failure.
- D. Increased friction within the 'speed increaser' gears on MUP-1B.

Reasons:

- A. A tripped pump will cause the RCP seal flow alarm but since the breaker is now open the gear oil pressure low alarm will not annunciate.
- B. Correct. A sheared shaft will cause decreased flow to the RCP seals and cause this alarm. Since the MUP breaker will still be closed then, after gear oil pressure decreases to < 7psig, the gear oil pressure low alarm will come in.
- C. A loss of the shaft driven gear oil pump will cause the gear oil pressure low alarm but should not affect RCP seal flow.
- D. If the friction gets great enough the MUP will eventually trip. This will cause the RCP seal flow alarm, but not the gear oil pressure low alarm.

OPS 4-52, Obj. 3, 7 & 8; AR-302 EP 1058

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

25. 025AA1.09 001/1/1/RO #7/MEM 3.2/3.1/BANK/R/CR03501/5-099-003

The following plant conditions exist:

- The plant is in Mode 5.
- RCS level 129.5 ft.
- DHP-1A in service.
- "DH PUMP A FLOW LOW" alarm is in and out of alarm.
- DHP-1A flow fluctuating.
- DHP-1A motor amps fluctuating.
- DHP-1B available and in standby.

Which of the following describes the required operator actions?

- A. Place DHP-1B in service and then stop DHP-1A.
- B. ✓ Stop DHP-1A and fill RCS to greater than 130.6 ft.
- C. Stop DHP-1A and place the Makeup System in service.
- D. Place DHP-1B in service and leave DHP-1A running until conditions stabilize.

Reasons:

- A. Limit and Precautions from OP-404, Decay Heat Removal System, requires that DH pumps be tripped when there is any evidence of cavitation.
- B. Correct. Per OP-404 and AP-404 the DHP would be stopped due to cavitation and the RCS refilled to greater than 130.6 ft.
- C. Makeup System would only be placed in service if there were no available Decay Heat trains.
- D. Limit and Precautions from OP-404, Decay Heat Removal System, requires that DH pumps be tripped when there is any evidence of cavitation.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 4-54, Obj. 5 & 8; AP-404 Step 3.8; OP-404 Step 3.2.2

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

26. 026A3.01 001/2/1/RO #42/C/A 4.3/4.5/MOD/R/CR03501/4-062-002

The following plant conditions exist:

- HPI, LPI, RBIC and BSV have actuated.
- HPI, LPI and RBIC were bypassed following actuation.
- BSV-4 automatic control has failed and manual flow control has been established.
- Remote/Local switch was left in the Remote position.
- During trouble shooting activities associated with BSV-4, BSP-1B experienced a spurious trip.

Assuming BSP-1B and BSV-4 automatic control circuitry has been repaired, which of the following methods could be used to return BSV-4 to Remote/Auto control?

- A. Depressing the auto pushbutton will return BSV-4 to auto with flow controlled at 1500 gpm.
- B. Depressing the auto pushbutton will return BSV-4 to auto with flow controlled at 1200 gpm.
- C. ✓ The auto pushbutton must be depressed and RBIC must be re-actuated in order to restore the Remote/Auto setpoint.
- D. The auto pushbutton must be depressed and HPI must be re-actuated in order to restore the Remote/Auto setpoint.

Reasons:

- A. Since BSP-1B tripped after RBIC was bypassed the automatic (1500 gpm) signal was lost. RBIC must be re-actuated to restore this signal.
- B. The Remote/Auto setpoint is 1500 gpm. The Local/Auto setpoint is 1200 gpm.
- C. Correct. Since BSP-1B tripped after RBIC was bypassed the automatic (1500 gpm) signal was lost. RBIC must be re-actuated to reinstate the Remote/Auto setpoint.
- D. This method will not restore the Remote/Auto setpoint. The HPI actuation has no input to the BSV-4 controller, only the BSP start circuit.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 4-62, Obj. 4; OPS 4-62 Sections 1-4.0.C

RO - Modified

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

27. 026AA2.01 001/1/1/RO #8/C/A 2.9/3.5/BANK/R/CR03501/5-061-003

The plant is at full power with the following plant conditions:

- The nuclear services surge tank level is slowly decreasing.
- SWV-277 (SW Surge Tank fill valve) is full open.
- The RO has estimated the SW leak rate to be in excess of 80 gpm.
- The reactor building and auxiliary building sump levels are not increasing.
- All nuclear services heat exchangers have been rotated into operation with no change in conditions.
- RCS makeup, letdown and MUT level are steady.
- There are no reactor building SW system leak annunciators in alarm.

Where is the location of the SW leak?

- A. The reactor coolant drain tank.
- B. ✓ The spent fuel cooling system.
- C. The primary sample cooler.
- D. The in-service reactor coolant pump seal return cooler.

Reasons:

- A. No leak annunciators in alarm will rule this tank out. SW Tank level lowering with the fill valve open indicates a leak greater than the 50 gpm differential required to cause the leak annunciators to be in alarm. The ROs leak rate estimate confirms the leak rate is greater than 50 gpm.
- B. Correct. This system is the only location for this leak with these conditions.
- C. SW would not leak out of this cooler; RCS will leak into the SW System.
- D. MUT level or the auxiliary building sump level would increase.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 5-61, Obj. 5; OPS 5-61 Section 1-4.0.I; AP-330 Steps 3.5 & 3.25

History: NRCN99

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

28. 026G2.1.32 001/2/1/RO #41/MEM 3.4/3.8/BANK/R/CR03501/4-062-003

A limit and precaution in SP-340B, BSP-1A and Valve Surveillance, states:

The minimum Reactor Building (RB) pressure allowed during the performance of this procedure is -0.65 psig (14.05 psia).

Which of the following is the basis for this limit and precaution?

- A. This establishes the conditions necessary for RB spray flow control valve (BSV-3/4) stroke time determination for operability.
- B. This ensures adequate NPSH for the RB spray pumps (BSP-1A/1B) if an accidental discharge of the RB spray system were to occur.
- C. ✓ This prevents exceeding the negative design pressure of the RB if an accidental discharge of the RB spray system were to occur.
- D. This ensures the minimum 40 psig pressure drop across the spray nozzles if an accidental discharge of the RB spray system were to occur.

Reasons:

- A. The building pressure will not affect the stroke time for this surveillance.
- B. NPSH is supplied from the BWST during this surveillance.
- C. Correct. This is the stated reason as found in SP-340B, L & P 3.5.4.
- D. This is the design number for ΔP but has nothing to do with this surveillance.

OPS 4-62, Obj. 5; SP-340B, Step 3.5.4

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

29. 028AK2.02 001/1/2/RO #20/C/A 2.6/2.7/BANK/R/CR03501/2-025-002

The following plant conditions exist:

- Plant is at 100% power.
- The temperature transmitter used for temperature compensation of the selected PZR level transmitter *slowly* fails high.

Which of the following describes what effect, if any, this malfunction will have on MUV-31 (PZR level control valve) operation?

- A. ✓ MUV-31 will throttle in the closed direction in an attempt to restore PZR level.
- B. MUV-31 will throttle in the open direction in an attempt to restore PZR level.
- C. MUV-31 is interlocked to freeze in position without a valid PZR level signal.
- D. SASS will transfer to the alternate level control signal and MUV-31 operation will be unaffected.

Reasons:

- A. Correct. Indicated level will be high so MUV-31 will close in an attempt to restore level to setpoint.
- B. If temperature compensation fails high then indicated level will go high. This will cause MUV-31 to close, not open.
- C. This interlock does not exist.
- D. Since the temperature failure was slow SASS will not transfer. MUV-31 will stay selected to the bad signal.

OPS 2-25, Obj. 66; OPS 2-25 Section 1-6.0.B.4.c).3)

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

30. 029EK2.06 001/1/1/RO #9/MEM 2.9/3.1/NEW/R/CR03501/

With the plant at full power an RCS pressure excursion is in progress. Three RPS channels have failed to actuate. As RCS pressure increases which of the following describes how DSS (Diverse Scram System) will shut down the reactor?

DSS will open:

- A. the "A" and "B" main CRD breakers.
- B. the "C" and "D" main CRD breakers.
- C. ✓ contacts in series with the "E" and "F" electronic trip contacts.
- D. contacts on the DC hold bus to de-energize "A" and "CC" phases.

Reasons:

- A. These breakers only open from a manual RX trip or RPS trip signal.
- B. These breakers only open from a manual RX trip or RPS trip signal.
- C. Correct. When both channels of DSS trip (2450 psig) contacts in series with the "E" and "F" electronic trip contacts will open. This will kill gating power to the regulating rods and they will insert into the core.
- D. The DC hold bus does energize "A" and "CC" phases but this power is not interrupted from a DSS actuation.

