

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	2	
Group #	1	
K/A #	003 K1.08	
Importance Rating	2.7	

Knowledge of the physical connections and/or cause-effect relationships between the RCPS and the following systems:
Containment isolation

Proposed Question: Common 1

Given the following:

- The reactor is tripped.
- RCS pressure has lowered to 1650 psia. *— CIAS / SIAS*
- Containment pressure is currently 17.2 psia. *— CIAS 17.7 = CSAS*
- The crew is performing OP-902-000, Standard Post Trip Actions.

Which ONE of the following describes the effect on the RCPs for this condition?

- ☒ A. Controlled Bleedoff Isolation valves, (CVC 401 and RC 606) are OPEN; CCW supply & return isolation valves, (CC 641; CC 710 & CC 713) are OPEN.
- ☐ B. Controlled Bleedoff Isolation valves, (CVC 401 and RC 606) are OPEN; CCW supply & return isolation valves, (CC 641; CC 710 & CC 713) are CLOSED.
- ☐ C. Controlled Bleedoff Isolation valves, (CVC 401 and RC 606) are CLOSED; CCW supply & return isolation valves, (CC 641; CC 710 & CC 713) are OPEN.
- ☒ D. Controlled Bleedoff Isolation valves (CVC 401 and RC 606) are CLOSED; CCW supply & return isolation valves, (CC 641; CC 710 & CC 713) are CLOSED.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. Containment pressure is above the CIAS setpoint and RCS pressure is below the SIAS setpoint. CBO isolation will be closed

- B. Incorrect. CCW supply valves close on CSAS, which actuates at a higher containment pressure (17.7 psia)
- C. Correct.
- D. Incorrect. Although CBO valve will be closed, CCW will remain open until a CSAS is generated

Technical Reference(s) OP-902-009, Appendix 4 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-RCP00 Obj 6 (As available)

Question Source: Bank # _____

Modified Bank # _____ (Note changes or attach parent)

New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 7

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u> </u>
Group #	<u>1</u>	<u> </u>
K/A #	<u>004 K6.26</u>	<u> </u>
Importance Rating	<u>3.8</u>	<u> </u>

Knowledge of the operational implications of the following concepts as they apply to the CVCS: Methods of pressure control of solid plant (PZR relief and water inventory)

Proposed Question: Common 2

Given the following:

- A plant startup is in progress.
- The pressurizer is solid in preparation for forming a bubble.
- RCS temperature is 210°F and rising slowly.
- RCS pressure is 250 psia and stable.

Which ONE of the following describes how RCS pressure is being maintained, and the pressure at which the LTOP relief valves will operate to maintain RCS pressure within limits?

Letdown Backpressure Control Valve is throttling....

- A. Closed as RCS temperature rises; LTOP reliefs lift at 392 psig.
- B. Closed as RCS temperature rises; LTOP reliefs lift at 415 psig.
- C. Open as RCS temperature rises; LTOP reliefs lift at 392 psig.
- D. Open as RCS temperature rises; LTOP reliefs lift at 415 psig.

Ref is 750 psia
Ref is 430 psia
which is 415 + 14.7
(Trick?)

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. LD Backpressure will be maintained by the control valve throttling open to allow more letdown flow as RCS expands during heatup. 392 is pressure that will give LTOP alarm
- B. Incorrect. Correct pressure, but incorrect action for valve
- C. Incorrect. Correct action for valve, but incorrect pressure
- D. Correct.

KA is matched because facility uses Shutdown Cooling Reliefs for LTOP, there are no PZR PORVs at facility. Pressure control during solid plant operation is provided by the letdown backpressure control valve.

Technical Reference(s)	OP-001-001 section 6.6	(Attach if not previously provided)
	WLP-OPS-SDC	

Proposed references to be provided to applicants during examination:	None
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Learning Objective: WLP-OPS-SDC Obj 1 (As available)

Question Source: Bank # _____
 Modified Bank # _____ (Note changes or attach
 parent)
 New X

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 5

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	<u>2</u>	<u> </u>
	Group #	<u>1</u>	<u> </u>
	K/A #	<u>005 K2.03</u>	<u> </u>
	Importance Rating	<u>2.7</u>	<u> </u>

Knowledge of bus power supplies to the following: RCS pressure boundary motor-operated valves

Proposed Question: Common 3

The plant is in Mode 1.

Which ONE of the following describes the power supply AND breaker status for RCS Loop Shutdown Cooling System Isolation Valve SI-401A? *SDC Isolation Isol*

- A. Powered by non-safety-related 480 volt MCC; breaker is CLOSED.
- B. Powered by non-safety-related 480 volt MCC; breaker is LOCKED OPEN.
- C. Powered by safety-related 480 volt MCC; breaker is CLOSED.
- D. Powered by safety-related 480 volt MCC; breaker is LOCKED OPEN.

Need Reference

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. In Mode 1, breaker is open and locked
- B. Incorrect. Correct breaker status but the valve is powered from a safety related MCC, although it performs a non-safety related function
- C. Incorrect. Valve closed with breaker open and locked.
- D. Correct.

Technical Reference(s) SD-SDC, Table 4 (Attach if not previously provided)
CWD B424, Sheet 595

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-SDC00 Obj 2 (As available)

Question Source: Bank #

Modified Bank # _____ (Note changes or attach parent)

New X

Question History:

Last NRC Exam _____

Question Cognitive Level:

Memory or Fundamental Knowledge X

Comprehension or Analysis _____

10 CFR Part 55 Content:

55.41 5

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	2	
Group #	1	
K/A #	006 A4.01	
Importance Rating	4.1	

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

Proposed Question: Common 4

The following events occurred:

- A small-break loss of coolant accident has occurred.
- High Pressure Safety Injection (HPSI) Pump A has tripped on overcurrent.
- The crew aligned and started HPSI Pump AB (bus 3AB is aligned to A side).

Current conditions:

- Two charging pumps are running.
- Pressurizer pressure is 1300 psia and steady.
- HPSI Pumps AB and B have been stopped upon meeting SI Termination Criteria.
- The RO reports that Pressurizer level is now 10% and slowly dropping.

Which ONE of the following describes the MINIMUM action required for the current conditions?

- A. Start HPSI Pumps B and AB and fully open all cold leg flow control valves; verify pressurizer level is rising; fully close cold leg injection flow control valves when desired pressurizer level is reached.
- B. Start HPSI Pump B and fully open enough cold leg flow control valves to raise or stabilize pressurizer level.
- C. Reinitiate safety injection by depressing the manual Safety Injection pushbuttons on CP-7.
- D. Ensure RCS temperature is stable; no action is required unless pressurizer level drops below 7%.

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. Would not fully open all valves and start all available pumps. Only operate enough SI to ensure throttle criteria remains met
- B. Correct.
- C. Incorrect. Once HPSI is throttled, would not reinitiate SIAS, would only stabilize the unit
- D. Incorrect. Because level cannot be controlled above 7%, reinitiating SI flow enough to maintain level is the correct action, even if the setpoint has not been reached

Technical Reference(s) OP 902-002, step 55 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-PPE02 Obj 19 (As available)

Question Source: Bank # X
Modified Bank # (Note changes or attach parent)
New

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 10

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u> </u>
Group #	<u>1</u>	<u> </u>
K/A #	<u>006 A3.03</u>	<u> </u>
Importance Rating	<u>4.1</u>	<u> </u>

Ability to monitor automatic operation of the ECCS, including: ESFAS-operated valves

Proposed Question: Common 5

Given the following:

- A LOCA has occurred.
- A RAS signal has been received.

Which ONE of the following valves automatically changes position due to the Recirculation Actuation Signal?

- A. LPSI Cold Leg Injection Flow Control Valve, SI-138A
- B. LPSI Minimum Flow Recirculation Valve SI-1161B
- C. ESF Pumps Suction RWSP Valve, SI-106B
- D. ESF Pumps Suction SI Sump Valve, SI-602A

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. Repositions on SIAS, not RAS
- B. Incorrect. Repositions only on SIAS, will be verified closed
- C. Incorrect. Does not reposition on RAS, but will be manually closed when swapover complete
- D. Correct.

Technical Reference(s) SD SI Page 42 (Attach if not previously provided)

Proposed references to be provided to applicants during None

examination: _____

Learning Objective: WLP-OPS-SI00 Obj 1 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach
parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 7

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u> </u>
Group #	<u>1</u>	<u> </u>
K/A #	<u>007 G2.1.32</u>	<u> </u>
Importance Rating	<u>3.4</u>	<u> </u>

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

Proposed Question: Common 6

Which ONE of the following describes how the Containment Penetration (#7) for Primary Makeup (PMU) is protected from over-pressurization during a design basis accident?

- A. Penetration has a Relief valve directed to the Quench Tank
- B. Penetration has a Relief Valve directed to the Reactor Drain Tank
- C. PMU Isolation to Quench Tank (PMU-153), is locked closed in Modes 1-4
- D. PMU Isolation to Quench Tank (PMU-153), is maintained open in Modes 1-4

Relief valves do not exist!

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. Penetration not provided with a relief, but if it did, it would relieve to either PRT or RDT
- B. Incorrect. Penetration not provided with a relief, but if it did, it would relieve to either PRT or RDT
- C. Incorrect. Locking valve closed could potentially cause the overpressure. Plausible if the applicant does not know the location of the valve in the system.
- D. Correct.

Technical Reference(s) OP-007-001, Limitation 3.2.7 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-RCS00 Obj 2 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach
parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 5

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u> </u>
Group #	<u>1</u>	<u> </u>
K/A #	<u>008 K4.07</u>	<u> </u>
Importance Rating	<u>2.6</u>	<u> </u>

Knowledge of CCWS design feature(s) and/or interlock(s) which provide for the following: Operation of the CCW swing-bus power supply and its associated breakers and controls

Proposed Question: Common 7

Initial conditions:

- CCW Pumps A and B are currently running.
- CCW Pump AB is replacing CCW Pump B.
- CCW Pump B will be removed from service.
- AB Bus is aligned to Train B.
- CCW AB Assignment Switch has been transferred to position B.
- CCW Pump AB has NOT been started.

Current conditions:

- A loss of off-site power occurs.
- All equipment operates as designed.
- Both Sequencers have timed out.

Which ONE of the following describes the operation of the CCW pumps for this event?

- A. ALL CCW Pumps are running.
- B. ONLY CCW Pump A is running.
- C. ONLY CCW Pumps A and B are running.
- D. ONLY CCW Pumps A and AB are running.

Proposed Answer: D

- A. Incorrect. Assignment switch calls for replacement of B pump on auto start, so it will not be started
- B. Incorrect. Because Assignment switch is in position B, CCW pump AB will receive a start signal on LOOP.
- C. Incorrect. For auto start, the pump assigned to train B will receive the signal, even though the other pump was running prior to the LOOP
- D. Correct.

Technical Reference(s)	SD-CC, Page 14 and Table 1.1	(Attach if not previously provided)
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Proposed references to be provided to applicants during examination:	None
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Learning Objective: WLP-OPS-CC00 Obj 3 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach
parent)
New ☒ X

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 7

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	2	
Group #	1	
K/A #	010 K3.01	
Importance Rating	3.8	

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

Proposed Question: Common 8

The plant is at 5% power:

If the controlling pressurizer pressure channel (PT-100X/Y) failed high, the reactor would trip on: (Assume no operator actions)

- A. CPC RCS Pressure Aux Trip
- B. A calculated DNBR LO trip
- C. Pressurizer Pressure HI
- D. Pressurizer Pressure LO

Proposed Answer: A

Explanation (Optional):

A. Correct. The Aux trip would occur first because 1) RCS pressure would be lowering vice increasing 2) the aux trip occurs at 1860 psia vice 1684 psia for the Pressurizer Pressure LO trip, and 3) Power is low enough that an actual lo DNBR condition would not occur prior to the AUX trip.

B. Incorrect. At higher power levels this would be possible

C. Incorrect. Transmitter failure is high, but only 1 transmitter will not cause a reactor trip on high pressure. Plausible because it supplies 1 of 2

D. Incorrect. Will cause a trip, but setpoint is lower than CPC trip, so CPCs will trip unit first

*not correct.
X/Y are control signals only*

Technical Reference(s) TS 2.0 Bases, DNBR-Low (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

None

Learning Objective: WLP-OPS-PPS00 Obj 7 (As available)

Question Source: Bank # X
2004 W3
#35
Modified Bank # (Note changes or attach
parent)
New
Question History: Last NRC Exam 2004
Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X
10 CFR Part 55 Content: 55.41 7

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u> </u>
Group #	<u>1</u>	<u> </u>
K/A #	<u>012 K6.06</u>	<u> </u>
Importance Rating	<u>2.7</u>	<u> </u>

Knowledge of the effect of a loss or malfunction of the following will have on the RPS: Sensors and detectors

Proposed Question: Common 9

Given the following:

- Mode 1, 100% power.
 - Channel B Narrow Range Pressurizer Pressure indication has failed low.
 - All required bypass / trip actions have been completed. *→ ~~all~~ with bypassed pzc high and pzc low ⇒ pzc high is 2/3*
- A short time later the following occurs:

- Channel C Narrow Range Pressurizer Pressure transmitter output fails high. *Trip channel 'C' 1 of 3 is tripped 2 remaining channels ⇒ 1 of 2 before action occurs*

Prior to any additional action, which ONE of the following describes the coincidence logic from remaining channels required to cause a reactor trip on high pressurizer pressure?

