

KEWAUNEE SEPTEMBER 6, 2002 SRO/RO
WRITTEN OPERATOR LICENSE EXAMINATION QUESTIONS

DOCKET NO. 50-305

1. Given the following plant conditions:

- Reactor power is currently 75% with a power increase to 100% in progress.
- After withdrawing Control Bank D rods two steps, the NCO notes that the IRPI and PPCS indications for a single Bank D control rod (rod G3) is at 166 steps.
- Bank demand position for Control Bank D is currently 180 steps.
- The IRPI and PPCS rod indications have been determined to be reading properly via an incore flux map.

Which ONE of the following correctly describes the implication of this condition on the power ramp to 100% ?

- A. The power ramp may continue to 100%, no further actions are required.
- B. The power ramp may continue to 100% provided the individual rod position voltage reading from the conditioning module indicates no rod misalignment.
- C. Reactor power must be reduced to < 50%.
- D. A reactor power limit of < 85% is required.

Proposed Answer: D.
Level RO
Tier # 1
Group # 1

K/A #005AK1.06 Importance Rating 2.9

Tech Reference(s): TS 3.10.e, A-CRD-49B, N-O-03

References during examination: NONE

Learning Objective: 0490010401A01

Question Source: New

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

2. Given the following plant conditions:

- A fire in BRA-114 has resulted in the loss of Instrument Bus IV.
- The Unit is currently at 96% power.

Which ONE of the following is an indication of this condition?

- A. The "Yellow" section of the SI Ready status panel (44909) is NOT lit.
- B. SI-11B, Loop 'B' Cold Leg Injection Valve, lost position indication.
- C. The "Yellow" sections of the Safeguards status panel (44908) is NOT lit.
- D. SI-11A, Loop 'A' Cold Leg Injection Valve, lost position indication.

Proposed Answer: C.
Level RO
Tier: #1
Group: #1

K/A #057 AA2.04 Importance Rating 3.7

Explanation: Channel IV (Yellow) Status Panel is fed from BRA-114 which is fed by Inverter BRA-112. All other indications are fed from circuits associated with equipment position/ condition or are not related to the affected Train (A).

Tech Reference(s): E-845, E-2316, System Desc. 55, 3.6 – 3.7

References during examination: NONE

Learning Objective: 0380000001K05, 0380020401A01

Question Source: New

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 55.43 ✓

3. Given the following plant conditions:

- The Unit has experienced a fault in Steam Generator 'A' inside containment.
- The operations crew has transitioned from E-0 to E-2, "Faulted Steam Generator Isolation".
- Containment pressure is currently at 28 psig and slowly rising.
- Both Containment Spray Pumps are NOT operating.

What ONE of the following indicates the correct action for the crew to take ?

- A. Continue in E-2, "Faulted Steam Generator Isolation" and transition to FR-Z.1, "Response To High Containment Pressure" if containment pressure exceeds 46 psig.
- B. Immediately transition to FR-Z.1, "Response To High Containment Pressure".
- C. Continue in E-2, then use ES-0.0, "Rediagnosis" (if necessary) to transition to the correct procedure.
- D. Go to E-0, "Reactor Trip or Safety Injection" and revalidate SI automatic actions to ensure Containment Fan Coil units are operating properly.

Proposed Answer: **B.**

Level RO

Tier # 1

Group # 1

K/A #069 2.4.2 Importance Rating 3.9

Tech Reference(s): UG-0, I. F-0.5

References during examination: NONE

Question Source: New

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

Learning Obj. FRZ0010501K02 – Explain the applicability and entry conditions of FR-Z.1

4. Given the following plant conditions:

- Operators are responding to a small break LOCA using ES-1.2 "Post LOCA Cooldown and Depressurization."
- RCS temperature is 400 °F.
- After depressurizing the RCS to restore pressurizer level, the 'A' Safety Injection (SI) Pump is stopped.
- While checking the step to "Verify SI Flow Not Required", the NCO observes that subcooling is 18 °F and slowly rising.

Which ONE of the following actions should be taken for these conditions ?

- A. Manually actuate SI.
- B. Start the 'A' SI pump only until subcooling is restored, then stop it.
- C. Start the 'A' SI pump and leave it running until SI reduction or termination criteria are satisfied.
- D. Wait and see if subcooling recovers. If subcooling recovers, then no action is needed.

Proposed Answer: D.
Level RO
Tier # 1
Group # 2

K/A #W/E03 EK3.2 Importance Rating 3.4

Tech Reference(s): ES-1.2 Backgd Doc. Step 16, Step 9

References during examination: NONE

Learning Objective: E010030501K03

Question Source: Bank # ✓ Point Beach NRC Exam

Question History: Last NRC Exam 1/2002 Point Beach Q# 28

Question Cognitive Level: Memory/Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

5. The following plant conditions exist:

- Reactor power is 100%.
- Reactor Trip Breaker testing is being performed.
- Reactor Trip Bypass Breaker 'A' (52/BYA) and Reactor Trip Breaker 'B' (52/RTB) are both RACKED IN and CLOSED.
- Reactor Trip Bypass Breaker 'B' (52/BYB) and Reactor Trip Breaker 'A' (52/RTA) are both RACKED OUT and OPEN.

After completion of the testing, the electrician then mistakenly attempts to RACK IN and CLOSE Reactor Trip Bypass Breaker B (52/BYB) instead of Reactor Trip Breaker 'A' (52/RTA). Immediately upon attempting closure, Reactor Trip Bypass Breaker B (52/BYB) opens. No other breakers reposition.

Which of the following describes the response to this condition ?

The reactor is _____.

- A. NOT tripped, the NCO should manually trip the reactor.
- B. NOT tripped, procedure FR-S.1 "Response To Nuclear Power Generation/ATWS" should be immediately entered.
- C. tripped, the NCO should direct the NAO to locally open both 52/RTB and 52/BYA.
- D. tripped, however the NCO should manually trip the reactor as directed by E-0 "Reactor Trip or Safety Injection".

Proposed Answer: A
Level RO
Tier # 1
Group # 2

K/A #029 EA2.07 Importance Rating 4.2

Explanation: When an attempt is made to close both Bypass breakers, a signal is generated to trip both Bypass breakers. 52/BYA should have opened but failed to open. The operator should attempt a manual trip.

Tech Reference(s): System Desc. 47, 3.13.4 XK100-144

References during examination: NONE

Learning Objective: 047000001K05

Question Source: Modified Bank # 047-1

Question History: Last NRC Exam 12/2000

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 55.43 ✓

6. Following a run of the Emergency Diesel Generator 'B', the Governor Speed Droop was inadvertently left at a setting of 30.

If a total loss of off-site power occurred and the diesel is required to supply Bus 62, which ONE of the following choices is correct regarding this improper speed droop setting ?

- A. As additional load is placed on the bus, frequency will rise.
- B. As additional load is placed on the bus, frequency will lower slightly but will be restored to 60 hertz by the automatic governor control system.
- C. There will be no effect since this setting only has an effect on the diesel operating characteristics when it is operating in parallel with another source.
- D. As additional load is placed on the bus, frequency will lower.

Proposed Answer: D.
Level RO
Tier # 1
Group # 3

K/A #56 AA1.04 Importance Rating 3.2

Tech Reference(s): System Desc. 042, 3.4.7

References during examination: NONE

Learning Objective: 0420000001K06

Question Source: Modified Bank # ✓ INPO/Dresden 2

Question History: Last NRC Exam 9/98

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

7. Given the following plant conditions:

- The unit has experienced a LOCA and the operating crew is in ES-1.1, SI Termination.
- The letdown orifice isolation valves (LD-4A, 4B, 4C) have been placed to close per ES-1.1.
- Currently, the crew is trying to establish letdown flow with LD-4A.

Which ONE of the following would NOT prevent LD-4A from opening ?

- A. The plant has experienced a loss of instrument air.
- B. Pressurizer level is less than 18%.
- C. LD-2 has failed closed.
- D. Both 'A' and 'C' charging pumps are out of service.

Proposed Answer: D.

Level RO

Tier # 2

Group # 1

K/A #004 A4.19 Importance Rating 3.1

Tech Reference(s): E-2023

References during examination: NONE

Learning Objective: 0350000001K02

Question Source: New ✓

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

8. The plant was initially operating at 100% power when a major plant transient occurred. Following the event, the following plant conditions exist:

- 'A' Steam Generator narrow range level is 2% and lowering.
- 'A' Steam Generator pressure is 250 psig and lowering.
- Containment pressure is 2.1 psig and lowering.
- 4.16 kV Bus 5 voltage meter indicates zero volts.

What is the status of the Emergency Core Cooling System (ECCS) equipment ?

- A. All ECCS equipment is operating.
- B. None of the ECCS equipment is operating.
- C. Only 'A' Train ECCS equipment is operating.
- D. Only 'B' Train ECCS equipment is operating.

Proposed Answer: **D**.
Level RO
Tier # 2
Group # 1

K/A #013 K2.01 Importance Rating 3.6*

Tech Reference(s): ODI-4, RPS/ESF Setpoint Knowledge Expectations, E-240

References during examination: NONE

Learning Objective: 0550000001K03

Question Source: Bank # ✓

Point Beach 1/02 NRC 42/49

Question History: Last NRC Exam

1/2002

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

9. Given the following plant conditions:

Reactor power is 95%.

Control Bank 'D' is at 212 steps

Which ONE of the following describes the response of the Rod Control System if Power Range Nuclear Instrument N42 fails low ? (Assume NO operator action and all controls are in automatic.)

- A. Rods step in while there is an error signal from turbine power/reactor power mismatch; rods do NOT step out.
- B. Rods step in while there is an error signal from the turbine power/reactor power mismatch; rods will then step out to match the TAVE/TREF error signal.
- C. Rods step out until Bank D rod stop is encountered; rods step in to match TAVE/TREF error signal.
- D. Rods step out until Bank D rod stop is encountered; rods will NOT step in to match any TAVE/TREF error signal due to the rod stop.

Proposed Answer: C.

Level RO

Tier # 2

Group # 1

K/A #015 K1.03 Importance Rating 3.1*

Explanation: The Bank D rod stop is normally set between 218 and 222 steps withdrawn.

Tech Reference(s): System Desc. 49, 3.5, ARP 47043-P

References during examination: NONE

Learning Objective: 0490000001K02

Question Source: Bank # ✓ Kewaunee 49-22

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

10. The following plant conditions exist:

- The reactor is shutdown.
- An extended station blackout is in progress.
- Average core exit thermocouple (CET) temperature is stable.
- Containment parameters are normal.

Which ONE of the following combination of RCS pressure and average CET temperature verifies adequate subcooling margin for RCS natural circulation ?

- A. 250 psig, 400 °F
- B. 375 psig, 410 °F
- C. 500 psig, 460 °F
- D. 600 psig, 590 °F

Proposed Answer: **B.**
Level RO
Tier # 2
Group # 1

K/A #017 K5.02 Importance Rating 3.7

Tech Reference(s): ECA-0.1, step 13, Steam Tables

References during examination: Steam Tables

Learning Objective: 1930080001K31,

E000080501K02

Question Source: Bank # ✓

INPO/DC Cook NRC exam

Question History: Last NRC Exam

2/96

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

11. The plant is shut down and recovering from a refueling outage. Following maintenance on all four Shroud Cooling Coil Bypass Valves (SW-901A, B, C, and D), a partial procedure performance of SP-02-138, Service Water Pump and Valve Test IST, is being performed. The following data has been recorded on data sheet No. 1 (see attached).

Which ONE of the following indicates the required action for these test results ?

- A. SW-901D-1 and the 'A' and 'C' Containment Fan Coil Units must be declared inoperable.
- B. ONLY the 'A' and 'C' Containment Fan Coil Units must be declared inoperable.
- C. ONLY SW-901D-1 and the 'C' Containment Fan Coil Unit must be declared inoperable.
- D. ONLY the 'C' Containment Fan Coil Unit must be declared inoperable.

Proposed Answer: C.
Level RO
Tier # 2
Group # 1

K/A #022 2.1.23 Importance Rating 3.9

Explanation: Data Sheet 1 (3) contains the following info above limits:
6.42.3.b for SW-901D-1 opening time.
6.42.5 for SW901C flow affecting CFCU 1C.

Tech Reference(s): SP-02-138 OPERM-547

References examination: SP-02-138, Data Sheet 1 (partial)

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

12. Given the following sequence of events:

- Reactor power is 6%.
- The turbine is latched at 1800 rpm and being prepared to synchronize to the grid.
- Main Feedwater Pump 'A' and Condensate Pump 'A' are operating.
- Condenser hotwell level is lowering due to a loss of makeup capability.
- A-CD-03, Condensate System Abnormal Operation, is being utilized to address the low hotwell level, however, actions are unsuccessful.
- Hotwell level continues to lower, resulting in a trip of Condensate Pump 'A'.

Which ONE of the following indicates the result of these plant conditions and the appropriate procedure used to respond to these conditions ?

- A. The turbine and the reactor have NOT tripped, A-CD-03 should be utilized to restart Condensate Pump 'B'.
- B. The turbine has tripped and the reactor has NOT tripped, A-CD-03 should be utilized to restart Condensate Pump 'B'.
- C. The turbine has tripped and the reactor has NOT tripped, a manual reactor trip should be initiated, enter E-0, Reactor Trip or Safety Injection.
- D. The turbine and reactor have automatically tripped, enter E-0, Reactor Trip or Safety Injection.

Proposed Answer: C.
Level RO
Tier # 2
Group # 1

K/A #056 A2.04 Importance Rating 2.6

Tech Reference(s): A-CD-03, 3.1.1, A-FW-05A, 3.2.1, ARP 47051-S

References examination: NONE

Learning Objective: 05A0020401A01

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43 ✓

13. During a radioactive waste release of a CVCS Monitor Tank to the Circulating Water system, R-18 Waste Discharge Liquid Monitor alarms. The operator notes that the release is terminated.

Which ONE of the following indicates how the release was terminated ?

- A. Liquid Waste discharge valves WD-18 and WD-19 both auto closed.
- B. Liquid Waste discharge valve WD-19 only auto closed.
- C. CVCS Monitor Tank discharge valve CVC-918 auto closed.
- D. The running CVCS Monitor Tank pump tripped.

Proposed Answer: **B.**

Level RO
Tier # 2
Group # 1

K/A #068 A3.02 Importance Rating 3.6

Tech Reference(s): A-RM-45, 3.8, E-2047

References during examination: NONE

Learning Objective:	0450000004K05,	32A0000001K02
Question Source:	Bank # ✓	32A-3 (Kewaunee NRC)
Question History:	Last NRC Exam	12/2000
Question Cognitive Level:	Memory or Fundamental Knowledge ✓	
10 CFR Part 55 Content:	55.41 ✓	55.43

14. Given the following plant conditions:

- The plant is at 100% power with two Circulating Water (CW) pumps in operation.
- A discharge of CVCS Monitor Tank 'A' is in progress.
- A single CW pump trips for an unknown reason.
- Dilution flow is found to be below the minimum required on the discharge permit.

Which ONE of the following is correct with regards to the discharge in progress ?

- A. The discharge may continue provided CVCS Monitor Tank 'A' flow has not changed.
- B. The discharge may continue provided continuous radiological monitoring is maintained.
- C. Terminate the discharge and contact Health Physics to calculate a new permit.
- D. Terminate the discharge and contact Chemistry to calculate a new permit.

Proposed Answer: **D.**
Level RO
Tier # 2
Group # 1

K/A #068 2.1.14 Importance Rating 2.5

Tech Reference(s): SP-32A-136, 3.3.1

References during examination: NONE

Learning Objective: 32A0080104K01

Question Source: New ✓

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 55.43 ✓

15. A discharge of Waste Gas Decay Tank 'C' is in progress.

Which ONE of the following will result in the automatic closure of WG-36/CV-31215, Gas Decay Tanks to Plant Vent?

- A. Both Waste Gas Compressors trip.
- B. R-35, Auxiliary Building Vent Stack Lo-Range Monitor high alarm.
- C. Both Auxiliary Building Exhaust Fans trip.
- D. R-13, Auxiliary Building Vent Exhaust Monitor high alarm.

Proposed Answer: **D.**

Level RO
Tier # 2
Group # 1

K/A #071 K4.04 Importance Rating 2.9

Tech Reference(s): N-GWP-32B, 4.2.5.d.9 CAUTION, E-2048

References during examination: NONE

Learning Objective: 32B0000004K04, 32B0000004K06

Question Source: Bank # ✓ 32B-3 (RO#59)

Question History: Last NRC Exam 12/2000

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

16. Following a functional test of R-23, Control Room Ventilation Radiation Monitor, the keyswitch is advertently left in the "keypad" position.

What implication, if any, will this mispositioning have on the system ?

- A. All automatic functions initiated by R-23 will be defeated.
- B. All automatic functions initiated by R-23 during the functional test are still active.
- C. A "check source" will be initiated every 30-35 seconds on R-23.
- D. The keypad will remain active, however, all automatic functions initiated by R-23 will occur normally.

Proposed Answer: A

Level RO

Tier # 2

Group # 1

K/A #072 A4.01 Importance Rating 3.0

Tech Reference(s): N-RM-45, A-RM-45

References during examination: NONE

Question Source: New ✓

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

17. A reactor trip from 100% power has occurred due to a fault on the main generator. Coincident with the trip, the Blue channel of TAVE fails high. This failure is NOT immediately recognized and the channel has NOT been removed from service.

Which ONE of the following describes the impact, if any, of this T_AVE failure on the Main Feedwater System isolation logic ?

- A. A feedwater isolation will still occur since the isolation logic is 2 out of 4.
- B. A feedwater isolation will still occur since the isolation logic uses auctioneered high TAVE.
- C. A feedwater isolation will NOT occur because the isolation logic is 2 out of 3.
- D. There is NO impact since the isolation logic is 3 out of 4.