OPS 4-12, Chapter 2, Obj. 2; OPS 4-12 Section 2-2.0.C; OPS 4-28 Figure 22

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

31. 038EA2.08 001/1/1/RO #10/C/A 3.8/4.4/NEW/R/CR03501/

The following plant conditions exist:

- Reactor has tripped.
- One TV and two GVs failed to close.
- EOP-2, Vital System Status Verification, immediate actions have been completed.
- The crew has transitioned to EOP-6, Steam Generator Tube Rupture, due to a 50 gpm tube leak on the "A" OTSG.
- "A" OTSG level is 100 inches and increasing slowly.
- RCS temperature is 490° F.
- BWST level is 44 feet.
- Initial Dose Equivalent Iodine-131 -- 2.53 E-3 uCi/g.
- Peak Dose Equivalent Iodine-131 -- 6.27 E-3 uCi/g .

Which of the following describes the RCS cooldown method that should be used *until* DHR is established?

Use the:

- A. "B" OTSG only and steam to the condenser.
- B. "A" and "B" OTSGs and steam to the condenser.
- C. ✓ "B" OTSG only and steam to atmosphere.
- D. "A" and "B" OTSGs and steam to atmosphere.

Reasons:

- A. The "A" OTSG cannot be steamed to the condenser because the MSIVs are closed.
- B. Neither OTSG can be steamed to the condenser because the MSIVs are closed.
- C. Correct. The "A" OTSG meets the TRACC criteria for Initial Dose Equivalent Iodine. With the failure of the TVs and GVs to close the operator would have closed the MSIVs and isolated the OTSGs from the condenser.
- D. The "A" OTSG meets the TRACC criteria and will be isolated.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 5-101, Obj. 5; OPS 5-101 Step 3.33; EOP-6 Step 3.33

RO - New

Reference(s) provided: EOP-6

QUESTIONS REPORT
for RO - NRC 2K5 BANK

32. 039K4.05 001/2/1/RO #43/C/A 3.7/3.7/NEW/R/CR03501/

A plant heatup is in progress. Which of the following conditions will cause the MSIVs and the EFW valves on the "A" OTSG to close?

- A. "A" & "B" OTSGs are at 650 psig.
A steam leak develops and "A" OTSG pressure decreases to 525 psig.
"B" OTSG remains at 650 psig.
- B. ✓ "A" & "B" OTSGs are at 750 psig.
A FW problem occurs causing the "A" OTSG pressure to decrease to 575 psig and the "B" OTSG pressure to decrease to 625 psig.
- C. "A" OTSG is at 750 psig.
"B" OTSG is at 700 psig.
A steam leak develops and "A" OTSG pressure decreases to 525 psig.
"B" OTSG pressure remains at 700 psig.
- D. "A" OTSG is at 750 psig.
"B" OTSG is at 800 psig.
A FW problem occurs causing the "A" OTSG pressure to decrease to 475 psig and the "B" OTSG pressure to decrease to 575 psig.

Reasons:

- A. EFIC is still bypassed in this condition and will not actuate at the 600 psig setpoint. BOTH OTSGs must get above 732 psig to release the bypass.
- B. Correct. Once BOTH OTSGs are greater than 732 psig EFIC automatically comes out of bypass. When the "A" OTSG gets below 600 psig the MSIVs will close. Since "B" OTSG is still above 600 psig the FOGG circuit will close the EFW valves to the "A" OTSG.
- C. EFIC is still bypassed at this point. BOTH OTSGs must get above 732 psig to release the bypass.
- D. Once BOTH OTSGs are greater than 732 psig EFIC automatically comes out of bypass. Since both OTSGs are now under 600 psig the MSIVs on both OTSGs will close. However, since both OTSGs are less than 600 psig, but the delta P between them is less than 125 psig, FOGG will not close either set of EFW valves.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 4-31, Obj. 2; OPS 4-31 Sections 1-4.0.G & 1-4.0.J

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

33. 039K5.08 001/2/1/RO #44/MEM 3.6/3.6/BANK/R/CR03501/1-047-001

Which of the following describes when the potential reactivity effects of a steam line break are most severe?

- A. ✓ End of core life.
- B. Middle of core life.
- C. Beginning of core life.
- D. Effects remain the same over core life.

Reasons:

As the core ages MTC becomes increasingly more negative. A steam line break results in a cooldown of the RCS and MTC adds positive reactivity as this occurs. Because MTC has a larger negative value as the core ages, the effect of the steam line break gets greater also.

OPS 1-47, Obj. 15; OPS 1-47, Section 1-4.0.C.3

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

34. 041A1.02 001/2/2/RO #61/C/A 3.1/3.2/BANK/R/CR03501/4-014-004

During a plant start-up the following conditions exist:

- Turbine header pressure is 870 psig and increasing slowly.
- Turbine is in operator auto with one generator output breaker closed.
- The ULD demand signal (used to apply the TBV bias) is less than 12%.
- All turbine bypass valves are closed.

If turbine header pressure continues to increase the turbine bypass valves should begin to open when header pressure exceeds (assume header pressure at setpoint for normal operation):

- A. 885 psig
- B. ✓ 895 psig
- C. 935 psig
- D. 1010 psig

Reasons:

- A. With the turbine and reactor not tripped and all TBVs closed with less than a 10# header pressure error the bias applied is 50#. The bias is released if a 10# header pressure error exists. At this pressure the bias is still applied.
- B. Correct. When pressure reaches 10# above setpoint the bias is released. The TBVs open to lower pressure back to setpoint.
- C. This is the correct pressure if the bias did not release.
- D. This is the correct pressure if the reactor tripped.

OPS 4-14, Obj. 3; OPS 4-14 Sections 1-4.0, 1-15 Table 3

History: NRCM98

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

35. 045K4.13 001/2/2/RO #62/MEM 2.6/2.8/MOD/R/CR03501/ROT 4-022-031

Placing the OPC key switch, located on the EHC lower operator panel, to the "Overspeed Test" position:

- A. ✓ bypasses the 103% overspeed protection signal to allow testing of the mechanical overspeed trip device.
- B. injects a 103% overspeed signal to test the mechanical overspeed trip device.
- C. bypasses the 103% overspeed protection signal to allow testing of the electronic overspeed trip device.
- D. injects a 103% overspeed signal to test the electronic overspeed trip device.

Reasons:

- A. Correct. In the "Overspeed Test" position the 103% signal is defeated to allow the mechanical overspeed trip device to be tested at 110% of rated speed.
- B. The 103% speed signal is only inserted when the key switch is placed in the "Test" position.
- C. The mechanical overspeed trip device is tested.
- D. The 103% speed signal is only inserted when the key switch is placed in the "Test" position.

OPS 4-22, Obj. 3 & 4; OPS 4-22 Section 1-5.0.B.4.k

RO - Modified

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

36. 051AA2.02 001/1/2/RO #21/C/A 3.9/4.1/NEW/R/CR03501/

The following plant conditions exist:

- The plant is at 25% power.
- Both condenser air removal pumps are operating.
- The "TURB VACUUM PRETRIP" alarm has just annunciated.
- Low pressure turbine exhaust temperature has increased to 255° F.

Based on these conditions which of the following action(s) should be taken?

- A. Increase turbine hood spray flow to lower turbine exhaust temperature.
- B. ✓ Trip the main turbine immediately and enter AP-660, Turbine Trip.
- C. Notify available operators to visually inspect turbine building for vacuum leaks.
- D. Since the condenser may become unavailable trip the reactor and enter EOP-2, Vital Systems Status Verification.

Reasons:

- A. Hood spray is a fixed value. Flow cannot be increased.
- B. Correct. The pretrip alarm comes in at 25 in-Hg. Since this is below the vacuum limit for 25% power, and reactor power is less than 45%, then the immediate action is to trip the turbine.
- C. This is the correct action to take if vacuum had not already reached the pretrip alarm value.
- D. If vacuum cannot be maintained the reactor may be tripped later, but is not a requirement at this time.

OPS 4-93, Obj. 5, 8 & 9; OPS 4-93 Section 1-8.A; OP-607 Step 3.2.4; AR-603 EP 1630

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

37. 054G2.4.49 001/1/1/RO #12/C/A 4.0/4.0/NEW/R/CR03501/

With the plant at 15% power all main feedwater is lost. With proper operator response which of the following describes the expected power level and turbine header pressure values 20 minutes later?