- ☒ A. 1 out of 2
- B. 1 out of 3
- C. 2 out of 2
- D. 2 out of 3

Proposed Answer: A

- A. Correct. With one channel already bypassed the logic is 2 out of 3. When the 2nd channel fails the logic now becomes 1 out of 2, since the second failure causes a trip.
- B. Incorrect. Plausible because with only 3 channels available this could be construed as the logic.
- C. Incorrect. Plausible because this is the logic after the 1st channel is bypassed.
- D. Incorrect. Plausible because this was the logic prior to the second failure.

Proposed references to be provided to applicants during examination:	NONE
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Question Source: Bank # X WTSI
 Modified Bank # _____ (Note changes or attach
 parent)
 New _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	2	
Group #	1	
K/A #	013 K4.12	
Importance Rating	3.7	

Knowledge of ESFAS design feature(s) and/or interlock(s) which provide for the following: Safety Injection block

Proposed Question: Common 10

Which ONE of the following describes the operation of the RPS/ESFAS PZR PRESS BYPASS?

- A. May be manually inserted using a keyswitch when pressurizer pressure decreases to 500 psia. Automatically restored when pressure rises above 500 psia.
- B. May be manually inserted using a keyswitch when pressurizer pressure decreases to 400 psia. Automatically restored when pressure rises above 500 psia. ✓
- C. Automatically inserted when pressurizer pressure decreases to 500 psia. May be manually defeated using a keyswitch.
- D. Automatically inserted when pressurizer pressure decreases to 400 psia. May be manually defeated using a keyswitch.

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. Manual bypass is performed below 400 psia. May also be manually placed in NORMAL below 500 psia.
- B. Correct.
- C. Incorrect. Not automatically inserted, but credible because the setpoints are correct ✓
- D. Incorrect. Not automatically inserted, but credible because the setpoints are correct ✓

Technical Reference(s) SD PPS, Table 2 (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

None

Learning Objective: WLP-OPS-PPS00 Obj 4 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach
parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 7

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u> </u>
Group #	<u>1</u>	<u> </u>
K/A #	<u>022 A2.03</u>	<u> </u>
Importance Rating	<u>2.6</u>	<u> </u>

Ability to (a) predict the impacts of the following malfunctions or operations on the CCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Fan motor thermal overload/high-speed operation

Proposed Question: Common 11

Given the following:

- The plant is at 100% power.
- Containment Cooling is in a normal alignment.
- The following alarm is received:
 - Cabinet C, E-1, TRN B CNTMT COOLER POWER LOST
- CNTMT Cooler D was running but is now stopped.
- Containment temperature begins to rise slowly.
- Investigation reveals that the fan supply breaker is in the ON position, and the control power fuses are intact.

Which ONE of the following describes the failure, impact of the failure, and action required?

- A. Fan motor overcurrent; Containment temperature will FIRST exceed technical specification limits at 110°F; contact Electrical Maintenance, and attempt reset.
- B. Fan motor overcurrent; Containment temperature will FIRST exceed technical specification limits at 120°F; place the control switch to OFF and return to ON. If fan does not start, contact Electrical Maintenance.
- C. Fan motor thermal overload; Containment temperature will FIRST exceed technical specification limits at 120°F; contact Electrical Maintenance, and attempt reset.
- D. Fan motor thermal overload; Containment temperature will FIRST exceed technical specification limits at 110°F; place the control switch to OFF and return to ON. If fan does not start, contact Electrical Maintenance.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. Overcurrent would have the breaker tripped free. CNTMT temp exceeds TS at 120, but 110 plausible because it is the setpoint for the cooler outlet high temperature alarm
- B. Incorrect. Overcurrent would have breaker trip, but actions would be correct for a fan shutdown and restart, not a fault
- C. Correct.
- D. Incorrect. Wrong tech spec, and Containment Cooler fan thermal overloads will not reset with control switch action. Off, then On, is for resetting overrides

Technical Reference(s) OP-500-003, E-1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-CCS00 Obj 5 (As available)

Question Source: Bank #
Modified Bank # (Note changes or attach parent)
New X

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 7,10

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	2	
Group #	1	
K/A #	022 K4.05	
Importance Rating	2.6	

Knowledge of CCS design feature(s) and/or interlock(s) which provide for the following: Containment cooling after LOCA destroys ventilation ducts

Proposed Question: Common 12

Given the following:

- The plant is operating in MODE 1 with all system alignments normal when a LOCA occurs inside Containment.
- The following conditions are noted:
 - RCS pressure = 1750 psia
 - Containment Pressure = 17.3 psia
 - All Containment Fan Coolers (CFCs) are OPERABLE
 - No manual operator actions have been taken

Which ONE of the following describes the status of the Containment Cooling System?

- A. 3 of 4 CFCs running in slow speed and discharging through the ring header.
- B. 4 of 4 CFCs running in slow speed and discharging through the safety dampers.
- C. 3 of 4 CFCs running in fast speed and discharging through the ring header.
- D. 4 of 4 CFCs running in fast speed and discharging through the safety dampers.

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. 3 of 4 is normal alignment, but in fast speed
- B. Correct. Above SIAS/CIAS setpoint, 4 of 4 will operate by shifting to slow speed
- C. Incorrect. Fast speed is for normal operation
- D. Incorrect. Fast speed is for normal operation

Technical Reference(s) SD CCS, Page 28 and (Attach if not previously
Figure 3 provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-CCS00 Obj 1 & 5 (As available)

Question Source: Bank # X
Modified Bank # (Note changes or attach
New parent)

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 7

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	2	
Group #	1	
K/A #	026 G2.1.30	
Importance Rating	3.9	

Conduct of Operations: Ability to locate and operate components, including local controls

Proposed Question: Common 13

Given the following:

- A LOCA has occurred.
- Containment pressure is 17.9 psia.
- RCS pressure is 1440 psia.
- 4.16KV Bus 3B is de-energized and locked out.
- The CRS directs closing Containment Spray Discharge Header Isolation Valve CS-125B.

Which ONE of the following describes the MINIMUM action required to close the valve?

- A. Place the control switch for CS-125B in CLOSE.
- B. Place the control switch for CS-125B in OPEN, then place in CLOSE.
- C. Place the override key switch in the +35 Relay Room in OVERRIDE, then place the control switch for CS-125B in CLOSE.
- D. Place the override key switch in the +35 Relay Room in OVERRIDE, then place the control switch for CS-125B in OPEN, then place in CLOSE.

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. CSAS has occurred, and with the signal still active, override must be performed
- B. Incorrect. Partially correct, because the valve must be placed in OPEN prior to CLOSED
- C. Incorrect. Partially correct, but the valve must be placed in OPEN since it received an AUTO signal from CSAS
- D. Correct.

Technical Reference(s) SD CS, Page 18 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-CS00 Obj 4 (As available)

Question Source: Bank # X
Modified Bank # _____ (Note changes or attach parent)
New _____

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 7

Comments:

Modified conditions but used same distractors as Bank item

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	2	
Group #	1	
K/A #	026 K1.01	
Importance Rating	4.2	

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

Proposed Question: Common 14

Given the following:

- A LOCA has occurred. ✓
- CSAS has actuated. ✓
- RWSP level is 55% and lowering. → NO RAS

Assuming no action by the crew, which ONE of the following describes the effect on the Containment Spray System?

- A. CCW flow is currently required through the Shutdown Cooling Heat Exchangers for the Containment Spray system to perform its design function; CC-963A remains closed.
- B. CCW flow is currently required through the Shutdown Cooling Heat Exchangers for the Containment Spray system to perform its design function; CC-963A automatically opened on SIAS.
- C. CCW flow is NOT currently required through the Shutdown Cooling Heat Exchangers for the Containment Spray system to perform its design function; CC-963A remains closed. ✓
- D. CCW flow is NOT currently required through the Shutdown Cooling Heat Exchangers for the Containment Spray system to perform its design function; CC-963A automatically opened on CSAS.

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. CCW flow not required until RAS actuation, when CNTMT sump water is supplied. Even if in CLOSE, valve will open to supply ~1900 GPM flow
- B. Incorrect. CCW flow not required until RAS actuation, when CNTMT sump water is supplied. Valve actuation is incorrect, as Train B actuates on SIAS.

- C. Incorrect. Requirement is correct, but valve will realign
D. Correct.

Technical Reference(s) SD-CS (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-CS00 Obj 2 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 7

Comments:

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

Group #

1

K/A #

039 K5.01

Importance Rating

2.9

Knowledge of the operational implications of the following concepts as they apply to the MRSS: Definition and causes of steam/water hammer

Proposed Question:

Common 15

Which ONE (1) of the following describes a design feature of the Main Steam supply to EFW Pump AB?

- EFW T/F
- A. Heat-tracing maintains temperature at a level to minimize the possibility of water hammer on pump start.
 - B. Heat-tracing maintains temperature to minimize water in the lines to minimize corrosion and wear product buildup.
 - C. A bypass line and flow orifice maintains temperature at a level to minimize the possibility of water hammer on pump start.
 - D. A bypass line and flow orifice maintains temperature to minimize water in the lines to minimize corrosion and wear product buildup.

Proposed Answer:

A

Explanation (Optional):

A is correct.

B is incorrect because the reason for the heat trace is water hammer prevention. Plausible because water buildup may cause increased corrosion and wear

C is incorrect because the bypass line and flow orifice are on the discharge side of the pump. Plausible because bypass lines pass water. Steam traps are also used.

D is incorrect because the bypass line and flow orifice are on the discharge side of the pump. Plausible for same reason as B

Technical Reference(s)

WLP-OPS-EFW00, Slide 50

(Attach if not previously provided)

SD-EFW, Page 15

Proposed references to be provided to applicants during

None

examination: _____

Learning Objective: WLP-OPS-EFW00 Obj 7 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach
parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 14

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	2	
Group #	1	
K/A #	059 K3.03	
Importance Rating	3.5	

Knowledge of the effect that a loss or malfunction of the MFW will have on the following: S/GS

Proposed Question: Common 16

Given the following:

- The plant is at 100% power.
- The output of the master controller for FWCS 1 became erratic
- The crew has entered OP-901-201, and placed the #1 Master Controller and both Main Feedwater Pump controllers to Manual.
- The output of the master controller is at 60%.
- The level setpoint remains at 68% NR.
- Subsequently, a reactor trip occurs.

Assuming no operator action occurs, what is the INITIAL post-trip response of SG #1 level and the FW system?

- A. Level in SG 1 rises to the level setpoint; RTO resets; FW components go to program condition for 60% master controller output.
- B. Level in SG 1 rises to HLO setpoint of 81% NR; SUFRV 1 cycles between the HLO and HLO reset setpoints at RTO flowrate.
- C. Level in SG 1 rises, RTO does not reset, and MFIV 1 goes closed when SG 1 level reaches 96% WR.
- D. Level in SG 1 rises to HLO setpoint of 81% NR; SUFRV #1 & MFRV #1 cycle between the HLO and HLO reset setpoints at 60% demand flowrate.

Proposed Answer: B

Explanation (Optional):

B is correct. Since the master controller is in manual and the output is above that required to reset RTO, the output of the pump and valve controllers will be at RTO values until HLO occurs at which time the valves will get a 0% output signal until the HLO signal clears.

A is incorrect because the RTO will not clear.

C is incorrect because HLO can control level around 81% NR.

10

[illegible]

.....

[illegible]

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	2	
Group #	1	
K/A #	059 A3.02	
Importance Rating	2.9	

Ability to monitor automatic operation of the MFW, including: Programmed levels of the S/G

Proposed Question: Common 17

Given the following:

- The plant is at 40% power.
- All control systems are in their normal automatic alignments.
- The Feedwater Flow signal to SG #1 fails high.

Which ONE of the following describes the effect of SG level control?

- A. Control system response will cause an increase in SG level, but will be offset by a level error signal. SG #1 level will stabilize at the program setpoint.
- B. Control system response will cause an increase in SG level, but will be offset by a level error signal. SG #1 level will stabilize above the program setpoint.
- C. Control system response will cause a decrease in SG level, but will be offset by a level error signal. SG #1 level will stabilize at the program setpoint.
- D. Control system response will cause a decrease in SG level, but will be offset by a level error signal. SG #1 level will stabilize below the program setpoint.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. If feed flow fails high, then feed will decrease to that SG. Once SG level goes below program, the level signal will cause feed to increase until the SG returns to program
- B. Incorrect. SG level dominance will return level to program
- C. Correct.
- D. Incorrect. Opposite failure in SG level, incorrect stabilization

Technical Reference(s) WPPT-OPS-FWC00, Slides (Attach if not previously provided)
98 & 99

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-FWC00 obj 4 (As available)

Question Source: Bank #
Modified Bank # X (Note changes or attach parent)
New

Question History: Last NRC Exam 2007

Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 7

Comments:
Mod W3 2007 #19 – different failure to change answer

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

Group #

1

K/A #

061 K2.02

Importance Rating

3.7

Knowledge of bus power supplies to the following: AFW electric drive pumps

Proposed Question: Common 18

The plant is at 100% power.