Proposed Answer: A
Level RO
Tier # 2
Group # 2

K/A #016 K3.04 Importance Rating 2.6*

Tech Reference(s): XK-100-147, 152

References during examination: NONE

Learning Objective: 0470000001K02

Question Source: New ✓

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

18. Given the following plant conditions:

- The plant was operating at 100% power in a normal full power alignment when a generator trip occurred due to a ground fault.
- All systems functioned as designed.

At 15 seconds after the trip, which ONE of the following indicates the flowpath of power to Reactor Coolant Pump 'B' ?

- A. MAT - Bus 2
- B. RAT - Bus 2
- C. TAT - Bus 2
- D. RAT - Bus 1

Proposed Answer: **B.**
Level RO
Tier # 2
Group # 2

K/A # 062 K2.01 Importance Rating 3.3

Tech Reference(s): System Description - 4160 V Electrical Distr.

References provided during examination: NONE

Learning Objective: 0390020401A05

Question Source: New ✓

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

19. Given the following plant conditions:

- A fire has started in a temporary trailer located just north of the plant, inside the protected area.
- The plant fire brigade is responding and are attempting to extinguish the fire.
- The NCO identifies that Fire Pump 'A' is running and that the fire protection header pressure is currently 95 psig and slowly lowering.

Which ONE of the following statements describes the above conditions ?

- A. Both Fire Pumps should be running, an attempt should be made to start the other pump.
- B. Both Fire Pumps should be running, however, one pump is adequate for the conditions described.
- C. Only one pump should have auto started, the other pump should be manually started.
- D. Only one pump should have auto started, the auto start of the other pump should be verified when it occurs.

Proposed Answer: A
Level RO
Tier # 2
Group # 2

K/A # 086 2.4.48 Importance Rating 3.5

Tech Reference(s): E-FP-08, 3.1 N-FP-08, 4.1.4

References during examination: NONE

Learning Objective: 0080010501K01, 0080010104A01

Question Source: Modified Bank # ✓ 008-2

Question History: Last NRC Exam 5/2001

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 55.43 ✓

20. Fire hose stations in the plant where high voltage electrical hazards exist are provided with _____.

- A. fixed fog nozzles.
- B. adjustable spray/straight stream nozzles.
- C. straight stream nozzles.
- D. adjustable spray nozzles.

Proposed Answer: A.

Level RO

Tier # 2

Group # 2

K/A # 086 K5.03 Importance Rating 3.1

Tech Reference(s): Fire Protection Program Plan, 11.8

References during examination: NONE

Learning Objective: 0080000001K02

Question Source: Bank # ✓ 008-7

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

21. Given the following plant conditions:

- The plant has operated for 320 consecutive days and is in the process of shutting down for a scheduled refueling outage.
- The Residual Heat Removal System was aligned for decay heat removal approximately 30 minutes ago and is operating normally.
- An inadvertent Train 'A' Safety Injection (SI) signal occurs during I&C testing.
- The Train 'A' SI signal is still present but has been reset.
- The NAO reports that CCW temperature control valve SW-1306A is full open, SW-1306B is full shut, and CCW temperature is slowly lowering.

Which ONE of the following correctly describes these conditions ?

- A. SW-1306A is malfunctioning, it must be locally shut.
- B. SW-1306B is malfunctioning, it must be locally opened.
- C. SW-1306A is operating properly, local manual reset of SW-1306A will re-establish CCW temperature control.
- D. SW-1306B is operating properly, local manual reset of SW-1306B will re-establish CCW temperature control.

Proposed Answer: C.
Level RO
Tier # 2
Group # 3

K/A # 008 A4.10 Importance Rating 3.1*

Technical Reference(s): E-1632

References during examination: NONE

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

22. Given the following sequence of events:

- The plant is operating at 100% power with all equipment operable and in a normal alignment.
- A RAT lockout occurs due to a Sudden Pressure fault. The alarm is valid and the RAT is observed to have serious damage.
- Later in the shift, RXCP 'A' trips due to overcurrent.
- All equipment operates per design.

Which ONE of the following identifies the status of the 4.16 kV system one (1) minute after the trip of the RXCP ?

- A. 4.16 kV Bus 2 is energized from the MAT.
- B. 4.16 kV Bus 5 is energized from its emergency diesel generator.
- C. 4.16 kV Bus 6 is de-energized.
- D. 4.16 kV Bus 1 is de-energized.

Proposed Answer: **D.**
Level RO
Tier # 2
Group # 3

K/A # 045 K3.01 Importance Rating 2.9

Explanation: With the RAT out of service, an auto transfer to that source will not occur and Bus 6 is loaded onto its DG. When RXCP A breaker trips, a reactor trip-turbine trip is generated. All non-Safeguards Buses will be deenergized. Bus 5 will still be energized via the TAT.

Tech Reference(s): N-EHV-39, 4.2.2, A-EHV-39, 3.1.1, E-2037, XK-100-147

References during examination: NONE

Learning Objective: 0390010401K01, 0360000001K07

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

23. Operators monitor parameters to ensure that the safety analysis assumptions for Shutdown Margin, Ejected Rod Worth, and Power Distribution Peaking Factors are preserved.

Which ONE of the following is a list of these **operator monitored** parameters ?
(Note: A list of abbreviations used in the answer selections is provided below.)

QPTR - Quadrant Power Tilt Ratio
DNBR - Departure From Nucleate Boiling Ratio
AFD - Axial Flux Difference
CHF - Critical Heat Flux

- A. QPTR, DNBR, AFD, and Rod Insertion Limits.
- B. Rod Alignment Limits, CHF, AFD, QPTR.
- C. Rod Insertion Limits, AFD, QPTR, Rod Alignment Limits.
- D. RCS Pressure, Rod Insertion Limits, Critical Boron Concentration, CHF.

Proposed Answer: **C.**
Level RO
Tier # 3
Group # 1

K/A # 2.1.10 Importance Rating 2.7

Tech Reference(s): TS Bases 3.10.b, pg TS B3.10-3; 3.10.c,
TS B3.10-5
SP-87-125, Table 1

Learning Objective: 1190110301A01

Question Source: Bank # ✓ Point Beach

Question History: Last NRC Exam 1/2002 Point Beach NRC RO #89

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 55.43 ✓

24. SP-05B-283A, "Motor Driven AFW Pump A Full Flow Test - IST" has been performed. One NCO has had responsibility for completing the surveillance.

What does the NCO signature or initials in the body of the procedure indicate ?

- A. The individual has completed the transfer of all field taken data onto the the procedure Data Sheets.
- B. The individual has either performed the steps of the procedure, has observed performance of the steps, or has received direct confirmation from the individual who has performed the step.
- C. The individual has reviewed the ACCEPTANCE CRITERIA and verified all the criteria are satisfied only.
- D. The individual has either performed the steps of the procedure or observed performance of the procedure, and the associated ACCEPTANCE CRITERIA are satisfied.

Proposed Answer: **B.**
Level RO
Tier # 3
Group # 2

K/A # 2.2.12 Importance Rating 3.0

Explanation : The signature in the body of the procedure indicates that all the steps of the procedure have been completed. If any of the ACCEPTANCE CRITERIA is not satisfied, the performer is directed within the body of the procedure to initiate an ACTION REQUEST (AR). The Data Sheet contains a separate sign-off for recording/transfer of data onto the sheet.

Tech Reference(s): Surveillance Performance Guideline, 4.2.2.1
SP-05B-283A, signoff

References during examination: NONE

Learning Objective: 1190190304A01

Question Source: New ✓

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

25. The plant is in the refueling mode.

Which ONE of the following is NOT considered to be a Refueling Operation ?

- A. Removal of the upper internals from the core.
- B. Insertion of a RCCA into a fuel assembly that is in the core.
- C. Unbolting the reactor head.
- D. Lifting the reactor head.

Proposed Answer: C.

Level RO

Tier # 3

Group # 2

K/A # 2.2.27 Importance Rating 2.6

Tech Reference(s): Technical Specification, 1.0.I, RF-01.00, 5.1-5.3, pg 4-13
N-FH-53-CLF, (2.7)

References during examination: NONE

Learning Objective: 1190110301A01

Question Source: New ✓

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 55.43 ✓

26. The following conditions exist:

- The reactor has tripped from 100% power due to a loss of off-site power.
- Natural circulation has been verified.

Which ONE of the following describes the response of S/G PORV position and required Auxiliary Feedwater flow over time if the plant remains in Hot Shutdown ?

S/G PORV position will be _____ , required Auxiliary Feedwater flow will _____.

- A. more open, lower
- B. less open, lower
- C. more open, rise
- D. less open, rise

Proposed Answer: **B.**

Level	RO	SRO
Tier #	1	1
Group #	1	1

K/A # W/E09 EK2.2 Importance Rating 3.6/3.9

Tech Reference(s): Accident & Transient Analysis, VI-20 & Fig. VI.9.

References during examination: NONE

Learning Objective: 2030000001K06

Question Source: Modified Bank # ✓ 203-2

Question History: Last NRC Exam 12/97 INPO Bank Q# 10832

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

27. The unit has experienced a fire in the Cable Spreading Room and the Control Room was evacuated. Operators are responding per E-0-06, Fire in Alternate Fire Zone, and Control Operator 'A' is in the process of verifying natural circulation.

- Subcooling is adequate.
- RCS Loop A hot leg is rising.
- Steam Generator A outlet pressure is rising.
- RCS Loop A cold leg is rising.

The correct operator response for these conditions is to:

- A. Decrease dumping steam by closing SD-3A, Steam Generator A PORV.
- B. Increase dumping steam by locally opening MS-2A, SG A MSIV Bypass Valve.
- C. Increase dumping steam by opening SD-3A, Steam Generator A PORV.
- D. Decrease dumping steam by lowering on the manual steam dump controller.

Proposed Answer: C.

Level	RO	SRO	
Tier #	1		1
Group #	1		1

K/A # W/E09 EK3.4 Importance Rating 3.4/3.6

Tech Reference(s): E-O-06, step 31

References during examination: NONE

Learning Objective: E060010501A01

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

28. The plant is operating at 100% power with all systems in their normal lineup. A fire occurs in the vicinity of the BA Evaporator Control panel which results in a loss of MCC 52E. The fire is quickly extinguished.

Which ONE of the following correctly describes an operational impact of this event?

- A. If Emergency Boration was required, the Immediate Actions could NOT be accomplished.
- B. A Main Feedwater Isolation of both feedwater lines would NOT occur automatically.
- C. PR-1A Pressurizer PORV Block valve could NOT be used to isolate a leaking PORV.
- D. If an SI occurs, the suction from the RWST to Safety Injection Pump A would be unavailable.

Proposed Answer: A.

Level RO SRO

Tier # 1 1

Group # 1 1

K/A # 024 AA1.04 Importance Rating 3.6*/3.7

Tech Reference(s): E-CVC-35 E-260

References during examination: NONE

Learning Objective: 0350010501A02

Question Source: Bank # ✓ 035-3

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

29. The plant is operating at 100% power with all systems and controls in a normal lineup.

Which ONE of the following could cause a Reactor Trip and Safety Injection actuation? (Assume NO operator action.)

- A. TE-401, Reactor Coolant Tave (Red Channel), fails LOW.
- B. PT-431, Pressurizer Pressure (Blue Channel), fails HIGH.
- C. A trip of both Main Feed Pumps.
- D. A Main Generator lockout.

Proposed Answer: **B.**

Level	RO	SRO
Tier #	1	1
Group #	1	2

K/A # 027 AK2.03 Importance Rating 2.6/2.8

Explanation : Selector switch is normally positioned to 2-3 with Channel 3 being the controlling channel. PT-431 is the Channel 3 Przr pressure transmitter. A failure high results in opening both Przr Spray valves, resulting in rapid depressurization.

Tech Reference(s): XK100-154 E-2038

References during examination: NONE

Learning Objective: 0360000001K17

Question Source: Bank # ✓ 036-8

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

30. Pressurizer pressure instrument PT-429 (Red Channel) has failed LOW. During the performance of A-MI-87 "Bistable Tripping for Failed Reactor Protection or Safeguards Instruments", several different bistables are placed in UP (test), including bistable 429A Hi Press Trip.

Placing bistable 429A Hi Press Trip in UP (test) is done to ensure _____.

- A. the RPS High Pressurizer Pressure Trip will function in the event of another channel failure.
- B. that Pressurizer PORV PR-2B/CV-31109 remains operable.
- C. that Pressurizer PORV PR-2A/CV-31110 remains operable.
- D. an RPS High Pressurizer Pressure Trip will NOT occur in the event of another channel failure.

Proposed Answer: A.
Level RO SRO
Tier # 1 1
Group # 1 2

K/A # 027 AK3.03 Importance Rating 3.7/4.1

Tech Reference(s): A-MI-87 XK-100 148, 154

References during examination: NONE

Question Source: Modified Bank # ✓

Question History: Last NRC Exam 12/97

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

31. Given the following plant conditions:

- A reactor trip was manually initiated from 75% power due to a loss of condenser vacuum.
- Following the trip, two (2) Steam Generator 'A' Safety valves lift and stick open.

Following the Immediate Actions of E-0, Reactor Trip or Safety Injection, the following parameters are noted:

- RCS temperature has lowered to 532 °F.
- RCS pressure has lowered to 1800 psig.

During implementation of E-2 "Faulted Steam Generator Isolation", the following indications are observed:

- the green indicating light for MS-1A/CV-31015 MSIV is illuminated, the red light is off.
- the red indicating light for MS-1B/CV-31016 MSIV is illuminated, the green light is off.

Based on these indications, which ONE of the following is correct with regards to the operation of the MSIVs ?

- A. A failure of MS-1B MSIV has occurred, it should be shut.
- B. Both MSIVs should be open since no automatic isolation signals have occurred.
- C. The MSIV indications are consistent with the given plant conditions.
- D. A manual isolation of MS-1A MSIV must have been performed during E-0 "Reactor Trip or Safety Injection" implementation since no automatic closure signals have occurred.

Proposed Answer: **C.**

Level	RO	SRO
Tier #	1	1
Group #	1	1

K/A # 040 AA1.13 Importance Rating 4.2/4.2

Tech Reference(s): E-1627

References during examination: NONE

Learning Objective: 0060000001K03

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

32. The following plant conditions exist:

- Operators are performing ECA 2.1, "Uncontrolled Depressurization of Both Steam Generators" due to a steam leak on both S/G main steam lines inside containment.
- Cooldown rate is 125°F per hour.
- Both RCS cold leg temperatures are 340°F
- Containment pressure is 8 psig.
- Narrow range Steam Generator levels indicate 10%.
- AFW flow on Steam Generators 'A' and 'B' indicates 110 gpm each.

Which ONE of the following choices is correct for these plant conditions ?

- A. Isolate AFW flow to both Steam Generators to reduce the cooldown rate.
- B. Do NOT adjust AFW flow to insure that heat sink criteria are maintained.
- C. Wait until narrow range level is less than 4%, then reduce AFW flow to 60 gpm.
- D. Adjust AFW flow to 60 gpm on each Steam Generator.

Proposed Answer: **D.**

Level	RO	SRO
Tier #	1	1
Group #	1	1

K/A # W/E12 EK1.2 Importance Rating 3.5/3.8

Tech Reference(s): ECA-2.1, step 2.1 Contingency

References during examination: NONE

Learning Objective: E020020501K04

Question Source: Bank # ✓ INPO/Watts Bar

Question History: Last NRC Exam 2/96

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

33. Given the following plant conditions:

- A major plant transient has occurred.
- Both Reactor Coolant Pumps are off.
- Letdown is isolated.
- Operators are currently implementing FR-P.1 "Response To Imminent Pressurized Thermal Shock Condition".
- RCS depressurization is required to decrease the stress on the reactor vessel.

Which ONE of the following choices correctly describes why the Pressurizer PORVs are the next preferred method of RCS depressurization prior to using auxiliary spray ?

- A. Reactor coolant inventory would be conserved.
- B. RCS depressurization and equalization is slower.
- C. Initiation of abnormal containment conditions is less likely.
- D. Pressurizer spray nozzle failure is less likely to occur.

Proposed Answer: **D.**

Level	RO	SRO
Tier #	1	1
Group #	1	1

K/A # W/E08 EK1.2 Importance Rating 3.4/4.0

Tech Reference(s): FR-P.1 Background Doc. Step 15

References during examination: NONE

Learning Objective: FRP0010501K04

Question Source: Bank # ✓ Point Beach

Question History: Last NRC Exam 1/02

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

34. The following plant conditions exist:

- Reactor power is 7% and the Main Generator has just been synchronized to the grid and loaded.
- Steam Dump control has been shifted to the T_{AVE} mode.
- The 'A' Condensate Pump, 'A' Main Feedwater Pump, and 'A' Circulating Water Pump are operating.
- The 'A' Circulating Water Pump circuit breaker trips open due to a ground fault.
- Condenser vacuum is currently 18" Hg.
- T_{AVE} is 547 °F.
- All condenser steam dumps are closed.

Which ONE of the following choices describes the reason the condenser steam dumps have remained closed ?

- A. The Lo Condenser Vacuum Interlock has actuated, but 2 valves can be opened by placing EITHER of the Steam Dump Interlock Selector Switches in Bypass Interlock.
- B. The Circulating Water Pump Interlock has actuated due to loss of the running CW Pump and the interlock CANNOT be bypassed.
- C. The Lo-Lo TAVE interlock has actuated, but 2 valves can be opened by placing BOTH of the Steam Dump Interlock Selector Switches in Bypass Interlock.
- D. The Lo-Lo Condenser Vacuum Interlock has actuated due to loss of the running CW Pump and the interlock CANNOT be bypassed.

