Draft Submittal

SEQUOYAH JUNE 2004 EXAM
50-327 & 328/2004-301

JUNE 7 - 16, 2004

1. Reactor Operator Operator Written Exam

Name: _____

1. ES-0.1-B.1.E 001

The unit has tripped from 100% power due to a loss of offsite power.

Which ONE of the following describes the difference between the following plant requirements 5 and 30 minutes after the trip?

	AFW flow for decay heat removal	Average atmospheric relief valve demand
A.	Higher at 5 minutes after trip	Approximately same at 5 and 30 minutes
B.	Higher at 30 minutes after trip	Approximately same at 5 and 30 minutes
C.	Higher at 5 minutes after trip	Higher at 5 minutes after trip
D.	Higher at 30 minutes after trip	Higher at 30 minutes after trip

Justification:

a. *Incorrect. Decay heat load will be the highest 5 minutes after the trip, requiring the atmospheric relief valve demand to be the greatest. Atmospheric relief valve demand will lower as heat load diminishes.*

b. *Incorrect. Decay heat load will be the highest 5 minutes after the trip, requiring the atmospheric relief valve demand to be the greatest. Atmospheric relief valve demand will lower as heat load diminishes.*

c. *Correct. Decay heat load will be the highest 5 minutes after the trip, requiring the atmospheric relief valve demand to be the greatest.*

d. *Incorrect. Decay heat load will be the highest 5 minutes after the trip, requiring the atmospheric relief valve demand to be the greatest. Atmospheric relief valve demand will lower as heat load diminishes.*

K/A {CFR}:	007 EK1.05 [3.3/3.8] {41.8, 41.10/45.3}
References:	General Physics GFES, Chapter 8, Reactor Operational Physics, pages 44-88.
LP/Objectives:	OPL271ES-0.1 B.1.e
History:	New
Level:	Comprehension
Comments:	Reviewed by R. Creek, S. R. Johnson 3/15/04

2. ECA-1.1-B.2 001

Unit 1 at 100% power. All conditions are normal with the following exceptions:

- 07:00 1A RHR Pump is tagged due to motor replacement and will be returned to service in 24 hours.
- 08:00 Unit 1 has a reactor trip and SI due to a small break LOCA.
- 08:01, when E-1, Reactor Trip Or Safety Injection, is entered, the following parameters are observed:

  - RCS pressure is 1100 psig and dropping
  - Containment pressure is 4.1 psid and dropping slowly
  - RWST level is 59% and dropping slowly
  - Containment sump level is 28% and rising

- 08:16, the 1B RHR Pump trips on overcurrent due to a locked rotor.

  Step 14 of E-1, transitions the crew to ECA-1.1, Loss of RHR Sump Recirculation.

Per the requirements of ECA-1.1, which ONE of the following describes how many Containment Spray Pumps should be running and why?

A. One Containment Spray Pump will be running to conserve RWST level until a RHR Pump is available for containment sump swapover.

B. No Containment Spray Pumps will be running to conserve RWST level until a RHR Pump is available for containment sump swapover.

C. Two Containment Spray Pumps will be running to conserve RWST level until a RHR Pump is available for containment sump swapover.

D. Two Containment Spray Pumps will be running to reduce containment pressure to below 2 psid.

Justifications:

A. *Incorrect. Due to the requirements of ECA-1.1, Containment pressure is < 9.5 psid requires no containment spray. The purpose of stopping Cont. Spray Pumps is to conserve RWST level.*

B. *Correct. Due to the requirements of ECA-1.1, Containment pressure is < 9.5 psid no containment spray pumps should be running. The purpose of stopping Cont. Spray Pumps is to conserve RWST level.*

C. *Incorrect. Due to the requirements of ECA-1.1, Containment pressure is < 9.5 psid requires no containment spray. The purpose of stopping Cont. Spray Pumps is to conserve RWST level.*

D. *Incorrect. Due to the requirements of ECA-1.1, Containment pressure is < 9.5 psid requires no containment spray. The purpose of stopping Cont. Spray Pumps is to conserve RWST level.*

K/A {CFR}:	005	K3.06	[3.1/3.2]	{41.7/45.6}
	2.4.18		[2.7/3.6]	{41.10/45.13}
	E11	EK3.1	[3.3/3.9]	{41.5/41.10/45.6/45.13}
	E11	EK2.1	[3.6/3.9]	{41.7/45.7}

References: ECA-1.1

LP/Objectives: OPL271ECA-1.1 Obj. B.2
OPL271ECA1-1, Obj. B.3
OPL271ECA1-1, Obj. B.8

History: Bank Question NEW - JES 03/07/04

Level: Analysis

Comments:

3. AOP-R.05-B.3 001

The following plant conditions exist on Unit 1:

- A turbine trip has occurred with reactor power level initially at 45%
- During the resultant transient the OATC observed PZR safety valve 68-566 open at 2280 psig, then reclose.

Which ONE of the following actions is required to be taken in response to this event?

A. Immediately restore the safety valve to operable status and suspend operations which would cause SDM to be reduced below 1600 pcm.

B. Immediately restore the safety valve to operable status and suspend operations which would cause SDM to be reduced below 1000 pcm.

C. Restore safety valve to operable status within 15 minutes or be in hot standby within 6 hours and hot shutdown within the following 6 hours.

D. Be in hot standby within the next 6 hours and cold shutdown in the following 30 hours.

a. distractor is incorrect, since action stated is applicable to Mode 4.

b. distractor is incorrect, since action stated is applicable to Mode 5.

c. is correct answer.

d. distractor is incorrect, since action is based on leakage limits vs. safety valve operability.

K/A {CFR}:	008 2.1.11 [3.8/4.2] {41.5}
References:	T.S. 3.4.3, Safety Valves - SHUTDOWN, T.S. 3.4.3.1, Safety Valves OPERATING, T.S. 3.4.6.3 RCS Pressure Isolation Valve LEAKAGE
LP/Objectives:	OPL271C367, Obj. B.3
History:	New Question 03/04
Level:	Analysis
Comments:	Reviewed by R. Creek, S. R. Johnson 3/15/04 If revising, make note of the +/- 3% from 2485 psig band allowed by TS.

4. AOP-I.06-B.4 001

The following conditions exist:

- Unit 1 is operating at 28% power during a plant startup to 100%.

On the #3 steam generator:

- Main feedwater regulating valve (FRV) is in AUTO control at 15% open
- Bypass FRV is in MANUAL control at 50% open
- Steam flow channel 1 is the controlling channel
- Steam flow channel 1 fails high

Which ONE (1) of the following statements correctly describes the plant response for the #3 steam generator FRVs?

A. Main FRV modulates open to increase feedwater flow, MFPT speed decreases as S/G level reaches the high level setpoint (P-14).

B. Main FRV modulates shut to reduce feedwater flow and steam generator level decreases to the low-low level reactor trip setpoint.

C. Main FRV modulates open to increase feedwater flow but sufficient level error signal develops to restore MFW flow to normal without tripping the reactor.

D. Main FRV modulates shut to reduce feedwater flow but sufficient level error signal develops to restore MFW flow to normal without tripping the reactor.

Justification:

a. *Incorrect. Main steam flow is used to determine program DP for the MFP speed control circuit. With one input failed high, the program DP will rise. This would tend to raise MFP speed.*

b. *Incorrect. With the rise in steam flow, the SGWLC circuit will attempt to match feed to steam flow. No. 3 MFRV will open to raise feed flow.*

c. *Correct.*

d. *Incorrect. Steam flow rise will open the No. 3 MFRV. Distractor implies level trending in the opposite direction.*

K/A {CFR}:	059 K1.04 3.4/3.4 41.2-9 059 K6.12 2.3/2.5 41.7 054 AK3.02 3.4/3.7 41.5, 41.10
References:	1-47W611-3-2, AOP-S.01, AOP-I.06
LP/Objectives:	OPL271c354, b.4
History:	Bank Question
Level:	Analysis
Comments:	

5. ES-1.2 B.2.A 001

The following plant conditions exist:

- Unit 2 initially at 100% power.
- A small break LOCA occurred.
- Offsite power was lost coincident with the trip.
- FCV-68-332 "BLOCK VALVE FOR PORV 340A" is open with power available.
- FCV-68-333 "BLOCK VALVE FOR PORV 334A" is open with no power.
- Procedure ES-1.2, "Post-LOCA Cooldown and Depressurization" is in progress.
- The OATC has been directed to depressurize the RCS to restore pressurizer level.

Which ONE of the following describes the method to be used to depressurize the RCS?

A. Normal spray valves.

B. PORV FCV-68-334A.

C. PORV FCV-68-340A.

D. Auxiliary spray valve.

Justification:

a. *Incorrect. No power is available to any RCP, so normal spray is not available.*

b. *Incorrect. This should not be operated since its related block valve is not powered.*

c. *Correct. This is the preferred PORV to operate since the related block valve is powered.*

d. *Incorrect. The presence of the safety injection signal has isolated the normal charging and letdown flowpaths, making the auxiliary spray flowpath unavailable.*

K/A {CFR}:	009 EA1.15	[3.9/4.1]	{41.7/45.5/45.6}
	WE03 EK2.1	[3.6/4.0]	{41.7/45.7}
	WE03 EK3.3	[3.9/3.9]	{41.5/41.10/45.6/45.13}

References:
E-1
EPM-3-E-1
ES-1.2
EPM-3-ES-1.2
Tech Spec 3.4.4.2
AOP-I.04

LP/Objectives: OPL271ES-1.2 Objective B.2.a

History: New 02/26/04

Level: Analysis

Comments: PORV 340A still operable, block valve has power; 334A has no block valve power. Alternate spray due to thermal shock not to be used if PORV available. Normal spray not available due to LOOP.

Reviewed by R. Creek, S. R. Johnson 3/15/04

6. AOP-R.04-B.0 001

The plant is at 8% power and increasing when the OATC inadvertently trips the #2 RCP. Which ONE of the following describes why brief plant operation is permitted here but is not allowed at higher power?

A.✓ Power is low enough so that violating DNB with only 3 pumps operating is not likely.

B. Two (2) loops are adequate to protect against a rod withdrawal accident with trip breakers closed.

C. One (1) loop is adequate to protect against a rod withdrawal accident with trip breakers open.

D. One (1) loop is adequate to protect against stratification and to provide adequate mixing in the core.

Justification:

a. Correct

b. Incorrect. Justification is correct for mode 3 requirement, plant is in mode 1.

c. Incorrect. Justification is correct for mode 4 requirement, plant is in mode 1.

d. Incorrect. Justification is correct for mode 5 requirement, plant is in mode 1.

K/A:	017 AK1.03	[3.0/4.0]	{41.8, 41.10, 45.3}
	015 AK1.03	[3.0/4.0]	{41.8, 41.10, 45.3}

Reference: AOP-R.04, Tech Spec basis 3.4.1.1/2/3

LP/Objectives: OPL271AOP-R.04, Obj. B.1.c

History: Bank Question (New 11/12/02)

Level: Memory

Comments: Modified stem to simplify terminology. Dropped " in power"
Reviewed by R. Creek, S. R. Johnson 3/15/04

7. E-0-B.7.A 001

The following conditions exist on Unit 2:

- An automatic reactor trip and safety injection have occurred.
- The operating crew is currently performing diagnostic steps of E-0.
- The following parameters are observed.
- SG #1 level = 5% NR
- SG #2 level = 7% NR
- SG #3 level = 12% NR
- SG #4 level = 9% NR
- RCS subcooling = 42 deg F
- RCS pressure is stable
- PZR level = 35%
- Total AFW flow = 350 gpm
- Containment pressure = 3.8 psig

Which ONE of the following describes actions the US should direct?

A. Transition directly to E-1, "Loss of Reactor or Secondary Coolant."

B. Transition to ES-1.2, "Post LOCA Cooldown and Depressurization."

C. Transition directly to ES -1.1, "SI Termination."

D. Increase AFW flow to >440 gpm, then transition to ES-0.1, "Reactor Trip Response."

Justification:

a. *Correct.*

b. *Incorrect. ES-1.2 is not a direct transfer procedure from E-0 (transfer made from E-1).*

c. *Incorrect. SI termination would not be looked at due to abnormal containment parameters. Several parameters do exceed SI termination values.*

d. *Incorrect. Containment parameters have degraded and would require transition to E-1.*

K/A {CFR}:	011 EA2.11 2.4.6
References:	E-0, step 22
LP/Objectives:	OPL271E-0, B.7.a
History:	Bank Question
Level:	Analysis
Comments:	

8. AOP-R.05-B.2 001

Given the following plant conditions:

- Unit 1 reactor power is STABLE at 90%
- Pressurizer level is DECREASING
- VCT level is DECREASING
- The following annunciators are actuated:

  PRESSURIZER LEVEL HIGH-LOW
  LTDN HX OUTLET TO DEMIN TEMP HIGH
  REGENERATIVE HX LETDOWN LINE TEMP HIGH

Which ONE of the following events would most likely cause these indications?

A. Pressurizer level control valve malfunction.

B. Isolation of CVCS letdown.

C. Charging header rupture.

D. Letdown header rupture.

Justification:

A. Incorrect, both pressurizer and VCT level would not be decreasing.

B. Incorrect, "Regenerative Hx Letdown Line temp High" would not alarm.

C. Correct, with a loss of charging due to a pipe break the PZR would still lower in level due to letdown. Since there is no flow balance VCT level would decrease. Without charging acting as a cooling medium on the regen heat exchanger the temperature alarms would annunciate.