Which ONE of the following describes the direct power supply and design flow capacity of EFW Pump B?

- A. 4.16KV Bus 2B; 350 GPM.
- B. 4.16KV Bus 2B; 700 GPM.
- C. 4.16KV Bus 3B; 350 GPM.
- D. 4.16KV Bus 3B; 700 GPM.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. Plausible because Bus 2B supplies Bus 3B in Mode 1
- B. Incorrect. 2B supplies 3B, and capacity is for TDEFW Pump
- C. Correct.
- D. Incorrect. Correct power supply but incorrect flow capacity

Technical Reference(s) SD 4KV R4, Figure 3

(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

None

Learning Objective:

WLP-OPS-EFW00 obj. 03

(As available)

Question Source:

Bank #

Modified Bank # _____ (Note changes or attach
parent)

New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 7

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	2	
Group #	1	
K/A #	062 A1.01	
Importance Rating	3.4	

Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the ac distribution system controls including: Significance of D/G load limits

Proposed Question: Common 19

Given the following conditions:

- A loss of off-site power has occurred.
- Both EDGs have started.
- EDG load is as follows:
 - "A" EDG 4350 KW
 - "B" EDG 4420 KW

Which ONE of the following describes the status of the EDGs, and the effect on the EDGs if a 100 KW load was added to either Emergency bus?

- A. BOTH EDGs are operating below the continuous load rating; both EDGs would exceed the continuous rating if the additional load was added to the associated bus.
- B. ONE EDG is operating above the continuous load rating; the other EDG would exceed the continuous load rating if a 100 KW load was added to its associated bus.
- C. BOTH EDGs are operating below the 2-hour load rating; both EDGs would exceed the 2-hour rating if the additional load was added to the associated bus.
- D. ONE EDG is operating above the 2-hour load rating; the other EDG would exceed the 2-hour load rating if a 100 KW load was added to its associated bus.

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. Continuous rating is 4400 KW. B EDG is above that
B. Correct. 4350 plus 100 would exceed the continuous rating
C. Incorrect. 2 hour rating is 4840 KW. Plausible if applicant confuses the ratings
D. Incorrect. 2 hour rating is 4840 KW. Plausible if applicant confuses the ratings

Technical Reference(s) SD EDG, Page 32 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-EDG Obj 2 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 5

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	2	
Group #	1	
K/A #	063 K3.01	
Importance Rating	3.7	

Knowledge of the effect that a loss or malfunction of the dc electrical system will have on the following: ED/G

Proposed Question: Common 20

Plant conditions:

- The plant is at 100% power.
- "A" EDG is synchronized to the grid for a post-maintenance test.

Which ONE (1) of the choices correctly completes the following statement regarding the impact on "A" EDG if a loss of "A" DC Bus occurs?

"A" EDG will _____.

- A. trip and the output breaker will trip open immediately
- B. trip and the output breaker will remain closed until manually opened locally by an operator
- C. continue running but the output breaker will trip on loss of protective relay power
- D. remain running with the output breaker closed but unloading must be accomplished by local operation of the breaker.

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. Plausible if candidate thinks the EDG will trip.
- B. Correct.
- C. Incorrect. Plausible if candidate thinks loss of protective relay power will cause relay actuation. Relays must energize to actuate
- D. Incorrect. EG-ISV-3001A would cause a trip on loss of power, Field Flash power is lost, and Generator Breaker AUTO trip function is lost.

Technical Reference(s): SD EDG, Table 2 (Attach if not previously provided)

WLP-OPS-ED00, Slide 18

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-EDG00 Obj 3, and (As available)
WLP-OPS-ED00, Obj 2

Question Source: Bank # X
Modified Bank # (Note changes or attach parent)
New

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 5, 7
55.43

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u> </u>
Group #	<u>1</u>	<u> </u>
K/A #	<u>063 K1.03</u>	<u> </u>
Importance Rating	<u>2.9</u>	<u> </u>

Knowledge of the physical connections and/or cause-effect relationships between the dc electrical system and the following systems: Battery charger and battery

Proposed Question: Common 21

With "A" DC battery charger placed in the EQUALIZING mode, which ONE (1) of the following will occur?

- A. Charger output voltage immediately rises to the equalize setting, battery cell voltage will slowly rise and amps will lower as the battery charges.
- B. Charger output voltage immediately rises to the equalize setting, battery cell voltage will slowly rise and amps will rise as the battery charges.
- C. Charger output voltage and battery cell voltage immediately rise to the equalize setting and amps will lower as the battery charges.
- D. Charger output voltage and battery cell voltage immediately rise to the equalize setting and amps will rise as the battery charges.

Proposed Answer: A

Explanation (Optional):

- A. Correct.
- B. Incorrect. Plausible because everything is correct with the exception of current flow.
- C. Incorrect. Plausible because charger does immediately increase, but battery does not.
- D. Incorrect. Plausible because charger immediately rises. Current flow lowers as battery is charged.

Technical Reference(s): WLP-OPS-TYE01, Slides 329 (Attach if not previously provided)
Thru 333, 342, & 343

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-DC00 Obj 3 (As available)
WLP-OPS-TYE01, Obj 16, 20, & 24

Learning Objective: WLP-OPS-DC00 Obj 3 (As available)

Question Source: Bank # X
Modified Bank # (Note changes or attach parent)
New

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis

10 CFR Part 55 Content: 55.41 5
55.43

Comments:
St Lucie 2006 – editorial mods for plausibility

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u> </u>
Group #	<u>1</u>	<u> </u>
K/A #	<u>064 A2.09</u>	<u> </u>
Importance Rating	<u>3.1</u>	<u> </u>

Ability to (a) predict the impacts of the following malfunctions or operations on the ED/G system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:
Synchronization of the ED/G with other electric power supplies

Proposed Question: Common 22

Given the following:

- EDG B is being synchronized to the grid for a retest following maintenance.
- The synchroscope is slowly rotating in the counter-clockwise direction.
- EDG voltage is approximately 10 volts lower than Bus voltage.

IF the EDG output breaker is closed under these conditions, which ONE of the following describes the effect on the EDG, and which ONE of the following describes the action required PRIOR to closing the breaker to prevent the effect?

- A. Potential EDG output breaker overcurrent condition; raise EDG frequency.
- B. Potential EDG output breaker overcurrent condition; raise EDG voltage.
- C. Potential reverse power trip of EDG output breaker; raise EDG frequency.
- D. Potential reverse power trip of EDG output breaker; raise EDG voltage.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. 10 volts less than bus voltage would not result in overcurrent. Action is for EDG speed, not voltage
- B. Incorrect. Correct action if overcurrent due to voltage difference is a concern, but effect is not correct
- C. Correct.
- D. Incorrect. Voltage will not affect reverse power. With EDG going counterclockwise, it will not pick up load when the breaker is closed

Technical Reference(s) OP-009-002, Precaution 3.1.7 (Attach if not

_____ provided)

Proposed references to be provided to applicants during examination: _____ None

Learning Objective: WLP-OPS-EDG00 Obj 2 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach
parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 7

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u> </u>
Group #	<u>1</u>	<u> </u>
K/A #	<u>064 A4.07</u>	<u> </u>
Importance Rating	<u>3.4</u>	<u> </u>

Ability to manually operate and/or monitor in the control room: Transfer ED/G (with load) to grid

Proposed Question: Common 23

Given the following:

- EDG A is loaded, synchronized to the grid for surveillance testing.
- In preparation for shutting down the EDG, the RO must transfer EDG load to the grid.

Which ONE of the following describes how the load transfer will be performed?

- A. Reduce MW AND MVAR output using EDG governor control.
- B. Reduce MW AND MVAR output using EDG voltage control.
- C. Reduce MW output using EDG governor control; reduce MVAR output using EDG voltage control.
- D. Reduce MW output using EDG voltage control; reduce MVAR output using EDG governor control.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. Governor control will change MW output but will cause MVAR to increase slightly or have very little effect
- B. Incorrect. Voltage control will change MVARs, but real load (MW) will be unaffected by change in voltage
- C. Correct.
- D. Incorrect. Opposite of correct answer

Technical Reference(s) OP-009-002, Page 22 (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

None

Learning Objective: WLP-OPS-EDG00 Obj 3 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 10

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	073 K5.03	
	Importance Rating	2.9	

Knowledge of the operational implications as they apply to concepts as they apply to the PRM system: Relationship between radiation intensity and exposure limits

Proposed Question: Common 24

Given the following:

- The plant is at 100% power.
- The following alarm is received on Cabinet L:
 - A-9, Rad Monitoring Sys Activity HI-HI
- ARM-IRE-5021, Letdown HX/Blowdown Pump Hallway, is in alarm
- Chemistry sample indicates elevated Iodine-131 activity levels

Which ONE of the following describes the reason for notification of Radiation Protection to initiate surveys in the Reactor Auxiliary Building?

- A. Radiation levels may require additional radiation controls.
- B. Surveys are required for confirmation of ARM-IRE-5021 detector response.
- C. ARM-IRE-5021 reads in CPM and therefore has no correlation to dose level changes.
- D. Reactor Auxiliary Building radiation levels are used to determine the need for additional letdown flow or a change in purification ion exchanger alignment.

Proposed Answer: A

Explanation (Optional):

- A. Correct.
- B. Incorrect. In this case, confirmation is provided by Chemistry sample
- C. Incorrect. ARM reads in mr/hr, and is directly related to changes in dose levels.
- D. Incorrect. Although Aux Building Radiation Levels are used to determine fuel failure, decon factors are used to determine ion exchanger alignment. Letdown is

maximized regardless of the radiation reading as long as ion exchange is working properly

Technical Reference(s) OP-901-410, Page 7, Step 3 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: GET-2, Rad Worker Training (As available)

Question Source: Bank # X
Modified Bank # _____ (Note changes or attach parent)
New _____

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 11,12

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	2	
Group #	1	
K/A #	076 A3.02	
Importance Rating	3.7	

Ability monitor automatic operation of the SWS, including: Emergency Heat Loads

Proposed Question: Common 25

Given the following:

- The plant is operating at 100% power.
- A, B, and D Containment Fan Coolers are operating in Fast Speed.
- A reactor trip occurs.
- Containment Pressure is 19.5 psia.

Which ONE of the following describes the CCW flow configuration to the Containment Fan Coolers?

- A. CCW flow of 2700 gpm on each header.
- B. CCW flow of 1400 gpm on each header.
- C. CCW flow of 2700 gpm each to header that was in service prior to the reactor trip. 1400 GPM to the header that was not in service prior to the reactor trip
- D. CCW flow of 1400 gpm each header that was in service prior to the trip. 2700 GPM to the header that was not in service prior to the trip

Proposed Answer: A

Explanation (Optional):

- A. Correct.
- B. Incorrect. Normal flow through coolers in fast speed
- C. Incorrect. All coolers will shift to slow speed and CCW aligns to provide maximum flow
- D. Incorrect. . All coolers will shift to slow speed and CCW aligns to provide maximum flow

Technical Reference(s) WLP-OPS-CCS00, Slide 35 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-CCS00 Obj 1 (As available)

Question Source: Bank # OPS-4127-A
Modified Bank # (Note changes or attach parent)
New

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 5

Comments:

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

Group #

1

K/A #

078 A4.01

Importance Rating

3.1

Ability to manually operate and/or monitor in the control room: Pressure gauges

Proposed Question: Common 26

Given the following conditions:

- 100 percent power
- Instrument Air Header pressure is 115 psig

An air leak occurs, causing Instrument Air Header pressure indication to drop to 90 psig.

Which ONE of the following describes the status of the instrument air system?