Proposed Answer: **B.**

Level	RO	SRO
Tier #	1	1
Group #	1	1

K/A # 051 AK3.01 Importance Rating 2.8*/3.1*

Tech Reference(s): O-ASYS-LP 2.1.6C

References during examination: NONE

Learning Objective: 0060000001K15

Question Source: Modified Bank # ✓ Point Beach (RO #8)

Question History: Last NRC Exam 2/02

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

35. Given the following plant conditions:

- The unit has experienced an intrusion of algae into the Circulating Water system.
- AOs are currently washing down the traveling water screens.
- The unit was rapidly backed down in power to maintain condenser vacuum per E-CW-04.
- Reactor power is currently 65%.
- Rod control is in AUTO.
- Control Bank 'D' is observed to be stepping in at minimum speed due to a $T_{AVE-T_{REF}}$ deviation of +2.5 °F and is currently at 122 steps.

Which ONE of the following choices is correct with regard to control rod operation for these conditions ?

- A. The rod speed proportional controller is malfunctioning.
- B. Control Bank 'D' rods should be stepping out.
- C. Control Bank 'C' and 'D' rods should be stepping in.
- D. The Rod Control System is operating properly.

Proposed Answer: **D.**

Level	RO	SRO
Tier #	1	1
Group #	1	1

K/A # 051 AA1.04 Importance Rating 2.5*/2.5*
Tech Reference(s): XK-100-151 System Desc. 49, 3.5.3
References during examination: NONE
Learning Objective: 0490000001K02, 0490000001K04
Question Source: New ✓
Question Cognitive Level: Comprehension or Analysis ✓
10 CFR Part 55 Content: 55.41 ✓ 55.43

36. The safety related station batteries are sized to provide adequate DC power to ensure _____.
- A. the seal oil is maintained for at least four hours to prevent dangerous hydrogen levels near the main generator.
 - B. the field flashing capability of the emergency diesel generators is maintained for at least twelve hours.
 - C. the Station Blackout coping duration of four hours is met.
 - D. the reactor is able to be shut down in the event of a single train failure coincident with a loss of off-site power.

Proposed Answer: **C.**

Level	RO	SRO
Tier #	1	1
Group #	1	1

K/A # 055 EK3.01 Importance Rating 2.7/3.4
 Tech Reference(s): USAR, 8.2-22, 8.2-26
 References during examination: NONE
 Learning Objective: 0380000001K06
 Question Source: New ✓
 Question Cognitive Level: Memory or Fundamental Knowledge ✓
 10 CFR Part 55 Content: 55.41 ✓ 55.43

37. Given the following plant conditions:

- A major plant transient has occurred.
- Multiple failures have resulted in a Red Path condition requiring implementation of FR-C.1 "Response To Adequate Core Cooling".
- RCS Wide Range Pressure Instrument PT-420 is noted by the Control Room crew to be reading 2400 psig and is 100 psig higher than any of the other RCS or Pressurizer Pressure instruments.

As Core Exit Thermocouple temperatures rise, which ONE of the following correctly describes the impact on the Subcooling Margin Monitor ?

Train 'A' subcooling indication will be _____ .

- A. accurate and slowly rising.
- B. accurate and slowly lowering.
- C. inaccurate and slowly rising.
- D. inaccurate and slowly lowering.

Proposed Answer: **B.**

Level	RO	SRO
Tier #	1	1
Group #	1	1

K/A # 074 EK2.08 Importance Rating 2.5*/2.5

Explanation: Subcooling monitor chooses the lowest pressure input to provide a conservative subcooling value. You must know this fact along with the ability to determine the direction subcooling is trending with CET rising.

Tech Reference(s): USAR, Rev. 16, 7.6.2 E-3416, Rev. H

References during examination: NONE

Learning Objective: 0500000001K02

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

38. While responding to a Degraded Core Cooling event, the Reactor Operator (RO) is directed per FR-C.2 "Response To Degraded Core Cooling" to depressurize all intact steam generators until RCS pressure is "less than or equal to 210 psig". The RO then proceeds with the steam generator depressurization and stops when RCS pressure is 120 psig.

Which ONE of the following choices correctly describes a NEGATIVE consequence of the ROs actions ?

- A. Accumulator nitrogen will be injected into the vessel and impede core cooling.
- B. Safety Injection Pumps will experience runout conditions.
- C. FR-C.2 must be immediately suspended and entry to FR-P.1 "Response To Imminent Pressurized Thermal Shock Condition" is required.
- D. The RHR pumps will inject into the reactor vessel.

Proposed Answer: A.

Level	RO	SRO
Tier #	1	1
Group #	1	1

K/A # W/E06 EK3.4 Importance Rating 3.5/3.7

Tech Reference(s): FR-C.2 Background Doc., steps 9-12

References during exam: NONE

Learning Objective: FRC0020501K04

Question Source: New ✓

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

39. Given the following plant conditions:

- Reactor power is at 20% with a plant startup in progress.
- T_{AVE} is matched to T_{REF} .
- Turbine control is in IMP IN.
- Rod Control is in AUTO.
- As turbine load is being increased, a turbine control malfunction causes the load ramp to occur at twice the selected rate, resulting in T_{AVE} deviating from T_{REF} .
- Immediately after going to HOLD to stop the load ramp, Control Rod Bank 'D' rods begin to withdraw at 8 steps/min due to the T_{AVE} - T_{REF} deviation.
- When T_{AVE} is again matched to T_{REF} , it is noticed that Control Rod Bank 'D' continues to withdraw at 8 steps/min.

Which ONE of the following choices indicates the NEXT required action ?

- A. Place the Control Rod Bank Selector Switch to Bank 'D'.
- B. Place the Control Rod Bank Selector Switch to MAN.
- C. Trip the reactor and initiate actions of E-0 "Reactor Trip or Safety Injection."
- D. Enter FR-S.1 "Response To Nuclear Power Generation / ATWS."

Proposed Answer: **B.**

Level	RO	SRO
Tier #	1	1
Group #	2	1

K/A # 001 AA1.01 Importance Rating 3.5/3.2

Tech Reference(s): E-CRD-49B, 3.2.1

References during exam: NONE

Learning Objective: 0490020501A04

Question Source: Modified Bank # ✓ 049-14

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

40. Given the following plant conditions:

- The plant is at 60% power with rod control in AUTO.
- A control rod in Control Bank 'A' drops into the core.
- A reactor trip does not occur, nor is required.
- AUTO control rod withdrawal occurs and T_{AVE} is restored to the 60% program value.

Which ONE of the following conditions has resulted from this event?

- A. Shutdown margin has decreased.
- B. The Rod Insertion Limit has decreased.
- C. The hottest channel DNBR has increased.
- D. Quadrant power tilt ratio has increased.

Proposed Answer: D.

Level	RO	SRO
Tier #	1	1
Group #	2	1

K/A # 003 AK1.04 Importance Rating 3.1/3.7
Tech Reference(s): E-CRD-49C, 2.0 USAR, Rev. 16, 14.1.3
References during exam: NONE
Learning Objective: 0490000001K02; 0490030501A01
Question Source: Bank # ✓ INPO/Harris
Question History: Last NRC Exam 2/97
Question Cognitive Level: Comprehension or Analysis ✓
10 CFR Part 55 Content: 55.41 ✓ 55.43

41. The following conditions exist:

- A reactor shutdown is in progress.
- Procedure in effect: N-CRD-49C, Reactor Shutdown.
- Intermediate Range (IR) N-35 reads 6.5×10^{-6} %.
- IR N-36 reads 8.5×10^{-4} %.
- Source Range Blocked status light is ON.

The NCO depresses Train A and Train B Source Range (SR) Reset pushbuttons, which results in a SR High Flux reactor trip on both SR Channels.

Which ONE of the following conditions is correct for these conditions ?

- A. A reactor trip should NOT have occurred. N-36 was reading higher than actual power.
- B. The reactor trip was valid. N-36 was reading higher than actual power.
- C. The reactor trip was valid. N-35 was reading lower than actual power.
- D. The reactor trip should NOT have occurred, both SR Instruments should have been below the SR reactor trip setpoint for the given IR readings.

Proposed Answer: **C.**

Level	RO	SRO
Tier #	1	1
Group #	2	2

K/A # 007 EA1.05 Importance Rating 4.0/4.1

Explanation : With N-36 reading correctly, the SR NIS channels will be above their trip setpoint of 10^5 cps. Conversely if N-35 were reading correctly, the SR channels should read below the trip setpoint, so multiple failures would have occurred.

Tech Reference(s): System Desc. 48, 3.4.2, 3.5.1 & Fig WPS-N101

References during exam: NONE

Learning Objective: 0480000001K02

Question Source: Modified Bank # ✓ Point Beach

Question History: Last NRC Exam 01/2002 Point Beach RO Q# 44

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

42. Given the following sequence of events:

- A plant cooldown for a refueling outage is in progress.
- RCS pressure is 400 psig.
- RCS temperature is 375 °F.
- Two Charging Pumps are running, both in manual, with letdown and charging balanced (letdown flow is 40 gpm).
- The RHR system has just been placed in service for decay heat removal.
- Auxiliary Building radiation levels are now rising.
- Pressurizer level is lowering.
- Annunciators 47032-Q, RHR Pump Pit A/B Level High, and 47032-R, RHR Pump Pit Sump Level High, are in alarm.

Assuming all plant systems function as designed, which ONE of the following conditions would be expected if the operators failed to respond ?

- A. An automatic Safety Injection (SI) signal will occur and restore RCS inventory.
- B. The SI Accumulators will inject into the RCS and restore RCS inventory.
- C. Containment sump recirculation will be unavailable and manual makeup to the RWST will be required.
- D. A Containment Isolation (CI) signal will stop the leak and normal Charging will restore pressurizer level.

Proposed Answer: C.

Level	RO	SRO
Tier #	1	1
Group #	2	1

K/A # W/E04 EK1.2 Importance Rating 3.5/4.2

Explanation : The leak location results in RCS spill to the Aux. Bldg. When directed to ES-1.3 on RWST level, the Containment Sump B level will be ZERO.

Tech Reference(s): OPXK100-18, A-RHR-34, 2.4, 4.1-4.3, 4.6, ES-1.3, Step 1

References during exam: NONE

Learning Objective: E010050501K03; 0340040401A01

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

43. Given the following plant conditions:

- The plant has tripped due to a total loss of off-site power.
- During the trip, a Pressurizer PORV fails open and cannot be isolated.
- All other equipment and systems are functioning normally.

Which ONE of the following statements accurately describes these plant conditions ?

- A. Decay heat cannot be removed, the core will heat up and likely exceed temperature limits.
- B. The RCS will continue to void and eventually decay heat will be removed by reflux cooling.
- C. The combination of SI/break flow, auxiliary feedwater, and/or steaming paths should be sufficient to remove decay heat.
- D. Natural circulation cooling cannot be verified and is the only method of removing decay heat under these conditions.

Proposed Answer: C.

Level	RO	SRO
Tier #	1	1
Group #	2	2

K/A # W/E03 EK2.2 Importance Rating 3.7/4.0

Tech Reference(s): E-1 Backgrnd Doc. 2.1.4

Accident & Transient Analysis, VIII.5. (4) - 47

References during exam: NONE

Learning Objective: 2050000001K06, 2050000001K08

Question Source: Bank # ✓ Point Beach NRC exam

Question History: Last NRC Exam 10/2000 RO Q# 21

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

44. Given the following plant conditions:

- The plant has tripped from 100% power due to a large break LOCA.
- Both RHR Pumps have tripped for unknown reasons.
- ECA-1.1 "Loss of Emergency Coolant Recirculation" has been entered.
- RWST level is 75% and slowly lowering.
- Containment Pressure is 28 psig and slowly rising.
- Containment Spray is aligned to the RWST.

Which ONE of the following choices is correct regarding the correct combination of Containment Fan Coil (CFC) units and Containment Spray (CS) pumps for these conditions ?

- A. With three (3) CFC units operating, one (1) CS pump is required.
- B. With one (1) CFC unit operating, one (1) CS pump is required.
- C. With two (2) CFC units operating, two (2) CS pumps are required.
- D. With four (4) CFC units operating, one (1) CS pump is required.

Proposed Answer: **A.**

Level	RO	SRO
Tier #	1	1
Group #	2	2

K/A # W/E11 EK2.1 Importance Rating 3.6/3.9

Tech Reference(s): ECA-1.1 Backgrd Doc Step 7 USAR, Rev. 16, 6.4.1

References during exam: NONE

Learning Objective: E010050501K04

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

45. The following plant conditions exist:

- At 0600, a LOCA outside containment resulted in a Reactor Trip and Safety Injection.
- At 1200, the crew transitioned to ECA-1.1 "Loss of Emergency Coolant Recirculation" due to inadequate Sump 'B' level.
- SI Pump 'A' was then secured.
- SI Termination criteria has NOT been met.
- At 1300 (present time), SI Pump 'B' flow is locally throttled to 50 gpm.

Using the attached reference (Figure ECA-1.1-1), which ONE of the following choices describes the correct course of action ?

- A. SI Pump 'B' flow should be increased by 50 gpm.
- B. SI Pump 'A' should be manually started with a flowrate of 150 gpm.
- C. SI Pump 'B' flow should be increased by 150 gpm.
- D. SI Pump 'A' should be manually started with a flowrate of 50 gpm.

Proposed Answer: **A.**

Level	RO	SRO
Tier #	1	1
Group #	2	2

K/A # W/E11 EA1.3 Importance Rating 3.7/4.2

Tech Reference(s): ECA-1.1 step 14 CA Fig. ECA-1.1-1

References during exam: Fig. ECA-1.1-1

Learning Objective: E010050501A01

Question Source: Modified Bank # ✓ E01-3

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

46. A fault on the 'B' S/G steam line has resulted in the following conditions:

- Pressurizer level is off-scale low.
- Pressurizer pressure is 1950 psig and slowly rising.
- Containment pressure is 18 psig and lowering.
- The faulted S/G is dry and Auxiliary Feedwater has been isolated.
- All systems functioned as designed.

Based on these conditions, RCS cold leg temperatures will be expected to stabilize at: (assume no operator action other than those indicated, round answer to the nearest degree)

- A. 545 °F
- B. 547 °F
- C. 549 °F
- D. 551 °F

Proposed Answer: **C.**

Level	RO	SRO
Tier #	1	1
Group #	2	1

K/A # W/E01 EK2.2 Importance Rating 3.5/3.8

Explanation : The conditions lead to a main steamline isolation on high-high containment pressure (> 17 psig). S/G pressure is then controlled at 1025 psig by the S/G PORV. This pressure corresponds to an approximate temperature of 549°F.

Tech Reference(s): E-0 Step 6, E1627, N-MS-06, 4.1.4.

References during exam: NONE

Learning Objective: E000010501A01, 0060000001K03

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

47. The Reactor Trip pushbutton was depressed due to a steadily rising RCS leak inside containment. While verifying Step 1 of E-0 "Reactor Trip or Safety Injection", the red indicating lights for both Reactor Trip Breakers (52/RTA and 52/RTB) are illuminated and the green indicating lights are extinguished.

Which ONE of the following describes the current status of the components associated with each Reactor Trip Breaker ? (assume the RTBs are NOT mechanically bound)

- A. The Undervoltage (UV) Coil is de-energized, the shunt trip coil is energized.
- B. The UV Coil and the shunt trip coil are both energized.
- C. The UV Coil is energized, the shunt trip coil is de-energized.
- D. The UV Coil and the shunt trip coil are both de-energized.

Proposed Answer: **C.**

Level	RO	SRO
Tier #	1	1
Group #	2	1

K/A # 029 EK2.06 Importance Rating 2.9*/3.1*

Tech Reference(s): System Description 47, 3.1 page 47-9 USAR, 7.2.2, page 7.2-17

References during examination: NONE

Learning Objective: 0470000001K05

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

48. Given the following plant conditions:

- A plant shutdown required by Technical Specifications is in progress due to the inoperability of both Emergency Diesel Generators.
- All plant equipment is in a normal alignment.
- The plant is at approximately 6% power as indicated on all 4 Power Range and both Intermediate Range instruments.
- Intermediate Range instrument N35 is then observed to be slowly rising and currently indicates 22% power.
- All other instruments indicate no change in reactor power.

Which ONE of the following choices indicates the action which should be taken for these conditions ?

- A. Immediately trip the reactor and enter E-0 "Reactor Trip or Safety Injection".
- B. Place the level trip switch for N35 to bypass.
- C. Depress BOTH Intermediate Range Block pushbuttons.
- D. Ensure N35 is placed in a trip condition within 1 hour.

Proposed Answer: A

Level	RO	SRO
Tier #	1	1
Group #	2	2

K/A # 033 2.4.49 Importance Rating 4.0/4.0

Explanation : Reactor power is below the P-10 setpoint, so the Intermediate Range high flux trips at 20% would have been re-instated. The failed channel should have generated a reactor trip.

Tech Reference(s): A-NI-48, 3.2, Ops Instructions tab 4

References during exam: NONE

Learning Objective: 0480000001K02, 0480040401A01

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43 ✓

49. Steam Generator tube leakage has resulted in a Reactor Trip and Safety Injection. The cooldown method of backfill has been selected.

Using this method minimizes _____.

- A. dilution of the RCS, while maintaining secondary chemistry stable.
- B. secondary system contamination and minimizes the time required to reach cold shutdown.
- C. both primary and secondary makeup water requirements during cooldown and depressurization.
- D. radiological releases but may cause dilution of the RCS.

Proposed Answer: **D.**

Level	RO	SRO
Tier #	1	1
Group #	2	2

K/A # 037 AK3.04 Importance Rating 2.5/2.9

Tech Reference(s): ES-3.1 Backgrnd Doc. 3 and 3.1.1, pages 9-10

References during exam: NONE

Learning Objective: E030020501K01

Question Source: Bank # ✓ INPO/Prairie Island NRC

Question History: Last NRC Exam 6/97

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

50. Given the following plant conditions:

- A tube rupture on the 'A' S/G has resulted in an automatic reactor trip and safety injection.
- E-3 "Steam Generator Tube Rupture" is being implemented.
- 'A' S/G level indicates 2% Narrow Range, AFW flow is 175 gpm.
- 'B' S/G level indicates 1% Narrow Range, AFW flow is 225 gpm.