- A. Reactor power is 15%.
Turbine header pressure is 885 psig.
- B. ✓ Reactor power is 4%.
Turbine header pressure is 885 psig.
- C. Reactor power is 4%.
Turbine header pressure is 935 psig.
- D. Reactor is tripped.
Turbine header pressure is 1010 psig.

Reasons:

- A. Per AI-505, Enclosure 1, Step 3.6, the turbine must be tripped and power reduced below 5% as quickly as possible.
- B. Correct. Power level is less than 5% and header pressure is correct for a tripped turbine.
- C. Since the turbine is tripped there will be no bias applied to header pressure setpoint. Pressure should be 885 psig.
- D. The reactor should not be tripped.

OPS 5-14, Obj. 11; AI-505, Enclosure 1, Step 3.6

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

38. 055EA1.07 001/1/1/RO #13/C/A 4.3/4.5/BANK/R/CR03501/5-030-001

A station blackout has just occurred. The Control Room Supervisor has entered EOP-12, Station Blackout, and has the Balance-of-Plant Operator (BOP) concurrently performing AP-770. The following plant conditions exist:

- Neither diesel is running.
- No ES 4160V Bus fault exists.
- The Off-site Power Transformer has been repaired.
- DIESEL GEN A BREAKER CLOSED annunciator alarm (Q-02-03) is NOT lit.

The BOP closes the Off-site transformer breaker, 3211. However, when the breaker control handle was released five seconds later, annunciator Q-02-01, 4KV ES BUS A DEAD, was still in alarm. Which of the following actions is responsible for this alarm not clearing?

- A. The "A" ES 4160V Bus AY knife switch is open.
- B. The 4160V ESA UV RESET pushbutton was not depressed.
- C. ✓ The bus undervoltage relays did not reset.
- D. The 480V ES undervoltage lockout has not been reset.

Reasons:

- A. The diesel generator breaker did not attempt to close and there is no reason to open the AY knife switch.
- B. The 4160V ESA UV RESET pushbutton is depressed following 3211 closure. Step 3.14 of AP-770.
- C. Correct. The control handle for the breaker has to be held until the undervoltage relays reset.
- D. There is no interlock between the 480V ES undervoltage lockout and the 4160V ES bus.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 5-30, Obj. 7; AP-770, Step 3.16

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

39. 055K3.01 001/2/2/RO #63/C/A 2.5/2.7/BANK/R/CR03501/4-093-004

The plant is operating at 25% RTP when the control board operator notices a slow degradation of condenser vacuum. Ten minutes later the following conditions exist:

- OP-607, Condenser Vacuum Systems, Section 4.5, Loss of Vacuum, has been entered.
- Condenser vacuum is 4" Hg absolute.
- Condenser ΔT is 3° F.
- "A" Air Removal Pump, ARP-1A, has tripped.
- "B" Air Removal Pump, ARP-1B, has failed to auto-start and cannot be manually started.

Which of the following describes required operator action(s), if any, and the status of condenser vacuum?

- A. The main turbine should be manually tripped; procedural limits have been exceeded. Condenser vacuum will continue to degrade following the turbine trip.
- B. The main turbine should be manually tripped; procedural limits have been exceeded. Condenser vacuum will stabilize following the turbine trip.
- C. ✓ Condenser vacuum is within procedural limits; condenser vacuum will continue to degrade.
- D. Condenser vacuum is within procedural limits; condenser vacuum will stabilize at a slightly lower value.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

Reasons:

- A. For this power level a turbine trip is not required unless condenser vacuum exceeds 4.5" Hg absolute.
- B. For this power level a turbine trip is not required unless condenser vacuum exceeds 4.5" Hg absolute. Vacuum will continue to degrade after a turbine trip.
- C. Correct. Vacuum is within limits for this power level and will continue to degrade as non-condensable gases build up in the condenser.
- D. Vacuum will continue to degrade under these conditions.

OP-607 Step 3.2.4

History: NRCN99

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

40. 056AA1.06 001/1/1/RO #14/C/A 3.6/3.6/BANK/R/CR03501/4-013-009

The following plant conditions exist:

- MUP-1A is tagged out.
- EDG-1A is tagged out.
- A Loss of Offsite Power has occurred.
- The resulting reactor trip causes an RCS leak with RCS pressure decreasing to 1575 psig.
- RB pressure has increased to 4.3 psig.

"A" Train

"B" Train

<i>Component</i>	<i>ES Status Lights</i>	<i>Component</i>	<i>ES Status Lights</i>
MUP-1A	OUT	MUP-1B	OUT
MUP-1B	GREEN	MUP-1C	GREEN
MUV-23	AMBER	MUV-25	GREEN
MUV-24	AMBER	MUV-26	GREEN
MUV-73	AMBER	MUV-58	GREEN
MUV-53	AMBER	MUV-257	GREEN
AHF-1A High	GREEN	AHF-1B High	GREEN
AHF-1A Low	AMBER	AHF-1B Low	GREEN
DHV-5	AMBER	DHV-6	GREEN
DHP-1A	AMBER	DHP-1B	AMBER
MUV-586	GREEN	MUV-586	GREEN
MUV-587	GREEN	MUV-587	GREEN

Based on the above conditions which of the following describes the status of ES components?

- A. ✓ All components have actuated/responded as expected.
- B. All "A" Train components have actuated/responded as expected with the exception of MUV-586 & 587.
- C. All "B" Train components have actuated/responded as expected with the exception of DHP-1B.
- D. All "A" Train components have actuated/responded as expected with the exception of MUP-1B.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

Reasons:

- A. Correct. For these conditions all components have responded properly, see B., C., and D. for reasons for other component variations.
- B. MUV-586 & 587 are DC powered valves and have responded correctly.
- C. DHP-1B responded correctly and should not have started from the RBIC cascade due to the LOOP.
- D. MUP-1B breaker has closed (green light comes off of breaker position) however the pump is not running due to the loss of power.

OPS 4-12, Obj. 2; OPS 4-13 Tables 1 & 2

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

41. 057G2.1.28 001/1/1/RO #15/MEM 3.2/3.3/NEW/R/CR03501/

The "Inverter A Available" light (located on the 'Standby Power Status' section of the MCB) has extinguished. What does this indicate to the operator?

- A. AC power *to* VBIT-1A is less than 72 volts.
- B. ✓ AC power *from* VBIT-1A is less than 72 volts.
- C. VBIT-1A has swapped to its backup AC power supply.
- D. VBIT-1A has swapped to its backup DC power supply.

Reasons:

- A. If AC input power degrades DC will automatically supply the inverter.
- B. Correct. This light will extinguish if the output of the inverter decreases to < 72 volts.
- C. This light only looks at inverter output voltage. Backup power for the inverter is DC.
- D. This light only looks at inverter output voltage.

OPS 4-91, Obj. 6; OPS 4-91 Section 1-5.0.A

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

42. 058AK3.01 001/1/1/RO #16/C/A 3.4/3.7/NEW/R/CR03501/

125 VDC for the "A" Emergency Diesel Generator has been lost. Which of the following describes the status of the "A" EDG?

The "A" EDG will:

- A. remain shutdown. Local start of the EDG is also defeated.
- B. remain shutdown. Local start of the EDG will remain available.
- C. start, come up to speed, and the "Ready" light will illuminate.
- D. ✓ start, come up to speed, and the "Ready" light will NOT illuminate.

Reasons:

- A. The EDG will start.
- B. The EDG will start.
- C. The EDG will start and come up to speed but with no field flashing capability the READY light will not illuminate.
- D. Correct. The EDG will start because the air start solenoid valves lose power and port air to the engine. The valves will remain open and exhaust all air from the air reservoirs. The READY light requires correct speed and voltage to illuminate. The EDG will be up to speed but the field will not flash because the K-1 (Field Short) relay will remain de-energized, shorting the field.

OPS 4-06, Obj. 4 & 7; OPS 4-06 Section 1-4.0.D.4, 1-4.0.L.5 & Section 1-8.0;
AR-302 EP 1195

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

43. 059AK1.01 001/1/2/RO #43/MEM 2.7/3.1/BANK/R/CR03501/2-030-001

The following conditions exist:

- 100% reactor power.
- Approximately 1000 gallons of Reactor Coolant has been drained to an empty RCBT.
- Two hours later a valve alignment error results in an accidental liquid radwaste release of the contents of the RCBT to the environment.

Which of the following statements describes a potential radiation hazard associated with this release and the intensity of that radiation hazard?

- A. Nitrogen-16 will be a hazard and will produce a high energy gamma.
- B. Nitrogen-16 will be a hazard and will produce a low energy Beta.
- C. Tritium will be a hazard and will produce a high energy gamma.
- D. ✓ Tritium will be a hazard and will produce a low energy Beta.