D. Incorrect, letdown header rupture would cause a loss of letdown therefore the high temp alarm would not annunciate.

K/A[CFR]:	022 AA2.01	[3.2/3.8]	{43.5}
	022 AK1.03	[3.0/3.4]	{41.8, 41.10, 45.3}

Reference: 1-AR-M6-C(A-4)
1-AR-M6-C(D-4)
1-AR-M5-A(C-3)
AOP-R.05

LP/Objectives: OPL271C367, B.2

History: Procedure bank

Level: Analysis

Comments: FHW 12/02 22 AA2.01 Reviewed by R. Creek, S. R. Johnson 3/15/04

9. AOP-R.03-B.1 001

Unit 1 is in Mode 5 with RCS at Mid-Loop with 1A-A RHR pump in service. Which ONE of the following action(s) will be required IF the 1A-A RHR pump motor amps become very erratic and continue to be erratic even after flow is reduced?

A. Make up to the RCS immediately by opening FCV-63-1.

B. Make up to the RCS immediately via FCV-62-135 & 136, suction of CCPs from the RWST.

C. Stop 1A-A RHR pump, increase the level in the RCS and attempt to restore RHR cooling.

D. Stop 1A-A RHR pump and start 1B-B RHR pump.

Justification:

a. *Incorrect. Not supported by AOP-R.03 as correct action to correct cavitation.*

b. *Incorrect Not supported by AOP-R.03 as correct action to correct cavitation.*

c. *Correct.*

d. *Incorrect. With the RCS level at mid-loop, starting the B RHR pump may cause it to cavitate as well resulting in a complete loss of shutdown cooling capability.*

K/A {CFR}:	057 AA2.05	[3.5/3.8]	{43.5, 45.13}
	025 AK1.01	[3.9/4.3]	{41.8, 41.10, 45.3}
	025 AK3.03	[3.9/4.1]	{41.5, 41.10, 45.6, 45.13}
	025 AA2.07	[3.4/3.7]	{43.5, 45.13}

References: AOP-R.03

LP/Objectives: OPL271AOP-R.03, Obj. B.1.a

History: Old Bank Number B-0295

Level: Comprehensiion

Comments: C CORRECT PER AOP-R.03
Reviewed by R. Creek, S. R. Johnson 3/15/04

10. OPDP-1 001

The Operator-at-the-Controls (OATC) is responding to a pressurizer pressure control malfunction. He recognizes that he must take actions which are outside the bounds of the abnormal operating procedures (AOPs) and prudent operator actions. Which ONE of the following describes the action that he should take?

A. The OATC should immediately take appropriate actions necessary and inform the SRO when time permits.

B. The OATC should take no action until a procedure is developed or revised.

C. The OATC shall obtain approval from a licensed SRO prior to taking action.

D. The OATC should obtain approval from the TSC prior to taking action.

Justification:

a. *Incorrect. Response is correct for taking immediate actions, but this is a 10CFR50.54(x) situation.*

b. *Incorrect. Correct answer for a normal procedural situation, but this is a 10CFR50.54(x) situation.*

c. *Correct. SRO approval required per 10CFR50.54(x).*

d. *Incorrect. Certain emergencies in the EOPs do require TSC approval, but this is a 10CFR50.54(x) situation.*

K/A: 027 G2.1.2 [3.0 - 4.0] {41.10, 45.13}

Reference: OPDP-1

Objective: OPL271C209, B.14

History: Modified Bank Question OPDP-1 008

Level: Memory

Comments: Reviewed by R. Creek, S. R. Johnson 3/15/04

11. ECA-0.0-B.3 001

The station batteries and load shedding instructions are designed to ensure DC power for a certain amount of time after a loss of all AC.

Which ONE of the following describes the amount of time and the requirement that this time satisfies?

A. 2 hours, station blackout rule

B. 4 hours, station blackout rule

C. 2 hours, Tech Spec action statement

D. 4 hours, Tech Spec action statement

Justification:

a. *Incorrect, batteries are rated (with load shedding) for 4 hours, without chargers to provide necessary DC power to maintain BOTH reactors at hot shutdown after a loss of ALL AC sources*

b. *Correct*

c. *Incorrect, batteries are rated (with load shedding) for 4 hours, without chargers to provide necessary DC power to maintain BOTH reactors at hot shutdown after a loss of ALL AC sources*

d. *Incorrect, batteries are rated (with load shedding) for 4 hours, without chargers to provide necessary DC power to maintain BOTH reactors at hot shutdown after a loss of ALL AC sources*

K/A {CFR}:	055 EK3.01 [2.7/3.4] {41.5, 41.10, 45.6, 45.13}
References:	FSAR 8.0 Electric Power, 8.1.4 Design Basis
LP/Objectives:	OPL271ECA-0.0, B.3.a
History:	Bank Question (09/19/02)
Level:	Memory
Comments:	Reviewed by R. Creek, S. R. Johnson 3/15/04

12. AOP-P.03-B.4 001

The following plant conditions exist on Unit 1:

- 120V AC Vital Instrument Power Board 1-IV develops a fault and has tripped
- The reactor has remained at power.

Which ONE of the following describes the impact of the board loss on steam generator (S/G) narrow range level indications?

A. Lose all indication for #4 S/G.

B. Lose 3 of 4 indicators on #4 S/G.

C. Lose 2 of 4 indicators for #4 S/G.

D. Lose at least one indication on each S/G.

Justification:

a. *Incorrect, per reference.*

b. *Incorrect, per reference.*

c. *Incorrect, per reference.*

d. *Correct, per reference.*

K/A {CFR}:	057 AA2.05	[3.5/3.8]	{43.5, 45.13}
References:	AOP-P.03 Appendix D SIGNIFICANT IMPACTS FROM LOSS OF VIPB 1-IV		
LP/Objectives:	OPL271C345, Obj. B.4		
History:	New Question (3/04)		
Level:	Memory		
Comments:	Modified distractors a. through c. based on review by R. Creek, S. R. Johnson 3/15/04		

13. AOP-M.01-B.5 001

The following conditions exist:

- Unit 1 is operating steady state at 100% with the 1B CCP in service.
- A large leak has developed on ERCW Supply Header 1A in the Auxiliary Building.

Which ONE of the following describes the pumps which will be stopped and locked out?

A. 1A and 1B CCPs.

B. 1A CCP and 1A Safety Injection Pump.

C. 1A CCP and 1A Containment Spray Pump.

D. 1A RHR Pump and 1A Containment Spray Pump.

Justification:

A. Incorrect - 1B CCP is not supplied by 1A ERCW header (1A is)

B. Correct - per AOP-M.01, section 2.2, first caution

C. Incorrect - 1A CS Pump is supplied from CCS vice ERCW

D. Incorrect - RHR pump and CS pump not supplied by ERCW

K/A{CFR}: 062 AA1.02 [3.2/3.3] {41.7/45.5/45.6}

Reference: AOP-M.01
Print 1-47W845 series

Objective: OPL271C348 Obj.. B.5

Level: Memory

History: Bank Question

Note: Reviewed by R. Creek, S. R. Johnson 3/15/04

14. AOP-M.02-B.3.C 001

The following plant conditions exist:

- Unit 2 is in mode 3, preparing for reactor startup.
- Troubleshooting has indicated an air leak of non-essential air inside Unit 2 containment.
- The closure of 2-FCV-32-111 "REACTOR BLDG UNIT 2 NON-ESSENTL CONTRL AIR VLV ISOL" to isolate the leak is being considered.

Which ONE of the following describes the impact of 2-FCV-32-111 closure?

A. Pressurizer spray valves fail closed.

B. MSIVs fail closed, AFW LCVs fail open.

C. CVCS letdown isolates, charging valves inside containment fail open.

D. Inside containment glycol valves fail closed, containment ERCW TCVs fail closed.

Justification:

a. *Incorrect. Spray valves receive air from essential air header, and each valve is supplied from a seperate train.*

b. *Incorrect. MSIVs are supplied from air header outside containment and would not close as a result of 2-FCV-32-111 closure.*

c. *Correct.*

d. *Incorrect. Containment ERCW TCV's fail open on loss of air.*

K/A {CFR}:	065 AK3.03	[2.9/3.4]	{41.5, 41.10/45.6/45.13}
References:	2-47W848-13 AOP-M.02		
LP/Objectives:	OPL271AOP-M.02 B.4.c		
History:	New 03/04/2004		
Level:	Memory		
Comments:	Modified initial question to simplify distractors a. thru d. Reviewed by R. Creek, S. R. Johnson 3/15/04		

15. FR-H.1-B.4.B 002

The following conditions exist on Unit 2:

- A loss of heat sink has occurred.
- Steam generator (S/G) atmospheric relief valves are cycling open to maintain RCS temperature.
- Operators have just entered FR-H.1, "Loss of Secondary Heat Sink".
- The OATC reports that containment pressure is increasing rapidly.
- RCS pressure is now 950 psig.
- S/G pressures have not changed.

Which ONE of the following is the correct action to take in response to these conditions?

A. Immediately initiate feed and bleed.

B. Place MFP in service to supply feedwater.

C. Transition to E-1, "Loss of Reactor or Secondary Coolant".

D. Depressurize a steam generator and use a condensate pump to supply feedwater.

Justification:

a. *Incorrect. Check of feed and bleed criteria occurs after check of RCS pressure for E-1 transition.*

b. *Incorrect. Crew will not get a chance to try and restore MFP in FR-H.1 since LOCA is now highest priority issue.*

c. *Correct, since secondary heat sink is not required. SGs are heat source in this case.*

d. *Incorrect. Crew will not get a chance to try and restore feed from condensate pump in FR-H.1 since LOCA is now highest priority issue.*

K/A:	E05 EA1.2	[3.7/4.0]	{41.7/45.5/45.6}
References:	FR-H.1, Loss of Secondary Heat Sink.		
Objective:	OPL271FR-H.1 B.4.b		
Level:	Analysis		
History:	New 03/09/2004		
Comments:	Reviewed by R. Creek, S. R. Johnson 3/15/04		

16. ECA-2.1-B.5.A 001

The following conditions exist:

- Unit 2 initially in mode 3 preparing for a reactor startup.
- A steam leak downstream of the MSIVs requiring safety injection has occurred.
- Operators are unable to close any MSIV from the Control Room.
- The applicable EOP has directed MSIV closure.

Which ONE of the following is the correct response to this condition?

A. Continue in the emergency operating procedures. Do not attempt MSIV closure at this time.

B. Dispatch operator to locally isolate control air to the MSIVs.

C. Dispatch operator to remove control power fuses for MSIVs at Vital Instrument AC Power panels.

D. Dispatch operator to attempt MSIV closure from Auxiliary Control Room (ACR). If unsuccessful from ACR, remove control power fuses for the MSIVs.

Justification:

A. Incorrect per reference.

B. Incorrect per reference.

C. Incorrect per reference.

D. Correct, the reduction in AFW flow was not by procedure direction therefore a transition to FR-H.1 is required.

K/A[CFR]:	E12 EK2.1	[3.4/3.7]	{41.7/45.7}
	040 G2.4.34	[3.8/3.6]	{43.5, 45.13}

Reference: ECA-2.1, EA-1.1

LP/Objectives: OPL271ECA-2.1, b.5.a
OPL271ECA-2.1, b.2.a

History: New Question 03/10/2004

Level: Memory

Comments: Reviewed by R. Creek, S. R. Johnson 3/15/04

17. ECA-1.2-B.6.A 001

Given the following plant conditions:

- Unit 2 is operating at 100% power when a LOCA occurs.
- Containment pressure is 0.2 psig and steady.
- The operators initiated safety injection.
- The crew has determined that SI cannot be terminated.
- SI has been reset.
- RCS pressure is 500 psig and dropping slowly.

Which ONE of the following best describes the procedure methodology to mitigate this condition?

A. If the LOCA can **NOT** be isolated then transition to E-1.

B. ✓ If the LOCA can **NOT** be isolated then transition to the Loss of RHR Sump Recirculation procedure.

C. When the RWST level is <27%, the operator should transfer ECCS pumps to the containment sump.

D. When the RWST level is <8%, the operator should transfer the ECCS pumps to the containment sump.

Justification:

a. *Incorrect - ECA-1.2 will not transition you to E-1.*

b. *Correct - per EPM-3 "Basis Document"*

c. *Incorrect - ECA-1.2 makes NO provisions for this evolution.*

d. *Incorrect - ECA-1.2 makes NO provisions for this evolution.*

K/A CFR:	E04 2.4.4	[4.0/4.3]	{41.10, 43.2}
	E04 EK2.2	[3.8/4.0]	{41.7}

References: ECA-1.2

LP/Objectives: OPL271ECA-1.2, B.6.a

History: Bank

Level: Memory

Comments: FHW 12/02 E04 EK2.2

18. ECA-2.1-B.2.B 001

Given the following plant conditions:

- A large main steam line break has occurred.
- All MSIVs failed to close.
- RCS has cooled down to 425°F within 15 minutes following initiation of the event.
- Narrow range levels in all S/Gs are off-scale low.
- ECA-2.1, "Uncontrolled Depressurization of All Steam Generators" is in effect and is directing AFW flow reduction.

Which ONE of the following describes the Auxiliary Feedwater flow requirements under these conditions and the basis for the flow requirements?