Based on these indications, which ONE of the following is correct with regard to S/G water level control ?

- A. AFW flow to the 'A' S/G is required to be isolated at this time.
- B. AFW flow to both S/Gs is required to be isolated when the 'A' S/G level rises above 4%.
- C. AFW flow to ONLY the 'A' S/G is required to be isolated when the 'A' S/G rises above 4%.
- D. AFW flow to the 'B' S/G can be isolated if desired.

Proposed Answer: C.

Level	RO	SRO
Tier #	1	1
Group #	2	2

K/A # 038 EA1.44 Importance Rating 3.4*/3.4
Tech Reference(s): E-3, step 4 E-3 Backgrnd Doc. Step 4
References during exam: NONE
Learning Objective: E030010501K04
Question Source: New ✓
Question Cognitive Level: Comprehension or Analysis ✓
10 CFR Part 55 Content: 55.41 ✓ 55.43

51. The following plant conditions exist:

- The plant is operating at 100% power.
- Containment humidity has increased off-scale HIGH.
- Containment pressure is increasing slowly.
- Power range NIs indicate 100% Rx power and stable.
- Steam flow from both S/Gs is steady at 100% power value.
- S/G 'B' Main Feedwater Regulating Valve is full open and level is slowly lowering.
- Feedwater flow and level is normal for S/G 'A'.

A manual Reactor Trip and Safety Injection is initiated. Following the trip, S/G 'B' pressure is observed to be lowering while S/G 'A' pressure is stable.

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

- A. Steam piping between the steam flow nozzle and the 'B' S/G.
- B. 'B' S/G feedwater line between the FW inlet check valve and the S/G.
- C. 'B' S/G feedwater line between the containment penetration and the FW inlet check valve.
- D. Steam piping between the containment penetration and the 'B' S/G steam flow nozzle.

Proposed Answer: **B.**

Level	RO	SRO
Tier #	1	1
Group #	2	2

K/A # 054 AK1.01 Importance Rating 4.1/4.3

Tech Reference(s): OP-M-205, Accident & Transient Analysis, IV.2. (4) – 7-8

References provided during examination: NONE

Learning Objective: 05A0000004K04

Question Source: Bank # ✓ 1997 NRC Examination

Question History: Last NRC Exam 12/97

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

52. The Unit has experienced a LOCA and the crew is working through E-1, Loss of Reactor or Secondary Coolant. The following indications exist:

- CTMT press is 3 psig
- RCS pressure: 475 psig
- Pressurizer level is off-scale low
- 'A' steam generator level: 13% Narrow Range
- 'B' steam generator level: 5% Narrow Range
- Total available feed flow: 100 gpm
- CTMT Wide Range radiation: 3 X 10⁵ R/HR
- RWST Level: 57%

What would be the correct action for the crew to take?

- A. Remain in E-1, "Loss of Reactor or Secondary Coolant".
- B. Transition to FR-H.1, "Response to Loss of Secondary Heat Sink".
- C. Transition to ES-1.3, "Transfer to Containment Sump Recirculation".
- D. Transition to FR-Z.3, "Response to High Containment Radiation Level".

Proposed Answer: **B.**

Level	RO	SRO
Tier #	1	1
Group #	2	2

K/A # W/E16 EK1.3 Importance Rating 3.0/3.3

Explanation : Due to the high radiation levels (>10⁺⁰⁵ R/hr), the ADVERSE CONTAINMENT values apply. RED Path for HEAT SINK: S/G levels <15% NR AND, total feedwater flow less than 200 gpm.

Learning Objective: E010010501A02 – While responding to a loss of reactor or secondary coolant, implement the E-1 QRF.

Tech Reference(s): E-1 QRF, NOTE & 3.

References during exam: NONE

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

53. Given the following plant conditions:

- High Radiation Alert and Alarm annunciators are lit.
- SER point indicates that R-11, Containment Air Particulate Monitor is in alarm.
- The operating crew has entered A-RM-45, "Abnormal Radiation Monitoring System".
- Per A-RM-45, an operator positions the paper drive for R-11 to fast for 15 seconds.

The paper drive is switched to fast in order to _____.

- A. determine if R-11 is responding properly.
- B. raise the sensitivity of R-11 to particulate radiation.
- C. initiate a source check of R-11 to determine operability.
- D. raise the sensitivity of R-11 to gaseous radiation.

Proposed Answer: A.

Level	RO	SRO
Tier #	1	1
Group #	2	2

K/A # W/E16 EK3.3 Importance Rating 3.0/3.0

Tech Reference(s): A-RM-45, 4.10.2 System Desc 45, 3.2.2

References during exam: NONE

Learning Objective: 0450090401A01, 0450000001K03

Question Source: New ✓

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

54. With the Pressurizer Level Control Selector Switch in the NORMAL position, a pressurizer level instrument failure caused the following SEQUENTIAL plant events:

- Charging flow was reduced to minimum.
- Pressurizer level lowered.
- Letdown flow isolated and pressurizer heaters turned off.
- Pressurizer level increased until a high level trip occurred.

Which ONE of the following instrument failures caused this sequence of events ?
(assume NO operator action)

- A. Pressurizer level channel 427 (White) failed low.
- B. Pressurizer level channel 427 (White) failed high.
- C. Pressurizer level channel 428 (Blue) failed low.
- D. Pressurizer level channel 428 (Blue) failed high.

Proposed Answer: **D.**

Level	RO	SRO
Tier #	1	1
Group #	3	3

K/A # 028 AK2.02 Importance Rating 2.6/2.7

Explanation: NORMAL position is 2(WHITE)-3(BLUE), with channel 3 input being sent the CONTROLLER.

Technical Reference(s): E-2039

References during exam: NONE

Learning Objective: 0360000001K23

Question Source: Bank # ✓ Point Beach NRC exam

Question History: Last NRC Exam 8/99

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

55. With the plant operating at 100% power, the following RCS parameters are identified:

- Charging flow is 50 gpm and rising.
- The controlling Pressurizer level channel indicates 25% and lowering slowly.
- The other two level channels indicate 38% and rising slowly.

Which ONE of the following choices would cause the plant indications as described ?

- A. A break on the variable leg of both non-controlling pressurizer level transmitters.
- B. A break on the controlling pressurizer level transmitter variable leg.
- C. Opening of the controlling pressurizer level transmitter equalization valve.
- D. A break on the controlling pressurizer level transmitter reference leg.

Proposed Answer: **B.**

Level	RO	SRO
Tier #	1	1
Group #	3	3

K/A # 028 AA2.11 Importance Rating 3.2/3.6

Explanation : A (small) leak on the variable leg to the transmitter would result in decreasing pressure for that side. This results in measured increase in dP across the transmitter showing a decrease in level for the affected channel. Charging would increase and the other channels would show the level increase.

Tech Reference(s): OPER XK-100-10, E-2039

References during exam: NONE

Learning Objective: 0360000001K36, 0360000001K23

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 55.43 ✓

56. Which ONE of the following signals, if failed, would have an impact on the rod insertion limit alarms generated by the RIL Computer.
- A. Pulse to analog converter output.
 - B. High TAVG Auctioneering circuit output.
 - C. Turbine First Stage Pressure (TREF).
 - D. Average Power Range NI power.

Proposed Answer: A.

Level	RO	SRO
Tier #	2	2
Group #	1	1

K/A # 001 K5.04 Importance Rating 4.3/4.7

Explanation : RCS ΔT is input to the RIL computer and the output compared to P/A converter (bank position) signal for alarm conditions. Auctioneered high T_{AVE} , T_{REF} and Power Range NIS are input to develop rod movement signals.

Tech Reference(s): System Desc. 49, 3.9.4 & 3.10, page 49-33
E-2042, 2043 & 2044

References provided during examination: NONE

Learning Objective:	0490000001K02,	0490000001K04
Question Source:	Bank # ✓	INPO/HB Robinson 2
Question History:	Last NRC Exam	8/96
Question Cognitive Level:	Memory or Fundamental Knowledge	✓
10 CFR Part 55 Content:	55.41 ✓	55.43

57. Given the following plant conditions:

- The plant had operated for 300 consecutive days when a generator trip/reactor trip occurred.
- All problems have been corrected and a reactor startup is in progress.
- The operating crew is currently withdrawing Shutdown Bank 'B' rods.

Which ONE of the following would be allowed during the continuous rod withdrawal ?

- A. Adjust steam generator PORV, SD-3A, to return RCS TAVE back below 549 °F.
- B. Commence a dilution to correct RCS boron concentration.
- C. Commence a dilution to raise RCS TAVE back to 547 °F.
- D. Adjust steam generator PORV, SD-3A, to maintain RCS TAVE above 540 °F.

Proposed Answer: D.

Level	RO	SRO
Tier #	2	2
Group #	1	1
K/A # 001 A4.15	Importance Rating	3.1*/3.1*
Tech Reference(s):	GNP-03.17.10, 6.1.4.c,	N-CRD-49B, 2.9 & 2.10
References provided during examination:	NONE	
Learning Objective:	1920080001K02,	490010101A04
Question Source:	New ✓	
Question Cognitive Level:	Comprehension or Analysis	✓
10 CFR Part 55 Content:	55.41 ✓	55.43

58. Which ONE of the following describes the reason for starting the RXCP Lift Oil Pump prior to starting a RXCP ?

- A. To lubricate the lower motor radial bearing.
- B. To lift the #1 seal into its starting position.
- C. To raise the anti-reverse rotation assembly to disengage the pawls.
- D. To reduce motor starting torque and minimize thrust bearing friction wear.

Proposed Answer: D.

Level	RO	SRO
Tier #	2	2
Group #	1	1

K/A # 003 K1.01 Importance Rating 2.6/2.8

Technical Reference(s): System Desc 36, 3.5.4

References during exam: NONE

Learning Objective: 0360000001K33

Question Source: Bank # ✓ Kewaunee 036BAS010

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

59. Given the following plant conditions:

- The plant is operating at 100% power.
- Normal letdown is isolated and excess letdown has been established to the VCT.
- An inadvertent automatic Containment Isolation signal occurs during I&C testing.

Which ONE of the following statements is correct as a result of the above conditions ?

- A. RXCP seal water return flow aligns to the RCDT.
- B. Excess letdown flow to the VCT must be manually isolated.
- C. CCW flow to the RXCP bearing oil coolers is isolated.
- D. RXCP seal injection flow will be maintained.

Proposed Answer: **D.**

Level	RO	SRO
Tier #	2	2
Group #	1	1

K/A #003 K6.04 Importance Rating 2.8/3.1
Technical Reference(s): OPERXK 100-20, 35, 36 E-2025
References during exam: NONE
Learning Objective: 0350000001K02
Question Source: New ✓
Question Cognitive Level: Comprehension or Analysis ✓
10 CFR Part 55 Content: 55.41 ✓ 55.43

60. Hydrogen is supplied to the Volume Control Tank (VCT) via an automatic pressure regulator.

This design feature of the CVCS system is provided to _____.

- A. control the pH in the RCS.
- B. minimize oxygen in the RCS.
- C. lower iodine levels in the RCS.
- D. maintain corrosion product solubility in the RCS.

Proposed Answer: **B.**

Level	RO	SRO
Tier #	2	2
Group #	1	1

K/A # 004 K4.01 Importance Rating 2.8/3.3
Technical Reference(s): System Desc. 35, 3.3.1
References during exam: NONE
Learning Objective: 0350000001K06
Question Source: New ✓
Question Cognitive Level: Memory or Fundamental Knowledge ✓
10 CFR Part 55 Content: 55.41 ✓ 55.43

61. Given the following sequence of events:

- The plant was at 100% power when a momentary Train A and Train B SI signal was generated during I & C testing.
- The SI signal is no longer present.
- The reactor is tripped, however, Reactor Trip Breaker A (52/RTA) did not open and cannot be opened locally.
- Both Train A and Train B SI Reset pushbuttons have been depressed.
- Normal Charging and Letdown have been restored with Charging Pumps A and C running.
- All actuated equipment has been restored to its normal alignment.

Which ONE of the following indicates the effect on the RCS if a small break LOCA occurs which causes containment pressure to rise to 5 psig ?

- A. Charging and letdown flow will continue to maintain normal Pressurizer level.
- B. Charging and SI injection flow will result in a water-solid Pressurizer with relief via the Pressurizer PORVs.
- C. Pressurizer level and RCS pressure will stabilize when SI injection flow matches the break flow.
- D. Pressurizer level and RCS pressure will continue to drop until operator action is taken to start the ECCS equipment.

Proposed Answer: C.

Level	RO	SRO
Tier #	2	2
Group #	1	1

K/A # 013 K3.02 Importance Rating 4.3/4.5

Technical Reference(s): E-1635, 1636, 1639 E-1 Bckgrnd Doc. 2.1.2

References during exam: NONE

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

62. Given the following plant conditions:

- Reactor power is 7% with a load increase in progress.
- All power is then lost to Instrument Bus I, BRA-113.

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

- A. An automatic reactor trip and safety injection have occurred.
- B. The turbine has tripped and the reactor remains at 7% power.
- C. An automatic reactor trip has occurred and the turbine has tripped.
- D. Both the turbine and reactor remain at 7% power, but several control systems have to be operated in MANUAL.

Proposed Answer: C.

Level	RO	SRO
Tier #	2	2
Group #	1	1

K/A # 015 K2.01 Importance Rating 3.3/3.7

Explanation: BRA-113 supplies Instrument and Control Power to Channel I NIS. Intermediate Range N-35 is affected and its High Flux Trip will result in a reactor trip. Only the single channel of any other protection circuit is affected

Tech Reference(s): System Desc. 48, 1.3, 3.8 E-845, E-800

References during exam: NONE

Learning Objective: 0480000001K02

Question Source: Bank # ✓ Kewaunne Bank 048-11

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

63. A severe accident has occurred and the operating crew is currently implementing the Integrated Plant Emergency Operating Procedures. The following conditions exist:

- Both Reactor Coolant Pumps are off.
- PZR level is off scale low.
- RCS pressure is 400 psig.
- Core exit thermocouples are reading 750 °F.

What course of action should the operating crew take?

- A. Transition to FR-C.2, Response to Degraded Core Cooling because core damage is occurring.
- B. Transition to FR-C.2, Response to Degraded Core Cooling because core uncover is likely occurring.
- C. Transition to FR-C.1, Response to Inadequate Core Cooling because core damage is occurring.
- D. Transition to FR-C.1, Response to Inadequate Core Cooling because core uncover is likely occurring.

Proposed Answer: **B.**

Level	RO	SRO
Tier #	2	2
Group #	1	1

K/A # 017 A2.02 Importance Rating 3.1/3.5

Learning Objective: FRC0020501K02 – Explain the applicability and entry conditions of FR-C.2, Response To a Degraded Core Cooling Condition

Technical Reference(s): F-0.2 FR-C.2 Background Doc., 2.

References during exam: NONE

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43 ✓

64. Which ONE of the following indicates the major concern if the Containment Fan Coil Units Emergency Discharge Dampers RBV-150A and RBV-150B fail open during normal 100% power operation ?

- A. RXCP B motor stator overheating
- B. Hot air stratification in the Containment Dome.
- C. Reverse air flow through the Containment Fan Coil Unit
- D. Damage to the Reactor Vessel Gap and Nuclear Instrumentation.

Proposed Answer: A

Level	RO	SRO
Tier #	2	2
Group #	1	1

K/A # 022 K3.01 Importance Rating 2.9*/3.2*

Tech Reference(s): A-RBV-18, 4.1 NOTE OPERM-602

References during exam: NONE

Learning Objective: 0180000001K02

Question Source: Bank # ✓ Kewaunee Bank 018-7

Question History: Last NRC Exam 12/2000 RO #37

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

65. While performing a plant startup with turbine load at 8%, the 'A' S/G Main Feed Control valve experiences a disk/stem separation and all feed flow through the valve is lost. Feed flow is able to be quickly restored using the 'A' S/G Bypass Control valve.

Assuming the power ramp continues, what is the maximum turbine load permitted per N-FW-05A, Feedwater System Normal Operation ?

- A. 10%
- B. 15%
- C. 20%
- D. 22.5%

Proposed Answer: **B.**

Level	RO	SRO
Tier #	2	2
Group #	1	1

K/A # 059 A1.03 Importance Rating 2.7*/2.9*

Tech Reference(s): N-FW-05A, 2.6.5

References during exam: NONE

Learning Objective: 05A0000004K02

Question Source: New ✓

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

66. Given the following sequence of events:

- The plant is currently at 100% power.
- Motor Driven Auxiliary Feedwater Pump (MDAFP) 'A' is tagged out for a motor inspection.
- A grid disturbance results in a main generator and reactor trip.
- All equipment operates per design.

Which ONE of the following describes the status of the S/G Blowdown valves ?

- A. Blowdown is isolated only to S/G 'B' with one of two blowdown valves closed.
- B. Blowdown is isolated only to S/G 'B' with both blowdown valves closed.
- C. Blowdown is isolated to both S/Gs, with both blowdown valves closed on each S/G.
- D. Blowdown is isolated to both S/Gs, with one of two blowdown valves closed in each S/G blowdown line.

Proposed Answer: **C.**

Level	RO	SRO
Tier #	2	2
Group #	1	1

K/A # 061 K4.03 Importance Rating 2.7/2.9

Explanation: Start of the B MDAFW Pump causes BT-3A and BT-2B to close. (If A MDAFW started it would close BT-2A and BT-3B). However the TDAFW Pump is also expected to start and its start results in a close signal to all 4 valves.

Tech Reference(s): E-1602, E-1629

References during exam: NONE

Learning Objective: 05B0000001K02, 0070000001K03

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

67. A Low-Low Steam Generator level signal was received on 2 of 3 channels on S/G 'A' (S/G 'B' level is at 30%).

Which ONE of the following is the expected Auxiliary Feedwater system line-up for this condition ?