- A. SA-125 Station Air Backup is OPEN, IA-123 Air Dryer Bypass is OPEN
- B. SA-125 Station Air Backup is CLOSED, IA-123 Air Dryer Bypass is OPEN
- C. SA-125 Station Air Backup is OPEN, IA-123 Air Dryer Bypass is CLOSED
- D. SA-125 Station Air Backup is CLOSED, IA-123 Air Dryer Bypass is CLOSED

Proposed Answer: A

Explanation (Optional):

- A. Correct.
- B. Incorrect. SA-125 opens at 105 psig IA-123 opens at 95 psig
- C. Incorrect. SA-125 opens at 105 psig IA-123 opens at 95 psig
- D. Incorrect. SA-125 opens at 105 psig IA-123 opens at 95 psig

Technical Reference(s) OP-003-016 pg 26

(Attach if not previously provided)

Proposed references to be provided to applicants during examination:

None

Learning Objective: WLP-OPS-AIR00 obj. 01 (As available)

Question Source: Bank #
Modified Bank # X (Note changes or attach parent)
New

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis

10 CFR Part 55 Content: 55.41 4

Comments:

Modified 2007 Retake 27 to change pressure indication, provides for different answer

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	2	
Group #	1	
K/A #	103 A3.01	
Importance Rating	3.9	

Ability to monitor automatic operation of the containment system, including: Containment isolation

Proposed Question: Common 27

Given the following:

- Containment Pressure = 16.9 psia
- RCS Pressure = 1450 psia
- CC-641, CCW RCP Inlet Outside Isol Valve is open
- BAM-133, Emergency Boration Valve is open
- SI-343, SI Tanks Drain to RWSP is closed
- MS 120A, Main Steam Line 1 Normal Drain Valve is open

*negative/
backward
logic*

Which valve did not automatically reposition to its ESFAS actuation position?

- A. CC-641
- B. BAM-133
- C. SI-343
- D. MS-120A

Proposed Answer: D

Explanation (Optional):

D is correct. For the conditions given, the only ESFAS actuations that apply are SIAS and CIAS.

A and B are incorrect because the valves are in the expected alignment with no CSAS.

C is incorrect because the valve listed in the correct condition for a CIAS.

Technical Reference(s) OP-902-009, Appendix 4 (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

None

Learning Objective: WLP-OPS-MS00 Obj 3 (As available)

Question Source: Bank # X
Modified Bank # _____ (Note changes or attach
parent)
New _____

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 7

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	2	
Group #	1	
K/A #	103 A1.01	
Importance Rating	3.7	

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

Proposed Question: Common 28

Which ONE of the following describes the operation of the Containment Vacuum Relief System to maintain Containment pressure within design limits?

If Containment to Annulus Differential Pressure reaches...

- Containment*
- A. 8.5 INWD, verify Vacuum Relief Valves CVR-101 and CVR-201 OPEN; Valves must be manually realigned when DP is below the specified value. -6.9
- B. 5.5 INWD, verify Vacuum Relief Valves CVR-101 and CVR-201 OPEN; Valves must be manually realigned when DP is below the specified value.
- C. 8.5 INWD, verify Vacuum Relief Valves CVR-101 and CVR-201 OPEN; Verify valves automatically close when DP is lowered to the specified value.
- D. 5.5 INWD, verify Vacuum Relief Valves CVR-101 and CVR-201 OPEN; Verify valves automatically close when DP is lowered to the specified value.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. Valves will open at 8.5 INWD, but manual control is for infrequent operation of manual control of Containment pressure
- B. Incorrect. Opposite of above, manual control. Plausible because misconception may exist on direction of DP, and 5.5 is the number for manual control
- C. Correct.
- D. Incorrect. Opposite of actual operation of system for normal pressure control, value is too low. In manual, DP would be lowered to 5.5

Technical Reference(s) OP-008-005 Section 6.1.1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

None

Learning Objective: WLP-OPS-CB00 Obj 2 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 7

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	2	
Group #	2	
K/A #	001 K1.05	
Importance Rating	4.5	

Knowledge of the physical connections and/or cause-effect relationships between the CRDS and the following systems:
NIS and RPS

Proposed Question: Common 29

Given the following:

- The plant is operating at full power.
- A transient occurs, resulting in reactor power rising slightly.
- Channel "A" LPD pre-trip alarm is received in the control room.
- Channels "B", "C", and "D" pre-trips have not been received.

Which ONE of the following describes the effect on CEA motion?

- A. CEA withdrawal is prohibited in automatic ONLY.
- B. CEA withdrawal is permitted, but if one more LPD pre-trip is received. CEA withdrawal will be prohibited in automatic ONLY
- C. CEA withdrawal is prohibited in all modes with the exception of Manual Individual.
- D. CEA withdrawal is permitted, but if one more LPD pre-trip is received, CEA withdrawal will be prohibited in all modes with the exception of Manual Individual. *permitted in Manual Individual ONLY*

Correct Answer

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. Auto withdrawal is still allowed, LPD pretrips will not just stop auto
- B. Incorrect. First part correct, but not just auto will be affected
- C. Incorrect. 2 of 4 pre-trips are required to give a CWP
- D. Correct.

Technical Reference(s) SD CPC, Figure 6

(Attach if not previously provided)

Proposed references to be provided to applicants during
examination:

None

Learning Objective: WLP-OPS-CED00 Obj 2 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach
parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 6, 7

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u> </u>
Group #	<u>2</u>	<u> </u>
K/A #	<u>016 K5.01</u>	<u> </u>
Importance Rating	<u>2.7</u>	<u> </u>

Knowledge of the operational implication of the following concepts as they apply to the NNIS: Separation of control and protection circuits.

Proposed Question: Common 30

Which ONE (1) of the following describes how the control process signals and plant protection process signals for RCS loop temperatures function?

- A. Separate elements are used for **protection** channel and **control** channel functions.
- B. Each element is provided with two separate outputs; one for **control** channel, one for **protection** channel.
- C. Isolation amplifiers from the output of each element ensure that feedback from the **control** signal will not affect the **protection** channel.
- D. Element outputs are multiplexed to be processed separately by the **control** channel and **protection** channel circuitry.

Proposed Answer: A

Explanation (Optional):

- A. Correct. RCS temperature inputs are specifically separated for protection and control. Different transmitters are used for each function, as well as input for other indications
- B. Incorrect. Typical arrangement with isolation for functions in other applications
- C. Incorrect. Isolation amplifiers are typically used in PPS circuitry to minimize noise or feedback between PPS components
- D. Incorrect. Multiplexing is used in PPS to carry many signals over a limited number of circuits

Technical Reference(s) SD-PAC, Pages 5 thru 7 (Attach if not previously provided)

Proposed references to be provided to applicants during None

examination: _____

Learning Objective: WLP-OPS-PPS obj 1 (As available)

Question Source: Bank # X
Modified Bank # _____ (Note changes or attach
parent)
New _____

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 X

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u> </u>
Group #	<u>2</u>	<u> </u>
K/A #	<u>017 A3.01</u>	<u> </u>
Importance Rating	<u>3.6</u>	<u> </u>

Ability to monitor automatic operation of the ITM system including: Indications of normal, natural, and interrupted circulation of RCS

Proposed Question: Common 31

Given the following:

- A loss of off-site power has occurred.
- RCS Thot is 585°F and stable.
- RCS Tcold is 555°F and stable.
- The ATC Operator is currently verifying Natural Circulation.

Which ONE of the following values ^{is} represents the MAXIMUM Representative CET temperature that ensures single phase natural circulation ~~may be~~ ^{has been} established?

- A. 589°F
- B. 592°F
- C. 594°F
- D. 597°F

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. 10°F is allowed in accordance with OP-902-003
- B. Incorrect. 10°F is allowed in accordance with OP-902-003
- C. Correct.
- D. Incorrect. Too high

Technical Reference(s) OP-902-003, Page 13, Step 15 (Attach if not previously provided)

None

WLP-OPS-PPE05, Obj 3 (As available)

Bank # _____
 Modified Bank # _____ (Note changes or attach
 parent)
 New ☒ X

Last NRC Exam _____

1: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

55.41 10

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	2	
Group #	2	
K/A #	028 A4.01	
Importance Rating	4.0	

Ability to manually operate and/or monitor in the control room: HRPS controls

Proposed Question: Common 32

Given the following:

- A LOCA has occurred.
- The crew is performing OP-902-002, Loss of Coolant Accident Recovery.

wrong system

Which ~~ONE~~ of the following describes the sequence of action required to place a Hydrogen Analyzer in service, and the hydrogen concentration indicated when the containment atmosphere reaches a flammable limit?

- A. Open the H2 Analyzer containment isolation valve, then turn the power switch ON; 2%.
- B. Place the power switch ON, then open the H2 Analyzer containment isolation valve; 2%.
- C. Open the H2 Analyzer containment isolation valve, then turn the power switch ON; 4%.
- D. Place the power switch ON, then open the H2 Analyzer containment isolation valve; 4%.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. 2% is a limit for waste gas, but flammable limit is 4%. Sequence is important because pump turns on when power turned on, if the valve is not open, there is no flowpath for pump
- B. Incorrect. Wrong sequence, wrong concentration
- C. Correct.
- D. Incorrect. Wrong sequence of operation

Technical Reference(s) OP-902-002, page 14 (Attach if not previously

_____ provided)
WLP-OPS-HRA00, Slide 29

Proposed references to be provided to applicants during examination: _____ None

Learning Objective: WLP-OPS-HRA00 Obj 1 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach
parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 10

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	2	
Group #	2	
K/A #	056 G2.1.32	
Importance Rating	3.4	

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

Proposed Question: Common 33

Given the following:

- A Plant Startup is in progress.
- Condensate Pump "A" was started from a cold condition, run for 30 seconds, and manually tripped 3 minutes ago.
- ~~Investigation revealed an erroneous indication, and the pump may be run as required.~~ *OK*
~~Investigation revealed the pump was tripped operator tripped the pump due to erroneous indication, and may be run as required.~~

In accordance with OP-003-003, Condensate System, which ONE of the following describes the requirement for subsequent start of the Condensate pump?
to start the 'A'
re-

(Assume cold start)

- A. The pump may be started ONE time immediately
- B. An additional 2 minutes must pass prior to attempting restart.
- C. An additional 27 minutes must pass prior to attempting restart.
- D. An additional 57 minutes must pass prior to attempting restart.

Proposed Answer: A

Explanation (Optional):

- A. Correct. Cold starts, 2 starts allowed in 5 minute period
- B. Incorrect. Two starts in 5 minutes does not require a 5 minute wait between starts
- C. Incorrect. For hot starts, pump must be running for >30 minutes prior to restart attempt
- D. Incorrect. 60 minutes is rest time between hot starts

Technical Reference(s) OP-003-003, Precaution 3.1.1 (Attach if not previously

_____ provided)

Proposed references to be provided to applicants during examination: _____ None

Learning Objective: _____ WLP-OPS-CD00 Obj 2, 8 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach
parent)
New _____ X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____ X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 _____ 10

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u> </u>
Group #	<u>2</u>	<u> </u>
K/A #	<u>068 K6.10</u>	<u> </u>
Importance Rating	<u>2.5</u>	<u> </u>

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

Proposed Question: Common 34

Given the following:

- A discharge of BACT A is in progress.
- The following alarm is received:
 - Cabinet G, A-10, BAC CONDENSATE RAD MONITOR TROUBLE
- Boron Management Discharge Rad Monitor, PRM-IRE-0627, indicates off-scale low.

Which ONE of the following describes the status of the BACT release ~~in progress~~?

- A. The release continues, but must be terminated manually.
- B. ONLY BACT Discharge to Circ Water Isolation, BM-547 closes.
- C. ONLY Boron Management Discharge to Circulating Water Flow Control Valve, BM-549, closes.
- D. Both BM-547 AND BM-549 close.

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. If indication is below a preset value, the valve will close on detector failure
- B. Incorrect. Both valves close, but plausible because either valve will serve to isolate the release in progress.
- C. Incorrect. Both valves close, but plausible because either valve will serve to isolate the release in progress.

D. Correct.

Technical Reference(s) OP 901-412, Page 4 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-BM00, Obj 5 (As available)

Question Source: Bank #
Modified Bank # (Note changes or attach parent)
New X

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 11

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	071 A2.02	
	Importance Rating	3.3	

Ability to (a) predict the impacts of the following malfunctions or operations on the Waste Gas Disposal System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Use of waste gas release monitors, radiation, gas flow rate, and totalizer.

Proposed Question: Common 35

Given the following:

- The plant is at 100% power.
- A Gaseous Waste Discharge is in progress when the Waste Gas Flow and Radiation Recorder, GWM-IFRR-0648, fails.
- The recorder cannot be immediately repaired.

Which ONE of the following describes the impact of the failure, and the action required?

- Waste Gas Discharge automatic isolation is inoperable; stop the release. Do not resume the release until the recorder is repaired and a new Gaseous Waste Release Permit is issued.
- Waste Gas Discharge automatic isolation is inoperable; stop the release. Do not resume the release until the recorder is repaired. Once the recorder is operable, the release may resume under the existing release permit after verifying NO new additions to the WGD Tank(s) being released.
- Waste Gas Discharge automatic isolation remains operable but flow indication is lost; verify the flow setpoint on GWM-309 remains below the limit specified on the release permit, and continue the release.
- Waste Gas Discharge automatic isolation remains operable but flow indication is lost; estimate discharge flow rate by determining the change in GDT pressure over time to ensure flow rate remains within limits.