A. Reduce flow to 25 gpm to each S/G to prevent thermal shock to the steam generator shell.

B. Reduce flow to 440 gpm total to minimize RCS cooldown, but ensure adequate heat sink.

C. Reduce flow to 25 gpm to each S/G to minimize the RCS cooldown and to prevent S/G dry out.

D. Reduce flow to 440 gpm total to terminate the RCS cooldown to prevent Pressurized Thermal Shock (PTS).

Justification:

a. *Incorrect. EPM-3-ECA-2.1 addresses dryout which could affect SG tubes.*

b. *Incorrect. EPM-3-ECA-2.1 states that flow should be reduced to minimum measurable flow to a SG of 25 gpm.*

c. *Correct. EPM-3-ECA-2.1*

d. *Incorrect. EPM-3-ECA-2.1 states that flow should be reduced to minimum measurable flow to a SG of 25 gpm.*

K/A:	040 AK304	[4.5/4.7]	{41.5/41.10/45.6/45.13}
	E12 EK2.2	[3.6/3.9]	{ 41.7/45.7}

Reference: ECA-2.1
EPM-3-ECA-2.1

Objective: OPL271ECA-2.1, B.2.b

Level: Comprehension

Source: Sequoyah Exam Bank 66. 000040K304 001

History: Used on HLC 9808 practice exam
Distracters a, b, and c reordered (7/21/98)

Notes: Clarified 03/10/2004.
Reviewed by R. Creek, S. R. Johnson 3/15/04

19. AOP-C.01-B.4 001

The following plant conditions exist on Unit 1:

- Reactor is at 100% RTP.
- The OATC notices that control rod H-8 has dropped into the core.
- The operating crew enters AOP-C.01, Section 2.2 Dropped Rod(s).
- Prior to withdrawing H-8, the OATC is directed to adjust the group step counter for Control Bank D Group 2 to ZERO steps.

Which ONE of the following describes the reason the group step counters are adjusted to ZERO ?

A. Allows the operator to determine that rod control system is attempting to withdraw the dropped rod and enables the operator to match individual rod position to bank position.

B. Restores rod to rod misalignment alarm function associated with M-4B Window D-4 COMPUTER ALARM ROD DEV AND SEQ NIS PWR RANGE TILTS.

C. Restores low insertion limit alarm function associated with M-4B Window A-7 ROD CONTROL BANKS LIMIT LOW.

D. Ensures that rod URGENT FAILURE alarm will not annunciate during rod retrieval.

Justification:

a. *Correct.*

b. *Incorrect. Rod-to-rod misalignment function is independent of group demand position.*

c. *Incorrect. This alarm will clear when dropped rod is restored to position above RIL.*

d. *Incorrect. Resetting group step counter to ZERO on Control Bank D will NOT prevent URGENT FAILURE alarm during subsequent rod withdrawal.*

K/A {CFR}:	003 AK3.06	[2.7/3.0]	{41.5}
	001 K4.12	[2.5/2.6]	{41.7}

References: AOP-C.01, Section 2.3

LP/Objectives: OPL271C357, B.4

History: New Question (3/04)

Level: Memory

Comments: Reviewed by R. Creek, S. R. Johnson

20. AOP-I.04-B.1 002

Unit 1 is at 100% power. As you are walking down the control boards you notice that PZR level instrument 1-LI-68-339 is indicating higher than 1-LI-68-335 and 1-LI-68-320.

Which ONE of the following is the reason for the higher indication?

There is a break on the . . .

A. reference leg and the ΔP cell ΔP is higher.

B. reference leg and the ΔP cell ΔP is lower.

C. variable leg and the ΔP cell ΔP is higher.

D. variable leg and the ΔP cell ΔP is lower.

Justification:

PZR level is sensed by a DP cell. The "High" pressure side is connected to the reference leg, the low pressure side is connected to the variable leg (pressurizer shell). A "0" DP will indicate 100%, maximum DP will indicate 0%.

Based on this.....

a. *Incorrect. Reference leg break creates lower ΔP sensed across ΔP cell, resulting in indicated level higher than actual level.*

b. *Correct.*

c. *Incorrect. A break in variable leg of ΔP cell creates higher ΔP being sensed by ΔP cell, resulting in level instrument indicating low level*

d. *Incorrect. A break in variable leg of ΔP cell creates higher ΔP being sensed by ΔP cell, resulting in level instrument indicating low level*

K/A {CFR}:	028 AK1.01	[2.8/3.1]	{41.8, 41.10, 45.3}
	011 K6.09	[2.4/2.6]	{41.7, 45.7}
	011 K4.03	[2.6/2.9]	{41.7}

References: 1-47W611-68-3, AOP-I.04

LP/Objectives: OPL271C353. Obj. B.1

History: Modified INPO NRC Bank Question ..000028.K1.01 Cook 1 05/21/2001

Level: Analysis.

Comments: Reviewed by R. Creek, S. R. Johnson 3/15/04. Dropped the word wet from distractors a. and b.

21. AOP-I.01-B.1 001

The following plant conditions exist:

- Unit 2 is in mode 3 preparing for reactor startup.
- N-31 indication fails low.

Which ONE (1) of the following conditions could have caused this to occur?

A. 120 VAC Vital Instrument Power Board 2-I is de-energized.

B. 120 VAC Vital Instrument Power Board 2-II is de-energized.

C. 120 VAC Vital Instrument Power Board 2-III is de-energized.

D. 120 VAC Vital Instrument Power Board 2-IV is de-energized.

Justification:

a. *Correct because de-energizing 120 VAC BD 2-I will remove power from N-31.*

b. *Incorrect because de-energizing 120 VAC BD 2-II will not cause a loss of N-31.*

c. *Incorrect because de-energizing 120 VAC BD 2-III will not cause a loss of N-31.*

d. *Incorrect because de-energizing 120 VAC BD 2-IV will not cause a loss of N-31.*

K/A: 032 AK2.01 [2.7/3.1]

Reference: AOP-I.01
AOP-P.04, Appendix A

Objective: OPL271AOPI01, B.1

Level: Memory

History: New question 3/10/2004

Comments: Reviewed by R. Creek, S. R. Johnson 3/15/04

22. RMS-B.15 001

Relative to area radiation monitoring indication, select from the following list of items:

I -Large spill of reactor coolant

II -Large spill of tritiated water (tritium only radioactive material in water)

III -Movement by Radcon of used reactor coolant filter through Auxiliary Building

IV- Start-up of residual heat removal system during cooldown at start of refueling outage

Which ONE of the following describes the events which would cause noticeable indication change on area radiation monitors?

A. I, II, III.

B. I, II, IV.

C. I, III, IV.

D. II, III, IV.

Justification:

a. *Incorrect, includes tritium in answer. GM tube would require a beta window AND close proximity to tritiated water spill to respond.*

b. *Incorrect, includes tritium in answer. GM tube would require a beta window AND close proximity to tritiated water spill to respond.*

c. *Correct, since answer does not include reference to tritium spill.*

d. *Incorrect, includes tritium in answer. GM tube would require a beta window AND close proximity to tritiated water spill to respond.*

K/A {CFR}:	061 AK1.01	[2.5/2.9]	{41.8/41.10/45.3}
	072 A1.01	[3.4/3.6]	{41.5/45.5}

References: 0-TI-CEM-260-012.2

LP/Objectives: OPT200.RM B.15

History: New 03/08/2004

Level: Memory

Comments: Reviewed by R. Creek, S. R. Johnson

23. CTMT-B.5.C 002

The following plant conditions exist on Unit 1:

- The Chemistry Lab is performing a sample of the reactor coolant system.
- PZR level dropped rapidly and a manual reactor trip and safety injection have been initiated.
- RCS sample valves 1-FSV-43-22 and 1-FSV-43-23 have failed to close.
- All other components operated as expected.

Which ONE of the following describes the required response to this condition?

A. Initiate a manual Containment Phase B isolation signal using both handswitches on 1-M-6.

B. Initiate a manual Containment Phase A isolation signal on both A and B trains.

C. Initiate a manual Containment Ventilation signal on both A and B trains.

D. ✓ Dispatch personnel to locally close either 1-FSV-43-22 or 1-FSV-43-23.

Justification:

a. *Incorrect. Affected valves are phase A valves.*

b. *Incorrect. Both trains of phase A actuated since all other components repositioned.*

c. *Incorrect. Affected valves are phase A valves.*

d. *Correct action per E-0.*

K/A {CFR}:	069 AA2.02	[3.9/4.4]	{43.5/45.13}
References:	E-0 EPM-4 47W611-88-1		
LP/Objectives:	OPT200.CNTMT STRUCTURE B.5.c		
History:	New 03/10/2004		
Level:	Memory		
Comments:	Reviewed by R. Creek, S. R. Johnson 3/15/04		

24. ES-1.2-B.2 001

The following plant conditions exist:

- A small-break LOCA is in progress.
- Both charging pumps are running.
- RCS subcooling is 56°F
- Tcold is 530°F.
- The PZR heater control switches are in the OFF position.
- PZR level is below the indicating range.
- Reactor coolant pump 2 is in service.
- The operating crew is on step 17 of ES-1.2, Post-LOCA Cooldown and Depressurization, which directs them to refill the PZR by depressurizing the RCS using normal spray.

Why will depressurizing the RCS refill the PZR?

A. ✓ The lower RCS pressure will decrease break flow, increase charging/SI flow, refilling the PZR.

B. The water in the RCS will expand at lower pressure, forcing water into the PZR.

C. Voiding throughout the RCS will displace water into the PZR.

D. Accumulator injection will force water into the PZR.

Justification:

a. *incorrect, negligible magnitude.*

b. *correct*

c. *incorrect, negligible magnitude.*

d. *incorrect, negligible magnitude.*

K/A {CFR}: E03 EA1.2 (3.7/3.9) [41.7]

References: ES-1.2, Post LOCA Cooldown and Depressurization
EPM-3-ES-1.2

LP/Objectives: OPL271ES12 Obj. B2,3&4

History: VC Summer exam Sep 2002. Modified to fit SQN.

Level: Memory

Comments: Reviewed by R. Creek, S. R. Johnson 3/15/04

25. FR-C.2-B.1 001

Given the following plant conditions:

- A LOCA has occurred
- All RCPs running
- NO charging or SI pumps running.

Which ONE of the following would require transition to FR-C.2, Degraded Core Cooling?

A. Core exit temperature 725°F and RVLIS lower range 40%

B. RCS subcooling 38°F and RVLIS dynamic range 40%

C. RCS subcooling 38°F and RVLIS lower range 40%

D. Core exit temperature 1225°F

Justification:

a. *Incorrect. Part of core cooling status tree logic. RCPs running invoke dynamic range.*

b. *Correct.*

c. *Incorrect. Part of core cooling status tree logic. True if no RCPs running.*

d. *Incorrect. Part of core cooling status tree logic. Puts you into FR-C.1.*

K/A {CFR}: E06 EK1.2 (3.5/4.1) [41.8, 41.10]

References: FR-0

LP/Objectives: OPL271FR-C.2 Obj. B.1

History: Cook 1 exam Sept 2001. Modified to fit SQN.

Level: Comprehension

Comments: Reviewed by R. Creek, S. R. Johnson 3/15/04

26. FR-P.1-B.2.A 001

The crew has entered FR-P.1, "Pressurized Thermal Shock". What is the basis for FR-P.1 instructing that SI be terminated and RCP(s) to be started if possible?

A.✓ SI is a significant contributor to any cold leg temperature decrease or overpressure condition and must be terminated. RCPs are started to provide mixing of cold SI and warm reactor coolant water.

B. SI is a significant contributor to any cold leg temperature decrease or overpressure condition and must be terminated. RCPs are started to minimize temperature gradient across S/G tube sheets.

C. The soak, required by FR-P.1, requires SI to be secured. RCPs should be started to equalize boron concentration throughout the primary to ensure proper shutdown margin as the RCS cools.

D. The soak required by FR.P.1 requires SI to be secured and RCPs running to provide ability to use spray to depressurize primary.

Justification:

a. Correct - This is correct basis per Westinghouse ERGs and FR.P-1.

b. Incorrect - purpose for RCPs is not priority in FR.P-1, SI statement correct

c. Incorrect - purpose for RCPs is not priority in FR.P-1, soak is not basis for SI

d. Incorrect - purpose for RCPs is not priority in FR.P-1, soak is not basis for SI

K/A {CFR}:	W/E 08 EK2.1 [3.4/3.7] {41.7/45.7}
References:	FR-P.1 EPM-3-FR-P.1
LP/Objectives:	OPL271FR-P.1 B.2.a
History:	Adapted 03/10/2004 from Seabrook 2003 RO Exam
Level:	Memory
Comments:	Reviewed by R. Creek, S. R. Johnson 3/15/04

27. AOP-C.01-B.4 003

Given the following plant conditions:

- Control rod M8 in control bank D has been misaligned from it's bank for 20 minutes.
- Repairs have been completed.
- The operating crew is ready to realign M8 control rod with it's bank by moving M8 control rod.
- Reactor engineering has determined that there are no restrictions on realignment of the Rod

Which ONE of the following describes the correct actions that must be completed to prepare for realignment of control rod M8?

A. Disconnect the lift coils for each rod in the affected bank (except M8) and adjust the affected group step counters to match the misaligned rod prior to rod movement.

B. Disconnect the lift coils for each rod in the affected group (except M8) and adjust the affected group step counter to match the misaligned rod prior to rod movement.

C. Disconnect the lift coil for the misaligned rod (M8) and adjust the affected bank step counters to match the misaligned rod prior to rod movement.