- A. The Turbine Driven Auxiliary Feedwater Pump (TDAFP) will be feeding both S/Gs.
- B. Both Motor Driven Auxiliary Feedwater Pumps (MDAFP) will be feeding both S/Gs.
- C. Both MDAFPs will be feeding S/G 'A' only.
- D. The TDAFP and MDAFP 'A' will be running feeding S/G 'A' only.

Proposed Answer: **B.**

Level	RO	SRO
Tier #	2	2
Group #	1	1

K/A # 061 A3.01 Importance Rating 4.2/4.2

Explanation: Both MDAFW Pumps will start on a low-low level in either SG. Normal alignment has discharge valves (AFW-2A & B) to each SG open and crossover valves (AFW-10A & B) open.

Tech Reference(s): E-1602, OPERM-205, USAR 6.6.2, 6.6-2

References during exam: NONE

Learning Objective: 05B0000001K02, 05B0000004K01

Question Source: Bank # ✓ Point Beach NRC exam Q53

Question History: Last NRC Exam 1/2002

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

68. The plant is operating at full power. Increasing radiation levels are noted on R-13 and R-14, Aux Building Ventilation Exhaust Radiation Monitors. A few minutes later, R-4, Charging Pump Room Area Monitor, alarms.

Which ONE of the following malfunctions would be indicative of these conditions ?

- A. Charging Pump relief valve lifting.
- B. Steam Generator Blowdown tank leak.
- C. Waste Gas Decay tank leak.
- D. Boric Acid Transfer Pump leak

Proposed Answer: **C.**

Level	RO	SRO
Tier #	2	2
Group #	1	1

K/A # 072 A1.01 Importance Rating 3.4/3.6

Explanation: The Waste Gas Decay tanks are in the vicinity of area monitor R-4 so it will alarm if one of the tanks started to leak. Charging pump relief goes into the VCT. SG Blowdown Tank is not normally radioactive and located in the mezz away from R-4. BATPs are located on a different level, above that of R-4.

Tech Reference(s): OPERM-601 A-204, A-206

References during exam: NONE

Learning Objective: 0450030401A01

Question Source: Bank # ✓ 045-5

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

69. Given the following plant conditions:

The plant was operating at 100% power when a reactor trip and SI occurred. Shortly following the SI actuation, the following conditions are observed:

- R-7, Incore Seal Table Area Monitor high alarm is actuated.
- Other Containment Radiation monitors show a rapid increase in radiation levels.
- Containment humidity spiked to 100%.
- Containment pressure has a rising trend.
- 47031-Q CONTAINMENT SUMP A LEVEL HIGH is actuated.
- 47031-R REACTOR CAVITY SUMP LEVEL HIGH/LOW is NOT actuated.
- 47043-B PRESSURIZER RELIEF TANK ABNORMAL is actuated.

Assuming NO operator action was taken, which ONE of the following would result in these conditions ?

- A. A RXCP #1 seal failure.
- B. A PRZR Safety valve has stuck open.
- C. Failure of a Steam Generator Blowdown piping tap.
- D. An Incore Thimble Tube has ruptured at the bottom of the reactor vessel.

Proposed Answer: **B.**

Level	RO	SRO	
Tier #	2	2	
Group #	2	2	
K/A # 002 K6.12	Importance Rating	3.0/3.5	
Tech Reference(s):	System Desc 36, 3.6.8		OPXK-100-10
References during exam:	NONE		
Learning Objective:	0360000001K34		
Question Source:	Bank # ✓	36-14 - Kewaunee	
Question History:	Last NRC Exam	12/2000 - NRC RO #27	
Question Cognitive Level:	Comprehension or Analysis	✓	
10 CFR Part 55 Content:	55.41 ✓	55.43	

70. Which ONE of the following plant parameters is the primary input that determines the required level (programmed level) in the pressurizer level control system ?

- A. Auctioneered high TAVE.
- B. Auctioneered high nuclear power from Power Range NIs.
- C. RCS Average Delta-T.
- D. TREF

Proposed Answer: A.

Level	RO	SRO
Tier #	2	2
Group #	2	2

K/A # 011 K4.04 Importance Rating 3.0/3.3
Tech Reference(s): System Desc 36, 3.8.3, E-2039
References during exam: NONE
Learning Objective: 0360000001K36
Question Source: Bank # ✓ INPO/Indian Point 3 NRC
Question History: Last NRC Exam 4/96 Indian Point 3
Question Cognitive Level: Memory or Fundamental Knowledge ✓
10 CFR Part 55 Content: 55.41 ✓ 55.43

71. Given the following plant conditions:

- The plant was operating at 100% power with TAVE/TREF matched when a spurious turbine runback occurred.
- Alarm window 47042-Q, Control Bank Low Limit, is illuminated.
- Alarm window 47042-R, Control Bank Low Low Limit, is illuminated.
- Alarm window 47033-13, TLA-3 Start-Outside Target Band, is illuminated.
- Alarm window 47033-15, TLA-5 Outer Target Band Limit, is illuminated.
- TAVE initially increased due to the runback but is now at the 100% power value and slowly lowering.
- Reactor Pressure is stable at 2235 psig.
- Control Bank 'D' is at 100 steps and inserting.

Comparing the current Reactor Protection System (RPS) setpoints to the RPS setpoints prior to the runback, which ONE of the following choices is correct ?

- A. The setpoint for only the Overtemperature Delta-T reactor trip is now lower.
- B. The setpoint for only the Overpower Delta-T reactor trip is now higher.
- C. The setpoints for BOTH Overtemperature and Overpower Delta-T reactor trips are now lower.
- D. The setpoints for BOTH Overtemperature and Overpower Delta-T reactor trips are now higher.

Proposed Answer: C.

Level	RO	SRO
Tier #	2	2
Group #	2	2

K/A # 012 K1.04 Importance Rating 3.2*/3.3*

Explanation: With ΔI driven negative outside the "doghouse" (< -15%) both OP ΔT and OT ΔT trip setpoints are going to be reduced from their "normal" values.

Tech Reference(s): Tech Spec 2.3.a.3, RD 11.4.1, 47033-15, Comments

References during exam: NONE

Learning Objective: 0470000001K06

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

72. A short circuit occurs internally on the Master Pressurizer Pressure Controller (PC-431K).

Which ONE of the following describes the effect of this fault on the Reactor Protection System ?

- A. The controller short circuit will feed back into the protection circuit, causing the associated channel to trip.
- B. The controller short circuit will feed back into the protection circuit, preventing the associated channel from tripping.
- C. The controller short circuit will NOT feed back into the protection circuit due to the use of isolation amplifiers.
- D. The controller short circuit will NOT feed back into the protection circuit since completely separate sensors (pressure transmitters) are used for control and protection.

Proposed Answer: C.

Level RO SRO

Tier # 2 2

Group # 2 2

K/A # 016 K5.01 Importance Rating 2.7*/2.8*

Tech Reference(s): USAR, 7.2.1, pg 7.2-3, System Desc 47, 3.1

References during exam: NONE

Learning Objective: 0470000001K05

Question Source: Modified Bank # ✓ 047-6.

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

73. Given the following plant conditions:

- A Large Break LOCA has occurred.
- Containment Spray has actuated.
- RWST level currently reads 25%.
- RHR Pump 'A' has been aligned for containment sump recirculation.
- Caustic Additive Standpipe level currently reads 100%.

What ONE of the following would be the effect due to these conditions ?

- A. Containment radiation levels are lower due to the increased removal of radioactive iodine.
- B. Containment pressure peaks at a higher value due to the reduced heat removal capacity of the ICS spray.
- C. Corrosion of the RHR piping/components may increase due to the lower pH value of the containment sump fluid.
- D. Removal of hydrogen in the containment atmosphere is lower due to the reduced volume of injected sodium hydroxide.

Proposed Answer: C.

Level	RO	SRO
Tier #	2	2
Group #	2	1

K/A # 026 K1.01 Importance Rating 4.2/4.2
Tech Reference(s): USAR , 6.4.2, pg 6.4.6 System Desc 23, 3.7
References during examination: NONE
Learning Objective: 0230000004K01
Question Source: Bank # ✓ 23-3.
Question Cognitive Level: Memory or Fundamental Knowledge ✓
10 CFR Part 55 Content: 55.41 ✓ 55.43

74. The plant was operating at 100% power when a LOCA occurred. E-1, Loss of Reactor or Secondary Coolant, is being implemented and is complete through step 5. A failure of Containment Spray Pump 'A' to start results in an ORANGE path condition and a transition to FR-Z.1, Response To High Containment Pressure, is made. FR-Z.1 has been completed and the ORANGE path condition is still active. All other plant equipment is operating normally.

Which ONE of the following describes the plant response and the next action that the crew should take as a result of these conditions ?

- A. Containment pressure will NOT exceed design pressure, the crew should return to E-1 at step 6.
- B. Containment pressure will exceed design pressure, the crew should re-perform FR-Z.1 beginning at step 1.
- C. Containment pressure will slowly lower, the crew should wait until the ORANGE path clears before taking any additional actions.
- D. Containment pressure will eventually exceed the Red path criteria, however the crew should now return to E-1 at step 1 until the Red path is exceeded.

Proposed Answer: **A**

Level	RO	SRO
Tier #	2	2
Group #	2	1

K/A # 026 A2.04 Importance Rating 3.9/4.2

Tech Reference(s): FR-Z.1 Bckgrnd Doc., step 7

References during exam: NONE

Learning Objective: FRZ0010501K04 – Given a high containment pressure condition, explain the basis for actions taken, per FR-Z.1 Background Document.

Question Source: Bank # ✓ FRZ0010501K02 2 (LRC)

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43 ✓

75. The plant is operating at 100% power when BOTH Main Steam Isolation Valves suddenly close.

Which ONE of the following describes the initial response of the Secondary PORVs and S/G Safety valves as a result of this event?

- A. Secondary PORVs will remain shut and S/G Safety valves will open to prevent S/G overpressure.
- B. Secondary PORVs will modulate open and S/G Safety valves will open to prevent S/G overpressure.
- C. Secondary PORVs will modulate open and one S/G Safety valve may open to assist in preventing S/G overpressure.
- D. Secondary PORVs will fully open and at least one S/G Safety valve will open to prevent S/G overpressure.

Proposed Answer: **D.**

Level	RO	SRO
Tier #	2	2
Group #	2	2
K/A # 035 K6.01	Importance Rating	3.2/3.6
Tech Reference(s): USAR, 14.1.9		
References during exam: NONE		
Learning Objective: 0060000001K02		
Question Source:	Bank # ✓	006-17. INPO/Kewaunee
Question History:	Last NRC Exam	12/97 Kewaunee RO Q #90
Question Cognitive Level:	Memory or Fundamental Knowledge	✓
10 CFR Part 55 Content:	55.41 ✓	55.43

76. Given the following plant conditions:

Reactor power is 100%.

All control systems are in a normal alignment.

Which ONE of the following will INITIALLY result in a reduction of feedwater flow to S/G 'A' ? (Assume NO operator action is taken)

- A. S/G 'A' level channel LT-461 fails low.
- B. S/G 'A' pressure channel PT-468 fails low.
- C. S/G 'A' steam flow channel FT-464 fails high.
- D. S/G 'A' feedwater flow channel FT-466 fails low.

Proposed Answer: **B.**

Level	RO	SRO
Tier #	2	2
Group #	2	2
K/A # 035 A1.01	Importance Rating	3.6/3.8
Tech Reference(s):	System Desc 5A, 3.13.4, 5 &	XK-100-152, 554, 556
References during exam:	NONE	
Learning Objective:	05A0000001K02,	0060000001K10
Question Source:	Bank # ✓	05A-11
Question Cognitive Level:	Comprehension or Analysis	✓
10 CFR Part 55 Content:	55.41 ✓	55.43

77. Given the following sequence of events:

- SP-05B-284, Turbine Driven AFW Pump Full Flow Test - IST, is being performed.
- The TDAFW was started and has been running for 2 minutes.
- Alarm window 47062-N, T/D AFW Pump Abnormal, then alarms.
- The NAO reports that the TDAFP Aux. Lube Oil Pump is continuously stopping and starting, with lube oil pressure fluctuating between 8 psig and 17 psig.

Which ONE of the following correctly describes the above conditions ?

- A. These conditions are normal and no action is required, the alarm will clear when the TDAFW pump is shut down.
- B. These conditions are normal, the NAO should be directed to locally shut down the Aux. Lube Oil Pump to clear the alarm.
- C. The Aux. Lube Oil Pump is operating as designed, a failure of the shaft driven pump has occurred and the test should be terminated.
- D. The Aux. Lube Oil Pump is malfunctioning, it should be shut down immediately.

Proposed Answer: **C.**

Level	RO	SRO
Tier #	2	2
Group #	2	2
K/A # 039 A4.04	Importance Rating	3.8/3.9
Tech Reference(s):	ARP 47062-N	System Desc 5B, 3.3
References during exam:	NONE	
Learning Objective:	05B0000001K01	
Question Source:	New ✓	
Question Cognitive Level:	Comprehension or Analysis ✓	
10 CFR Part 55 Content:	55.41 ✓	55.43

78. Given the following plant conditions:

- The condenser air inleakage test is being performed using the Digital Air Flow Calibrator.
- An air flow reading has just been obtained, when a high alarm occurs on R-15, Air Ejector Exhaust Monitor.

Which ONE of the following describes the affect on the air ejector flowpath for these conditions ?

- A. AR-6, Air Ejector Discharge Vent Valve, will automatically re-align to direct the air ejector flow to the suction of the Aux. Building ventilation exhaust fans.
- B. AR-6 will automatically re-align to direct the air ejector flow to the suction of the Spent Fuel Pool ventilation exhaust fans.
- C. AR-6 will NOT re-position, since it is already aligned to the suction of the Aux. Building ventilation exhaust fans.
- D. AR-6 will NOT re-position, since it is already aligned to the suction of the Spent Fuel Pool ventilation exhaust fans.

Proposed Answer: A

Level	RO	SRO
Tier #	2	2
Group #	2	2
K/A # 055 A3.03	Importance Rating	2.6/2.6
Tech Reference(s): N-AR-09, 4.2.2.c, A-RM-45, 3.5.1.a, & OPERM-212		
References during exam: NONE		
Learning Objective:	0090050104A01,	0450000004K05
Question Source:	New ✓	
Question Cognitive Level:	Comprehension or Analysis ✓	
10 CFR Part 55 Content:	55.41 ✓	55.43

79. Given the following plant conditions:

- The plant is at 100% power with all equipment in its normal lineup.
- A NAO is dispatched to BRB-112, 7.5 KVA Inverter.
- The NAO accidentally opens the Inverter AC input breaker.

Which ONE of the following describes the effect of this action on Pressurizer level control ?

- A. The NCO must take the charging pump to MANUAL since BRB-114, Instrument Bus III, is without 120V AC power.
- B. The NCO must take the charging pump to MANUAL since the loss of BRB-114 resulted in letdown isolation.
- C. Level control remains normal since BRA-114, Instrument Bus IV, is still powered from its normal source via Inverter BRA-112.
- D. Level control remains normal since BRB-114 is powered from 125 VDC Bus BRB-104 via Inverter BRB-112.

Proposed Answer: D.

Level	RO	SRO
Tier #	2	2
Group #	2	2

K/A # 062 K3.03 Importance Rating 3.7/3.9

Explanation: The normal Przr level controlling channel is 3 (BLUE) and is powered from BRB-114. Channel IV (BRA-114) does not exist for Przr level.

Tech Reference(s): System Desc. 38, 3.11, E-233, & E-2039

References during exam: NONE

Learning Objective: 0380000001K02, 0380000001K06

Question Source: Bank # ✓ 038-8

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

80. Given the following plant conditions:

- The plant is in Intermediate Shutdown with the spare Charger off-site for repair.
- Annunciators 47105-A, BATTERY 'A' ABNORMAL, and 47104-A, BATTERY 'A' CHARGER TROUBLE, are in alarm.
- Both trains of RHR are operable with RHR in service controlling RCS temperature at 300 °F.
- S/G 'B' is operable.
- Battery Charger 'A' (BRA-108) is found to have tripped due an internal fault and must be replaced.

What ONE of the following indicates the required action to provide charging capability to Battery 'A' (BRA-101)?

- A. Cross-connect the DC buses BRA-102 and BRC-102.
- B. Align 250 VDC Battery Charger BRE-108 to Bus BRA-104.
- C. Cross-connect the DC Buses BRA-102 and BRB-102.
- D. Cross-connect the DC Buses BRA-102 and BRD-102

Proposed Answer: C.

Level	RO	SRO	
Tier #	2	2	
Group #	2	1	
K/A # 063 K4.02	Importance Rating	2.9*/3.2*	
Tech Reference(s):	A-EDC-38, 4.7.3, E-233, E-3626		
References during exam:	NONE		
Learning Objective:	0380000001K02,	0380070401A01	
Question Source:	Bank # ✓	38-6.	
Question History:	Last NRC Exam	12/2000	Q# 54/51 (RO/SRO)
Question Cognitive Level:	Memory or Fundamental Knowledge	✓	
10 CFR Part 55 Content:	55.41 ✓	55.43	

81. The following plant conditions exist:

- The DC Supply and Distribution System is configured for normal operation and is operating properly.
- Annunciator 47102-B, BRB-102 Feeder Bkr Undervoltage, alarms.

Which ONE of the following describes the local indications available to the local operator, as well as any required actions ?

- A. Adjacent to the breaker, the red circuit status light will be OFF, the toggle switch should be placed in the OFF position.
- B. Adjacent to the breaker, the red circuit status light will be ON, the toggle switch should be placed in the OFF position.
- C. Adjacent to the breaker, the red circuit status light will be ON, the toggle switch should be placed in the ON position.
- D. Adjacent to the breaker, the red circuit status light will be OFF, the toggle switch should be placed in the ON position.