Proposed Answer: D

Explanation (Optional):

- | | | |
|------------------------|----------------------------------|-------------------------------------|
| Technical Reference(s) | OP-007-003, Page 14, Step 6.4.14 | (Attach if not previously provided) |
|------------------------|----------------------------------|-------------------------------------|

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	2	
Group #	2	
K/A #	072 K4.01	
Importance Rating	3.3	

Knowledge of ARM system design feature(s) and/or interlock(s) which provide for the following: Containment ventilation isolation

Proposed Question: Common 36

Which ONE of the following describes the type of radiation monitoring provided by RE-5024, 5025, 5026, and 5027, Containment Purge Isolation Monitors, and the Containment Purge System components operated directly by a signal from the monitors?

reference given for Q 59

- A. Area Radiation Monitors; Supply and Exhaust Valves ONLY.
- B. Area Radiation Monitors; Supply and Exhaust Valves, and Ventilation Fans.
- C. Process Radiation Monitors; Supply and Exhaust Valves ONLY.
- D. Process Radiation Monitors; Supply and Exhaust Valves, and Ventilation Fans.

Proposed Answer: A

Explanation (Optional):

- A. Correct.
- B. Incorrect. ARMs are supplied, but the fan trips on closure of valves (Need to verify correct)
- C. Incorrect. Monitors are not PRMs.
- D. Incorrect. Monitors are not PRMs, and fans do not trip directly on High Rad

Technical Reference(s) SD RMS (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

None

Learning Objective: WLP-HVR00 Obj 3 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach
parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 7

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	2	
Group #	2	
K/A #	075 A2.03	
Importance Rating	2.5	

Ability to (a) predict the impacts of the following malfunctions or operations on the Circulating Water System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Safety features and relationship between condenser vacuum, turbine trip, and steam dump

Proposed Question: Common 37

Given the following:

- The plant is at 50% power.
 - A loss of Condenser vacuum is in progress.
 - The crew is performing action of OP-901-220, Loss of Condenser Vacuum.
 - Condenser vacuum is 20 inches Hg and lowering slowly in all condenser sections.
- Handwritten notes:* An arrow points from "lowering slowly" to "loss of condenser vacuum" in the second bullet point. Another arrow points from "lowering slowly" to "vacuum is 20 inches Hg" in the fourth bullet point.

Which ONE of the following describes the status of SBCS, and the action required at this moment?

- A. All SBCS valves are closed due to low vacuum; trip the reactor.
- B. All SBCS valves are closed due to low vacuum; trip the turbine and stabilize reactor power.
- C. All SBCS valves remain available; trip the reactor.
- D. All SBCS valves remain available; verify turbine trips, and stabilize reactor power.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. SBCS valves receive a trip signal at 3.4 INHG. Vacuum is not low enough for trip
- B. Incorrect. SBCS valves receive a trip signal at 3.4 INHG. Vacuum is not low enough for trip. Would not trip turbine alone, though plausible because the plant is below the power for reactor trip due to turbine trip

- C. Correct.
- D. Incorrect. Would not trip turbine alone, though plausible because the plant is below the power for reactor trip due to turbine trip

Technical Reference(s) OP-901-220 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP –PPO020 obj 03 (As available)

Question Source: Bank # _____

Modified Bank # _____ (Note changes or attach parent)

New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 7,10

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>2</u>	<u> </u>
Group #	<u>2</u>	<u> </u>
K/A #	<u>086 A1.03</u>	<u> </u>
Importance Rating	<u>2.7</u>	<u> </u>

Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the Fire Protection System controls including: Fire doors

Proposed Question: Common 38

Given the following:

- The plant is at 100% power.
- A report from the RAB is received that a broken latch is discovered on a Fire Door in a safety related area.
- The door is closed but will not stay latched closed.
- Fire detection is operable on BOTH sides of the broken door.

Which ONE of the following describes the action required?

- A. A Continuous Fire Watch MUST be posted until the latch is repaired.
- B. An Hourly Fire Watch patrol MUST be initiated until the latch is repaired.
- C. A Fire Watch is NOT required because all Fire Detection is operable.
- D. A Fire Watch is NOT required because the door remains closed and the fire boundary is intact.

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. Only required if operability of at least 1 side of fire detectors cannot be verified
- B. Correct.
- C. Incorrect. With inoperable door, a fire watch will be posted
- D. Incorrect. With inoperable door, a fire watch will be posted

Technical Reference(s) TRM 3/4.7.11

(Attach if not previously provided)

FP-001-015

Proposed references to be provided to applicants during examination:

None

Learning Objective: WLP-OPS-PPA00, OBJ 1 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 10

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	1	
Group #	1	
K/A #	007 EK3.01	
Importance Rating		4.0

Knowledge of the reasons for the following as they apply to a reactor trip: Actions contained in EOP for reactor trip

Proposed Question: Common 39

Given the following:

- A reactor trip has occurred.
- The turbine did NOT trip automatically OR manually.

Which ONE of the following contingency actions will be performed in accordance with Standard Post Trip actions, and the reason for the action?

- A. Close both MSIVs; prevent uncontrolled cooldown of the RCS.
- B. Close both MSIVs; to conserve secondary inventory.
- C. Manually trip the Main Generator; prevent uncontrolled cooldown of the RCS.
- D. Manually trip the Main Generator; to conserve secondary inventory.

Proposed Answer: A

Explanation (Optional):

- A. Correct.
- B. Incorrect. Secondary inventory will be conserved, but the reason that MSIVs are closed after turbine fails to trip is uncontrolled cooldown.
- C. Incorrect. Tripping the Main Generator will disconnect the generator from the grid. Basis is incorrect for this action.
- D. Incorrect. Generator may not trip if turbine is not tripped, but should not be tripped until the turbine is verified tripped, and the reason is to prevent overspeed of the main turbine.

Technical Reference(s) OP-902-000 and TG

(Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-EP00 Obj 2 (As available)

Question Source: Bank # X
Modified Bank # (Note changes or attach parent)
New

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis

10 CFR Part 55 Content: 55.41 10

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	1	
Group #	1	
K/A #	008 AK1.02	
Importance Rating	3.1	

Knowledge of the operational implications of the following concepts as they apply to a Pressurizer Vapor Space
Accident: Change in leak rate with change in pressure

Proposed Question: Common 40

Initial Conditions:

- A Pressurizer Safety Valve has stuck open after a load rejection.
- RCS pressure is 1200 psia.
- Containment pressure is 18 psia and rising.
- SI flow is approximately 150 GPM.

Current Conditions:

- The stuck open Safety Valve cannot be isolated.
- RCS pressure continues to decrease and is currently 600 psia.
- Containment pressure is 21 psia and rising.

Assuming no action by the crew, which ONE (1) of the following correctly describes the current RCS leak rate and SI flow?

- A. Leak rate is approximately 50% of the initial leak rate.
SI flow is less than 300 GPM.
- B. Leak rate is approximately 50% of the initial leak rate.
SI flow is greater than 300 GPM.
- C. Leak rate is approximately 70% of the initial leak rate.
SI flow is less than 300 GPM.
- D. Leak rate is approximately 70% of the initial leak rate.
SI flow is greater than 300 GPM.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. Leak rate is proportional to the square root of DP. Half of the DP will not equal half of the flow

- B. Incorrect. Leak rate is proportional to the square root of DP. Half of the DP will not equal half of the flow
- C. Correct. *With RCS pressure half of what it initially was, the break flow will be approximately 70% of the initial break flow. SI discharge was originally pumping against 1400 psig, so the DP between SI and RCS was lower, resulting in higher flow than when RCS pressure is higher*
- D. Incorrect. SI flow will be less than double the initial SI flow, due to pump performance and pump laws

300 GPM is plausible because the applicant may refer to the LPSI pump curve and choose an incorrect option

Technical Reference(s) Attachment 2E, 2F (Attach if not previously provided)

Proposed references to be provided to applicants during examination: OP-902-009, Att 2E, 2F

Learning Objective: WLP-OPS-PP02 OBJ 3 (As available)

Question Source: Bank # X
Modified Bank # (Note changes or attach parent)
New

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 14

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	1	
Group #	1	
K/A #	009 EK2.03	
Importance Rating	3.0	

Knowledge of the interrelations between the small break LOCA and the following: S/Gs

Proposed Question: Common 41

Given the following:

- A LOCA has occurred.
- RCS pressure is 1600 psia *RCP's Tripped, CSAS, MSIS closed*
- Containment pressure is 18 psia
- The crew is performing OP-902-002, Loss of Coolant Accident Recovery
- All required actions have been taken
- All equipment is operating as designed

Which ONE of the following describes the method and rate that will be used to perform RCS cooldown in accordance with OP-902-002?

Cooldown using...

- ☒ A. SBCS at no greater than 50°F per hour
- ☐ B. SBCS at no greater than 100°F per hour
- ☒ C. ADVs at no greater than 50°F per hour *OK*
- ☐ D. ADVs at no greater than 100°F per hour

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. SBCS will be unavailable due to MSIS on high containment pressure. RCPs should not be operating, CSAS occurred, so CD rate is correct
- B. Incorrect. SBCS unavailable, no RCPs
- C. Correct.
- D. Incorrect. RCPs not operating, natural circulation cooldown rate is 50°F per hour

Technical Reference(s) OP-902-002, Steps 7, 8, 19 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-PPE02 Obj 17 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 10

Comments:

KA is matched because the item evaluates knowledge of how the SGs are going to provide cooling to the RCS during a LOCA

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	1	
Group #	1	
K/A #	011 G2.4.50	
Importance Rating	3.3	

Emergency Procedures / Plan Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.

Proposed Question: Common 42

Given the following:

- A LOCA has occurred.
- RCS pressure is 100 psia.
- The crew is performing OP-902-002, Loss of Coolant Accident Recovery.
- The following alarms are received on Control Room Cabinet K:
 - K-19, RAS TRAIN A LOGIC INITIATED
 - K-20, RAS TRAIN B LOGIC INITIATED

Which ONE of the following describes the plant status, and the action required?

- A. LPSI Pumps are off; SI Pumps Recirc Isolation Valves, SI-121A and B, must be opened.
- B. LPSI Pumps are off; SI Pumps Recirc Isolation Valves, SI-120A and B, must be closed.
- C. Charging Pumps are off; SI Pumps Recirc Isolation Valves, SI-121A and B, must be opened.
- D. Charging Pumps are off; SI Pumps Recirc Isolation Valves, SI-120A and B, must be closed.

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. Recirc valves must be closed, but plausible because 602A/B are opened on RAS
- B. Correct.
- C. Incorrect. Charging Pumps are manually shut off. LPSI Pumps are automatically

D. Incorrect. Correct valve alignment, but Charging pumps are manually tripped on RAS

Bank #

New X

Last NRC Exam _____

Memory or Fundamental Knowledge	X
---------------------------------	---

Comprehension or Analysis

55.41 5, 10

Comments:

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

Group #

1

K/A #

015 AK1.04

Importance Rating

2.9

Knowledge of the operational implications of the following concepts as they apply to the Reactor Coolant Pump Malfunctions (Loss of RC Flow): Basic steady state thermodynamic relationship between RCS loops and S/Gs resulting from unbalanced RCS flow

Proposed Question: Common 43

$$Q = \dot{m} C (T_H - T_C)$$

Given the following:

- The plant was at 100%.
- 2B RCP shaft seized and resulted in a reactor trip.

Loop 2 lower flow
Loop 1 higher flow

Which ONE of the following describes the HIGHEST Loop Delta T and the SG with the HIGHEST feedwater flow requirement to maintain stable SG level post trip?

	Highest Loop Delta T	Highest SG Feedwater Flow
A.	Loop 1	SG 1
B.	Loop 1	SG 2
C.	Loop 2	SG 1
D.	Loop 2	SG 2

SG loads

SF out w/sg
SACS = Q

Snapshot

Loop 2: $Q_2 = \dot{m} C \Delta T$

Loop 1: $Q_1 = \dot{m} C \Delta T + \dot{W}_p$

$Q_1 > Q_2$ \dot{W}_p

Proposed Answer: A

Explanation (Optional):

- A. Correct.
- B. Incorrect. Loop 1 will show a higher Delta T since RCPs are providing the heat input, but feed flow requirements are also higher due to that heat input
- C. Incorrect. Feedwater flow requirements are based on heat removal of the SG. With less heat input from RCPs, then less feedwater will be required to maintain a constant level, and lower differential temperature due to the lower Thot in the loop with less pump heat
- D. Incorrect. Loop Delta T and Feedwater flow have decreased because the loop is doing less work; less heat input from RCPs

Technical Reference(s) WLP-OPS-RCP00, Page 22 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-RCP00, OBJ 7 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 2, 14

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	1	
Group #	1	
K/A #	022 AA1.03	
Importance Rating	3.2	

Ability to operate and / or monitor the following as they apply to the Loss of Reactor Coolant Makeup: PZR level trend

Proposed Question: Common 44

Given the following:

- The plant is at 100% power.
- Charging Pump B is tagged out of service.
- The following alarm is received:
 - Cabinet G, B-4, CHARGING PUMP A TRIP/TROUBLE
 - The RO determines that Charging Pump A has tripped with no indications of the cause.
- Charging Pump AB trips upon starting on overcurrent.
- Regenerative Heat Exchanger Outlet temperature is 440°F and rising at 5°F every 30 seconds.
- NO action has been taken by the crew.
- Tave is 572°F.
- Pressurizer level is 54% and lowering at 1% every 2 minutes.