Reasons:

- A. & B. Nitrogen-16 has a very short half life and would be a minimal contributor to radiation hazards within a few minutes of storage in the RCBT.
- C. Tritium produces a very low energy Beta.
- D. Correct. The tritium beta has an energy of about 20 Kev.

OPS 2-30, Obj. 74; OPS 2-30 Section 2-13.0.I

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

44. 059K3.02 001/2/1/RO #45/C/A 3.6/3.7/BANK/R/CR03501/4-012-013

The following plant conditions exist:

- A power increase is in progress with reactor power at 55%.
- VBDP-11 is out of service.
- "A" train Main Feedwater (MFW) flow momentarily decreases to 9 E5 lbm/hr then immediately recovers back to 2.8 E6 lbm/hr.
- "A" and "B" FW Loop Demands are at 47%.

If AMSAC Channel "B" were to actuate one minute later which of the following describes the resulting plant response?

- A. ✓ No plant transient will occur.
- B. Both trains of EFIC will be actuated; the turbine and reactor will trip.
- C. Both trains of EFIC will be actuated; the turbine will trip and the reactor will runback to about 18% power.
- D. Only the "B" train of EFIC will be actuated; the turbine and reactor will trip.

Reasons:

- A. Correct. "A" MFW flow would have to decrease to <17% of scale on both the SU and main FW flow ranges. With FW loop demands at 47% the MBVs are not open and flow is still seen by the SU flow transmitters. The values given will only decrease main FW flow below 17%. The loss of VBDP-11 de-energizes "D" Channel of EFIC. AMSAC Channel "B" inputs to this channel so its actuation will have no additional effect on EFW.
- B. Both channels of AMSAC have not actuated.
- C. Both channels of AMSAC have not actuated and the reactor would trip, not runback to 18% power.
- D. If AMSAC actuates both trains of EFIC will be actuated.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 4-12, Obj. 4; OPS 4-31 Obj. 2, 4 & 6, OPS 4-12 Section 2-3.0.B; OPS 4-31
Sections 1-2.0.A, B & C

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

45. 061AK2.01 001/1/2/RO #23/C/A 2.5/2.6/BANK/R/CR03501/4-025-012

The following plant conditions exist:

- The reactor has been tripped for 30 minutes
- Tave is constant at 552° F.
- Pressurizer level is decreasing.
- MUV-31 is full open.
- Makeup tank level is decreasing.
- Reactor Building (RB) pressure is 0.5 psig and steady.
- The "A" OTSG is at low level limits.
- The "B" OTSG is at 40 inches and increasing.

Which of the following radiation monitors would be in alarm or increasing towards an alarm setpoint?

- A. RM-A6, Reactor Building Ventilation Duct Monitor.
- B. ✓ RM-A12, Condenser Vacuum Pump Off Gas Monitor.
- C. RM-G26, "B" Main Steam Line Monitor.
- D. RM-G29, Containment D Ring Monitor.

Reasons:

- A. These parameters indicate an OTSG tube leak is in progress. Unless there is also a steam leak in containment this monitor will not increase.
- B. Correct. RM-A12 will detect any activity, not just short-lived N-16 gammas.
- C. While this monitor is very accurate when the reactor is on line producing N-16 gammas within a few minutes after the reactor is shut down this monitor will trend back to its base value.
- D. These parameters indicate an OTSG tube leak is in progress. Unless there is also a steam leak in containment this monitor will not increase.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 4-25, Obj. 3; OPS 4-25 Section 1-4.0.D & 1-4.0.F.7

RO - Slightly modified - count as Bank.

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

46. 061K5.01 001/2/1/RO #46/MEM 3.6/3.9/BANK/3.9/CR03501/5-116-003

EOP-13, Rule 3, EFW/AFW Control, contains the following step:

IF adequate SCM does NOT exist,
AND level in available OTSGs is NOT at or trending toward "ISCM" level,
THEN establish manual required EFW flow.

Which of the following plant conditions would require EFW/AFW flow in order to ensure sufficient primary-to-secondary heat transfer for core protection?

Certain size:

- A. large break LOCAs with two Makeup pumps available.
- B. large break LOCAs with one Makeup pump available.
- C. small break LOCAs with two Makeup pumps available.
- D. ✓ small break LOCAs with one Makeup pump available.

Reasons:

- A. & B. Large break LOCAs do not require this minimum flow per the step basis document.
- C. This minimum flow is not required for core cooling if two MUPs are available.
- D. Correct. The step basis document lists a SBLOCA with only one MUP as the reason for this step.

OPS 5-116, Obj. 2; EOP-13, Rule 3; EOP Cross-Step Document

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

47. 062AK3.03 001/1/1/RO #17/C/A 4.0/4.2/BANK/R/CR03501/5-014-005

The following plant conditions exist:

- A controlled plant shutdown is in progress due to a shaft failure of RWP-2A.
- The reactor is critical with RCS temperature at 545° F.
- PZR level is 95".
- The SPO reports that CWTS-2 is completely clogged with debris and will not start. The flume water level is almost empty.

Based on these conditions, which of the following actions should be evaluated and what would be the reason for performing the action?

- A. Continue the shutdown and inform maintenance of the problem.
Redundant equipment is available to compensate for CWTS-2 fouling.
- B. Consider tripping the reactor and actuating EFIC due to the imminent loss of Circulating Water cooling to the condenser.
- C. Consider tripping the reactor due to pressurizer level being under 100 inches.
- D. ✓ Consider tripping the reactor due to the imminent loss of Nuclear Services Raw Water flow.

Reasons:

- A. This failure will render RWP-1 and RWP-2B inoperable. No redundant equipment is available to supply SW RW so the reactor should be tripped.
- B. CW cooling is not affected by this failure.
- C. During a plant startup or shutdown PZR level is allowed to be <100" without tripping the reactor.
- D. Correct. Per AP-330, the reactor should be tripped on a loss of SW RW flow.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 5-61, Obj. 5; AP-330 Step 3.2

History: NRCN99

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

48. 062K1.02 001/2/1/RO #47/MEM 4.1/4.4/BANK/R/CR03501/4-006-005

SP-354A, Monthly Functional Test of the Emergency Diesel Generator, is in progress with the EDG output breaker closed and an electrical load of 2800 kW. A grid disturbance occurs and grid frequency *slightly* decreases.

Which of the following describes the effect this will have on the operating EDG?

- A. The EDG output breaker will automatically open due to a Volts/Hertz lockout relay actuation.
- B. The EDG output breaker will automatically open due to a reverse power relay actuation.
- C. There should be minimal effect to the EDG due to the Unit/Parallel switch being selected to Parallel.
- D. ✓ There should be minimal effect to the EDG due to the Speed Droop being set at 60.

Reasons:

- A. A Voltz/Hertz lockout relay actuation will only open the main generator output breakers.
- B. The effect of a grid frequency decrease could only attempt to increase power out of the EDG.
- C. The Unit/Parallel switch being selected to Parallel only affects voltage droop. The speed droop selection determines how the EDG responds to changes in frequency.
- D. Correct. With Speed Droop set to 60 the EDG is allowed to slow down slightly and follow grid frequency so that it does not attempt to pick up the whole grid.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 2-16, Obj. 42; OPS 2-16 Section 1-7.0.R; OPS 4-06 Section 1-4.0.B.2.d

History: NRCN99

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

49. 063K2.01 001/2/1/RO #48/C/A 2.9/3.1/NEW/R/CR03501/

DPDP-1B has experienced a catastrophic failure and power is lost to the DC bus it supplies. Which of the following components will lose power as a result of this failure?

- | | | |
|----|--------|-------------------------------------|
| 1. | EFV-32 | EFP-2 block valve to the "B" OTSG |
| 2. | EFV-33 | EFP-3 block valve to the "B" OTSG |
| 3. | EFV-55 | EFP-2 control valve to the "B" OTSG |
| 4. | EFV-57 | EFP-3 control valve to the "B" OTSG |

- A. 1 and 2
- B. ✓ 2 and 3
- C. 3 and 4
- D. 1 and 3

Reasons:

- A. Due to single failure concerns in the EFW system the block valves are powered from the opposite electrical train. EFV-32 is powered from DPDP-8C, which is powered from DPDP-1A.
- B. Correct. See A above. EFV-33 is powered from DPDP-8D and EFV-55 is powered from DPDP-5B. Both of these DPDPs are powered from DPDP-1B
- C. EFV-57 is powered from DPDP-5A, which is powered from DPDP-1A.
- D. See A above. Even though EFV-32 is in the "B" EFW train flowpath it is powered from DPDP-8C, which is powered from DPDP-1A.