Proposed Answer: **A**

Level	RO	SRO
Tier #	2	2
Group #	2	1

K/A # 063 A3.01 Importance Rating 2.7/3.1

Tech Reference(s): A-EDC-38, 4.6 ARP 47102-B

References during exam: NONE

Learning Objective:0380030401A03 – Given a DC bus, BRA-102/BRB-102, feeder breaker undervoltage, respond in accordance with A-EDC-38.

Question Source: Bank # ✓ 038-3

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

82. Which ONE of the following indicates the flowpath of power to the Diesel Generator 'A' Starting Air Compressor?

(Assume all equipment is in a normal 100% power alignment)

- A. RAT - Bus 5 - Bus 52 - MCC 52A
- B. TAT - Bus 6 - Bus 62 - MCC 62A
- C. RAT - Bus 6 - Bus 62 - MCC 62A
- D. TAT - Bus 5 - Bus 52 - MCC 52A

Proposed Answer: **D.**

Level	RO	SRO
Tier #	2	2
Group #	2	2

K/A # 064 K2.01 Importance Rating 2.7*/3.1

Tech Reference(s): System Desc 10, 3.8, p 18, & E-240, E-258

References during exam: NONE

Learning Objective: 0390000004K04

Question Source: New ✓

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

83. While performing a gas decay tank discharge, WG-36, Waste Gas To Plant Vent Control Valve, automatically closes.

Assuming the automatic closure signal is no longer present and it is acceptable for the release to be re-initiated, which ONE of the following describes the operation needed to open WG-36 ?

- A. The automatic closure signal must be manually reset and WG-36 will then automatically re-open.
- B. WG-36 control switch must be taken to close to reduce control air pressure, and then may be re-opened.
- C. WG-36 can be re-opened by placing its control switch in the OPEN position.
- D. WG-36 control switch must be taken to close to raise control air pressure, and then may be re-opened.

Proposed Answer: **B.**

Level	RO	SRO
Tier #	2	2
Group #	2	2

K/A # 073 K4.01 Importance Rating 4.0/4.3

Tech Reference(s): N-GWP-32B, 4.2.5.d.9 NOTE 1, E-2048

References during exam: NONE

Learning Objective: 32B0000004K06 – Describe the WD-(G) system’s local component operation using the following logic diagrams: E2048-E2050.

Question Source: Modified Bank # ✓ 32B-5

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

84. Given the following sequence of events:

- The plant is in Hot Shutdown at normal operating temperature and pressure.
- Circulating Water (CW) Pump 'A' is in service, CW Pump 'B' is in standby.
- Severe icing of the travelling screens is occurring and Forebay level is lowering.
- Forebay level lowers to 41% and CW Pump 'A' trips.

Which ONE of the following describes the plant response and required action for these conditions ?

- A. Forebay level will rise, condenser absolute pressure will lower. N-CW-04, Circulating Water System, should be utilized for these conditions.
- B. Forebay level will lower, condenser absolute pressure will lower. E-CW-04, Loss of Circulating Water, should be utilized for these conditions.
- C. Forebay level will lower, condenser absolute pressure will rise. A-CW-04, Abnormal Circulating Water System Operation, should be utilized for these conditions.
- D. Forebay level will rise, condenser absolute pressure will rise. E-CW-04, Loss of Circulating Water, should be utilized for these conditions.

Proposed Answer: **D.**

Level	RO	SRO
Tier #	2	2
Group #	2	2
K/A # 075 A2.02	Importance Rating	2.5/2.7
Tech Reference(s):	E-CW-04, 8.b CA (all)	
References during exam:	NONE	
Learning Objective:	0040010504A01	
Question Source:	New ✓	
Question Cognitive Level:	Memory or Fundamental Knowledge ✓	
10 CFR Part 55 Content:	55.41 ✓	55.43 ✓

85. The following plant conditions exist:

- Cooldown to COLD SHUTDOWN is in progress.
- RHR is aligned for cooldown.
- RCS pressure is 400 psig.
- RCS (Hot Leg) Wide Range temperature is 350 °F.
- Flow Controller RHR-101 is in AUTOMATIC and is 10% open.
- Local RHR Heat Exchanger outlet temperature is 300 °F.

The equalizing valve on RHR return header flow transmitter (FT-626) is opened inadvertently. What is the plant response to this event?

- A. RHR Heat Exchanger Bypass Valve (RHR-101) will position to fully closed, RCS cooldown rate will increase.
- B. RHR Heat Exchanger Bypass Valve (RHR-101) will position to full open, RCS cooldown rate will decrease.
- C. RHR Heat Exchanger Flow Control Valves (RHR-8A/8B) will automatically close to prevent exceeding RCS cooldown rate of 100 °F/hour.
- D. RHR Return Header Isolation Valve (RHR-11) will automatically open to maintain RHR Pump discharge pressure and flow constant to the Reactor Vessel.

Proposed Answer: **B.**

Level	RO	SRO
Tier #	2	2
Group #	3	3

K/A # 005 K6.03 Importance Rating 2.5/2.6

Tech Reference(s): E-2036, & OPERXK100-18

References exam: NONE

Question Source: Bank # ✓ 034-2

Question History: Last NRC Exam 5/2001 Q# 33

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

86. Which ONE of the following accurately describes the function of the 'Frame Interlock' on the Fuel Transfer System ?
- A. Prevents movement of the containment upender when the manipulator crane mast is lowered while on the refueling transfer line.
 - B. Prevents the reactor side upender from operating unless the conveyor is at the reactor home position.
 - C. Prevents the SFP side upender from operating unless the conveyor is at the SFP home position.
 - D. Prevents the conveyor from moving if either upender is NOT in the full down (horizontal) position.

Proposed Answer: **D.**

Level	RO	SRO
Tier #	2	2
Group #	3	2

K/A # 034 A3.01 Importance Rating 2.5*/3.1
 Technical Reference(s): System Desc 53, 3.8.1
 References during exam: NONE
 Learning Objective: 0530000001K02
 Question Source: New ✓
 Question Cognitive Level: Memory or Fundamental Knowledge ✓
 10 CFR Part 55 Content: 55.41 ✓ 55.43

87. A fire in the Control Room has resulted in implementation of E-0-06, Fire in Alternate Fire Zone.

Which ONE of the following describes the air compressor that is aligned to the Dedicated instrument air header ?

- A. Air Compressor 'B'.
- B. Air Compressor 'C'.
- C. Air Compressor 'F'.
- D. Air Compressor 'G'.

Proposed Answer: **B.**

Level	RO	SRO
Tier #	2	2
Group #	3	3

K/A # 078 K2.01 Importance Rating 2.7/2.9

Tech Reference(s): System Desc 1, 1.5, pg 5

References during exam: NONE

Learning Objective: 0010000004K02

Question Source: Bank # ✓ # 0010000004K0201

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

88. A loss of instrument air (IA) is in progress and has resulted IA pressure lowering to 88 psig.

Which ONE of the following describes the status of the IA system for these conditions?

- A. Compressors 'A', 'B', and 'C' are running and loaded, SA-200 and SA-400 (Station Air Header 1A and 1B Isolations) are partially closed.
- B. Compressors 'C' and 'B' are running and loaded, compressor 'A' is running and unloaded, SA-200 and SA-400 (Station Air Header 1A and 1B Isolations) are partially closed.
- C. Compressors 'A', 'B', and 'C' are running and loaded, SA-200 and SA-400 (Station Air Header 1A and 1B Isolations) are fully open.
- D. Compressors 'A', 'B', and 'C' are running and loaded, SA-200 and SA-400 (Station Air Header 1A and 1B Isolations) are fully closed.

Proposed Answer: **D.**

Level	RO	SRO
Tier #	2	2
Group #	3	3

K/A # 078 A3.01 Importance Rating 3.1/3.2

Technical Reference(s): System Desc 1, 3.3 pg 9, 3.7.3, & A-AS-01, 3.1.4

References during examination: NONE

Learning Objective: 0010000001K02, 0010010401A04

Question Source: New ✓

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

89. One design feature of the Containment Fan Coil Units provides for reactor coolant leak detection. This design feature routes all condensation from the Containment Fan Coil Units to _____.

- A. Sump 'A'
- B. Sump 'B'
- C. Sump 'C'
- D. RCDT

Proposed Answer: **A**

Level	RO	SRO
Tier #	2	2
Group #	3	2

K/A # 103 K1.01 Importance Rating 3.6/3.9

Tech Reference(s): USAR, 6.3., pg 6.3-7; 6.5.1, pg 6.5-3 & 4

References during exam: NONE

Learning Objective: 0180000001K02

Question Source: New ✓

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

90. Given the following plant conditions:

- The plant is operating at 100% power.
- A small instrument air leak inside Containment causes a slow rise in Containment pressure.
- Containment pressure is currently 1.7 psig.

In order to ensure adequate margin to Containment design pressure is maintained, which ONE of the following indicates the appropriate action to reduce Containment pressure ?

- A. All Containment Fan Coil Units should be started or verified running.
- B. One Containment vacuum breaker should be opened (after obtaining a discharge permit).
- C. The Containment should be vented using the Post-LOCA 2 inch vent lines.
- D. The Containment should be vented using the 36" RBV valves.

Proposed Answer: C.

Level	RO	SRO
Tier #	2	2
Group #	3	2

K/A # 103 A1.01 Importance Rating 3.7/4.1

Explanation: With the Containment Pressure rising due to air line leakage, the only way to reduce pressure is to purge air from Containment.

Tech Reference(s): N-RBV-18B, 2.0, & System Desc 18, 3.1.8, pg 18

References during exam: NONE

Learning Objective: 0180000001K09

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

91. The following plant conditions exist:

- The plant is at 100% power.
- T_{REF} is 0.7°F above T_{AVE} .
- The CRS has directed a dilution of 20 gallons be initiated.

Which of the following describes the administrative controls applicable to operation of the Reactor Makeup system?

- A. A Peer Check is required for BOTH positioning the Reactor Makeup controls AND restoring Automatic Makeup when the evolution is complete.
- B. A Peer Check is required for positioning the Reactor Makeup controls, but is NOT required when restoring Automatic Makeup when the evolution is complete.
- C. Independent Verification is required for BOTH positioning the Reactor Makeup controls AND restoring Automatic Makeup when the evolution is complete.
- D. Independent Verification is required for positioning the Reactor Makeup controls, but is NOT required when restoring Automatic Makeup when the evolution is complete.

Proposed Answer: A.

Level	RO	SRO
Tier #	3	3
Group #	1	1
K/A # 2.1.9	Importance Rating 2.5/4.0	
Tech Reference(s):	GNP 03-17-10, 6.2.2, 6.2.5.1 & 6.2.5.5	
References during exam:	NONE	
Learning Objective:	1190020301K03	
Question Source:	New ✓	
Question Cognitive Level:	Memory or Fundamental Knowledge ✓	
10 CFR Part 55 Content:	55.41	55.43

92. Given the following sequence of plant events:

- The plant was starting up following a refueling outage.
- A reactor trip occurred from 50% power due to a steam line leak.
- The leak has now been isolated.
- All rods fully inserted on the trip.
- RCS TAVE = 532°F
- Intermediate Range NIS = 7.5×10^{-3} %
- Intermediate Range SUR = -0.35 dpm

Using the available references, which ONE of the following indicates the current Operational Mode ?

- A. The plant is currently in INTERMEDIATE SHUTDOWN.
- B. The plant is currently in HOT SHUTDOWN.
- C. The plant is currently in HOT STANDBY.
- D. Not enough information is present to determine the current Operational Mode.

Proposed Answer: **A.**

Level	RO	SRO
Tier #	3	3
Group #	1	1

K/A # 2.1.22 Importance Rating 2.8/3.3

Explanation: The given condition is BOL: 1) The Required Shutdown Reactivity is 1000 pcm (> 700 ppm boron); and 2) Control rods provide at least -4735 pcm (Bank D @ 0 steps) when fully inserted. Power defect (@ ≈ 1400 pcm boron) is +1130 pcm & cooldown of 15 degrees from 547°F with Isothermal coefficient of -8.7 pcm/°F gives positive reactivity addition of +1260.5 pcm. The reactivity difference is then -3474.5 pcm, which is 2474.5 pcm higher than the required SDM From this for BOL conditions when the control rods are fully inserted, the Required Shutdown Reactivity will be met.

Tech Reference(s): Tech Specs 1.0.j and 3.10.1, RD-4.2, 5.4.1, 5.4.2, 7.1, 8.2

References during exam: RD 4.2 (Figure TS 3.10.1)

Learning Objective: 1190110301A01

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 55.43 ✓

93. Given the following conditions:

- A reactor startup is in progress following a shutdown to repair a leaking Component Cooling Water flange on the RXCP 'A' motor.
- Initial criticality for the core had been achieved 2 days prior to today.
- Control Bank D is at 44 steps.
- The ECP was calculated to be at 42 steps on Control Bank 'D'.
- The reactor is NOT critical.
- Both Source Range channels are at their eight-fold values.

What action is required ? (Accumulated Integral Rod Worth data and 8-Fold Table are attached) The operator will _____.

- A. continue to withdraw Bank D control rods until the +400 pcm Administrative Limit is reached.
- B. continue to withdraw Bank D control rods until the Eight-fold Critical Rod Position can be verified using the Intermediate Range channels.
- C. shutdown the reactor as directed in N-CRD-49C "Reactor Shutdown", and recalculate the ECP.
- D. manually trip the reactor, enter E-0 "Reactor Trip Or Safety Injection", and initiate an emergency boration.

Proposed Answer: C.

Level	RO	SRO
Tier #	3	3
Group #	2	2

K/A # 2.2.1 Importance Rating 3.7/3.6

Explanation: The condition has the critical rod position at D-92, based on eight-fold increase (RD-5.5.1). The calculated Administrative limit is reached when rods are withdrawn to D-88 steps. The procedure direct that the reactor will be shutdown and the ECP recalculated if either 1) the determination is the critical position will be below the RIL or 2) the 8-fold critical rod height will be above/below the +/-400 pcm Administrative Limit.

Tech Reference(s): N-CRD-49B, & RD 5.1.1.1, 5.5.1

References during exam: RD 5.1.1.1, 5.5.1

Learning Objective: 0490010101A05

Question Source: Modified Bank # ✓ 049-5

Question History: Last NRC Exam 12/2000 Kewaunee RO # 4

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 55.43

94. A Tagout is being removed that includes CV-204A, 1A RXCP Seal Supply Throttle Valve. The valve was tagged with a HOLD TAG in the CLOSED position.

What is the requirement for restoration of CV-204A ?

- A. Independent Verification (IV) is required.
The verifying operator must initial the Tagout Control Sheet (restoration IV section) when completed.
- B. Concurrent Verification is required.
The verifying operator must initial the Tagout Control Sheet (restoration IV section) when completed.
- C. Concurrent Verification is required.
The removing operator signs the Hold Cards and initials the Tagout Control Sheet (restoration IV section) when completed.
- D. Operator self-check techniques are substituted for Independent Verification.
The removing operator signs the Hold Cards and initials the Tagout Control Sheet (restoration IV section) when completed.

Proposed Answer: **B.**

Level	RO	SRO
Tier #	3	3
Group #	2	2

K/A # 2.2.13 Importance Rating 3.6/3.8

Tech Reference(s): GNP-03.03.01, 6.7.10.1, & GNP-03.09.01, 6.3.2.4

References during exam: NONE

Learning Objective: 1190120304A01, 1190040304K02

Question Source: New ✓

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

95. A valve located in containment has the following radiation level readings:

- Bottom of valve: 2500 mR on contact, 1200 mR/hr @ 30 cm.
- Top of valve (bonnet area) - 100 mR/hr on contact and 48 mR/hr @ 30 cm.

This valve is located in the general area of containment and no enclosure exists. Which ONE of the following describes the required radiological postings ?

- A. The valve should be roped off and posted as a High Radiation Area with a flashing light.
- B. The valve should be roped off and posted as a High Radiation Area without a flashing light.
- C. No posting is required as long as Containment is posted as High Radiation Area.
- D. Containment should be posted as a "Very High Radiation Area".

Proposed Answer: A.

Level	RO	SRO
Tier #	3	3
Group #	3	3

K/A # 2.3.1 Importance Rating 2.6/3.0

Tech Reference(s): HP-01.019, 6.12.3.3

References during exam: NONE

Learning Objective: 1190100304K02, GAT (RWT)

Question Source: Modified Bank # ✓ Point Beach NRC

Question History: Last NRC Exam 1/2002 PB RO# 94

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43 ✓

96. The reactor is in Cold Shutdown and a containment purge using the 36" RBV valves is being initiated.

Which ONE of the following requirements and/or limitations apply during this evolution?

- A. A gaseous discharge permit is required.
- B. Fresh air is supplied by the Containment Ventilation Supply Unit to both the Reactor Building and Turbine Building.
- C. Notification of the NRC is required.
- D. A Containment Purge Exhaust Fan must be started prior to a Containment Vent Exhaust Fan.

Proposed Answer: **A**

Level	RO	SRO
Tier #	3	3
Group #	3	3
K/A # 2.3.9	Importance Rating	2.6/3.0
Tech Reference(s):	N-RBV-18B, 2.0 & 4.1.2	
References during exam:	NONE	
Learning Objective:	0180030101A01	
Question Source:	New ✓	
Question Cognitive Level:	Memory or Fundamental Knowledge ✓	
10 CFR Part 55 Content:	55.41 ✓	55.43 ✓

97. The following plant conditions exist:

- A loss of feedwater ATWS occurred from 100% power.
- FR-S.1 was completed and a transition made to E-0, Reactor Trip Or Safety Injection.
- The only OPERABLE AFW Pump then tripped and a transition was made to FR-H.1, Response To Loss Of Secondary Heat Sink.
- Both S/G WR levels were 4% at the time the procedure was entered.
- At the time step 11 of FR-H.1, Verification of RCS Injection Path, was completed, the following equipment conditions existed:
 - RAT is locked out.
 - TAT is locked out.
 - Bus 5 is locked out.
 - Bus 6 is energized.
 - SI Pump B is running.
 - CET temperatures read 1190 °F and rising.
- During the performance of step 12, Establish RCS Bleed Path, but before both PORVs are opened, Diesel Generator 'B' experiences a mechanical lockout.