D. Disconnect the lift coil for the misaligned rod (M8) and adjust the affected group step counter to match the misaligned rod prior to rod movement.

Justification:

A. Correct.

B. All lift coils(except M8) for the bank must be disconnected, vs only disconnecting those in the affected group.

C. This distractor is valid because AOP-C.01 provides an alternate method of realignment by disconnecting the lift coil for the misaligned rod and moving the other rods to match the misaligned rod. The stem gives information to discriminate between which method to use.

D. This distractor is valid because AOP-C.01 provides an alternate method of realignment by disconnecting the lift coil for the misaligned rod and moving the other rods to match the misaligned rod. The stem gives information to discriminate between which method to use.

K/A {CFR}:	005AK2.02	[2.5/2.6]	{41.7}
	005AK3.06	[3.9/4.2]	{41.5, 41.10}
	005AA1.02	[3.7/3.5]	{41.7}

References: AOP-C.01

LP/Objectives: OPL271C357 Obj. B.4

History: Bank Question

Level: Analysis

Comments:

28. CCS-B.14.D 001

Given the following plant conditions:

- Unit 1 is in HOT STANDBY
- 480V SD BD 1A1-A FAILURE OR UNDERVOLTAGE annunciator illuminates

Which ONE (1) of the following equipment will now be UNAVAILABLE?

A. Electric Fire Pump.

B. CRDM Cooling Fan 1C-A.

C. Component Cooling Pump 1A-A.

D. Control Room Air Conditioning Compressor A-A.

Justification:

a. *Incorrect because Fire Pump 1A-A is powered from 480V Shutdown Board 1A2-A.*

b. *Incorrect because CRDM Cooling Fan 1C-A is powered from 480V Shutdown Board 1A2-A.*

c. *Correct because Component Cooling Pump 1A-A is powered from 480V Shutdown Board 1A1-A.*

d. *Incorrect because Control Room Air Conditioning Compressor A-A is powered from 480V Shutdown Board 1A2-A.*

K/A: 008 K2.02 [3.0 - 3.2]
008 K6.04 2.1/2.3

Reference: AOP-P.05, pages 42 & 43

Objective: OPL271CCS, B.14.d

Level: Memory

History: Bank Question

Comments:

29. OPT200.RCP-B.8 001

The following plant conditions exist:

- Unit 2 is initially at 100% power.
- A small break LOCA has occurred requiring manual reactor trip and safety injection.
- You are the CRO verifying back panel alarms after immediate actions of E-0 have been completed.

- The following CCS alarms on have all just come in simultaneously:

  M27B-D
  A-2 "CCS PUMP 2A-A DISCH PRESSUREHIGH-HIGH"
  A-3 "CCS PUMP 2B-B DISCH PRESSURE HIGH-HIGH"

  M27B-E
  A-1 "CCS REAC BLDG SUPPLY HEADER FLOW LOW"
  B-1 "RC PUMPS THRM BARRIER RETURN HEADER FLOW LOW"
  B-2 through B-5 "RC PUMP 1/2/3/4 THRM BARRIER OUTLET FLOW LOW"
  D-1 "RC PUMPS OIL CLR RETURN TEMPERATURE HIGH"
  D-2 through D-5 "RC PUMP 1/2/3/4 OIL COOLERS OUTLET FLOW LOW"

- No other abnormal CCS alarms have been received.

Which ONE of the following describes the cause of the above annunciators?

A. Check phase B has actuated and announce same to crew. Alarms are expected.

B. Check CCS surge tank level indicators rising. Announce to crew RCP thermal barrier leakage. Alarms are not expected.

C. Check CCS surge tank level indicators dropping. Announce CCS supply to reactor building piping break to crew. Alarms are expected.

D. Check status of RCP thermal barrier isolation valves. Announce thermal barrier isolation valve misalignment to the crew. Alarms are not expected.

Justification:

a. *Correct. Small break LOCA is in progress, so a Phase B isolation would be an expected response. Alarms are indication that isolation did in fact occur.*

b. *Thermal barrier leakage would not result in a change in CCS flow to RCP oil coolers.*

c. *With the listed alarms, the reactor building supply header break would result in CCS low header pressure alarms as well. Stem lists that alarms received are the only ones that have annunciated.*

d. *RCP thermal barrier isolation valves closing would not result in A-1 or D-2 thru D-5 annuciators.*

K/A {CFR}:	003 G2.4.46	[3.5/3.6]	{43.5/45.3/45.12}
References:	0-AR-M27-B-E		
LP/Objectives:	OPL200.RCP B.8		
History:	New 03/08/2004		
Level:	Analysis		
Comments:	Reworded all distractors to position alarm expectations at the end. Reviewed by R. Creek, S. R. Johnson 3/15/04. Unit 1 response verified on simulator 3/17/04.		

30. CVCS-B.7 001

Given the following plant conditions:

- Unit 1 is operating steady state at 93% power
- Unit is at EOL in coastdown for the upcoming refueling outage
- "LS-62-129A/B VOLUME CONTROL TANK LEVEL HI-LOW" alarms on M-6
- LI-62-129, VCT Level, indicates 100%
- LI-62-130, VCT Level, indicates 35% decreasing

Which ONE of the following describes the effect on the plant?

A. Pressurizer level will decrease to 17% resulting in letdown system isolation and recovery of VCT level.

B. Auto makeup will initiate at 20%, level will continue to decrease slowly till suction to the operating charging pumps is eventually lost.

C. VCT level will continue to decrease until the operator manually initiates makeup through the blender.

D. Suction to the operating CCP will align to the RWST when VCT level decreases to 7%.

Justification:

a. *Letdown isolation will not cause VCT level recovery.*

b. *Correct. Makeup is restricted to 70 gpm from the PW pumps based on the EOL coastdown comment in the question stem. VCT level will dontinue to drop until CCP loses suction.*

c. *VCT level will drop, but since the auto makeup function is still available, manual operator action is not required.*

d. *Both LT-62-129 and LT-62-130 must be below 7% for auto swap to RWST to occur.*

K/A {CFR}:	004 A1.06	[3.0/3.2]	{41.5, 45.5}
References:	1-AR-M6-C, page 5		
LP/Objectives:	OPT200.CVCS. Obj. B.15.f.		
History:	HLC 9809 Audit Exam		
Level:	Analysis		
Comments:	Reviewed by R. Creek, S. R. Johnson 3/15/04		

31. RHR-B.13.I 001

Which ONE of the following states the requirement for RHR system boron concentration prior to placing RHR in operation for shutdown cooling?

Greater than or equal to the ...

A. current RCS boron concentration to prevent dilution.

B. current RWST boron concentration to prevent a loss of shutdown margin.

C. minimum RCS boron concentration required for shutdown margin to prevent dilution.

D. the minimum RWST boron concentration allowed by technical specifications to prevent a loss of shutdown margin.

Justification:

a. *Incorrect per reference. If RHR loop is above minimum for shutdown margin no recriticality can occur on pump start. RCS boron may be well above minimum.*

b. *Incorrect per reference.. Shutdown margin, not RWST boron, is limiting factor.*

c. *Correct, per reference.*

d. *Incorrect per reference. Shutdown margin, not RWST boron, is limiting factor.*

K/A {CFR}:	005 K5.09 [3.2/3.4]
References:	0-SO-74-1
LP/Objectives:	OPL271RHR, Obj.B.13.i
History:	Bank Question - HLC 9809 Audit Exam
Level:	Memory
Comments:	Reviewed by R. Creek, S. R. Johnson 3/15/04

32. ECCS-B.14.C 001

Per the FSAR, which ONE of the following is the highest RCS pressure at which the Safety Injection Pumps will deliver water to the RCS?

A. 1050 psig

B. 1250 psig

C. 1500 psig

D. 1650 psig

Justification:

a. *Pump delivering flow but will still be delivering flow at 1500 psig (higher pressure).*

b. *Pump delivering flow but will still be delivering flow at 1500 psig (higher pressure).*

c. *FSAR shutoff head is 1520 psig so pump would still be delivering flow at this pressure.*

d. *Above shutoff head of SI pump per FSAR.*

K/A {CFR}:	006 K6.03	[3.6/3.9]	{41.7, 45.7}

References: E-0
FSAR Table 6.3.2-1
1/2-SI-SXP-063-201.A/B

LP/Objectives: OPT200.ECCS, Obj. B.14.c.

History: INPO NRC Bank Question, ..006000.K6.03 Callaway 1 modified

Level: Memory

Comments: Reviewed by R. Creek, S. R. Johnson 3/15/04
K/A was approved by NRC, based on question in INPO NRC Bank.

33. PRT-B.11 001

Which ONE of the following is an indication that the PRT has ruptured following a pressurizer PORV failing OPEN?

A. PRT temperature increasing.

B. Pressurizer level decreasing.

C. Containment humidity increasing.

D. Relief line temperature increasing.

Justification:

a. *Incorrect. PRT temperature increases prior to rupture.*

b. *Incorrect. PZR level would tend to increase as a function of this event (similar to vapor space break response).*

c. *Correct. As steam is released to the containment atmosphere, humidity will be rising.*

d. *Incorrect. Indication of PORV open, not PRT rupture. When PRT ruptures, PORV backpressure drops initially.*

K/A {CFR}:	007 A1.01 007 K1.01	[2.9/3.1]	{41.5, 41.10, 45.6, 45.13}

References: General Physics GFES Thermodynamics Chapter 4.

LP/Objectives: OPT200.PZRPRT, Obj. B.15.b
OPT200.PZRPRT, Obj. B.9.a

History: Bank Question

Level: Memory

Comments:

34. PZR PRESS-B.14.B 001

The following plant conditions exist on Unit 1:

- Reactor is at 100% RTP
- A small leak has developed on the line connecting the PZR to PORV 1-PCV-68-340.

Which ONE of the following describes the response of the PZR pressure control circuit to this event?

A. Backup heaters will energize as PZR pressure lowers to less than 2210 psig.

B. Control Bank heaters will be fully energized when PZR pressure lowers to less than 2225 psig.

C. All pressurizer (backup and control) heaters will energize when PZR level rises 5% above program level.

D. When control bank heaters are fully energized, an alarm will sound alerting the operators to the low pressure condition.

Justification:

a. Correct.

b. Incorrect, since variable heaters are fully energized at 2218 psig.

c. Incorrect, since only backup heaters are energized by the level deviation.

d. Incorrect, since low pressure alarm is sounded when backup heaters energize.

K/A {CFR}:	010 K6.02	[3.2/3.5]	{41.7, 45.7}
References:	TI-28 Atttachment 9, pg 15 of 18		
LP/Objectives:	OPT200.PZRPCS, Obj. B.14.b		
History:	New Question		
Level:	Analysis		
Comments:	Reviewed by R.Creek and S. Johnson 3/15/04		

35. PZR PRESS-B.17.B 001

The following plant conditions exist on Unit 1:

- The PZR master pressure controller is in AUTO.
- Controller output has failed to ZERO.

With NO operator actions, which ONE of the following describes the RCS pressure response?

A. Pressure will stabilize at the pressure corresponding to the setpoint.

B. Pressure will rise to the high pressure reactor trip setpoint.

C. Pressure will drop to the low pressure reactor trip setpoint.

D. Pressure will rise, then cycle at the PORV setpoint.

Justification:

a. *Incorrect. All backup heaters will be energized causing pressure to rise.*

b. *Incorrect. Although PZR pressure will rise, one of the PZR PORVs will cycle to control pressure.*

c. *Incorrect. All heaters will be energized, causiing PZR pressure to rise.*

d. *Correct.*

K/A {CFR}:	010 A3.02	[3.6/3.5]	{41.7, 45.5}
References:	1-47W611-68-3 TI-28 Atttachment 9, pg 15 of 18		
LP/Objectives:	OPT200.PZRPCS, Obj. B.17.b		
History:	INPO NRC Bank Question 010000.A3.02 Braidwood 1		
Level:	Analysis		
Comments:	Reviewed by R. Creek, S. R. Johnson 3/16/04		

36. RPS-B.4.A 001

Which ONE of the following describes the effect on Limiting Safety System Setpoints for Overtemperature ΔT (OTΔT) and Overpower ΔT (OPΔT) if Tavg decreases while Reactor power remains at 100%?

Assume Pressurizer pressure remains near 2235 psig.

A. OTΔT setpoint will increase and OPΔT setpoint will remain the same.

B. OTΔT setpoint will remain the same and OPΔT setpoint will increase.

C. OTΔT setpoint will increase and OPΔT setpoint will decrease.

D. Both OTΔT and OPΔT setpoints will decrease.

Justification:

a. *Correct.*

b. *As RCS temperature drops, the margin to DNB becomes larger. This will raise the setpoint for the OPDT trip above the nominal full power value. The margin to the calculated OPDT setpoint will NOT be adjusted by a drop in Tavg, so the setpoint remains the same.*

c. *As RCS temperature drops, the margin to DNB becomes larger. This will raise the setpoint for the OPDT trip above the nominal full power value. The margin to the calculated OPDT setpoint will NOT be adjusted by a drop in Tavg, so the setpoint remains the same.*

d. *As RCS temperature drops, the margin to DNB becomes larger. This will raise the setpoint for the OPDT trip above the nominal full power value. The margin to the calculated OPDT setpoint will NOT be adjusted by a drop in Tavg, so the setpoint remains the same.*

K/A {CFR}:	012 K4.02	[3.9 / 4.3]	{41.7}
References:	TS 2.2.1		
LP/Objectives:	OPT200.RPS, Obj. B.15.b		
History:	Old Bank Number PL-0812		
Level:	Comprehension		
Comments:	Reviewed by R. Creek, S. R. Johnson 3/16/04		

37. RPS-B.17.A 001

Which ONE of the following describes the type of core protection afforded by the RPS Overtemperature ΔT Trip?