OPS 4-37, Obj. 3; OPS 4-37 Sections 1-4.0.H.2 and 1-4.0.I.7

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

50. 064A4.06 001/2/1/RO #49/MEM 3.9/3.9/BANK/R/CR03501/4-006-002

EOP-8, LOCA Cooldown, is in progress. HPI and LPI actuated as designed and recovery efforts are in progress. The CRS directs you to shut down the EDGs. Which of the following methods *should normally* be used to shut down an EDG in this situation?

- A. Place the Normal/At Engine switch to At Engine and direct the primary plant operator to depress the reset pushbuttons in the EDG engine room.
- B. Bypass or reset the ES actuation and direct the primary plant operator to depress the Emergency Stop pushbutton in the EDG control room.
- C. ✓ Bypass or reset the ES actuation and depress the Stop pushbutton on the main control board.
- D. Use the speed changer to decrease EDG load to approximately 100 kW and then depress the stop pushbutton on the main control board.

Reasons:

- A. Operation of this switch will prevent the EDG from starting due to an ES actuation but will not shutdown the engine if it is already running.
- B. The Emergency Stop pushbutton will stop the EDG with an ES signal present but this would not be the normal method to secure the diesel.
- C. Correct. The HPI actuation started the EDGs. Since there was no LOOP then the engines will be running unloaded. The ES signal must be bypassed or reset to clear the start signal to the EDGs. Then the Stop pushbutton on the MCB should be depressed.
- D. The diesel is not loaded and ES must be bypassed or reset to secure the engine from the control room.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 4-06, Obj. 4; OPS 4-06 Sections 1-4.0.C.1

History: NRCN99

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

51. 064G2.1.8 001/2/1/RO #50/MEM 3.8/3.6/BANK/R/CR03501/4-006-004

A step in SP-354A, Monthly Test of EDG-1A, requires the PPO to ensure that the Unit-Parallel switch is selected to 'Parallel'. Where would you direct the PPO to go to perform this function and why is it necessary?

The EDG-1A Unit-Parallel switch is located in(on) the ____ (1) _____. This switch allows sharing of ____ (2) ____ load when selected to "Parallel".

(1)

(2)

- | | | |
|------|------------------|----------|
| A. | EDG control room | real |
| B. ✓ | EDG control room | reactive |
| C. | Engine governor | real |
| D. | Engine governor | reactive |

Reasons:

- A. This switch allows the sharing of reactive load.
- B. Correct. The location and reason are correct.
- C. This switch is located in the EDG control room and allows the sharing of reactive load.
- D. This switch is located in the EDG control room.

OPS 4-06, Obj. 3, 4 & 6: OPS 4-06 Section 1-4.0.L.6.b)4) and 1-4.0.B.2.d)

History: NRCN99

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

52. 071A3.03 001/2/2/RO #52/MEM 3.6/3.8/BANK/R/CR03501/4-025-005

A small leak has just occurred in the Waste Gas Decay Tank area. Which of the following describes the **first** radiation monitor that should detect this leak and the automatic actuations that should occur?

- A. ✓ RM-A3; trips AHF-11A/B and closes AHD-29 & 36 (area supply and exhaust dampers).
- B. RM-A3; trips AHF-11A/B, closes WDV-393, 394 & 395 (recycle isolation valves) and closes WDV-439 (common waste gas isolation).
- C. RM-A11; closes WDV-393, 394 & 395 (recycle isolation valves) and closes WDV-439 (common waste gas isolation).
- D. RM-A11; trips AHF-11A/B, closes WDV-436, 437 & 438 (tank outlet isolation valves).

Reasons:

- A. Correct. RM-A3 monitors this area. When actuated it will trip the AB supply fans and close the general area dampers.
- B. If RM-A3 trips it will not close the recycle valves or the common waste gas isolation valve.
- C. If RM-A11 trips then these actions would occur. RM-A11 is not in service unless a waste gas release is in progress and will only trip if the preset release values are exceeded.
- D. These actions occur on a trip of RM-A2 which may trip eventually but will not be the first monitor to actuate.

OPS 4-25, Obj. 3; OPS 4-25 Section 1-4.0.F.5.d

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

53. 073G2.3.11 001/2/1/RO #51/C/A 2.7/3.2/NEW/R/CR03501/

The plant is at normal full power operation. The "A" ECST is ready for release. Which of the following actions, if any, are required to satisfy the interlock(s) for WDV-892 (RM-L2 discharge isolation valve) and allow the valve to be opened?

- A. ✓ No additional actions are required.
- B. Start RWP-2A or RWP-2B (SW/RW).
- C. Start RWP-3A or RWP-3B (DH/RW).
- D. Place the RML-2/7 Valve/Pump Interlock By-Pass switch to "By-Pass".

Reasons:

- A. Correct. With the plant at normal power operation RWP-1 should be running and the RML-2/7 Valve/Pump Interlock By-Pass switch should be selected to "Normal". This meets the interlock requirements for WDV-892.
- B. Since RWP-1 is already running it is not required to start another SW/RW pump.
- C. If the RML-2/7 switch was selected to "By-Pass" then starting RWP-3A or 3B would allow WDV-892 to be opened.
- D. If this action is performed a DH/RW pump must also be started.

OPS 4-59, Obj. 4; OPS 4-59 1-4.0 HH 2; OPS 4-25 1-4.0 G

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

54. 076A4.01 001/2/1/RO #52/MEM 2.9/2.9/NEW/R/CR03501/

Which of the following describes the status of the RW system after a loss of offsite power has occurred? (assume sufficient time for all automatic actions to occur)

- A. As soon as power is restored to the ES 4160V buses RWP-2B will start due to RW system low pressure.
- B. As soon as power is restored to the ES 4160V buses RWP-2A and RWP-2B will start due to RW system low pressure.
- C. The automatic start on low pressure is blocked by the 4160V undervoltage lockout. No RWPs will be running.
- D. ✓ The automatic start on low pressure is blocked by the EDG output breaker closure. No RWPs will be running.

Reasons:

- A. The low pressure start for RWP-2B is blocked by breaker 3210 closure.
- B. The low pressure start for RWP-2B is blocked by breaker 3210 closure. RWP-2A does not have an automatic start on low pressure.
- C. The 4160V undervoltage lockout is not the signal that blocks the low pressure start of RWP-2B.
- D. Correct. The low pressure start for RWP-2B is blocked by breaker 3210 closure to ensure that a LOOP, coincident with an ES actuation, will not overload the EDG.

OPS 4-57, Obj. 4; OPS 4-57, Section 1-4.0.C.5.b

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

55. 078K1.05 001/2/1/RO #53/MEM 3.4/3.5/BANK/R/CR03501/ROT-5-91-029

The Control Room has entered EOP-12, Station Blackout, and has notified the SPO to align the backup air supply to the ADVs by opening IAV-676, "ADV Backup Air Supply ISO".

The purpose of this action is to:

- A. align air to the local control station to allow the SPO control of the ADVs as directed by the Control Room.
- B. force the ADVs closed since they have failed open and are causing an overcooling event due to the loss of IA.
- C. provide the Control Room with continued remote operation of the ADVs since the normal air supply is automatically isolated during a Station Blackout.
- D. ✓ provide the Control Room with continued remote operation of the ADVs because a sustained loss of IA can cause the MSIVs to drift close.

Reasons:

- A. The ADVs may be manually operated but there is no local control station.
- B. Aligning the backup air to the ADVs does not force them close. It only aligns an alternate air source for continued operation.
- C. There is no automatic signal to isolate the air supply to the ADVs.
- D. Correct. MSIVs will drift close on a loss of air.

OPS 5-91, Obj. 1; OPS 5-91 Enclosure 1, Page 11

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

56. 078K3.02 001/2/1/RO #54/MEM 3.4/3.6/NEW/R/CR03501/

The following plant conditions exist:

- A slow loss of Instrument Air pressure is occurring.
- At time $T = 0$ air pressure is 79 psig at the MFW valves.
- At time $T = 1$ air pressure is 34 psig at the MFW valves.

At $T = 0$ the _____ (1) _____ will lock in position. At $T = 1$ the _____ (2) _____ will lock in position. Depressing the associated valve's "Air Fail Reset" pushbutton on the MCB will allow air from the in-line accumulator(s) to be used to reposition the _____ (3) _____.