What ONE of the following is the next action that should be taken?

- A. Return to the beginning of FR-H.1 (Step 2) and continue attempts to establish feed flow to the S/Gs.
- B. Complete Step 12 of FR-H.1 and open both Przr PORVs.
- C. Transition to FR-C.1, Response to Inadequate Core Cooling.
- D. Transition to ECA-0.0, Loss Of All AC Power.

Proposed Answer: **D.**

Level	RO	SRO
Tier #	3	3
Group #	4	4

K/A # 2.4.6 Importance Rating 3.1/4.0

Explanation: When DG B was lost, a loss of all Safeguards AC power occurred (Loss of All AC Power). This requires entry into ECA-0.0.

Tech Reference(s): ECA-0.0, 2.2.a & NOTE Step 1

References during exam: NONE

Learning Objective: E000070501K02

Question Source: Bank # ✓ LRCBank #E000070501K02 2

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43 ✓

98. The plant has experienced a major plant transient. An ORANGE path Functional Restoration Procedure (FRP) is currently being implemented.

The implementation of the ORANGE path FRP must be suspended for all of the following conditions EXCEPT when:

- A. a RED path FRP is identified.
- B. a higher priority ORANGE path FRP is identified.
- C. the ORANGE path condition clears.
- D. a total loss of onsite and offsite AC power occurs.

Proposed Answer: **C.**

Level	RO	SRO
Tier #	3	3
Group #	4	4

K/A # 2.4.14 Importance Rating 3.0/3.9

Tech Reference(s): UG-0, I.

References during exam: NONE

Learning Objective: 1190070502K07 – Describe how the Critical Safety Function Status Trees are used during an accident/transient event, per the ERG Executive Volume.

Question Source:	Bank # ✓	Point Beach NRC
Question History:	Last NRC Exam	1/2002 PB SRO# 96
Question Cognitive Level:	Memory or Fundamental Knowledge ✓	
10 CFR Part 55 Content:	55.41 ✓	55.43

99. Which ONE of the following is a responsibility of the Control Room 'A' operator during implementation of E-0-06, Fire in Alternate Fire Zone ?

- A. De-energize Buses 1 and 2.
- B. Establish instrument air.
- C. Establishing charging flow.
- D. Tripping Main Steam Isolation Valve, MS-1B.

Proposed Answer: C.

Level	RO	SRO
Tier #	3	3
Group #	4	4

K/A # 2.4.25 Importance Rating 2.9/3.4

Tech Reference(s): E-0-06, Step 21

References during exam: NONE

Learning Objective: E060010501A01

Question Source: New ✓

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

100. The plant is operating at 80% power. A reactor coolant leak inside containment has resulted in pressurizer level lowering to the point requiring a Reactor Trip and Safety Injection. After attempting to manually trip the reactor, the NCO reports to the CRS that both reactor trip breakers are closed and reactor power is steady at 80%. An attempt to de-energize Bus 33 and Bus 43 is also unsuccessful (breakers will not open).

Which ONE of the following describes the next appropriate action ?

- A. Manually initiate Safety Injection and complete the remaining immediate actions of E-0, Reactor Trip or Safety Injection.
- B. Verify Main Feedwater Isolation.
- C. Enter FR-S.1, Response To Nuclear Power Generation/ATWS
- D. Manually initiate Safety Injection and enter FR-S.1.

Proposed Answer: **C.**

Level	RO	SRO
Tier #	3	3
Group #	4	4
K/A # 2.4.49	Importance Rating	4.0/4.0
Tech Reference(s):	E-0, Step 1	FR-S.1, 2.1
References during exam:	NONE	
Learning Objective:	FRS0020501K02	
Question Source:	New ✓	
Question Cognitive Level:	Comprehension or Analysis	✓
10 CFR Part 55 Content:	55.41 ✓	55.43 ✓

101. The unit is at 88% power and has experienced a single rod misalignment (14 steps out of alignment). Core peaking factors have been determined to be within limits. Attempts to realign the rod have failed and the rod has been determined to be mechanically stuck.

Subsequently, a second control rod falls out of alignment criteria (13 steps out of alignment). Attempts to realign this rod have also failed and this rod has been determined to be mechanically stuck. Core peaking factors are within limits with both rods misaligned.

Using the attached Technical Specification reference, which ONE of the following indicates the course of action the operating crew should now take?

- A. Reduce reactor power to less than 50% because rod misalignment criteria does not apply at power levels less than 50%.
- B. Commence the standard shutdown sequence because the shutdown margin requirements are no longer met.
- C. Power can be maintained at 88% since core peaking factors are within the limit.
- D. Reduce reactor power to less than 85% in order to increase the available rod misalignment allowance from 12 to 24 steps.

Proposed Answer: **B.**
Level SRO
Tier # 1
Group # 1

K/A # 005 AA2.03 Importance Rating 4.4

Tech Reference(s): Tech Spec 3.10. e & g, 3.0.c, & A-CRD -49B, 4.7

References during exam: TS 3.10

Learning Objective: 0490010401A01, 1190190302A01

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 55.43 ✓

102. Given the following plant conditions:

- The plant is at 100% power with Diesel Generator 'B' out of service due to contaminated fuel oil. The diesel was declared inoperable at 1100 on 12/01/00.
- At 1600 on 12/01/00, the plant experiences a trip due to a spurious reactor trip signal generated during I & C testing.
- At 2200 on 12/01/00, while maintaining the plant in Hot Shutdown, annunciator 47022-I, SI PUMPS CC FLOW LOW, alarms.
- Investigation shows CCW flow to SI Pump 'A' has been lost due to an apparent valve stem/disc separation.
- CCW flow to SI Pump 'B' is normal.

Which ONE of the following describes the status for plant startup?

The plant may _____.

- A. NOT be taken critical and must be in Cold Shutdown by 2300 on 12/2/00.
- B. NOT be taken critical and must be in Cold Shutdown by 1000 on 12/3/00.
- C. be taken critical and power operations continued as long as Diesel Generator 'B' is restored to service by 1100 on 12/08/00.
- D. be taken critical and power operations continued as long as SI Pump 'A' is restored to service by 2200 on 12/04/00.

Proposed Answer: **B.**
Level SRO
Tier # 1
Group # 1

K/A # W/E01 2.2.22 Importance Rating 4.1

Explanation: With DG 'B' inoperable, for SI Pump 'B' to be considered operable its normal power source must be operable AND SI Pump 'A' must be operable. The given condition results in SI Pump A being inoperable. Both SI Pumps are then inoperable.

Tech Reference(s): ARP 47022-I, RA 1.a, & Tech Spec 3.3.b., 3.7.c & 3.0.c

References during exam: NONE

Learning Objective: 1190190302A02, 1190190302A01

Question Source: Modified Bank # ✓ 033-5

Question History: Last NRC Exam 12/02 SRO # 29

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 55.43 ✓

103. Given the following plant conditions:

- The operating crew is implementing FR-C.1, Response to Inadequate Core Cooling.
- Both Reactor Coolant Pumps (RXCP) have been restarted per FR-C.1.
- Core Exit Thermocouples are 1240 °F and slowly lowering.
- The NCO then reports that both RXCP bearing temperatures are 260 °F and slowly rising.

Which ONE of the following would be the correct response to this situation?

- A. Shut down RXCP 'A' for possible future use and leave RXCP 'B' running since the connection to the pressurizer is from Loop 'B'.
- B. Shut down RXCP 'B' for possible future use since the connection to the pressurizer is from Loop 'B' and leave RXCP 'A' running.
- C. Shut down both RXCPs.
- D. Leave both RXCPs running.

Proposed Answer: D.
Level SRO
Tier # 1
Group # 1

K/A #015/017AA2.08 Importance Rating 4.1

Tech Reference(s): FR-C.1, step 17, & FR-C.1 Background Doc., Step 17 & NOTE

References during exam: NONE

Learning Objective: FRC0010501K04

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 55.43 ✓

104. Given the following plant conditions:

- A reactor startup is in progress and criticality has just been achieved.
- RCS parameters and rod position are being recorded on the ECP data sheet when Reactor Coolant Pump 'A' suddenly trips.

Which ONE of the following correctly describes the Technical Specification requirements for this condition ?

(Assume no additional actions are taken and current plant conditions are as described above. Technical Specification references are attached. Consider ONLY Technical Specification requirements.)

- A. Continued operation is permitted by Technical Specifications, however, no reduction in boron concentration is allowed.
- B. Plant operation is permitted by Technical Specifications but power must be maintained less than the P-7 interlock.
- C. Immediate entry into the Standard Shutdown Sequence is required by Technical Specifications.
- D. Plant operation is permitted by Technical Specifications but must be maintained less than 2%.

Proposed Answer: **D.**
Level SRO
Tier # 1
Group # 1

K/A #015/017 2.1.12 Importance Rating 4.0

Tech Reference(s): Technical Specification 3.1.a.1.B & 1.0.j

References during exam: TS 3.1

Learning Objective: 1190190302A02

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 55.43 ✓

105. Given the following plant conditions:

- The unit is in Intermediate Shutdown with a cooldown in progress.
- RCS temperature is 410 °F.
- The Equipment Operator has reported that Door 262, 1A AFW Pump to Safeguards Alley, is ajar and will not latch closed.

Which one of the following is the correct course of action?

- A. Declare the 'A' AFW Pump inoperable and initiate an Action Request (AR).
- B. Establish a fire watch patrol within 1 hour and initiate a AR.
- C. No action is required since AFW operability requirements are not in effect in Intermediate Shutdown.
- D. Establish a fire watch patrol within 4 hours and initiate a AR.

Proposed Answer: **B.**
Level SRO
Tier # 1
Group # 1

K/A #067 AA2.15 Importance Rating 3.9

Tech Reference(s): Fire Plan Appendix A, Master Fire Door List, & Tech Spec 3.4.b

References during exam: NONE

Learning Objective: 1190190302A04

Question Source: New ✓

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 55.43 ✓

106. A fire in the control room has resulted in the implementation of E-0-06, Fire In Alternate Fire Zone. The procedure has been implemented to the point that the RCS has been cooled and depressurized and RHR is ready to be placed in service. While preparations are being made to start RHR, the Control Room Supervisor identifies the following conditions:

- Bus 3 is de-energized.
- Bus 4 is de-energized.
- Bus 5 is energized via the 'A' Diesel Generator.
- Bus 6 is de-energized and the 'B' Diesel Generator is running.

Which ONE of the following correctly describes the conditions observed by the CRS ?

- A. This is the expected electrical alignment required by the procedure.
- B. The electrical alignment is as expected except the 'B' Diesel Generator should NOT be running.
- C. The alignment is as expected except Bus 6 should be energized by the 'B' Diesel Generator in the event Bus 6 is required.
- D. The alignment is as expected except Bus 3 and Bus 4 should be energized and the 'B' Diesel Generator should NOT be running.

Proposed Answer: **B.**
Level SRO
Tier # 1
Group # 1

K/A #068 AA1.31 Importance Rating 4.0

Explanation: By this point in the procedure Buses 1-4 and Bus 6 would have been de-energized and DG B stopped (step 27).

Tech Reference(s): E-0-06, Steps 27, 54-55

References during exam: NONE

Learning Objective: E060010501A01, E060010502A05

Question Source: New ✓

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

107. SP-55-167-3, MG(R) and MD(R) Valves Timing Test, has just been performed. The Control Room Supervisor has just received the data sheet for review.

Using the attached data sheet and available references, which ONE of the following actions is required for these conditions ?

- A. Within 1 hour, either return at least one isolation valve to an operable status or isolate the penetration flowpath.
- B. Within 24 hours, return the valve(s) to an operable status or isolate the penetration flowpath(s).
- C. Within 72 hours, return the valve(s) to an operable status or isolate the penetration flowpath(s).
- D. Immediate entry into the Standard Shutdown Sequence.

Proposed Answer: A.
Level SRO
Tier # 1
Group # 1

K/A #069 AA2.01 Importance Rating 4.3
Tech Reference(s): Tech Spec 3.6, & SP 55-167-3
References during exam: SP 55-167-3 Data Sheet 1, & TS 3.6
Learning Objective: 1190190302A02, 1190190302A01
Question Source: New ✓
Question Cognitive Level: Comprehension or Analysis ✓
10 CFR Part 55 Content: 55.41 55.43 ✓

108. The following plant conditions exist:

- Radiation alarms and confirmatory sample results indicate that RCS activity has exceeded Technical Specification 3.1.c.1.b limits for gross radioactivity.
- The reactor has been shutdown.

What action is taken to minimize the likelihood of a radioactive release to the environment in the event that a Steam Generator Tube Rupture were to occur with the elevated RCS activity ?

- A. Both MSIVs are closed.
- B. The RCS is cooled down below 500 °F.
- C. Steam Generator blowdown is placed in Mode II operation.
- D. CVCS letdown flow is maximized with all demineralizers in service.

Proposed Answer: **B.**
Level SRO
Tier # 1
Group # 1

K/A #076 2.2.22 Importance Rating 4.1

Tech Reference(s): Tech Spec 3.1.c.2.B and Bases

References during exam: NONE

Learning Objective: 1190190302 K01

Question Source: Modified Bank # ✓ Point Beach NRC # 92

Question History: Last NRC Exam 1/2002 Point Beach NRC - SRO

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 55.43 ✓

109. In E-0, Reactor Trip or Safety Injection, the reactor coolant pumps are required to be tripped if the SI or RHR pumps indicate flow and RCS subcooling is less than 15 °F (45 °F).

The basis for this action is _____.

- A. to allow the steam generator tubes to drain and provide RCS inventory to the core.
- B. to prevent reactor coolant pump damage from cavitation due to operation with two-phase flow.
- C. to prevent damage to the reactor coolant pump seal stack which could result in additional mass loss from the RCS.
- D. to avoid the excessive RCS inventory loss that would occur if the reactor coolant pumps were left running and then tripped later in a small break LOCA event.

Proposed Answer: **D.**
Level SRO
Tier # 1
Group # 2

K/A #009 EK3.21 Importance Rating 4.5

Tech Reference(s): E-0 Backgrnd Doc. Step 20

References during exam: NONE

Learning Objective: E000020501K08

Question Source: Bank # ✓ Point Beach NRC Exam

Question History: Last NRC Exam 1/2002 PB NRC SRO # 27

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

110. Given the following:

- A reactor startup is in progress.
- Control rods are stopped at 80 steps withdrawn on Control Bank 'D'.
- Intermediate Range channel N-35 indicated 8.02E-4% and then failed low.
- Intermediate Range channel N-36 indicates 8.15E-4% and is stable.

Which ONE of the following describes the action to be taken for this situation ?

- A. Trip the reactor and enter E-0, "Reactor Trip or Safety Injection."
- B. Reduce reactor power below P-6 setpoint and reinstate the Source Range trips.
- C. Position the Level Trip switch to BYPASS for N-35 and continue with the startup.
- D. Perform NO actions that would result in a positive reactivity addition.

Proposed Answer: **C.**
Level SRO
Tier # 1
Group # 2

K/A #033 AA2.08 Importance Rating 3.4
Tech Reference(s): N-CRD-49B, 2.0 & 3.0, & A-NI-48, 4.2.1
Tech Spec Table TS-3.5-2 No.3 & Note 3

References during exam: NONE
Learning Objective: 0480040401A01, 1190190302A02
Question Source: Modified Bank # ✓ INPO/Braidwood ILO # 3493
Question History: Last NRC Exam 10/97 Braidwood
Question Cognitive Level: Memory or Fundamental Knowledge ✓
10 CFR Part 55 Content: 55.41 55.43 ✓

111. The following plant conditions exist:

- The plant is at 100% power.
- At 0700 on 09/01/02, R-15, Condenser Air Ejector Monitor, showed a rapid increase in readings from 650 cpm to 32,600 cpm.
- At 0715, HP reported that the expedited air ejector sample results provide confirmation of the R-15 indications.
- At 0745, Chemistry reports S/G sampling has indicated that 98% of the radioactivity can be directly attributed to S/G 'B'.

Using the available references and other known guidance, which ONE of the following describes the action required for the above situation ?

- A. The plant will be less than 50% power by 0800, in HOT SHUTDOWN by 1000, and in COLD SHUTDOWN by 2300 on 09/02/02.
- B. The plant will be in HOT SHUTDOWN by 0915, and in INTERMEDIATE SHUTDOWN with RCS average coolant temperature less than 500 °F by 1315 on 09/01/02.
- C. The plant will be in HOT SHUTDOWN by 0945, and in COLD SHUTDOWN by 2345 on 09/02/02.
- D. The plant will be less than 50% power by 1000, shutdown and maintained in HOT SHUTDOWN by 1200 on 09/01/02.

Proposed Answer: **A.**
Level SRO
Tier # 1
Group # 2

K/A #037 2.1.12 Importance Rating 4.0

Explanation: E-0-14, Rev. B, 1.2.2 and step 8. Using RC-C-88: R-15 to Leakage Rate Conversion Graph, the leakage rate in GPD is determined to be approximately 183 gpd. This exceeds the TS allowed limit of 150 gpd from one S/G.

Tech Reference(s): Night Order Book, RC-C-88 Graph E-0-14, 1.2.2 and step 8.
Tech Spec 3.1.d.2

References during exam: RC-C-88 Graph, & TS 3.1.d

Learning Objective: 1190190302A02, 1190190302A01

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 55.43 ✓

112. The following plant conditions exist:
- The plant is in INTERMEDIATE SHUTDOWN.
 - RCS T_{AVE} is 240 °F.
 - At 1230, radiation monitor R-21, Containment Vent Monitor, failed high.
 - Prior to removing R-21 from service, the Containment Vent Isolation Reset pushbuttons were depressed.
 - Annunciator 47051-B, CNTMT VENT ISOL HIGH RADIATION DISABLED, is now in alarm.
 - A Containment Vent is scheduled to begin at 1300.