Assuming the following trends continue, which ONE of the following describes pressurizer level indication for this event?

Pressurizer level will continue to lower...

- A. At a constant rate for the duration of this event because letdown has isolated.
- B. At a constant rate until reactor trip is required in approximately 15 minutes.
- C. At a constant or decreasing rate until letdown isolates in approximately 3 minutes.
- D. At a constant or decreasing rate until letdown isolates in approximately 15

minutes.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. Letdown has not isolated, because RHX temperature is not high enough and action has not been taken.
- B. Incorrect. Prior to 15 minutes, letdown will isolate due to high RHX outlet temperature, and letdown flow will change from 28 GPM to 0 GPM. Plausible because reactor trip will be required in 15 minutes at this trend for PZR level
- C. Correct.
- D. Incorrect. Letdown would be manually isolated within 15 minutes, but will automatically isolate prior to that

Technical Reference(s) OP-901-112 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: OP-901-112, Att. 1

Learning Objective: WLP-OPS-PPE010 obj 1 (As available)

Question Source: Bank #
Modified Bank # (Note changes or attach parent)
New X

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 7

Comments:

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

Group #

1

K/A #

025 G2.1.23

Importance Rating

3.9

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

Proposed Question: Common 45

Given the following:

- The plant is in Mode 6.
- Shutdown Cooling Trains A and B are in service.
- The following alarm^s~~is~~_{are} received:
 - LPSI Pump B Flow Lost
 - Shutdown Cooling Trouble
- NO other alarms have been received.

Which ONE (1) of the following describes the event that has occurred, and the initial action required in accordance with OP-901-131, Shutdown Cooling Malfunction?

- A. LPSI Pump B has tripped; Close LPSI header B suction isolation valves.
- B. LPSI Pump B has tripped; Stabilize RCS temperature using LPSI Train A.
- C. SI-407 B, Loop 1 Suction Isol Downstream Outside Valve, closed; Trip LPSI Pump B.
- D. SI-407 B, Loop 1 Suction Isol Downstream Outside Valve, closed; Stabilize RCS temperature using LPSI Train A.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. If pump tripped, there would be another alarm
- B. Incorrect. Pump did not trip

- C. Correct. IOA requires trip of LPSI if a suction valve closes
D. Incorrect. Correct failure but pump must be tripped

Technical Reference(s) OP-901-131 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-PPO10 obj. 2 (As available)

Question Source: Bank # X
Modified Bank # _____ (Note changes or attach parent)
New _____

Question History: Last NRC Exam 2007 Retake 44

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 10

Comments:
WF3-NRC-1195-A

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	1	
Group #	1	
K/A #	026 G2.2.22	
Importance Rating	3.4	

Equipment Control Knowledge of limiting conditions for operations and safety limits.

Proposed Question: Common 46

Given the following:

- The plant is at 50% power.
- A CCW System leak is in progress.
- The crew is performing actions of OP-901-510, Component Cooling Water System Malfunction.
- Makeup from the CSP has just been initiated.
- CCW Surge Tank level is 28% and lowering at 1% per minute.
- CSP level is currently 97%

Which ONE of the following parameters will be the FIRST to require entry into a technical specification LCO?

- A. CCW Surge Tank level is reduced below 24%
- B. CCW Surge Tank level is reduced below 20%
- C. CSP level is reduced below 92%
- D. CSP level is reduced below 11%

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. This is the level at which the makeup control must be performed manually if an auto makeup did not provide sufficient inventory in 3 minutes. Does not by itself require entry to an LCO AS
- B. Correct. This is the level at which auto makeup to CCW Surge Tank will initiate. Dry Cooling Tower isolation at 20% will place the crew in TS 3.7.3 and 3.7.4.
- C. Incorrect. 92% in Modes 1-3 is the limit, but that level will not be reached at the rate that CCW surge tank level is dropping

D. Incorrect. This would be correct in Mode 4

Technical Reference(s) OP-901-510 (Attach if not previously provided)

Proposed references to be provided to applicants during examination:	None
--	------

Learning Objective: WLP-OPS-CC00 Obj 9 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach
parent)
New X

Question History: Last NRC Exam

Question Cognitive Level:	Memory or Fundamental Knowledge	<u> </u>
	Comprehension or Analysis	<u> X </u>

10 CFR Part 55 Content:	55.41	<u>10</u>
	55.43	2

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	1	
Group #	1	
K/A #	027 AA1.05	
Importance Rating	3.3	

Ability to operate and / or monitor the following as they apply to the Pressurizer Pressure Control Malfunctions: Transfer of heaters to backup power supply

Proposed Question: Common 47

Given the following:

- The crew has evacuated the Control Room due to a fire in CP-8.
- The crew has entered OP-901-502, Evacuation of the Control Room and Subsequent Plant Shutdown.
- The SM has directed restoring Pressurizer Proportional Heaters.

To complete this action, the operator will: [Assume each is the only action taken.]

- A. Verify the Fire Isolation switch is in LOCAL and close the 32A Feeder Breaker locally using the Permissive button.
- B. Verify the Fire Isolation switch is in LOCAL and close the 32B Feeder Breaker locally using the Permissive button.
- C. Place the 32A FDR Permissive To Close Keyswitch to SWGR and close the 32A Feeder Breaker locally using the Permissive button and breaker handswitch
- D. Place the 32B FDR Permissive To Close Keyswitch to SWGR and close the 32B Feeder Breaker locally using the Permissive button and breaker handswitch

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. Isolation switches will be transferred, but the breaker will not close without other actions. Wrong proportional heaters for plant condition; Group 2 will be used
- B. Incorrect. Correct power supply but actions incorrect
- C. Incorrect. Incorrect power supply but actions are correct.
- D. Correct.

Technical Reference(s) OP-901-502 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-PP051 obj 3 (As available)

Question Source: Bank # WF3-OPS-7206-A
Modified Bank # (Note changes or attach parent)
New

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis

10 CFR Part 55 Content: 55.41 10

Comments:
Distractors rewritten from bank item

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	1	
Group #	1	
K/A #	029 EK2.6	
Importance Rating	2.9	

Knowledge of the interrelations between the and the following an ATWS: Breakers, relays, and disconnects

Proposed Question: Common 48

Given the following:

- The plant was at 100% power.
- A load rejection occurred.
- Reactor Trip on High Pressure was generated, but the reactor did not trip.

Which ONE (1) of the following describes the additional automatic action that takes place to shut down the reactor?

Diverse Reactor Trip System actuates at...

- A. 2350 psia to open CEDM MG Set feeder breakers.
- B. 2350 psia to open CEDM MG Set *output main line* Load Contactors.
- C. 2435 psia to open CEDM MG Set feeder breakers.
- D. 2435 psia to open CEDM MG Set *see above* Load Contactors.

Proposed Answer: D

Explanation (Optional):

- E. Incorrect. Normal PPS trip setpoint
- F. Incorrect. Normal PPS trip setpoint, correct action by DRTS
- G. Incorrect. Correct setpoint but incorrect trip
- H. Correct.

Technical Reference(s) WLP-OPS-ATS000 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-ATS00 Obj. 03 (As available)

Question Source: Bank # X
Modified Bank # (Note changes or attach parent)
New

Question History: Last NRC Exam 2007 Retake 47

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis

10 CFR Part 55 Content: 55.41 5

Comments:
WF3-NRC-3476-A

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	1	
Group #	1	
K/A #	038 EK1.01	
Importance Rating	3.1	

Knowledge of the operational implications of the following concepts as they apply to the SGTR: Use of steam tables

Proposed Question: Common 49

Given the following:

- A SGTR has occurred.
- SG #1 has been confirmed as the SG with the rupture.
- RCS Cooldown and Depressurization are in progress in accordance with OP-902-007, Steam Generator Tube Rupture Recovery.
- Current conditions are:
 - RCS pressure 1050 psia
 - RCS temperature (REPCET) 510°F
 - SG pressures 1000 psia (#1)
800 psia (#2)

Which ONE (1) of the following describes the value of RCS subcooling, and whether the MINIMUM RCS subcooling requirement is met for OP-902-007?

- A. 8°F; minimum RCS subcooling requirements are met
- B. 8°F; minimum RCS subcooling requirements are NOT met
- C. 40°F; minimum RCS subcooling requirements are met
- D. 40°F; minimum RCS subcooling requirements are NOT met

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. Corresponds to saturation of non-ruptured SG
- B. Incorrect. Corresponds to saturation of non-ruptured SG and subcooling would not be met unless two phase natural circulation was occurring
- C. Correct.

- | | | |
|--|---------------------------------------|-------------------------------------|
| Technical Reference(s) | Steam Tables | (Attach if not previously provided) |
| | <u>OP-902-007</u> | |
| Proposed references to be provided to applicants during examination: | <u>Steam Tables</u> | |
| Learning Objective: | <u>WLP-OPS-PPE07 Obj 3</u> | (As available) |
| Question Source: | Bank # _____ | |
| | Modified Bank # _____ | (Note changes or attach parent) |
| | New <u>X</u> | |
| Question History: | Last NRC Exam _____ | |
| Question Cognitive Level: | Memory or Fundamental Knowledge _____ | |
| | Comprehension or Analysis <u>X</u> | |
| 10 CFR Part 55 Content: | 55.41 <u>10</u> | |
| | _____ | |
| Comments: | | |

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	1	
Group #	1	
K/A #	040 AK2.01	
Importance Rating	2.6	

Knowledge of the interrelations between the Steam Line Rupture and the following: Valves

Proposed Question: Common 50

Given the following:

- The plant trips from 100% power
- An ESD has occurred downstream of the MSIV on SG #1
- Main Steam Line pressure ^{SA} ~~is~~ ^{ARE} as follows:
 - #1 ~~Main Steam Line~~ 660 psia.
 - #2 ~~Main Steam Line~~ 680 psia.

Which ONE (1) of the following describes the valve alignment associated with the SGs for this condition?

- A. MSIVs on both SGs closed; EFW flow isolated to both SGs.
- B. MSIVs on both SGs closed; EFW flow available to ONLY ONE SG.
- C. MSIVs on both SGs open; EFW flow available to both SGs.
- D. MSIVs on both SGs open; EFW flow available to ONLY ONE SG.

Proposed Answer: A

Explanation (Optional):

- A. Correct
- B. Incorrect. With MSIS, the highest pressure SG will not be fed until a DP of 123 psig is attained between SGs.
- C. Incorrect. This is plausible because if the applicant does not recognize the MSIS setpoint has been met, then this would be the alignment
- D. Incorrect. The highest pressure SG will not be fed until a DP of 123 psig is attained between SGs.

Technical Reference(s) SD-MS, Page 16

(Attach if not previously provided)

SD-EFW, Page 7

Proposed references to be provided to applicants during examination:

None

Learning Objective: WLP-OPS-MS00 Obj 3 (As available)

Question Source: Bank # X
Modified Bank # _____ (Note changes or attach parent)
New _____

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 7
55.43 _____

Comments:
SONGS 2005

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	1	
Group #	1	
K/A #	054 AA1.01	
Importance Rating	4.5	

Ability to operate and / or monitor the following as they apply to the Loss of Main Feedwater (MFW): AFW controls, including the use of alternate AFW sources

Proposed Question: Common 51

Given the following:

- A Loss of Main Feedwater has occurred.
- The crew is performing OP-902-006, Loss of Main Feedwater Recovery.
- EFW Pump A is tagged out.
- EFW Pump B has tripped on overcurrent.
- EFW Pump AB is feeding both SGs.
- BOTH SG narrow ranges are off-scale low.
- CSP level is 24% and lowering slowly.

Which ONE of the following describes the action required in accordance with OP-902-006?

- A. Throttle EFW flow in accordance with Appendix 2-G, Condensate Inventory Curves, to ensure cooldown requirements may be met.
- B. Transfer EFW Pump suction to ONE operating train of ACCW.
- C. Transfer EFW Pump suction to BOTH operating trains of ACCW.
- D. Locally throttle open CMU-141, Condensate Storage Pool LCV Bypass, and throttle EFW flow to minimum allowable.

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. EFW flow will not be adjusted based on curves, they will assist in determining whether a cooldown is possible with the inventory that exists
- B. Correct. (* Step 29 of OP-902-006)
- C. Incorrect. Only 1 operating train of ACCW will be aligned
- D. Incorrect. Valve will be throttled, but lowering EFW flow will not be performed in

this condition

Technical Reference(s) OP-902-006 (Attach if not previously
_____ provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-PPE06 Obj 2 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach
parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 10

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	1	
Group #	1	
K/A #	056 AA2.37	
Importance Rating	3.7	

Ability to determine and interpret the following as they apply to the Loss of Offsite Power: ED/G indicators for the following: voltage, frequency, load, load-status, and closure of bus tie breakers

Proposed Question: Common 52

Given the following:

- A loss of off-site power has occurred.
- Both EDGs start automatically.
- The following parameters were obtained upon completion of EDG start:
 - EDG A voltage 4000 volts
 - EDG A frequency 59.8 Hz
 - EDG B voltage 4240 volts
 - EDG B frequency 60.1 Hz

Which ONE of the following describes the operation of the EDG output breakers for this event, and the indication that will be seen on the EDG MW output?