A. Power density.

B. Total core power.

C. Departure from Nucleate Boiling.

D. Linear heat generation rate (kW/ linear foot).

Justification:

a. Incorrect. Protection afforded by OPDT trip.

b. Incorrect. Protection afforded by Power Range Hi Flux trip.

c. Correct.

d. Incorrect. Protection by OPDT trip

K/A {CFR}:	012 K5.01	[3.3/3.8]	{41.5, 45.7}
References:	Tech Spec 2.2.1, Bases Overtemperature Delta T		
LP/Objectives:	OPT200.RPS, Obj. B.17.a		
History:	INPO NRC Bank Question ..012000.K5.01, Prairie Island 2		
Level:	Memory		
Comments:	Reviewed by R. Creek, S. R. Johnson 3/16/04		

38. RPS-B.24.F 001

The following plant conditions exist on Unit 1:

- Reactor is at 100% RTP
- A manual Phase A isolation signal on Train A was actuated.

Which ONE of the following describes the impact and corrective actions required to be taken in response to this event?

	Impact	Actions
A.	Letdown Isolation 1-FCV-62-69 closes.	Place excess letdown in service.
B.	All orifice isolation valves close.	Place excess letdown in service.
C.	1-FCV-62-77 and ALL orifice isolation valves close.	Reset Phase A Train A isolation signal, return letdown to service
D.	1-FCV-62-69 and ALL orifice isolation valves close.	Reset Phase A Train A isolation signal, place excess letdown in service using EA-63-3.

Justification:

a. *Incorrect. 1-LCV-62-69 does not isolate on a Phase A signal and CCS to the excess letdown heat exchanger does isolate on a Phase A signal.*

b. *Incorrect. All orifice isolation valves do close but the CCS to the excess letdown heat exchanger does isolate on a Phase A signal.*

c. *Correct*

d. *Incorrect, establishing letdown would be preferred to excess letdown.*

K/A {CFR}:	013 A2.06	[3.7/4.0]	{41.5, 43.5, 45.3, 45.13}
References:	1-47W611-63-1, 1-47W611-88-1, 1-47W611-62-1		
LP/Objectives:	OPT200.RPS, Obj. B.24.f		
History:	New Question		
Level:	Analysis		
Comments:	Reviewed by R. Creek, S. R. Johnson 3/16/04 Incorporated comments by P. Boyd 4/7/04		

39. PZR PRESS-B.17 001

Given the following plant conditions:

- Unit 2 is in Mode 3 preparing for startup.
- "C" CSST is inadvertently deenergized.
- 2B Diesel fails to start, and all other ESF equipment responds as required.

Which ONE of the following correctly describes the pressurizer heater groups that will be available to maintain RCS pressure?

A. All backup heaters groups and the control heater group 2D.

B. Backup heater groups 2A-A, 2B-B, and 2C.

C. Backup heaters groups 2A-A, 2B-B, and control heater group 2D.

D. Backup heater groups 2A-A and control heater group 2D.

Justification:

a. *Incorrect - control heater 2D will not come back on after blackout.*

b. *Correct - "B" shutdown board is not affected and 2A heater group is only group that will come back on after blackout.*

c. *Incorrect - Assumes "B" shutdown board lost power and 2D fed off "A" Shutdown Bd. and not "B".*

d. *Incorrect - "B" Shutdown Board did not lose power.*

K/A {CFR}:	011 K2.02	[3.8/3.9]	{41.7}
	062 K2.01	[3.3/3.4]	{41.7}
	010 A4.02	[3.6/3.4]	{41.7/45.5 to 45.8}

References: 2-47W611-68-3

LP/Objectives: OPT200.PZRPCS, Obj.B.10.a.

History: Bank Question (New - JES 03/07/04)

Level: Analysis

Comments:

40. CTMT COOL-B.9 001

Given the following plant conditions:

- Unit 1 is stable at 100% power.
- Lower compartment temperature is 105°F.
- Upper compartment temperature is 95°F.
- 3 Lower Compartment Coolers are in service.
- 2 Upper Compartment Coolers are in service.
- The ICS computer has just failed.

Which ONE the following describes the effect on Containment Temperature?

A. Upper compartment temperature will rapidly increase because its TCVs will fail closed when the ICS signal is lost.

B. Lower compartment temperature will rapidly decrease because its TCVs will fail open when the ICS signal is lost.

C. Upper and Lower compartment temperatures will remain approximately the same because the TCV controllers are operated in local manual per the SO.

D. Lower compartment temperature will remain approximately the same if the TCV controllers are NOT reset locally.

Justification:

To arrive at an answer the candidate must understand the following:

- *These lower compartment TCVs are the only one of this type used at the plant*
- *The controllers use an input temperature signal from the ICS computer. If the input temperature signal is lost the controller will lock its output at the current value until the RESET pushbutton is depressed or the controller is placed in MANUAL control and the output adjusted.*
- *If RESET is depressed with the ICS input signal absent or failed low the controller assumes it is a valid signal and will close the TCV. When the TCV closes with the unit at power lower compartment temperature will increase.*

K/A: 022 A1.01 [3.6 / 3.7]

Reference: 0-SO-30-5, section 8.2

Objective: OPT200.CONTCOOLING, B.15.a.

History: Bank Question

Level: Comprehension

Comments: This question is based on a recent plant event where the TCV controllers were reset with the ICS computer signal failed. This resulted in an increase in lower compartment temperatures almost to the Tech Spec limit.

Reviewed by R. Creek, S. R. Johnson 3/16/04

41. CTMT-B.3 002

Given the following plant conditions:

- Mechanical maintenance is adjusting the ice condenser inlet door spring tension.
- The maintenance technician adjusts the zero load position of the spring such that the door is fully shut

Which ONE of the following describes how the ice condenser operation is affected by the maintenance action?

A. The inlet door will NOT open fully for large accidents.

B. The inlet door will be fully open during normal operations.

C. A significant inlet flow maldistribution may occur for large accidents.

D. A significant inlet flow maldistribution may occur for very small incidents.

Justification:

a. *Incorrect because the zero load position of the spring mechanism is used to maintain the inlet door slightly open under no load conditions.*

b. *Incorrect because the zero load position was adjusted to maintain the inlet doors fully closed.*

c. *Incorrect because inlet doors will be fully open under large loads.*

d. *Correct because the inlet doors will be fully closed under no load conditions. Therefore, when the doors open, the cold air head will be lost and inlet flow may be poorly distributed for a very small event. With the spring mechanism properly adjusted, the door is held slightly open by the gasket such that small accident (event) flow distribution will be satisfactory.*

K/A: 025 K6.01 [3.4/3.6] {41.7, 45.7}

Reference: FSAR Section 6.5.9

Objective: OPT200.ICE, Obj. B.14.a

Level: Comprehension

Source: Bank Question (Developed 7/16/98)

Comments: Reviewed by R. Creek, S. R. Johnson 3/16/04. Modified distractors to make impact of a single door vs. multiple doors.

42. ICE COND.-B.0 001

Which ONE of the following statements best describes the means of protecting the ice condenser glycol piping from becoming a release path during an accident?

A. Isolation valves on supply and return line penetrations isolate on a Containment Ventilation Isolation signal.

B. Isolation valves on supply and return line penetrations isolate on a Phase A Containment Isolation signal.

C. Isolation valves on supply and return line penetrations isolate on a Phase B Containment Isolation signal.

D. Piping is designed to handle full rated pressure. Glycol flow to containment remains in service during LOCA to remove heat from containment.

Justification:

a. Incorrect, per reference valves close on Containment Phase A isolation signal.

b. Correct, per reference valves close on Containment Phase A isolation signal.

c. Incorrect, per reference valves close on Containment Phase A isolation signal.

d. Incorrect, per reference valves close on Containment Phase A isolation signal.

K/A {CFR}:	025 A3.02	[3.4/3.4]	{41.7, 45.5}
	025 A4.01	[3.3/2.7]	{41.7, 45.5, 45.6, 45.7, 45.8}
References:	FSAR Section 6.5.6.2		
LP/Objectives:	OPT200.ICE. Obj.B.17.b.		
History:	Bank Question		
Level:	Memory		
Comments:	Reviewed by R. Creek, S. R. Johnson 3/16/04		

43. MS-B.17.B 001

The following conditions exist on Unit 1:

- A plant shutdown and cooldown is in progress.
- The operating crew is in the process of isolating the Cold Leg Accumulator valves per 0-GO-7 UNIT SHUTDOWN FROM HOT STANDBY TO COLD SHUTDOWN
- 1-PIC-1-33 controller fails, causing all steam dumps to open.

Which ONE of the following will occur?

A. MSIVs will be closed due to low steam line pressure.

B. MSIVs will be closed due to manual operator action.

C. MSIVs will be closed due to negative rate function.

D. MSIVs will be closed due to high steam flow function.

Justification:

a. *Incorrect. The Low Steam Line Pressure SI would have been blocked when RCS pressure was initially reduced to <1920 psig (P-11).*

b. *Incorrect. The pressure transient caused by all steam dumps opening will drop steam pressure before an operator could respond.*

c. *Correct. Function is enabled when Low Steam Line Pressure SI is blocked.*

d. *Incorrect. High steam flow will cause annunciation but will not cause MSIV closure*

K/A {CFR}:	039 A3.02	[3.3/3.5]	{41.5, 45.5}
References:	0-GO-7, 1-47W611-1-1		
LP/Objectives:	OPT200.MS, Obj. B.17.b		
History:	New Question		
Level:	Analysis.		
Comments:	Include references provided(Bold) to examinee and any additional information necessary.		

44. CSS B.11.B 001

The following plant conditions exist:

- Unit 1 initially at 100% power.
- 1A-A Containment Spray pump is initially out of service for impeller replacement.
- A large break LOCA has occurred.
- 1B-B Containment Spray (CS) Pump is running but not developing rated head.
- Adequate suction pressure to the 1B-B CS pump has been verified.
- Containment pressure is 10 psig.
- 60 minutes have elapsed since the start of the accident.
- ES-1.3, Transfer to RHR Containment Sump has been completed.

Which ONE of the following describes the impact of the 1B-B Containment Spray pump malfunction?

A. 1B-B Containment Spray pump can be left running. RHR spray should be placed in service in accordance with FR-Z.1.

B. No further action is required at this time since the 1B-B Containment Spray pump is maintaining containment pressure below design basis.

C. 1B-B Containment Spray pump should immediately be tripped and placed in pull-to-lock to permit placing RHR spray in service in accordance with FR-Z.1.

D. 1B-B Containment Spray pump should immediately be tripped and placed in pull-to-lock since it is not performing as required. No additional actions are required.

Justification:

a. *Correct. Per FR-Z.1, all conditions have been satisfied to place RHR spray in service. Containment Spray pump 1B-B may continue to run.*

b. *Incorrect. Conditions have been met to place RHR spray in service to limit containment pressure.*

c. *Incorrect. Containment Spray pump can continue to run while RHR Spray aliognment is established.*

d. *Incorrect. Information provided in the stem does not require 1B-B CS pump to be locked out.*

K/A {CFR}:	026 K3.02	[4.2/4.3]	{41.7/45.6}
	026 A2.04	[3.9/4.2]	{41.5/43.5/45.3/45.13}

References: FR-Z.1

LP/Objectives: OPT200.CS B.11.b

History: New 03/01/2004

Level: Comprehension

Comments: Reviewed by R. Creek, S. R. Johnson 3/16/04

45. FW-B.5.A 001

Which ONE of the following describes the functional relationship between the Main Feedwater Pump and Main Feedwater Reg Valve when the Unit is raising power from 80-100% power?

Main FW Pump Speed Control	FW Reg Valve
A.✓ Maintains a variable ΔP Program.	Throttles to maintain a constant S/G level program.
B. Maintains a constant ΔP Program.	Throttles to maintain a variable S/G level program.
C. Maintains a variable ΔP Program.	Throttles to maintain a variable S/G level program.
D. Maintains a constant ΔP Program.	Throttles to maintain a constant S/G level program.

Justification:

a. *Correct.*

b. *Incorrect. DP program is variable from 80-100% power. SG program level is constant at 44% from 20-100% turbine power.*

c. *Incorrect. DP program is variable from 80-100% power. SG program level is constant at 44% from 20-100% turbine power.*

d. *Incorrect. DP program is variable from 80-100% power. SG program level is constant at 44% from 20-100% turbine power.*

K/A: 059 K1.04 [3.4 / 3.4]

Reference: 0-GO-4, 0-GO-5

Objective: OPT200.MFW, Obj.B.9.d.

History: Bank Question

Level: Comprehension

Comments: Reviewed by R. Creek, S. R. Johnson 3/16/04

46. COND-B.3 001

Unit 1 is operating at 100% power and all systems are aligned normal. The crew notices the "PS-2-129 Low NPSH at MFP's" alarm just annunciated.

Which ONE of the following could bring in this alarm?