(1)

(2)

(3)

- | | | | |
|------|-------------|-------------|-------------|
| A. | SUCV & LLCV | None | SUCV & LLCV |
| B. ✓ | SUCV | LLCV | LLCV |
| C. | LLCV | SUCV | SUCV |
| D. | None | SUCV & LLCV | LLCV |

Reasons:

- A. The LLCV will not lock in position until $T = 1$. The SUCV does not have an accumulator.
- B. Correct. The SUCV will lock in position at < 80 psig. The LLCV will lock in position at < 35 psig. Depressing the "Air Fail Reset" pushbutton will allow air from the accumulator to reposition the LLCV.
- C. The LLCV will not lock in position until $T = 1$. The SUCV will lock in position at $T = 0$. The SUCV is not supplied with an air accumulator.
- D. The SUCV will lock in position at $T = 0$. At $T = 1$ the SUCV is already locked in position.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 4-68, Obj. 3 & 7; OPS 4-68 Sections 1-4.0.U.5 and 1-4.0.X.5

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

57. 086K4.06 001/2/2/RO #65/MEM 3.0/3.3/BANK/R/CR03501/4-007-002

A fire alarm has sounded for the "A" main feedwater pump due to an oil fire. The cardox system has cycled one time and the fire is still burning. How can the cardox system be re-actuated such that the CO₂ will continue to flow without any time limits?

- A. Using the Control Room Spurt pushbuttons.
- B. Using the manual actuation pushbutton on the Fire Service Panel in the Control Room.
- C. ✓ Using the manual actuation station on the outside wall of the control room (TB 145' elev) and at the storage tank (TB 119' elev).
- D. Manually override the individual pilot valve (TB 145' elev) for the "A" MFP using the handwheel and operate the manual actuation station at the storage tank (TB 119' elev).

Reasons:

- A. Pushbutton used in the Control Room utilizes the Timer.
- B. There is no pushbutton for Cardox on the Fire Service Panel.
- C. Correct. The manual (break glass) actuation stations have to operated for the individual zone that is on fire and at the master valve (COV-24) manual (break glass) station on the wall north of the cardox tank.
- D. The individual pilot valves have no handwheel to provide manual override.

OPS 4-07, Obj. 3 & 4; OPS 4-07 Section 1-4.0.O.6.f

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

58. 103K4.06 001/2/1/RO #55/MEM 3.1/3.7/BANK/R/CR03501/ROT 4-056-068

The plant was operating at 100% power when a steam leak on the "A" steam generator occurred in the reactor building (RB). RB pressure increased to 5 psig. In this situation the nuclear services closed cycle cooling (SW) system is providing cooling water to:

- A. Reactor coolant pumps only.
- B. Reactor coolant pumps and control rod drive mechanisms.
- C. ✓ Reactor coolant pumps and reactor building main fan assemblies.
- D. Reactor coolant drain tank and reactor building main fan assemblies.

Reasons:

- A. RB main fan assemblies will also be cooled by SW.
- B. CRDs have SW isolated when an RBIC actuation occurs at 4 psig RB pressure.
- C. Correct. RCPs are not isolated because there is no coincident low level in the SW surge tank. RB main fan assemblies switched from CI to SW on an RBIC actuation.
- D. RCDT has SW isolated when an RBIC actuation occurs at 4 psig RB pressure.

OPS 4-13, Obj. 2; OPS 4-13 Table 6

History: NRCN99

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

59. BW/A04AA2.1 001/1/2/RO #24/C/A 3.3/3.7/MOD/R/CR03501/ROT 5-29-005

Reactor power is 40% when a turbine trip occurs. Valve indications are as follows:

Governor Valve #1 is closed.
Governor Valve #2 is closed.
Governor Valve #3 is open.
Governor Valve #4 is open.
Throttle Valve #1 is closed.
Throttle Valve #2 is closed.
Throttle Valve #3 is closed.
Throttle Valve #4 is closed.

Which of the following best describes the operators required actions for this event?

- A. ✓ Enter AP-660, Turbine Trip.
- B. Close the MSIVs (prompt and prudent action) and enter AP-660, Turbine Trip.
- C. Enter EOP-02, Vital Systems Status Verification.
- D. Close the MSIVs (prompt and prudent action) and enter EOP-02, Vital Systems Status Verification.

Reasons:

- A. Correct. Since only GVs are open AP-660 entry conditions are met.
- B. The MSIVs are not required to be closed unless at least 1 GV AND 1 TV are open.
- C. A turbine trip at 40% power does not require a reactor trip.
- D. The MSIVs are not required to be closed unless at least 1 GV AND 1 TV are open and a turbine trip at 40% power does not require a reactor trip.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 5-29, Obj. 4; AP-660; AI-505 Step 4.1.4.1.b

RO - Modified

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

60. BW/A05AK2.1 001/1/2/RO #25/C/A 4.0/3.8/BANK/R/CR03501/4-006-001

Reactor Building pressure is 4.8 psig. Which of the following describes the status of the EDGs and the effect of protective relay actuation on the output breaker?

- A. ✓ The EDGs are running with their 'Ready' lights illuminated. Actuation of the generator differential current relay will shut down the engine and trip or prevent closure of the output breaker.
- B. The EDGs are running with their 'Ready' lights illuminated. Actuation of the exciter field short relay will shut down the engine and trip or prevent closure of the output breaker.
- C. The EDGs are running with their 'Run' lights illuminated. Actuation of the generator differential current relay will shut down the engine and trip or prevent closure of the output breaker.
- D. The EDGs are running with their 'Run' lights illuminated. Actuation of the exciter field short relay will shut down the engine and trip or prevent closure of the output breaker.

Reasons:

- A. Correct. Since there is no undervoltage the EDG will only start, but not load the bus. The generator differential current relay will stop the engine even with an ES signal present.
- B. The exciter field short relay will only trip or prevent closure of the output breaker.
- C. Since there is no undervoltage condition the 'Run' lights will not be illuminated.
- D. Since there is no undervoltage condition the 'Run' lights will not be illuminated. The exciter field short relay will only trip or prevent closure of the output breaker.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 4-06, Obj. 4; OPS 4-06 Section 1-4.0.E.9; OPS 4-90 Section 1-4.0.F.2

History: NRCN99

RO - Bank

Reference(s) provided: **None**

QUESTIONS REPORT
for RO - NRC 2K5 BANK

61. BW/A07AK1.2 001/1/2/RO #26/C/A 3.3/3.7/BANK/R/CR03501/5-083-005

The plant is at 80% power with the following maintenance activities in progress:

- "B" SCHE shoot and clean activities.
- "C" CWP breaker investigation (breaker tripped open for no apparent reason).

The "Cond. Pump Pit Sump Level High" alarm has just annunciated in conjunction with the SPO reporting water coming out of the SCHE and that CWV-5, "B" SCHE inlet valve from CWP-1D, has failed partially open. Water level in the CDP pit is about 1' and rising slowly.

Based on these conditions which of the following actions are required?

- A. Trip the reactor and transition to EOP-02; then stop all CWPs.
- B. Trip the reactor and transition to EOP-02; then stop CWP-1D.
- C. Concurrently perform AP-510; stop CWP-1D and continue power operation at < 60%.
- D. ✓ Concurrently perform AP-510; when reactor power is < 45% trip the turbine; stop CWP-1D and transition to AP-660.

Reasons:

- A. The reactor does not need to be tripped and only the affected CWP should be stopped.
- B. The reactor does not need to be tripped.
- C. Since the affected CWP is in a hotwell that has only one CWP running then power must be decreased to < 45% and the turbine tripped.
- D. Correct. Since the affected CWP is in a hotwell with only 1 CWP running then power will have to be reduced to <45% and the turbine tripped.

OPS 5-83, Obj. 7; AP-1050 Step 3.6

RO - Bank

Reference(s) provided: AP-1050

QUESTIONS REPORT
for RO - NRC 2K5 BANK

62. BW/E04EK2.2 001/1/1/RO #18/MEM 4.2/4.2/MOD/R/CR03501/5-102-004

EOP-4, Inadequate Heat Transfer, has been entered. EFP-2 is the only running EFW pump. Tincore is currently 510° F. You are directed to increase and maintain OTSGs as a heat sink. Step details are as follows:

Lower OTSG PRESS using TBVs (preferred) or ADVs until the higher of the following occurs:

___ OTSG PRESS 200 psig (if EFP-2 is only running EFWP)

___ OTSG Tsat 90 to 110° F below Tincore

What would be the proper OTSG pressure for this situation?

- A. 200 psig
- B. ✓ 260 psig
- C. 600 psig
- D. 730 psig

Reasons:

- A. This value would be correct if Tincore was lower and EFP-2 was the only running EFW pump.
- B. Correct. Using approx. 400° F Psat will be about 260 psig.
- C. This is where OTSG isolation will occur.
- D. This is saturation pressure for a Tincore temp of 510° F.