What is the effect of the R-21 failure on the planned Containment Vent ?

- A. The Containment Vent may NOT be initiated with the annunciator 47051-B in alarm.
- B. The Containment Vent may NOT be initiated until two technically qualified personnel have performed independent verification of the release rate calculations and the discharge valve lineup.
- C. The Containment Vent may be started if R-11, Containment Particulate Monitor, or R-12, Containment Gas Monitor, is verified OPERABLE prior to initiation of the vent.
- D. The Containment Vent may be started using the 2" Post -LOCA lines if R-13 and R-14, Aux Bldg Vent Exhaust Monitors are OPERABLE.

Proposed Answer: **A.**
 Level SRO
 Tier # 1
 K/A #061 2.1.32 Importance Rating 3.8
 Tech Reference(s): ARP 47051-B, RA 1, N-RBV-18B, 4.1 CAUTION
 References during exam: NONE
 Learning Objective: 0180020101A01
 Question Source: New ✓
 Question Cognitive Level: Memory or Fundamental Knowledge ✓
 10 CFR Part 55 Content: 55.41 ✓ 55.43 ✓

113. The following plant conditions exist:

- A reactor trip and SI occurred from 100% power.
- RCS TAVE is 562 °F.
- Both RXCPs have been stopped.
- The MSIVs have closed.
- S/G 'A' pressure is 1020 psig.
- S/G 'B' pressure is 1140 psig.
- S/G 'B' narrow range level has risen to 97%.
- The CRS is implementing FR-H.2 "Response To Steam Generator Overpressure".

What is the appropriate action relative to steam release from S/G 'B' ?

- A. Steam release should NOT occur since natural circulation flow in the other loop may be disrupted.
- B. Steam release should NOT occur since damage may occur due to water hammer of the steamline.
- C. Steam may be released via MS-2B, Main Steamline Isolation Bypass Valve, only until RCS TAVE is less than 540 °F.
- D. Steam may be released via MS-2B without restriction since narrow range level has been adequately established.

Proposed Answer: **B.**
Level SRO
Tier # 1
Group # 3

K/A #W/E13 2.4.18 Importance Rating 3.6

Tech Reference(s): FR-H.2, Step 4 CAUTION, & FR-H.2 Bckgrd Doc. Step 4

References during exam: NONE

Learning Objective: FRH0020501K04

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

114. The following plant conditions exist:

- The plant is at 100% power.
- Power Range NI channel N44 has failed high. The channel has been properly removed from service per A-MI-87, Bistable Tripping for Failed Reactor Protection or Safeguards Instruments.
- Subsequently, Power Range NI channel N42 upper detector slowly drifts low and N42 is reading 52%.

The Control Room Supervisor references A-NI-48, Abnormal Nuclear Instrumentation, Technical Specifications, and A-MI-87 for the N42 failure.

With respect to N42 and N44, which ONE of the following describes the action/condition associated with these channels ?

The bistables associated with N42 should NOT be placed in trip, N44 may be considered operable.

The bistables associated with N42 should be placed in trip, N44 may be considered operable.

C. The bistables associated with N42 should NOT be placed in trip, N44 CANNOT be considered operable.

D. The bistables associated with N42 should be placed in trip, N44 CANNOT be considered operable.

Proposed Answer: A.
Level SRO
Tier # 2
Group # 1

K/A #015 2.4.11 Importance Rating 3.6

Tech Reference(s): A-MI-87, 4.1, Attachment I , pg 33-35 & pg 23-25
XK-100-694, 147

References during exam: NONE

Learning Objective: 0870010401A02

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43 ✓

115. Given the following plant conditions:

- The plant is in Intermediate Shutdown and is being cooled to Cold Shutdown.
- A Containment Vent is in progress.
- All radiation monitors are in their required alignment.
- R-21, Containment Vent Monitor, sample pump has just tripped and CANNOT be restarted.

Which ONE of the following documents identifies the requirements that would allow the Containment Vent to continue ?

- A. Off-site Dose Calculation Manual
- B. Radiological Environmental Monitoring Manual
- C. Technical Specifications
- D. Updated Safety Analysis Report

Proposed Answer: **A.**
Level SRO
Tier # 2
Group # 1

K/A #071 2.4.11 Importance Rating 3.6
Tech Reference(s): ARP 47013-A, RA 5., & N-RM-45, 4.3.19
ODCM, Table 3.2

References during examination: NONE
Learning Objective: 0450000004K06
Question Source: New ✓
Question Cognitive Level: Memory or Fundamental Knowledge ✓
10 CFR Part 55 Content: 55.41 ✓ 55.43 ✓

116. Following a major plant accident, the containment atmosphere is being vented via the Shield Building Vent System to reduce hydrogen concentration. Site boundary dose levels have risen higher than anticipated and have reached the point such that the venting is required to be stopped. Venting is secured, however, containment hydrogen concentration is still 2.2% and slowly trending upward.

Which ONE of the following statements describes the alternative hydrogen control methodology and/or limitations for these conditions ?

- A. Pressurization of the containment with instrument air is acceptable as this will defer the need to vent until further decay of the containment atmosphere has occurred.
- B. Use of the portable hydrogen recombiners is NOT acceptable as the discharge of the recombiners will increase the site boundary dose limits similar to the venting operation.
- C. Use of the portable hydrogen recombiners is acceptable provided both trains of Auxiliary Building Ventilation are operating.
- D. Pressurization of containment with instrument air is NOT acceptable due to the high hydrogen concentration. Containment pressure will rise above allowable limits prior to any appreciable reduction in hydrogen concentration.

Proposed Answer: A.
Level SRO
Tier # 2
Group # 2

K/A #028 K5.04 Importance Rating 3.2?

Tech Reference(s): N-RBV-18C, 1.1 & 2.3, & USAR, 14.3.9, pg 14.3.50-51

References during examination: NONE

Learning Objective: 0180010104A01, 0180000001K09

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

117. RT-DGM-10-TSC, Technical Support Center Diesel Generator Repetitive Test, is in progress. During the diesel run, the Equipment Operator reports that the TSC Diesel is on fire. The Fire Brigade has been dispatched to the scene. After 10 minutes, the Fire Brigade Leader reports that the fire is still active.

Two hours have now elapsed from the initial report of fire.

By this time, which ONE of the following outside agencies is NOT required to have been notified of this event ?

- A. NRC.
- B. State Warning Center.
- C. Nuclear Electric Insurers Limited (NEIL).
- D. Manitowoc County Sheriff.

Proposed Answer: **C.**
Level SRO
Tier # 2
Group # 2
K/A #086 2.4.30 Importance Rating 3.6
Tech Reference(s): EPIP AD-07, 3.1, 5.2.7; EPIP AD-03, 5.5.3; EPIP AD-04, 5.6.3
EPIP AD-02, 3.3, Chart K, NAD-02.10, 5.9
References during exam: NONE
Learning Objective: 1190080502A01, 1190020505A01
Question Source: New ✓
Question Cognitive Level: Memory or Fundamental Knowledge ✓
10 CFR Part 55 Content: 55.41 55.43 ✓

118. Given the following plant conditions:

- A large Service Water (SW) leak has occurred on SW Header B.
- SW-10B, Aux Building SW Header B Isolation, has been shut per A-SW-02, Abnormal Service Water System Operation, and the leak successfully isolated.
- Train B Aux Building loads are NOT being supplied by Header A.

Which ONE of the following is correct regarding these conditions ?

- A. Diesel Generator B is immediately inoperable.
- B. RHR Pump B may be considered operable.
- C. SI Pump B is immediately inoperable.
- D. All affected equipment supported by SW Train B must be declared inoperable after 72 hours.

Proposed Answer:

C.

Level SRO

Tier # 2

Group # 3

K/A #076 2.4.24 Importance Rating 3.7

Tech Reference(s): N-SW-02, & A-SW-02

References during exam: NONE

Learning Objective: 0020010501A15, 0020000004K02

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43

119. Following a refuel outage, a normal plant startup and power escalation to 100% was initiated. The reactor achieved 100% rated power (1650 MWth) approximately four (4) hours ago. During the first performance of SP-87-125 (Shift Instrument Channel Checks - Operating) since achieving 100% power, the NCO identifies to the Control Room Supervisor (CRS) that the computer input for blowdown flow on the 'A' Steam Generator has been mistakenly entered as 140 gpm instead of the required 40 gpm.

In addition to directing that the S/G 'A' computer point be changed, the CRS should _____.

- A. direct the NCO to raise power slightly since the calorimetric will now be reading lower than 1650 MWth.
- B. order that no reactor power adjustments be made for the next eight hours so an accurate 8-hour power average is obtained.
- C. order that no reactor power adjustments be made for the next 4 hours and then make adjustments to power as required.
- D. direct an immediate power reduction to ensure the 8 hour average does not exceed 1650 MWth.

Proposed Answer: **D.**
Level SRO
Tier # 3
Group # 1

K/A #2.1.7 Importance Rating 4.4
Tech Reference(s): SP-87-125, 2.1 Sample Calorimetric
References during exam: NONE
Learning Objective: 1190190302A02, 1930070001K08
Question Source: New ✓
Question Cognitive Level: Comprehension or Analysis ✓
10 CFR Part 55 Content: 55.41 55.43 ✓

120. The following describes the current equipment out of service information:
- March 19, 1200 - CNTMT FCU 'B', RBV-150B/CD-34131, CNTMT Fan Coil Unit 'B' Emergency Disch Damper, due to wiring failure at the damper operator.
 - March 20, 1520 - Caustic Additive Standpipe isolated due to packing failure on CI-1040, Caustic Line Vent.
 - March 23, 1040 - Service Water Pump A1 tripped on overcurrent due to a relay failure at the breaker.

The following plant conditions exist:

- The plant is at 100% power.
- It is currently 1100 on March 23.

The Maintenance Supervisor has identified that personnel assigned for completion of tasks to repair the OOS components is limited such that only one task can be worked at a time. The estimated time for completion (for return to service) of each individual task is 4 hours. He has requested prioritization be provided for each of the three tasks in progress.

Using the available references, which ONE of the following indicates the proper prioritization for completion of the tasks ?

- A. CNTMT FCU 'B', Caustic Additive Standpipe, and Service Water Pump A1.
- B. Caustic Additive Standpipe, Service Water Pump A1, and CNTMT FCU 'B'.
- C. Service Water Pump A1, CNTMT FCU 'B', and Caustic Additive Standpipe.
- D. Service Water Pump A1, Caustic Additive Standpipe, and CNTMT FCU 'B'.

Proposed Answer: **B.**
 Level SRO
 Tier # 3
 Group # 1

K/A #2.1.12 Importance Rating 4.0

Explanation: The corresponding allowed LCO times are SW Pump (A Train) – 72 hours (71:40 left); CFCU (A Train) – 7 day (73 hours left); Standpipe - 72 hour (15 hours 20 min left). However SW Pump failure also affects A Train components supported by SW –DG, ICS Pump, RHR Pump, SI Pump , CC HX. All again have 72 hour LCOs except DG – 7days. So shortest time is CS Standpipe, next time is SW Pump (& other LCOs). Longest time is CFCU.

Tech Reference(s): Tech Spec 3.3.c.1.A.3.(i) & (iv), 3.3.c.2.A.2 & 3, 3.3.e.2 N-SW-02, 2.2

References during exam: TS 3.3

Learning Objective: 1190190302A01, 1190190302A02

Question Source: Bank # ✓ LRC 1190190302A02 16

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 55.43 ✓

121. The following plant conditions exist:

- The plant is at 55% power.
- RCS TAVE is on program.
- Pressurizer pressure is 2230 psig.
- Control Bank 'D' is at 160 steps withdrawn.
- The Control Rod Bank Selector is in AUTO.
- Control Bank 'D' then begins to step out at minimum rod speed.
- Rod Control System automatic rod blocks fail to function.

With no operator action, which ONE of the following would generate the reactor trip to provide protection from exceeding the DNB limit in the core ?

- A. Overpower ΔT reactor trip.
- B. High nuclear power reactor trip.
- C. Overtemperature ΔT reactor trip.
- D. Pressurizer low pressure reactor trip.

Proposed Answer: **C.**
Level SRO
Tier # 3
Group # 2

K/A #2.2.22 Importance Rating 4.1

Tech Reference(s): Tech Spec Bases 2.3 USAR, 14.1.2 Results

References during exam: NONE

Learning Objective: 1190110301K01

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 55.43 ✓

122. Given the following conditions:

- Maintenance has requested a tagout for SI Pump B.
- The tagout included taking the handswitch to PULLOUT and racking out its supply breaker only.
- A visual inspection showed that NO work is required.
- NO disassembly work was performed on the equipment.

Which ONE of the following indicates the minimum requirement for restoring SI Pump B operability ?

SI Pump B can be considered operable when ...

- A. the supply breaker is racked in.
- B. the supply breaker is racked in and the handswitch is in Auto.
- C. the supply breaker is racked in and tested and the handswitch is in Auto.
- D. the supply breaker is racked in and "SI Pump B Test" of SP 33-098, SI Pump and Valve Test, is completed.

Proposed Answer: C.
Level SRO
Tier # 3
Group # 2

K/A #2.2.21 Importance Rating 3.5

Tech Reference(s): Operating Instructions and Duties,
Testing of Safety System Components.

References during exam: NONE

Learning Objective:

Question Source: Bank # ✓

Question History: Last NRC Exam 2000 Kew.

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 55.43 ✓

123. The following plant conditions exist:

- The plant is in HOT SHUTDOWN.
- A containment entry is being made to perform a partial alignment of N-RC-36-CL (RCS Prestart Checklist) following discovery of some discrepancies in the previously performed checklist.
- The general radiation field in the area requiring entry is 240 mrem/hr.
- The highest area of radiation to be entered is 1500 mrem/hr.
- It has been determined that the total times for exposure are 10 minutes in the general area field and an additional 40 minutes in the area of highest radiation.

Which ONE of the following describe the requirements associated with performing this task ?

- A. A Pre-job ALARA Brief must be performed for both the individual performing the alignment and the individual who will perform the alignment verification. Independent Verification is required to be performed.
- B. A Pre-job ALARA Brief is required for the individual performing the alignment, the Independent Verification requirement can be waived.
- C. A Pre-job ALARA Brief is NOT required. Concurrent Verification should be used in lieu of independent verification.
- D. A Pre-job ALARA Brief is NOT required since the Independent Verification requirement is waived due to the high radiation field.

Proposed Answer: **B.**
Level SRO
Tier # 3
Group # 3

K/A #2.3.2 Importance Rating 2.9

Tech Reference(s): GNP-03.09.01, 6.1.1.10 NAD-03.09, 5.2 HP-04.001, 4.2

References during exam: NONE

Learning Objective: 1190040304K02

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 ✓ 55.43 ✓

124. The following is a time-line of activities associated with Waste Condensate Tank 'A':

- 1400, Waste Condensate Tanks 'A' and 'B' are placed on recirculation for sampling.
- 1620, Chemistry completes sampling of Waste Condensate Storage Tanks.
- 1730, Chemistry submits a Radiological Liquid Waste Discharge Permit # 02-XX for the Waste Condensate Storage Tanks.
- 1735, Shift Manager authorizes the release on Radiological Liquid Waste Permit # 02-XX
- 1745, NAO aligns the Waste Condensate Storage Tanks for discharge to the Aux. Bldg Standpipe and starts the release.
- 1746, R-18, Waste Disposal Liquid Monitor, fails low. The release is terminated and the Waste Condensate Storage Tanks are restored to a normal lineup.
- 1930, R-18 monitor is repaired and restored to service.
- 1935, Shift Manager reauthorizes the release of the Waste Condensate Tanks on the Radiological Liquid Waste Permit # 02-XX.
- 1940, NAO realigns the Waste Condensate Storage Tanks for discharge to the Aux. Bldg Standpipe.

What is the problem associated with these actions?

- A. A Radiological Liquid Waste Permit approved for one shift may NOT be used for initiation of a release on the next shift.
- B. The sample taken for the Radiological Liquid Waste Permit is NOT representative of the current contents of the Waste Condensate Tanks now being released.
- C. The release rate calculations and the discharge line valving require independent verification prior to initiating the second release.
- D. The Waste Condensate Tanks must first be transferred to the Waste Holdup Tank for further processing prior to release.

Proposed Answer: **B.**
Level SRO
Tier # 3
Group # 3

K/A #2.3.6 Importance Rating 3.1

Tech Reference(s): SP 32A-136, 4.4 N-LWP-32A-3, 4.2.2

References during exam: NONE

Learning Objective: 32A0080104K01

Question Source: New ✓

Question Cognitive Level: Comprehension or Analysis ✓

10 CFR Part 55 Content: 55.41 55.43 ✓

125. The following plant conditions exist:

- An incident has occurred and an ALERT has been declared.
- The ERO has responded and all required emergency response facilities have been activated.

Which ONE of the following is a primary responsibility of the Radiological Protection Director for these conditions ?

- A. Making protective action recommendations to state and local authorities.
- B. Reviewing and approving all exposures in excess of 10CFR20 limits.
- C. Performing site and off-site dose projections prior to EOF activation.
- D. Approving changes in the emergency classification based on radiological conditions.

Proposed Answer: C.
Level SRO
Tier # 3
Group # 4

K/A #2.4.36 Importance Rating 2.8

Tech Reference(s): KNPP Emergency Plan, APPENDIX A , RPD, pg A-6 & A-11

References during exam: NONE

Question Source: New ✓

Question Cognitive Level: Memory or Fundamental Knowledge ✓

10 CFR Part 55 Content: 55.41 55.43 ✓