A. Condensate low pressure heater strings "A" and "B" isolated on hi-hi #7A and #7B heater levels.

B. High pressure feedwater heater #1A discharge valve was inadvertently closed.

C. Trip of a condensate booster pump.

D. Condensate intermediate heaters #3B and #3C are above program level.

Justification

A. Incorrect, there is no string isolation logic associated with the #7 heaters.

B. Incorrect, the isolated #1 heater discharge valve is downstream of the MFP.

C. Correct, per reference.

D. Incorrect, the #3 heaters do not have a program level.

K/A[CFR]: 056 K1.03 [2.6/2.6] [41.2-9]

Reference: 1-AR-M3-A (E-1)
1,2-47W611-2-1
1,2-47W611-2-2
1,2-47W803-1

LP/Objective: OPT200.COND, Obj. B.9.c.

History: Bank Question

Level: Memory

Comments:

47. AFW-B.4 001

Which ONE of the following is the correct power supply to 1-FCV-3-136B Auxiliary Feedwater System ERCW Header Isolation Valve?

A. 480v Unit Bd 1A.

B. 250v Battery Bd #1.

C. 480v Rx MOV Bd 1A2-A.

D. 480v Turbine MOV Bd 1A.

Justification

A. Incorrect per reference. Different 480V power source.

B. Incorrect per reference. Credible source if valve was DC powered.

C. Correct per reference. Different 480V power source.

D. Incorrect per reference. Different 480V power source.

K/A[CFR]:	061 K2.01	[3.2/3.3]	[41.7]
Reference:	1-SO-3-2, Att. 1 1,2-45N779-10		
LP/Objective:	OPT200.AFW. Obj.B.10.a.		
History:	Bank Question		
Level:	Memory		
Comments:	Reviewed by R. Creek, S. R. Johnson 3/16/04 Modified stem to simplify terminology.		

48. FW-B.5.B 001

Which ONE of the following describes the SSPS input to the MFW Pump trip circuitry?

A. The SSPS provides a signal to a 120v AC trip solenoid valve which dumps trip oil thus tripping the pump.

B. The SSPS provides a signal to the overspeed trip plunger which dumps trip oil thus tripping the pump.

C. The SSPS provides a signal to a 48v DC trip solenoid valve which dumps trip oil thus tripping the pump.

D. The SSPS provides signals to two 125v DC trip solenoid valves which dump trip oil thus tripping the pump.

Justification

A. Incorrect per reference. MFW pump trip coils supplied by 125VDC, not 120VAC.

B. Incorrect per reference. MFW pump tripped by solenoid valve vice trip plunger.

C. Incorrect per reference. MFW pump trip coils supplied by 125VDC, not 48VDC.

D. Correct per reference.

KA[CFR]:	063 K4.04 [2.6/2.9] [41.7] 059 K4.16 (3.1-3.2)
References:	1,2-47W611-99-4
LP/Objective:	OPT200.DC, Obj. B.12.d OPT200.FW Obj. B.12.n
History:	System bank; 9/2/97 Makeup Audit Exam.
Level:	Memory
Comments:	FHW 12/02 063 K4.04 Reviewed by R. Creek, S. R. Johnson 3/16/04

49. D/G-B.9.A 001

The following plant conditions exist on Unit 1:

- Reactor is at 100% RTP.
- Surveillance testing of the 1A D/G is in progress.
- 1A D/G is paralleled to 6.9kV Shutdown Board, and is loaded to 4.0 Mw.
- A loss of offsite power has occurred.

Which ONE of the following describes the how the AC electrical distribution system will be affected during this event?

A. 1A D/G breaker will trip and be locked out by an overcurrent device.

B. 1A D/G will trip due to overcurrent and 1A 6.9 kV SD Board will remain deenergized.

C. 1A DG will maintain power to 1A 6.9 kV SD Board and the loads it is supplying on the 1A 6.9 kV Unit Board.

D. 1A DG breaker is tripped by an overcurrent device and when load shedding is complete, the 1A D/G will reenergize the 1A 6.9 kV SD Board.

Justification:

a. *Incorrect. Breaker will not lock out on overcurrent trip (not differential trip).*

b. *Incorrect. Diesel generator will repower 1A 6.9kV Shutdown Board.*

c. *Incorrect. Loads on Unit Board exceed capacity of diesel generator.*

d. *Correct.*

K/A {CFR}:	064 K1.01	[3.8/4.2]	{41.5}
References:	1-SO-82-1		
LP/Objectives:	OPT200.DG, B.9.a		
History:	Modified bank question, Electrical 218E082.005		
Level:	Analysis		
Comments:			

50. OPT200.DG-B.11.C 001

The following plant conditions exist:

- Both units were operating at 100% power.
- Offsite power was lost.
- All required manual diesel loading due to loss of offsite power was completed with no spare component placed in service.
- 2B-B CCP was running.
- Both units are stable in mode 3.
- 2A-A diesel generator subsequently catastrophically failed.

Which ONE of the following describes the additional major loads required to be manually loaded on running diesel generators in response to the failure of 2A-A diesel?

A. Battery charger for vital battery board III, battery charger for #2 250V battery board.

B. Battery charger for vital battery board IV, battery charger for #1 250V battery board

C. Train A ERCW pump, battery charger for vital battery board IV, battery charger for #1 250V battery board.

D. Train A ERCW pump, battery charger for vital battery board III, battery charger for #2 250V battery board.

Justification:

a. *Correct. Vital battery board III and #2 250V battery chargers have lost their power supply.*

b. *Incorrect. Wrong chargers.*

c. *Incorrect. Wrong chargers, can't start additional ERCW pump on diesel generators.*

d. *Incorrect. Correct chargers, can't start additional ERCW pump on diesel generators.*

K/A {CFR}:	064 K3.03	[3.6/3.9]	{41.7/45.6}
References:	AOP-P.06 0-SO-250-5		
LP/Objectives:	OPL200.DG B.11.c		
History:	New 03/09/2004		
Level:	Analysis		
Comments:	Reviewed by R. Creek, S. R. Johnson 3/16/04 . Modified a. and b. to make technically accurate.		

51. ERCW-B.18.A 001

The following plant conditions exist on Unit 1:

- ERCW pump L-B has tripped.
- Train B ERCW header pressure has dropped to 70 psig.

Which ONE of the following describes the actions required to be taken in response to this event?

A. Start M-B ERCW pump to restore flow to Train B ESF equipment.

B. Lock out the L-B ERCW pump, manually start another B Train ERCW pump.

C. Ensure the L-B ERCW pump is selected by the Emergency Power Selector Switch.

D. Be in hot standby within the next 6 hours and cold shutdown in the following 30 hours.

Justification:

a. *Incorrect. Incomplete statement, since it does not address lock out of tripped ERCW pump.*

b. *Correct.*

c. *Incorrect. AOP-M.01 requires selecting away from failed pump.*

d. *Incorrect. Pump trip does not result in entry into the described T.S. ACTION.*

K/A {CFR}:	076 A4.01	[2.9/2.0]	{41.7, 45.5, 45.6, 45.7, 45.8}
References:	AOP-M.01		
LP/Objectives:	OPT200.ERCW, B.18.a		
History:	New Question		
Level:	Memory		
Comments:	Reviewed by R. Creek, S. R. Johnson 3/16/04		

52. ERCW-B.9.B 001

The following plant conditions exist on Unit 1:

- Reactor is at 100% RTP.
- The operating crew has determined that Train A ERCW supply header has failed in the yard area.
- AUOs have been dispatched per the applicable procedure.

Which ONE of the following describes the actions to be performed by these AUOs locally?

AUOs are...

A.✓ at specific locations to place power on, manipulate, then remove power from selected valves to support isolation of the leak.

B. standing by to safe stop the auxiliary air compressors in the event they auto-start.

C. at specific locations to open the alternate ERCW supply for the 1A and 2A D/G.

D. standing by to start additional lower compartment and CRDM fans.

Justification:

a. *Correct.*

b. *Incorrect. AOP-M.01 directs aux air compressors to be placed in safe-stop. AUO would be dispatched to perform action then would be assigned another task. "standing by" and "in the event they auto-start" make this distractor incorrect.*

c. *Incorrect. Action can be accomplished from main control room.*

d. *Incorrect. Action can be accomplished from main control room.*

K/A {CFR}:	076 2.1.8	[3.8/3.6]	{45.5, 45.12, 45.13}
	062 AA2.03	[2.6/2.9]	{43.5, 45.13}

References: AOP-M.01

LP/Objectives: OPT200.ERCW, B.16.b.

History: New Question

Level: Comprehension

Comments: Reviewed by R. Creek, S. R. Johnson 3/16/04

53. RMS-B.2 001

Which ONE of the following Unit 1 radiation monitors will actuate a Containment Vent Isolation (CVI) Signal?

A. Containment Upper Compartment Particulate Monitor, 1-RE-90-112 - Channel A.

B. Containment Lower Compartment Iodine Monitor, 1-RE-90-106 - Channel C.

C. Post Accident Lower Compartment High Range Monitor, RE-90-273.

D. Containment Purge Air Exhaust Radiation Monitor, 1-RE-90-130.

Justification:

a. Incorrect. Monitor does survey containment but is not input to CVI.

b. Incorrect. Monitor does survey containment but is not input to CVI.

c. Incorrect. Monitor does survey containment but is not input to CVI.

d. Correct. 1-RE-90-130 and 131 initiate CVI.

K/A {CFR}: 071 A3.03 (3.6-3.8) {41.7, 41.11}
071 K4.01 (3.3-3.6) {41.7}
073 K3.01 (3.6 - 4.2)
073 A2.02 (2.7 - 3.2)

References: TS 3.3.2.1

LP/Objectives: OPT200.RM, Obj. B.11.a.

History: Bank Question

Level: Memory

Comments:

54. AIR-B.12 001

Given the following plant conditions:

- Unit 1 and 2 are at 100% power
- A leak develops on the Control Air System
- Control air pressure 74 psig and DECREASING

Which ONE (1) of the following identifies the system response that should occur by the time control air pressure reaches 74 psig?

A. Auxiliary air isolates from control air.

B. Auxiliary air compressors start and load.

C. Auxiliary air to containment valves fail closed.

D. Only Control air compressors start and fully load.

Justification:

a. *Incorrect because auxiliary air isolates from control air at 69 (66.5 - 71.5) psig.*

b. *Correct because auxiliary air compressors start at 77 (74.5 - 79.5) psig.*

c. *Incorrect because auxiliary air to containment valves fail closed at 50 psig.*

d. *Incorrect because control and service air compressors load to 100% at 88 (86 - 90) psig.*

K/A: 078 K4.01 [2.7/2.9]

Reference: AOP-M.02, Section 3.1.B Symptoms Table

Objective: OPT200.CSA, B.12

Level: Memory

Source: Sequoyah Exam Bank 223. 078000A301 001

History: Stem and distractors a, b, c and d modified (7/9/98)

Reviewed by R. Creek, S. R. Johnson 3/16/04

55. RPS-B.15 001

Which ONE of the following is required before "A" train Containment Isolation Phase B signal will RESET?

A. Safety injection RESET.

B. "A" train phase B reset switch turned to reset.

C. Containment pressure less than 2.81psig 3/4 PTs.

D. Both train phase B reset switches turned to reset simultaneously.

Justification:

a. *Incorrect. SI signal does not factor in to the Containment Phase B reset logic.*

b. *Correct.*

c. *Incorrect. Containment Phase B may be reset even though a "standing" signal still exists.*

d. *Incorrect. To actuate a manual Phase B isolation both handswitches on M-6 or M-5 must be operated simultaneously.*

K/A {CFR}: 103 A4.04 (3.5-3.5) [41.7]

References: Logic print 47W611-88-1

LP/Objectives: OPT200.RPS Obj. B.15

History: new

Level: comprehension

Comments: Reviewed by R. Creek, S. R. Johnson 3/16/04

56. RD CNTRL-B.11.B 001

The following plant conditions exist on Unit 1:

- Reactor is at 100% RTP.
- The OATC notices that control rods are inserting at 72 steps/minute.

Prior to the OATC taking actions, which ONE of the following describes the response of the RCS to the rod insertion?

A. Reactor power will rise as main steam pressure drops.

B. Axial flux difference will become less negative.

C. PZR pressure will rise.

D. RCS Tavg will drop.

Justification:

a. *Incorrect. Steam pressure will drop but so will reactor power.*

b. *Incorrect. Axial flux becomes more negative.*

c. *Incorrect. Pressurizer pressure will drop.*

d. *Correct*

K/A {CFR}:	001 K3.02	[3.8/4.2]	{41.5}
References:	General Physics GFES Materials, Reactor Theory Chapter 8.		
LP/Objectives:	OPT200.RCCNTL, Obj. 11.b		
History:	New Question		
Level:	Analysis		
Comments:	Reviewed by R. Creek, S. R. Johnson 3/16/04		

57. OPT200.NIS-B.18 001

The following plant conditions exist:

- Unit 2 was operating at 100% power
- Control Bank D rods at 228 steps in automatic.
- Power Range Channel N-41 fails high.
- Control rods have been placed in manual after moving 3 steps in auto.
- The CRO is initiating actions to take N-41 out of service at the NIS drawers.

Which ONE of the following describes a correct action and its effect in response to these conditions?

A. CRO places power mismatch bypass switch to bypass N-41. This removes N-41 from the auctioneered high NIS input to the rate circuitry which was previously armed by the failed high N-41.

B. CRO places rod stop bypass to bypass N-41. Until this switch was repositioned, control rods could not move outward in automatic. Once the switch is repositioned, control rods may move outward in automatic.