- A. BOTH EDG output breakers will automatically close; MW output will immediately rise upon breaker closure.
- B. Both EDG output breakers will automatically close; MW output will not rise until load sequencing is initiated after a time delay.
- C. ONLY ONE EDG output breaker will close; MW output will immediately rise upon breaker closure.
- D. ONLY ONE EDG output breaker will close; MW output will not rise until load sequencing is initiated after a time delay.

Proposed Answer: A

Explanation (Optional):

A. Correct. Voltage and frequency are within limits for each EDG. MW will rise

because not all loads are stripped from bus on LOOP

- B. Incorrect. Load will rise prior to sequencing
- C. Incorrect. Both EDG OP breakers will close
- D. Incorrect. Both EDG OP breakers will close

Technical Reference(s) SD EDG (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-EDG00 Obj 2 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 5

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	1	
Group #	1	
K/A #	057 AK3.01	
Importance Rating	4.1	

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

Proposed Question: Common 53

Given the following:

- The plant is at 70% power.
- Auxiliary Component Cooling Water Pump "A" is running.
- A loss of bus MA has occurred.

Which ONE (1) of the following action(s) will be required to control Component Cooling Water temperature, and reason for the action?

- A. Manually control dry cooling tower and wet cooling tower train A fans because CC HX A ACC Outlet TCV (ACC-126A) fails closed, resulting in loss of temperature control.
- B. Manually throttle cooling tower wet basin M/U valve (CMU-410A, WET COOLING TOWER A LCV BYPASS) to prevent a high wet basin level because CC HX A ACC Outlet TCV (ACC-126A) fails open. *→ "maintain" would make this correct*
- C. Manually control dry cooling tower and wet cooling tower train A fans because power is lost to the Dry Cooling Tower Sequencer.
- D. Manually isolate cooling tower wet basin M/U valve (CMU-407A, WET COOLING TOWER B LEVEL CONTROL VALVE)) to maintain wet basin level because CC HX A ACC Outlet TCV (ACC-126A) fails closed, and Wet Cooling Tower interlocks are disabled.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. Valve fails open, but actions correct
- B. Incorrect. Valve fails open, actions not correct
- C. Correct. Part of action for manually controlling CCW temperature with A ACCW

D. Incorrect. Would throttle M/U valve, would not isolate it. CMU 407A fails Closed on the loss of this SUPS. Interlocks are disabled, but they are fan interlocks

(Attach if not previously provided)

None

WLP-OPS-CC00 obj. 03, 04
WLP-OPS-PPE30 obj. 03

Bank #	X
Modified Bank #	
New	

Last NRC Exam 2007 Retake #51

Memory or Fundamental Knowledge
Comprehension or Analysis

55.41 4

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	1	
Group #	1	
K/A #	058 AK3.02	
Importance Rating	4.0	

Knowledge of the reasons for the following responses as they apply to the Loss of DC Power: Actions contained in EOP for loss of dc power

Proposed Question: Common 54

Given the following:

- Emergency Diesel Generator 'A' is running loaded.
- A loss of DC control power occurs.

Which of the following describes the effect of the loss of DC control power on the EDG and its auxiliaries?

- A. The EDG fuel racks will fail in their current position and the EDG must be declared inoperable.
- B. The lube oil cooler temperature control valve will fail to the full cooling position and must be manually throttled.
- C. Fuel oil transfer pump starts and must be secured to prevent overfilling the Fuel oil day tank.
- D. Jacket cooling water valves fail open and must be manually throttled, and the jacket water heater loses power.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. Loss of DC will not trip fuel racks, although EDG will be declared inoperable
- B. Incorrect. TCV is controlled by air, which will remain intact
- C. Correct.
- D. Incorrect. Heater is AC powered.

Technical Reference(s) OP-901-313

(Attach if not previously provided)

Proposed references to be provided to applicants during

None

examination:

Learning Objective: WLP-OPS-PPO30 obj 3 (As available)

Question Source: Bank # X
Modified Bank # (Note changes or attach parent)
New

Question History: Last NRC Exam 2007 Retake #52

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis

10 CFR Part 55 Content: 55.41 10

Comments:

WF3-NRC-5886-A

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	062 AA2.02	
	Importance Rating	2.9	

Ability to determine and interpret the following as they apply to the Loss of Nuclear Service Water: The cause of possible SWS loss

Proposed Question: Common 55

Given the following:

- The plant is shutdown on Shutdown Cooling.
- RCS Temperature is 280° F.
- RCS pressure is 300 psia.
- CCW Surge Tank Level has lowered from 40% to 30% in 20 minutes.
- CCW Makeup is initiated.
- Pressurizer Level is 60% and stable.
- VCT level is 73% and stable.

Which ONE (1) of the following components is causing the drop in CCW Surge Tank Level?

- A. Letdown Heat Exchanger tube leak.
- B. Spent Fuel Pool heat exchanger tube leak.
- C. Shutdown Cooling heat exchanger tube leak.
- D. RCP Seal Cooler tube leak.

Proposed Answer: B

Explanation (Optional):

- A. Incorrect, Letdown heat exchanger is at a higher pressure than CCW
- B. Correct, SFP HX is at a lower pressure.
- C. Incorrect. SDC pressure is higher than CCW pressure
- D. Incorrect, SG Sample Cooler is at a lower pressure

Technical Reference(s): _____ (Attach if not previously

_____ provided)
SD CC

Proposed references to be provided to applicants during examination: _____ None

Learning Objective: _____ WLP-OPS-CC00 Obj 7 _____ (As available)

Question Source: Bank # _____ X (WTSI) _____
Modified Bank # _____ (Note changes or attach
parent)
New _____

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis _____ X _____

10 CFR Part 55 Content: 55.41 _____ X _____
55.43 _____

Comments:
CCW is considered NSW at W3

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	1	
Group #	1	
K/A #	065 AA2.05	
Importance Rating	3.4	

Ability to determine and interpret the following as they apply to the Loss of Instrument Air: When to commence plant shutdown if Instrument Air pressure is decreasing

Proposed Question: Common 56

Given the following:

- The plant is at 100% power.
- A leak on the Instrument Air system has occurred.
- The crew is performing actions of OP-901-511, Instrument Air Malfunction.
- Instrument Air header pressure is 90 psig and slowly lowering.

In accordance with OP-901-511, which ONE of the following conditions requires the crew to consider initiation of a plant shutdown in accordance with OP-010-005, Plant Shutdown?

- A. Immediately based on the current Instrument Air header pressure.
- B. If Instrument Air pressure cannot be maintained above 80 psig.
- C. If Instrument Air pressure cannot maintain pressurizer spray valves operable.
- D. If Instrument Air pressure drops below 65 psig at ANY time.

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. Procedure calls for action at 80 psig
- B. Correct.
- C. Incorrect. Other action required for spray failure.
- D. Incorrect. Reactor Trip required at 65 psig.

Technical Reference(s) OP-901-511 (Attach if not previously provided)

None

(As available)

X

Last NRC Exam

Comprehension or Analysis

10

Modified RO 54 from last exam

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	1	
Group #	2	
K/A #	003 AA2.03	
Importance Rating	3.6	

Ability to determine and interpret the following as they apply to the Dropped Control Rod: Dropped rod, using in-core/ex-core instrumentation, in-core or loop temperature measurements

Proposed Question: Common 57

Given the following:

- Reactor power is at 70% during a power increase to 100%.
- The following conditions are observed:
 - Reg Group 6 CEAs indicate 100 inches.
 - Loop 2 Tave has lowered by 1.5°F during the last CEA withdrawal.
 - Core Exit thermocouple indication has lowered by 10-13°F near *rules out RCP* Loop 2
 - CPC B power indication is 76%.
 - CPC A, C and D indication is 82%.

Which ONE of the following describes the cause of these indications?

- A. Xenon oscillation. *-> Axial effect all 4 quad*
- B. Dropped CEA
- C. RCP degraded flow
- D. Inadvertent SG safety valve lift

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. A xenon oscillation would affect all 4 quadrants of power and temperature
- B. Correct. Indication of a CEA de-coupled from its drive shaft (CEDM)
- C. Incorrect. Could account for temperature indication but would not account for decreased power in one quadrant
- D. Incorrect. Would result in lower temperature and higher power in all loops

Technical Reference(s) OP-901-102 (Attach if not previously provided)

T&AA dropped CEA?

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-PP010 obj 1 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 2

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	1	
Group #	2	
K/A #	005 AK1.05	
Importance Rating	3.3	

Knowledge of the operational implications of the following concepts as they apply to Inoperable / Stuck Control Rod:
Calculation of minimum shutdown margin

Proposed Question: Common 58

The plant is at 100% power.

Which ONE of the following plant conditions requires verification of Shutdown Margin within one hour, and the reason why?

- A. One CEA is determined to be immovable; Shutdown Margin calculations do not account for immovable CEAs. With one immovable CEA, a new Shutdown Margin calculation must be performed.
- B. One CEA is determined to be immovable; Shutdown Margin calculations account for only ONE immovable CEA. With a known CEA immovable, action must be taken to ensure that Shutdown Margin requirements are met.
- C. One CEA is misaligned from its group by 10 inches; Shutdown Margin calculations do not account for mispositioned CEAs. With one mispositioned CEA, a new Shutdown Margin calculation must be performed.
- D. One CEA is misaligned from its group by 10 inches; Shutdown Margin calculations account for only 1 mispositioned CEA. With a known CEA mispositioned, action must be taken to ensure that Shutdown Margin requirements are met.

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. Shutdown Margin calculation assumes the most reactive CEA is stuck
- B. Correct.
- C. Incorrect. A misaligned CEA does not require SDM verification until it is verified to be immovable or untrippable. Mispositioned CEA effect on SDM is a common misconception

- D. Incorrect. A misaligned CEA does not require SDM verification until it is verified to be immovable or untrippable. Mispositioned CEA effect on SDM is a common misconception

Technical Reference(s) TS 3.1.3.1 (Attach if not previously provided)
TS Definitions

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-CE000 06TS (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 10
55.43 2

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u> </u>
Group #	<u>2</u>	<u> </u>
K/A #	<u>036 AA1.01</u>	<u> </u>
Importance Rating	<u>3.3</u>	<u> </u>

Ability to operate and / or monitor the following as they apply to the Fuel Handling Incidents: Reactor building containment purge ventilation system

Proposed Question: Common 59

Given the following:

- The plant is in Mode 6.
- Fuel Handling activities are in progress.
- A spent fuel assembly is damaged in Containment.
- The following Radiation Monitoring Computer Grid alarms are received:
 - RCB PLUS 46 PURGE ISOL B (5024)
 - RCB PLUS 46 PURGE ISOL A (5025)

Which ONE of the following describes the status of Containment Isolation as a direct result of the radiation monitor alarms?

- A. CNTMT Purge Makeup and Exhaust Isolation Valves receive a close signal; CNTMT Atmospheric Pressure Relief Valves, CAR 200B and 202B, receive a close signal.
- B. CNTMT Purge Makeup and Exhaust Isolation Valves receive a close signal; CNTMT Atmospheric Pressure Relief Valves, CAR 200B and 202B, are unaffected.
- C. CNTMT Purge Makeup and Exhaust Isolation Valves will first receive a close signal when EITHER of the RCB PLUS 21 PURGE ISOL MONITORS (5026/5027) are in alarm; CNTMT Atmospheric Pressure Relief Valves, CAR 200B and 202B, will not receive a close signal from any of the Purge Isolation Monitors.
- D. CNTMT Purge Makeup and Exhaust Isolation Valves will first receive a close signal when EITHER of the RCB PLUS 21 PURGE ISOL MONITORS (5026/5027) are in alarm; CNTMT Atmospheric Pressure Relief Valves, CAR 200B and 202B, will first

receive a close signal when EITHER of the RCB PLUS 21 PURGE ISOL MONITORS (5026/5027) are in alarm.

Proposed Answer: A

Explanation (Optional):

- A. Correct.
- B. Incorrect. CAR valves receive a close signal for Purge isolation. Valves do not require both monitors in a train to be in alarm, only one.
- C. Incorrect. CAR valves receive a close signal for Purge isolation. Valves do not require both monitors in a train to be in alarm, only one. Signal to close valves was received on +46 alarms
- D. Incorrect. Valves do not require both monitors in a train to be in alarm, only one. Signal to close valves was received on +46 alarms

Technical Reference(s) OP-901-405 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-HVR00 Obj 2 (As available)

Question Source: Bank #
Modified Bank # (Note changes or attach parent)
New X

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis

10 CFR Part 55 Content: 55.41 5

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	1	
Group #	2	
K/A #	060 AA1.02	
Importance Rating	2.9	

Ability to operate and / or monitor the following as they apply to the Accidental Gaseous Radwaste: Ventilation system
Proposed Question: Common 60

The following plant conditions exist:

- 100% power, steady-state operations.
- No major equipment out of service.
- The following annunciators are received:
 - RAD MONITORING SYS ACTIVITY HI-HI on CP-36.
 - CLASS 1E RAD MONITORING SYS ACTIVITY HI-HI on CP-18.
 - CROAI NORTH (0200.1) rad monitor indicates red with a rising trend
 - CROAI SOUTH (0200.2) rad monitor indicates red and off-scale high

Which of the following actions will occur because of this condition?