OPS 5-102, Obj. 5; EOP-4 Step 3.61 & Figure 4

RO - Modified

Reference(s) provided: Steam Tables

QUESTIONS REPORT
for RO - NRC 2K5 BANK

63. BW/E05EK2.2 001/1/1/RO #11/MEM 4.2/4.4/NEW/R/CR03501/

Step 3.34 in EOP-5, Excessive Heat Transfer, states the following:

IF all the following exist:

___ At least 1 RCP running

___ Level in any OTSG $\leq 12 \frac{1}{2}$ inches

THEN establish RCS cooldown rate of $\approx 6^\circ \text{ F/hr.}$

What is the basis for this limit?

- A. Aids in maintaining non-condensable gases in solution.
- B. Limits Delta Tc control problems between the dry OTSG and the good OTSG.
- C. Matches RCS cooldown rate with OTSG tube cooldown rate of the dry OTSG.
- D. ✓ Matches RCS cooldown rate with OTSG shell cooldown rate of the dry OTSG.

Reasons:

- A. Non-condensable gases will not have been released in an overcooling event.
- B. At this power level core delta T is essentially 0° F so delta Tc control is not a concern.
- C. OTSG tube temperature will be the same as RCS temperature.
- D. Correct. OTSG shell cooldown rate due to ambient losses is about 6° F/hr. Since the OTSG is dry tube to shell stresses must be minimized. By keeping the RCS cooldown rate matched with the shell cooldown rate these stresses will be maintained within analyzed ranges.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 5-94, Obj. 3; EOP Cross-Step Document, EOP-5, Step 3.34

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

64. BW/E08EK3.3 001/1/2/RO #27/MEM 4.0/3.6/NEW/R/CR03501/

EOP-8, LOCA Cooldown, performance is in progress. Step 3.9 requires the operator to ensure emergency RB cooling is in service.

Which of the following describes the number of RB main fans (AHF-1A, 1B and 1C) that should be started or ensured running and the reason for this requirement?

- A. Both ES selected RB main fans; to ensure RB temperature and pressure are maintained within the analyzed values.
- B. Both ES selected RB main fans; to ensure balanced EDG loading if a LOOP was in progress or were to occur.
- C. ✓ One ES selected RB main fan; to ensure the SW system heat load is maintained within analyzed values.
- D. One ES selected RB main fan; to ensure additional margin on the opposite train's EDG if a LOOP was in progress or were to occur.

Reasons:

- A. Only 1 RB fan should be in service. One fan, with an RB Spray pump, is adequate to ensure RB temperature and pressure are maintained within the analyzed values.
- B. Only 1 RB fan should be in service.
- C. Correct. One RB fan in service to ensure that the SW system does not get too hot.
- D. EDG margin is not a reason for this requirement.

OPS 4-63, Obj. 4; OPS 4-63 Section 1-4.0.B.1.a; EOP-8 Step 3.9

RO - New

Reference(s) required: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

65. BW/E10EK1.2 001/1/1/RO #1/MEM 3.5/4.0/BANK/R/CR03501/ROT 5-096-071

Initial plant conditions:

- The plant is in Mode 3 with a cooldown in progress per OP-209, Plant Cooldown.
- Control Rod Drive Group 1 is fully withdrawn.

A loss of off-site power (LOOP) occurs.

Plant conditions 20 minutes later are:

- RCS temperatures are stable.
- Off-site power is restored.

Which of the following is the appropriate *initial* EOP entry and next subsequent transition for the given conditions?

- A. Enter EOP-02, Vital Systems Status Verification, and transition to EOP-09, Natural Circulation Cooldown, as directed by EOP-02 follow-up steps.
- B. Enter EOP-09, Natural Circulation Cooldown, and transition to EOP-10, Post Trip Stabilization, as directed by EOP-09 follow-up steps.
- C. ✓ Enter EOP-02, Vital Systems Status Verification, and transition to EOP-10, Post Trip Stabilization, as directed by EOP-02 follow-up steps.
- D. Enter EOP-09, Natural Circulation Cooldown, and transition to EOP-02, Vital Systems Status Verification, as directed by EOP-09 follow-up steps.

Reasons:

- A. EOP-02 does not direct a transition to EOP-09. The operator should know, without a procedure, that a natural circulation cooldown will not be started if the plant is stable and off-site power is available.
- B. & D. EOP-9 is only entered when no other EOP is applicable. In this case EOP-02 is applicable.
- C. Correct. Entry conditions for EOP-2 are met and EOP-2 will transition to EOP-10.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 5-96, Obj. 1; EOP-2; EOP-9

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

66. G2.1.12 001/GENERIC/1/RO #66/C/A 2.9/4.0/BANK/R/CR03501/4-006-011

One Emergency Diesel Generator (EDG) is declared inoperable at 0200. The first SR 3.8.1.1 was performed at 0300. TS 3.8.1 states:

Condition	Required Action	Completion Time
One EDG inoperable.	Perform SR 3.8.1.1 for OPERABLE offsite circuit(s).	1 hour <u>AND</u> Once per 8 hours thereafter.

Which of the following is the *latest* allowable completion time for the next performance of SR 3.8.1.1?

- A. 1000
- B. 1100
- C. 1200
- D. ✓ 1300

Reasons:

- A. This time could be calculated by adding the 8 hour frequency to the original time that the EDG was declared inoperable. This answer is incorrect because it does not include the allowable 25% (2 hr) extension and does not start from completion of the previous SR 3.8.1.1.
- B. This time could be calculated by adding the 8 hour frequency plus the 25% (2 hr) allowable extension to the original time that the EDG was declared inoperable. This answer is incorrect because it does not start from the completion of the previous SR 3.8.1.1.
- C. This time could be calculated by adding the 8 hour frequency to the completion time of the previous SR 3.8.1.1. This answer is incorrect because it does not include the allowable extension of 25% (2 hrs).
- D. Correct, the start time is completion of the previous SR 3.8.1.1 and the required completion time includes the maximum allowed 25% (2 hr) extension. (0300 + 8 hrs + 2 hrs (extension) = 1300)

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 5-01, Obj. 6; TS 3.8.1

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

67. G2.1.29 001/GENERIC/I/RO #67/MEM 3.4/3.3/BANK/R/CR03501/5-038-001

The following conditions exist for a normally locked open valve:

- The valve was repaired during the latest outage.
- An initial valve lineup is being performed.
- The position must be verified.

Which of the following is the preferred method to determine the position of this valve? (initial verifier)

- A. Verification that the locking device is properly installed on the valve.
- B. Verification that the valve stem is in the open position and then locking the valve.
- C. Attempting to move the valve in the open direction and then locking the valve.
- D. ✓ Moving the valve in the closed direction, then in the open direction and then locking the valve.

Reasons:

- A. This method would only verify that the valve is locked in position. Does not verify what position.
- B. Valve stem position may be used for a backup method per AI-500, Appendix 10, Section 4.4.
- C. Valve maybe stuck in the closed position and not move giving a false open indication.
- D. Correct. This is the method used for the initial verification per AI-500, Appendix 10, Section 4.1.

OPS 5-38, Obj. 32; AI-500, Appendix 10, Step 4.1 & 4.2

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

68. G2.2.1 001/GENERIC/2/RO #68/C/A 3.7/3.6/NEW/R/CR03501/

The following plant conditions exist:

- A reactor startup is in progress.
- Control rod index is 245%.
- +1% $\Delta K/K$ rod position of the ECP is 250%.
- Initial count rate was 4×10^1 on source range NIs 1 & 2.
- Current count rate is stable at 6×10^2 on source range NIs 1 & 2.

Which of the following describes the next action that should be taken?

- A. ✓ Insert control rod groups 2 through 7 and evaluate.
- B. Begin emergency boration to ensure a 1% shutdown margin.
- C. Continue with the startup and request a new boron value from Chemistry.
- D. Add demineralized water to lower rod index and continue the reactor startup.

Reasons:

- A. Correct. Per OP-210 all groups except group 1 should be driven in and a new ECP calculated.
- B. As long as rod index is within the ECP values you have not violated the OP-103D Rod Withdrawal Index curve and > 1% shutdown margin still exists.
- C. 30 times your initial count rate is 1200 cps. With your current count rate at 600 cps you would not expect to reach criticality within the allowed rod index upper limit. The startup should not continue from this point.
- D. While this may be the ultimate solution the rods must be inserted and a re-evaluation completed prior to deborating.