C. CRO places trip bypass switch to bypass for N-41. This removes the N-41 signal from the trip circuitry so that it will take 2/3 of the remaining NIS channels exceeding their setpoint for a high flux reactor trip to occur.

D. CRO resets rate trip signals. This removes the N-41 rate trip signals from the trip circuitry so that it will take 2/3 of the remaining NIS channels exceeding their setpoint for a rate reactor trip to occur.

Justification:

a. *Correct.*

b. *Incorrect. This rod stop prevents both AUTO and MANUAL rod withdrawal until blocked. Rods cannot move out in automatic due to current rod position.*

c. *Incorrect. Power Range has no "trip bypass" function. This function does exist for source and intermediate range NIS channels.*

d. *Incorrect. Rate trip signals are not reset by the operator per AOP-I.01.*

K/A {CFR}:	015 A4.01	[3.6/3.6]	{41.7/45.5 to 8}
References:	AOP-I.01 1,2-47W611-99-2 1-5655D26-9		
LP/Objectives:	OPL200.NIS B.18		
History:	New 03/09/2004		
Level:	Analysis		
Comments:	Reviewed by R. Creek, S. R. Johnson 3/16/04		

58. AMSAC-B.6 001

Given the following plant conditions:

- Unit 2 is at 45% power
- All systems are aligned normal for this power level.
- 2B MFPT is tagged to perform maintenance on the trip bus.
- 2A MFPT automatic speed control malfunctions
- Levels in all S/Gs decrease to 5% before the CRO can take manual control of 2A MFPT and begin recovery.

Which ONE (1) of the following describes the plant response?

A. A reactor trip would immediately initiate as soon as S/G levels dropped to 15%.

B. The TDAFW pump would immediately start if the 2A MFPT tripped during S/G level recovery.

C. 2A-A MDAFW pump would automatically start if the S/G levels remained at 5% for 25 seconds.

D. The TDAFW pump LCVs would open as soon as S/G levels dropped to 10% for 2 seconds.

Justification:

a. *Incorrect. Trip Time Delay (TTD) function timer would prevent an immediate reactor trip due to SG low level.*

b. *Incorrect. B MFP trip bus would be deenergized in order to perform maintenance described in stem. Trip of A MFP would not cause start of TDAFW pump.*

c. *Correct.*

d. *Incorrect. TTD and EAM would call for TDAFW pump LCVs to open when SG levels were less than 15% and the TTD timer had timed out.*

K/A:	016 K4.03	[2.8/2.9]	{41.7}
	016 K1.09	[3.7/3.7]	{41.2-41.9, 45.7, 45.8}
	2.2.3	[3.1/3.3]	{41, 43, 45}

Reference: 1,2-47W611-99-4

Objective: OPT200.AMSAC, Obj. B.12.b.

History: Bank Question, Replace dist. b with more plausble statement - PEH 8/8/97

Level: Analysis

Comments: Reviewed by R. Creek, S. R. Johnson 3/16/04

59. CTMT COMB GAS-B.10 001

Which ONE of the following describes the normal power supply for 2B-B hydrogen recombiner?

A.✓ 2B-B Reactor Vent Board.

B. 2B1-B 480V Shutdown Board.

C. "B" 480V Auxiliary Building Common Board.

D. "B" 480V Auxiliary Building Common MCC Board

Justification:

a. *Correct.*

b. *Incorrect, per reference. Board is a 480V power board powering Aux Building components.*

c. *Incorrect, per reference. Board is a 480V power board powering Aux Building components.*

d. *Incorrect, per reference. Board is a 480V power board powering Aux Building components.*

K/A {CFR}:	028 K2.01	[2.5/2.8]	{41.7}
References:	0-SO-83-1, Attachment 2		
LP/Objectives:	OPT200.CtmtCombGas B.10		
History:	New 03/04/2004		
Level:	Memory		
Comments:	Reviewed by R. Creek, S. R. Johnson 3/16/04. Modified distractors c. and d. Rearranged distractors.		

60. SFPS-2 001

Given the following plant conditions:

- Refueling outage is in progress for Unit 2
- Unit 2 core offload is complete
- New fuel has been place in the Spent Fuel Pit (SFP) in preparation for core reload.

Which ONE (1) of the following would occur if the SFP was slowly diluted from a boron concentration of 2000 ppm boron to zero ppm boron?

A. Reduce SDM until criticality occurs in SFP.

B. Reduce SDM but criticality would not occur in SFP.

C. Increase Keff of SFP causing increased decay heat generation.

D. Increase Keff of SFP causing a neutron radiation hazard on the operating floor.

Justification:

A. See B below

B. Correct. SDM will be reduced but Keff will be maintained < 0.95 per Tech Spec.

C. Keff will increase due to less boron, however decay heat generation is not affected by boron concentration.

D. Keff will increase due to less boron, however the neutron shielding is provided by water and will not be affected by boron concentration.

K/A{CFR}:	033 K4.05	[3.1/3.3]	{41.7}
	033 K5.05	[2.1/2.3]	{41.5}
	033 A3.01	[3.0/3.5]	{41.5, 43.5}

References: Tech Spec 5.6.1.1.a

LP/Objectives: OPL273C9919, Obj. B.2

History: Modified stem of WBNOPS~1.bnk Q# SYS078A.04 003

Level: Memory

Comments: LP-5/2000. SFP 001

61. FH-B.15.B 001

Given the following conditions during refueling operations:

- Refueling cavity water level at normal refueling level
- Wafer valve is closed.

If the reactor cavity seal completely deflates, allowing maximum calculated leakage rate, which one of the following states the approximate time it would take for the refueling cavity to drain to the reactor vessel flange elevation?

A. 10 minutes

B. 40 minutes

C. 70 minutes

D. 120 minutes

Justification:

a. Incorrect, per reference.

b. Incorrect, per reference.

c. Correct.

d. Incorrect, per reference.

K/A {CFR}:	034 A1.02	[2.9/3.7]	{41.7/45.7}
References:	AOP-M.04, Appendix B		
LP/Objectives:	OPT200.FH B.5.a		
History:	Old Bank Number PL-1046		
Level:	Memory		
Comments:	Reviewed by R. Creek, S. R. Johnson 3/16/04.		

62. S/G-B.7 001

Given the following plant conditions:

- Unit 1 is operating at 50% power
- The # 1 SG controlling pressure transmitter fails HIGH

Which ONE (1) of the following describe the **INITIAL** feedwater flow response **AND** the correct operator action?

A. The feedwater flow would decrease due to the failure of the steam pressure input to the steam flow signal AND the operator should place the # 1 SG LCV in MANUAL and restore feed flow to match steam flow.

B. The feedwater flow would increase due to the failure of the steam pressure input to the steam flow signal AND the operator should place the # 1 SG LCV in MANUAL and restore feed flow to match steam flow.

C. The feedwater flow would decrease due to the failure of the steam pressure input to the steam flow signal AND the operator should leave the # 1 SG LCV in AUTO because SG level is the dominant control signal and will restore feed flow to match steam flow.

D. The feedwater flow would increase due to the failure of the steam pressure input to the steam flow signal AND the operator should leave the # 1 SG LCV in AUTO because SG level is the dominant control signal and will restore feed flow to match steam flow.

Justification:

A. Compensating pressure transmitter failing high will cause steam flow to indicate high, which will cause an increase[incorrect] in feed flow. The operator response is correct.

B. Correct. Compensating pressure transmitter failing high will cause steam flow to indicate high, which will cause an increase in feed flow. The operator response is correct.

C. Compensating pressure transmitter failing high will cause steam flow to indicate high, which will cause an increase[incorrect] in feed flow. The operator response is incorrect based on AOP-I.06. C and D distractor are valid because actual SG level is the dominant control signal and if the LCV were left in auto, it should match FF/SF after some time delay, however AOP-I.06 provide direction for transferring to Man control.

D. Compensating pressure transmitter failing high will cause steam flow to indicate high, which will cause an increase in feed flow. The operator response is incorrect based on AOP-I.06

K/A{CFR}:	035 A2.04	[3.6/3.8]	{41.5, 43.5}
	035 A2.03	[3.4/3.6]	{41.5, 43.5}
	035 A4.01	[3.7/3.6]	{41.7}
	035 A3.01	[4.0/3.9]	{41.7}
	054 AA2.08	[2.9/3.3]	{43.5}

Reference: AOP-S.01
AOP-I.06
AR-M6-B

LP/Objectives: OPT200.SG, Obj. B.Obj. B.17.a

History: Modified HotLicen.bnk Q# OPL271C028.7 005

Level: Analysis

Comments: Reviewed by R. Creek, S. R. Johnson 3/16/04.

63. LRW-B.18.A 001

The following plant conditions exist at the site:

- A refueling outage is in progress on Unit 1.
- Unit 2 is at 100% power.
- The liquid radwaste system is in normal lineup.
- Annunciator "0-RA-90-212A STA SUMP DISCH HIGH RADIATION" has just been received.
- 0-RM-90-212 appears to be operating properly (no instrument failure alarm).

Which ONE of the following describes the effects and required response to this alarm?

A. 0-RM-90-212 alarming automatically closed the "L" valve, terminating the release. An operator needs to verify the "L" valve closed.

B. The Turbine Building sump pump discharge needs to be verified aligned normally (to LVWT pond) and the "L" valve closed to stop the release.

C. The Turbine Building sump pump discharge needs to be verified aligned normally (to yard drainage) and the "L" valve closed to stop the release.

D. 0-RM-90-212 alarming tripped the Turbine Building sump pumps, terminating the release. An operator needs to verify the sump pumps are stopped.

Justification:

a. *Incorrect. 0-RM-90-212 does not provide an automatic isolation function to close the "L" valve.*

b. *Correct.*

c. *Incorrect. Turbine Buliding Sump is normally aligned to the Low Volume Waste Treatment pond.*

d. *Incorrect. 0-RM-90-212 in alarm does not cause the Turbine Building Sump Pumps to trip automatically.*

K/A {CFR}:	068 2.4.48	[3.5/3.8]	{43.5/45.12}
	068 2.3.11	[2.7/3.2]	{45.9/45.10}
	068 A4.03	[3.9/3.8]	{41.7/45.5 to 8}

References: 0-AR-M12-A

LP/Objectives: OPT200.LRW B.18.a

History: New 03/02/2004

Level: Comprehension

Comments: Reviewed by R. Creek, S. R. Johnson 3/16/04.

64. FPS-B.1 001

Which ONE of the following areas is protected by a manually activated sprinkler system?

A. 125V Battery Rooms.

B. Control Building Wall.

C. Cable Spreading Room.

D. Diesel Generator Building Corridor Area.

Justification:

a. Correct. Manually activated sprinkler (don't want to lose vital battery board due to inadvertant actuation of fire protection).

b. Incorrect. FPR required automatically actuated water suppression system.

c. Incorrect. FPR required automatically actuated water suppression system.

d. Incorrect. FPR required automatically actuated water suppression system.

K/A{CFR}: 086 K5.03 [3.1/3.4] {41.5}

References: Fire Protection Report 12.4.2 and 14.3

LP/Objectives: OPT200.HPFP, Obj. B.13.b.

History: New question

Level: Memory

Comments: Reviewed by R. Creek, S. R. Johnson 3/16/04.

65. RVLIS-B.11 001

The following conditions exist:

- Annunciator "XIS-68-387 REAC LEVEL CH-I HYDRO ISOLATOR TROUBLE is LIT on Unit 1.
- The US has dispatched an AUO to the local panel in the elevation 690 penetration room to investigate the cause of the alarm.
- The AUO reports that an amber light is lit on that particular channel.

Which ONE of the following describes the condition of RVLIS Channel I?

A. No problems exists on Channel I and that a Work Order should be generated on the control room annunciator.

B. High fluid, a possible high temperature condition exists in the transmitter or a leak exists on the RCS side of the transmitter.

C. An average RCS void fraction of less than 50% exists in the reactor for the present reactor temperature and pressure.

D. Low fluid, a possible leak exists on the sensing line from the isolator to the transmitter.

Justification:

A. Incorrect. Amber light is indicative of actual failure. Action would be correct if no other cause found for alarm.

B. Incorrect. Amber light indicates low, not high pressure condition. Red light indicates high pressure.

C. Incorrect. Indication provided is for inadequate core cooling.

D. Correct.

K/A {CFR}:	002 K6.03	[3.1/3.6]	{41.7, 45.7}
References:	1-AR-M4-B, Windows D-1		
LP/Objectives:	OPT200.RCS, Obj.B.14.d.		
History:	Bank Question		
Level:	Memory		
Comments:			

66. AOP-C.04-B.7 001

The following plant conditions exist on Unit 2:

- Unit 2 was operating at 100% power.
- Fire in the cable spreading room forced control room evacuation.
- Control had been successfully established from the Auxiliary Control Room.
- Offsite power was subsequently lost.

Which ONE of the following describes the correct Unit 2 OATC actions in response to these conditions?

A. Monitor automatic start, output breaker closure, and loading of diesel generators. Direct operators in field to monitor diesel for proper operation.

B. ✓ Ensure diesels are running. Notify shutdown board room operator to energize shutdown boards from diesels. Notify operator to ensure ERCW valves open at diesel generator.

C. Direct the operator at the D/G Building to start the diesels. Notify shutdown board room operator to energize shutdown boards from diesels. Notify operator to ensure ERCW valves open at diesel generator.

D. Ensure diesels are running. Energize shutdown boards from diesels using controls in Auxiliary Control Room (ACR). Monitor automatic loading of equipment. Manually load other required loads in the ACR. Notify operator to ensure ERCW valves open at diesel generator.