QUESTIONS REPORT
for RO - NRC 2K5 BANK

OPS 5-104, Obj. 5; OP-210 Step 4.2.18 & 4.2.20

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

69. G2.2.11 001/GENERIC/2/RO #69/MEM 2.5/3.4/BANK/R/CR03501/5-077-002

Given the following conditions:

- The quarterly Reactor Building Spray Pump surveillance is in progress.
- The operator who is reviewing the surveillance and an I&C technician inform the Control Room Supervisor that the tolerance listed in the surveillance acceptance criteria is incorrect.
- The I&C technician states that a new flow instrument has been installed and the tolerances should be $\pm 2\%$ and not $\pm 5\%$ as indicated in the procedure.

Which of the following actions should be taken?

- A. Stop the surveillance and perform a Temporary Change per PRO-NGGC-0204.
- B. Have the CRS make a note in the procedure and continue with the surveillance.
- C. Continue with the surveillance and record in the Component Deviation Log.
- D. ✓ Stop the surveillance and perform a Permanent Procedure Revision.

Reasons:

- A. A change of tolerances is not within the allowable procedural changes which can be made under the "Temporary Change" guidance of PRO-NGGC-0204.
- B. & C. PRO-NGGC-0200 requires a permanent change.
- D. Correct. This is classified as a "Change of Intent" which requires permanent procedure revision per PRO-NGGC-0204.

OPS 5-77, Obj. 6 & 8; PRO-NGGC-0204, Step 3.5

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

70. G2.2.28 001/GENERIC/2/RO #70/MEM 2.6/3.5/NEW/R/CR03501/NEW

The plant is in Mode 6 with fuel handling activities in progress. Which one of the following individuals is **directly** responsible for monitoring the countrate during core alterations?

- A. Refueling Engineer
- B. RB Upender Operator
- C. Superintendent Shift Operations
- D. ✓ Control Center Refueling Communicator

Reasons:

- A. The Refueling Engineer is a floating position, not continuously in the control room.
- B. The RB upender operator will probably hear a change in count rate but is not responsible for monitoring.
- C. The SSO has multiple other duties during an outage and does not continuously stay in the control room during fuel movement activities.
- D. Correct. The CCRC's responsibility, at a minimum, is to monitor countrate and notify the Refueling Supervisor of unexpected changes.

OPS 5-50, Obj. 2; FP-203 Step 3.4.3.5.3

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

71. G2.3.1 001/GENERIC/3/RO #71/MEM 2.6/3.0/NEW/R/CR03501/

The plant is in Mode 5. You and your co-worker are working near each other in the Letdown Cooler room performing a valve lineup. The lineup should be complete in about 10 minutes. When you check your ED it is reading 0 mrem. Your co-worker's ED is reading 34 mrem. Which of the following actions should be taken?

- A. Exit the Letdown Cooler room, move to a low dose area and promptly notify the HP reactor building rover.
- B. ✓ Exit the reactor building and the Auxiliary Building and promptly notify the HP office.
- C. Exit the reactor building, move to a low dose area within the Auxiliary Building and promptly notify the HP office.
- D. Inform your co-worker to stay near you until the valve lineup is complete so that you will know approximately how much dose you have received. When the lineup is complete exit the RCA and promptly notify the HP office.

Reasons:

- A. By procedure you should immediately exit the RCA and notify HP.
- B. Correct. By exiting the AB you are out of the RCA.
- C. The AB should also be exited.
- D. By procedure you must exit the RCA if you suspect your ED has malfunctioned.

OPS 5-43, Obj. 11; RSP-101 Section 4.21

RO - New

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

72. G2.3.10 001/GENERIC/3/RO #72/MEM 2.5/2.9/BANK/R/CR03501/2-032-005

Work is to be completed in an area with a radiation point source of 10 R/hr. Two feet away from this source the dose rate is 8 R/hr. Which of the following will have the most effect on reducing total dose received for the job?

- A. Reducing the amount of time to complete the job by 60%.
- B. ✓ Moving the job from two feet to four feet from the source
- C. Using two employees to complete the job in 50% of the time.
- D. Adding a half thickness of shielding material between the job and the source.

Reasons:

- A. This action would reduce the total dose by 60%.
- B. Correct. This action would reduce the total dose by 75%.
 $I_1/I_2 = D^2_2/D^2_1$
 $8/x = 4^2/2^2$
 $I_2 = 2 \text{ R/hr}$
- C. This action would result in no change in total dose.
- D. This action would reduce the total dose by 50%.

OPS 2-32, Obj. 12; OPS 2-32 Section 1-7.0.B.7

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

73. G2.4.35 001/GENERIC/4/RO #74/MEM 3.5/3.5/BANK/R/CR03501/5-091-001

With LPI established at > 1400 gpm in both lines a step in EOP-3, Inadequate Subcooling Margin, instructs the PPO to unlock and close the CFT isolation valve breakers. Where are these breakers located and what is the purpose for this action?

- A. ES MCC 3A & 3B; to allow the control room operators to verify the valves are open to provide an additional source of makeup to the RCS.
- B. ES MCC 3A & 3B; to allow the control room operators to close the valves to prevent nitrogen injection into the RCS after the tanks are emptied.
- C. ES MCC 3AB; to allow the control room operators to verify the valves are open to provide an additional source of makeup to the RCS.
- D. ✓ ES MCC 3AB; to allow the control room operators to close the valves to prevent nitrogen injection into the RCS after the tanks are emptied.

Reasons:

- A. Breakers are located on ES MCC 3AB. With LPI flow > 1400 gpm the CFTs have already emptied into the RCS.
- B. Breakers are located on ES MCC 3AB.
- C. With LPI flow > 1400 gpm the CFTs have already emptied into the RCS.
- D. Correct. The valves are located on ES MCC 3AB and we need to be able to close them after CF injections to ensure nitrogen does not get into the system.

OPS 5-91, Obj. 1 & 2; OPS 5-91 Enclosure 2; EOP-3 Step 3.34

History: NRCN99

RO - Bank

Reference(s) provided: None

QUESTIONS REPORT
for RO - NRC 2K5 BANK

74. G2.4.43 001/GENERIC/4/RO #75/MEM 2.8/3.5/NEW/R/CR03501/

An Alert has been declared. The primary method for notifying state and local agencies is using the _____ and the primary method for notifying the NRC is using the _____.

- A. ✓ State Hot Ringdown (SHRD); Emergency Notification System (ENS)
- B. State Hot Ringdown (SHRD); Emergency Response Data System (ERDS)
- C. Emergency Notification System (ENS); Emergency Response Data System (ERDS)
- D. Florida Emergency Satellite Communication System (ESATCOM); Emergency Notification System (ENS)

Reasons:

- A. Correct. These are the primary methods. Commercial telephone is the first backup.
- B. ERDS is activated to send data to the NRC but this is not used for voice notification.
- C. ENS is used to notify the NRC. ERDS is activated to send data to the NRC but this is not used for voice notification.
- D. ESATCOM is the third method to notify state and local agencies.

OPS 5-34, Obj. 8; EM-202 Enclosure 2, page 3

RO - New

Reference(s) provided: None

1

2

3

QUESTIONS REPORT
for RO - NRC 2K5 BANK

75. G2.4.6 001/GENERIC/4/RO #73/MEM 3.1/4.0/BANK/R/CR03501/5-116-010

When aligning the DH system for boron precipitation EOP-14, Enclosure 20, Boron Precipitation Control, directs that the seal-in circuits for DHV-42 and 43 (RB sump to DHP valves) be defeated. Enclosure 20 also directs that the valve control switch be held in the open position for 6 seconds before the DH drop lines valves are opened.

What is the purpose of these steps for initiating "Drop-Line" flow?

- A. Prevents excessive drop-line flow from causing vortexes in the core region.
- B. ✓ Prevents damage to RB sump screens from possible flashing of hot RCS water.
- C. Ensures adequate NPSH for the decay heat pump that is aligned to the RB sump.
- D. Prevents voiding in the core region from the rapid pressure drop that would occur if the valves were fully opened.

Reasons:

- A. Drop line flow cannot cause vortexing in the Rx vessel due to the flowpaths in the Rx vessel.
- B. Correct. This limits the flowrate and therefore the flashing and pressure force exerted on the RB sump screens and other sump components.
- C. Minimizing the flowrate to the RB sump from the drop line has nothing to do with NPSH for the DH pump.
- D. Voiding in the core region will not occur due to the flowpath from the core to the hotleg and then out the drop line to the RB sump.

OPS 5-116, Obj. 2; EOP-14, Enclosure 20, Step 20.19

RO - Bank

Reference(s) provided: None