Justification:

a. *Incorrect. Output breakers will not close automatically under conditions given in the stem.*

b. *Correct.*

c. *Incorrect. D/Gs should automatically start on loss of power. Remainder of information in distractor will be addressed per AOP-C.04.*

d. *Incorrect. Controls listed for the D/G do not esixt in Aux Control Room.*

K/A {CFR}:	2.1.8	[3.8/3.6]	{45.5/45.12/45.13}
	068 AA1.10	[3.7/3.9]	{41.7/45.5/45.6}
	068 AK3.18	[4.2/4.5]	{41.5/41.10/45.6/45.13}

References: AOP-C.04

LP/Objectives: OPL271C423 B.7

History: New 03/08/2004

Level: Comprehension

Comments: Reviewed by R. Creek, S. R. Johnson 3/16/04

67. TS-3.2-B.3 001

The operating crew members monitor parameters to ensure that the safety analysis assumptions for Hot Channel Factors (Heat Flux and Nuclear Enthalpy Rise) are preserved.

Which ONE of the following lists these operator monitored parameters?

A. Quadrant Power Tilt Ratio, Axial Flux Difference, and Rod Insertion Limits.

B. Rod Group Height, Rod Insertion Limits, Bank Overlap and Axial Flux Difference.

C. Departure from Nucleate Boiling limits, Axial Flux Difference, and Bank Overlap.

D. Departure from Nucleate Boiling limits, Quadrant Power Tilt Ratio, and Axial Flux Difference.

Justification:

a. *Incorrect. AFD and rod insertion limits are monitored parameters, QPTR is not.*

b. *Correct per reference.*

c. *Incorrect. AFD and bank overlap are monitored parameters, DNB is not.*

d. *Incorrect. AFD is monitored parameter, others are not.*

K/A {CFR}:	2.1.10	[3.8/3.6]	{43.1, 45.13}
References:	Tech Spec Bases 3.2.2 and 3.2.3.		
LP/Objectives:	OPL271C180, B.3		
History:	New Question		
Level:	Analysis		
Comments:	Reviewed by R. Creek, S. R. Johnson 3/16/04.		

68. SPP-2.2 001

Which ONE of the following describes the process for obtaining a copy of the latest revision procedure for use in a control room evolution?

A.✓ The latest version of procedures are maintained in Curator and are the latest revision when they are printed. If an urgent change has been implemented, this is flagged in Curator and a copy of the urgent change is filed in the Control Room.

B. The latest version of procedures are maintained in Curator and are the latest revision when they are printed. Urgent changes are made to the copy in Curator just prior to change approval so that the latest version is always available electronically.

C. The latest version of procedures are maintained in Curator and are the latest revision when they are printed. Urgent changes are made to the copy in Curator immediately after change approval so that the latest version is always available electronically.

D. Operators must check the urgent change file in the Control Room prior to printing any procedure from Curator. If there are no entries for the procedure in the urgent change file index, then the procedure in Curator is current. If there is an entry in the index for the procedure, the Curator version is not up to date and may not be used.

Justification:

a. Correct.

b. Incorrect. If a procedure has an Urgent Change filed against it, the electronic copy of the procedure will be blocked from printing and the user will be directed to the TIC to receive a copy.

c. Incorrect. See above.

d. Incorrect. See above.

K/A {CFR}:	2.1.21	[3.1/3.2]	{45.10 & 13}
References:	SPP-2.3 SPP-2.2 ODM-1.0 Appendix D		
LP/Objectives:	OPL271C273 B.12		
History:	New 03/04/2004		
Level:	Memory		
Comments:	Reviewed by R. Creek, S. R. Johnson 3/16/04.		

69. OPDP-1-B.8 002

The following plant conditions exist on Unit 2:

- Unit 2 is operating at 100% power.
- 2A SI pump is being taken out of service for maintenance.
- The following times apply to this evolution:
  0030 Shift Manager approves clearance on 2A SI pump
  0035 Pre-job brief starts on 2A SI pump clearance
  0055 Pre-job brief complete
  0149 Operations places handswitch for 2A SI pump in the pull to lock position

(first step in clearance)
  0315 Operations completes clearance on 2A SI pump

Which ONE of the following describes the time at which the 2A SI pump should be considered inoperable?

A. 0030.

B. 0055.

C. 0149.

D. 0315.

Justification:

a. *Incorrect. Approval of the clearance authorizes the system to be reconfigured to support maintenance, but no physical actions have been taken.*

b. *Incorrect. No reconfiguration has occurred.*

c. *Correct.*

d. *Incorrect. Pump was made inoperable when handswitch was placed in Pull-to-Lock.*

K/A {CFR}:	2.2.24	[2.6/3.8]	{43.2/45.13}
References:	OPDP-1 Tech Spec LCO 3.5.2		
LP/Objectives:	OPL271C209 B.8		
History:	New 03/08/2004		
Level:	Comprehension		
Comments:			

70. 0-GO-2-B.1 001

Given the following plant conditions:

- A reactor startup is being performed 20 hours after a trip from 100% power.
- Estimated critical rod position is control bank D at 100 steps.
- Criticality is predicted in approximately 5 hours.
- Startup is delayed and critically attained one hour later than predicted.

What is the effect on ICCR plot data taken during the approach to critical?

The ICCR plot will:

A. ✓ ACCURATELY predict critically at a LOWER rod height.

B. ACCURATELY predict critically at a HIGHER rod height.

C. INACCURATELY predict critically in a CONSERVATIVE direction.

D. INACCURATELY predict critically in a NON-CONNSERVATIVE direction.

Justification:

a. *Correct. Startup delay does not affect ICCR plot accuracy. Delay will will affect core reactivity since Xenon is decaying, reducing the negative reactivity in the core. Rods will not have to be withdrawn as far to make the reactor critical.*

b. *Incorrect. Rods will not have to be withdrawn as far to make the reactor critical.*

c. *Incorrect. Startup delay does not affect ICCR plot accuracy.*

d. *Incorrect. Startup delay does not affect ICCR plot accuracy.*

K/A {CFR}:	2.2.34	[2.8/3.2]	{43.6}
References:	0-GO-2, Unit Startup from Hot Standby to Reactor Critical. General Physics GFES , Chapter 8		
LP/Objectives:	OPL271C050 Obj. B.1		
History:	Indian Point 2 exam Mar 2003. Modified to fit SQN.		
Level:	Comprehenion		
Comments:	Reviewed by R. Creek, S. R. Johnson 3/16/04.		

71. EPIP-15.01 001

Given the following plant conditions:

- A General Emergency has been declared on Unit 1 due to a LOCA in the El. 653 pipe chase
- An offsite release is in progress due to this leak
- A worker isolating the leak suffered a heart attack
- An emergency responder has volunteered to go in remove the injured worker

Which ONE of the following describes the MAXIMUM dose the emergency responder would be allowed for this activity?

A. 7 Rem.

B. 10 Rem.

C. 22 Rem.

D. 25 Rem.

Justification:

a. *Incorrect. Per EPIP-15 the maximum dose to save a life is 25 Rem.*

b. *Incorrect. This is the limit for protection of valuable property given in EPIP-15.*

c. *Incorrect. Per EPIP-15 the maximum dose to save a life is 25 Rem.*

d. *Correct.*

K/A: 2.3.4 [2.5/3.1]

Reference: EPIP-15, page 4, 6, & 7

Objective: 271C198REP04, B.1.f

History: Y2K LOR Bienniel Exam, Week Three

Level: Comprehension

Comments: Reviewed by R. Creek, S. R. Johnson 3/16/04.

72. RCI-10 001

A job that an AUO is preparing to work has a maximum allowed dose of 600 mRem. The area dose rate is 3 R/hr. How long can the AUO stay in the work area? [Assume no other radiological conditions exist in the area.]

A. 2 minutes

B. 5 minutes

C. 12 minutes

D. 21 minutes

3R = 3000 mR

3000mR / 60 min = 50 mR/min

Justification:

a. *Incorrect. 50 mR/min x 2 min = 100 mR. AUO could remain for an additional 10 minutes before reaching maximum allowed dose.*

b. *Incorrect. 50 mR/min x 5 min = 250 mR. AUO could remain for an additional 7 minutes before reaching maximum allowed dose.*

c. *Correct. 600mR / 50mR/min = 12 min*

d. *Incorrect. 50 mR/min x 21 min = 1050 mR, which exceeds maximum allowed dose.*

K/A: 2.3.10 (2.9 - 3.3)

Reference: RCI -10

Objective: OPL271C263, B.1

History: Old Bank Number PL-0969
Modified for Y2K LOR Bienniel Exam
Y2K LOR Bienniel Exam, Week Three

Level: Analysis

Comments: Reviewed by R. Creek, S. R. Johnson 3/16/04.

73. RAD RELEASE 001

The following plant conditions exist:

- Unit 1 is operating at 100% power when annunciator
- Window B-5 on M12-A, "1-RA-120A/121A STM GEN BLDN LIQ SAMP MON HI RAD" is in alarm.
- The indicator for RM-90-120 is reading pegged high and the red light is on.
- No other radiation monitor reads abnormally.
- RM-90-121 responds properly to a source check.

Which ONE of the following reflects the correct action to take under these conditions?

A. Since RM-90-121 is reading normally blowdown should not have isolated. Entry into AOP-R.01, "Steam Generator Tube Leak", is required.

B. Ensure 1-FCV-15-44 closed to stop blowdown flow. Entry into AOP-R.01, "Steam Generator Tube Leak", is required.

C. Since RM-90-121 is reading normally blowdown should not have isolated. Notify Chemistry. If monitor has failed, place pink tags.

D. Ensure 1-FCV-15-44 closed to stop blowdown flow. Notify Chemistry. If monitor has failed, place pink tags.

Justification:

a. *Incorrect. Either blowdown monitor alarming causes isolation. Entry into AOP-R.01 would be required if other indications existed of tube leak. All indications point to failed monitor only.*

b. *Incorrect. 1-FCV-15-44 would be closed. Entry into AOP-R.01 would be required if other indications existed of tube leak. All indications point to failed monitor only.*

c. *Incorrect. Either blowdown monitor alarming causes isolation. Other actions correct per AR.*

d. *Correct per reference.*

K/A: 2.3.11 [2.7/3.2] {45.9, 45.10}

Reference: 0-AR-M12-A

Objective: OPT200.SGBD, Obj. B.9.d.
OPT200.SGBD, Obj. B.11.b.

History: Bank Question

Level: Analysis

Comments: Reviewed by R. Creek, S. R. Johnson 3/16/04.

74. E-0-B.5.C 001

Given the following plant conditions:

- Unit 2 was operating at 100% power when SG a tube leak develops.
- The leak rate is estimated to be 40 gpm.
- Annunciator 2-RA-90-119A CNDS VAC PMP LO RNG AIR EXH MON HIGH RAD is in alarm.

Which ONE of the following radiation monitors could be used to determine the SPECIFIC SG that developed the leak?

A. Observing 2-RM-90-120 (SG blowdown liquid rad)

B. Observing 2-RM-90-124 (SG sample line monitor)

C. Observing 2-RM-90-255 (Cond vac pump exhaust hi rad)

D. Observing 2-RM-90-421, -422, -423, -424 (steamline high rad).

Justification:

a. *Incorrect. Point monitored is common to all S/Gs. Possible method for isolating and selectively opening SG blowdown isolation valves could identify leak, but process is extremely slow.*

b. *Incorrect. Point monitored is common to all S/Gs*

c. *Incorrect. Point monitored is common to all S/Gs*

d. *Correct. Individual Steam lines are monitored, so a determination of the leaking SG can be made.*

K/A {CFR}:	2.4.3	[3.5/3.8]	{41.6, 45.4}

References: AOP-R.01, E-3

LP/Objectives: OPL271E0, Obj. 5.c.

History: Modified PROCED Bank Question E-3-B.4 001

Level: Analysis.

Comments: Include references provided(Bold) to examinee and any additional information necessary.

Reviewed by R. Creek, S. R. Johnson 3/16/04.

75. OPL271FIRE-B.4 001

While walking outside of a building, you have come upon an electrical panel that is on fire. The closest extinguisher is a CO_2 extinguisher.

Which ONE of the following describes the proper method of employing the fire extinguisher?

After readying the extinguisher, approach the fire cautiously, with the wind...

A. in your face. When 4-6 feet from the fire, discharge the extinguisher at the top of the fire, sweeping from side to side.

B.✓ at your back. When 4-6 feet from the fire, discharge the extinguisher at the base of the fire, sweeping from side to side.

C. at your back. When 8-12 feet from the fire, discharge the extinguisher at the top of the fire, sweeping from side to side.

D. in your face. When 8-12 feet from the fire, discharge the extinguisher at the base of the fire, sweeping from side to side.

Justification:

a. *Incorrect. See below.*

b. *Correct. Wind at your back carries smoke away from you. Discharging extinguisher at base of fire gives maximum effect. Optimum distance for CO2 extinguisher is 4-6 feet.*

c. *Incorrect. See above.*

d. *Incorrect. See above.*

K/A {CFR}:	2.4.26	[2.9/3.3]	{43.5/45.12}
References:	OPL271FIRE.ppt (from Fire Ops information)		
LP/Objectives:	OPL271FIRE B.4		
History:	New 03/03/2004		
Level:	Memory		
Comments:	Reviewed by R. Creek, S. R. Johnson 3/16/04.		