- A. Control Room Toilet Exhaust Fans starts. BOTH Control Room Emergency Filtration Units A and B start.
- B. Control Room Toilet Exhaust Fans start. ONLY ONE Control Room Emergency Filtration Unit starts. ← true if 0200.1 and 0200.5
- C. Control Room Toilet Exhaust Fan stops. BOTH Control Room Emergency Filtration Units A and B start. ← true if both 0200.1 and 0200.2
- D. Control Room Toilet Exhaust Fan stops. ONLY ONE Control Room Emergency Filtration Unit starts.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. Toilet Exhaust Fan stops, not start
- B. Incorrect. Toilet Exhaust Fan stops. Correct filtration alignment

- C. Correct. Both monitors past the setpoint will actuate the system on both trains
D. Incorrect. Incorrect filtration alignment

Technical Reference(s) OP-901-401 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-HVC00 Objective (As available)
2

Question Source: Bank # _____
Modified Bank # X (Note changes or attach parent)

New _____

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 11

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	061 AK2.01	
	Importance Rating	2.5	

Knowledge of the interrelations between the Area Radiation Monitoring (ARM) System Alarms and the following:
Detectors at each ARM system location

Proposed Question: Common 61

Given the following:

- A LOCA has just occurred.
- The following alarm reflashes on Control Room Panel SA:
 - K-4, CLASS 1E RAD MONITORING SYS ACTIVITY HI-HI
- The RO verifies Containment Radiation on ARM-IRE-5400AS, Cntmt Rad Monitor Hi Range A, to be approximately 5000 Rem/Hr.
- Approximately 1 minute later, Containment Radiation indication is 300 Rem/Hr and lowering.

Which ONE of the following describes the reason for the radiation monitor indication?

- A. Initiation of Containment Spray has reduced iodine levels
- B. Blowdown phase of the LOCA resulted in high radiation indication. Refill and reflood phases are cooling the core and reducing radiation levels in containment.
- C. Failure of the radiation monitor, as it is not qualified for harsh containment environments, and not required for safety related use.
- D. Thermally induced currents due to Containment environment, location of detector, and length of cabling.

Proposed Answer: D

Explanation (Optional):

- | | | |
|--|--------|-------------------------------------|
| Technical Reference(s) | RMS SD | (Attach if not previously provided) |
| <div style="border: 1px solid black; height: 100px; width: 100%;"></div> | | |

Learning Objective: WLP-OPS-RMS00 Obj 1 (As available)

Question History: Last NRC Exam

10 CFR Part 55 Content: 55.41 11

Comments:

Level	RO	SRO
Tier #	1	
Group #	2	
K/A #	074 EA2.04	
Importance Rating	3.7	

Proposed Question: Common 62

- A. RCS temperature 570°F; RCS pressure 1020 psia
- B. RCS temperature 580°F; RCS pressure 1375 psia
- C. RCS temperature 590°F; RCS pressure 1550 psia
- D. RCS temperature 600°F; RCS pressure 1720 psia

A. Correct. With SG pressure higher than RCS pressure, SGs are not removing heat, and the RCS is superheated at that point of temperature and pressure

B. Incorrect. SG can provide heat sink, although RCS temperature is high

C. Incorrect. SG can provide heat sink, although RCS temperature is high

D. Incorrect. SG can provide heat sink, although RCS temperature is high

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)

New

X

Question History:

Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge

Comprehension or Analysis

X

10 CFR Part 55 Content: 55.41

5

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	A13 AK1.2	
	Importance Rating	3.2	

Knowledge of the operational implications of the following concepts as they apply to the (Natural Circulation Operations) Normal, abnormal and emergency operating procedures associated with (Natural Circulation Operations).

Proposed Question: Common 63

Given the following:

- A reactor trip has occurred.
- Off-Site power was lost 20 minutes ago.
- The crew is performing OP-902-003, Loss of Offsite Power/Loss of Forced Circulation Recovery.

Which ONE of the following describes a MINIMUM criterion related to parameters for verifying single phase natural circulation, and the action required if it CANNOT be verified?

- A. Loop ΔT less than 58°F on BOTH loops; Raise steaming rate of SG(s).
- B. Loop ΔT less than 58°F on at least ONE loop; Ensure all available Charging pumps are operating.
- C. Loop ΔT less than 58°F on BOTH loops; Ensure all available Charging pumps are operating.
- D. Loop ΔT less than 58°F on at least ONE loop; Raise steaming rate of SG(s)

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. Action is correct, but natural circulation is verified if EITHER loop Delta T is >58
- B. Incorrect. Parameter correct, action incorrect. Ensuring all charging pumps running is an action taken for two phase natural circulation verification.
- C. Incorrect. Both loops are not required. Ensuring all charging pumps running is an action taken for two phase natural circulation verification
- D. Correct.

Technical Reference(s) OP-902-003 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-PPE03obj 5 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 10

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	<u>1</u>	<u> </u>
Group #	<u>2</u>	<u> </u>
K/A #	<u>A16 G2.1.14</u>	<u> </u>
Importance Rating	<u>2.5</u>	<u> </u>

Conduct of Operations: Knowledge of system status criteria which require the notification of plant personnel.

Proposed Question: Common 64

Given the following:

- An RCS leak is in progress.
- Reactor Drain Tank level has been rising steadily.
- Reactor Drain Tank temperature is rising.
- ONE Charging Pump is operating.
- Letdown flow is 28 GPM.
- Pressurizer Level is stable.
- RCS temperature is stable.
- Containment PIG radiation monitor indication is stable.
- Containment Sump level is stable.
- A plant shutdown has been commenced.
- Power has been lowered by 5% in the past 30 minutes.

Which ONE of the following describes the technical specification leakage limit being exceeded, and the notification required?

- A. Identified leakage exceeds the limit; notify Chemistry to sample iodine due to power change.
- B. Identified leakage exceeds the limit; notify Radiation Protection for Radiological support as required.
- C. Unidentified leakage exceeds the limit; notify Chemistry to sample iodine due to power change.
- D. Unidentified leakage exceeds the limit; notify Radiation Protection for Radiological support as required.

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. Correct leakage since the leakage is collected in a tank, but incorrect notification. Sample required for power change >15% in 1 hour
- B. Correct.
- C. Incorrect. Although leakage source is unknown, RDT level rising qualifies as identified. Wrong notification
- D. Incorrect. Although leakage source is unknown, RDT level rising qualifies as identified.

Technical Reference(s) OP-901-111 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-PPO10 OBJ 4,5 (As available)

Question Source: Bank #
Modified Bank # (Note changes or attach parent)
New X

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 10

Comments:

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

Group #

1

K/A #

E09 EK3.4

Importance Rating

3.3

What?
Knowledge of the reasons for the following responses as they apply to the (Functional Recovery) RO or SRO function as a within the control room team as appropriate to the assigned position, in such a way that procedures are adhered to and the limitations in the facilities license and amendments are not violated.

Proposed Question: Common 65

Given the following:

- A reactor trip has occurred due to a SGTR.
- Several CEAs failed to insert on the reactor trip.
- RCS pressure is 1690 psia *missed CEA?*
- Containment pressure is 15.8 psia.
- RCS temperature is 370° F and lowering slowly. *What is expectation? Trip RCP at 380°?*
- The crew has diagnosed and entered OP-902-008, Functional Recovery.

Which ONE of the following describes the operation of RCPs for these conditions, in accordance with OP-902-008, Functional Recovery?

- A. ALL RCPs must be tripped due to loss of cooling water.
- B. At least TWO RCPs must be tripped due to loss of cooling water.
- C. ALL RCPs must be tripped; ONE of the RCPs is stopped due to low RCS temperature causing core uplift problems.
- D. At least TWO RCPs must be tripped; ONE of the RCPs is stopped due to low RCS temperature causing core uplift problems.

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. For conditions presented, cooling water is still available because CSAS is not initiated. All RCPs would be tripped based on loss of cooling water
- B. Incorrect. TWO RCPs would be tripped based on RCS pressure <1621 psia, but not just 2 based on loss of cooling
- C. Incorrect. Correct reason, but only 2 RCPs must be tripped

D. Correct.

Technical Reference(s) OP-902-008 and TG (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-PPE08 OBJ 9 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X _____

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X _____

10 CFR Part 55 Content: 55.41 10 _____

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	3	
Group #	1	
K/A #	G2.1.18	
Importance Rating	2.9	

Ability to make accurate, clear and concise logs, records, status boards, and reports.

Proposed Question: Common 66

Given the following:

- Plant Startup in progress.
- Power is at 30% and holding due to chemistry concerns.
- The ATC is taking Tech Spec Logs when the UFM fails.
- The following data is available:
 - Plant power change was 3% over the last hour.
 - Indicated PMC Power is:

Sec Calorimetric PMC C23230	29.9%
BDELT PMC C24104	28.9%
MSBSRAW PMC C24631	29.3%
FWBSRAW PMC C24630	31.2%
USBSRAW PMC C24629	28.8%

Which ONE of the following power indications will be logged in Att 11.1 of OP-903-001, Technical Specification Surveillance Logs?

- A. 28.9%
- B. 29.3%
- C. 29.9%
- D. 31.2%

Proposed Answer: A

Explanation (Optional):

- A. Correct. <35% power, UFM out of service, use BDELT
- B. Incorrect. Credible because it is power that is available and may be used for plant conditions not defined in stem
- C. Incorrect. Credible because it is power that is available and may be used for plant

conditions not defined in stem

- D. Incorrect. Credible because it is power that is available and may be used for plant conditions not defined in stem

Technical Reference(s) OP-903-001 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-PPA00 Obj 3 (As available)

Question Source: Bank # WF3-OPS-7208-A
Modified Bank # _____ (Note changes or attach parent)
New _____

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 10
55.43 _____

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #	1	
	K/A #	G2.1.12	
	Importance Rating	2.9	

Ability to apply technical specifications for a system.

Proposed Question: Common 67

During hydrostatic testing of the RCS in Mode 5, RCS pressure is increased to a point exceeding the RCS Pressure Safety Limit.

Which ONE (1) of the following states the RCS Pressure Safety limit setpoint, and the MAXIMUM time allowed in accordance with Technical Specifications to reduce RCS pressure below the safety limit?

- A. 2735 psia; 5 minutes
- B. 2735 psia; 15 minutes
- C. 2750 psia; 5 minutes
- D. 2750 psia; 15 minutes

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. This would be correct if it was PSIG
- B. Incorrect. 5 minutes not allowed in Mode 5. 1 hour allowed in Modes 1-4, 15 minute action is required for exceeding minimum temperature for criticality
- C. Correct.
- D. Incorrect. 15 minutes is not allowed, but pressure is correct for condition

Technical Reference(s) TS 2.1.2 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-RCS00 Obj 8 (As available)

Question Source: Bank # X

Modified Bank # _____ (Note changes or attach
parent)
New _____

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 10
55.43 2

Comments:
WTSI Bank, 2006 VCS

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

3

Group #

2

K/A #

G2.2.26

Importance Rating

2.5

Knowledge of refueling administrative requirements.

Proposed Question: Common 68

Which ONE (1) of the following describes the MINIMUM requirement for Source Range Nuclear Instrumentation prior to commencing core off-load in MODE 6?

	<u>Visual in CR</u>	<u>Audible in CR</u>	<u>Audible in CTMT</u>
A.	2	0	1
B.	2	1	1
C.	1	1	1
D.	2	2	2

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. Plausible because Source Range is correct.
- B. Correct. Tech Specs requires 2 OPERABLE Source Range in CR, and audible in both CR and CTMT.
- C. Incorrect. Plausible because minimum is met with one SR INOPERABLE.
- D. Incorrect. Plausible because Source Range is correct.

Technical Reference(s) Tech Spec 3.9.2 and Bases (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

NONE

Learning Objective: WLP-OPS-ENI00 obj 11 (As available)

Question Source: Bank # X
Modified Bank # _____ (Note changes or attach
New _____ parent)

Question History: Last NRC Exam 2007 W3 Retake #68

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 10

Comments:
WTSI Generic Bank

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	3	
Group #	2	
K/A #	G2.2.27	
Importance Rating	2.6	

Knowledge of the refueling process.

Proposed Question: Common 69

Which ONE of the following describes ^{the} ~~ONLY~~ personnel ^(allowed to authorize the commencement of) ~~authorized to commence~~ Core Alterations? ^{or} _(required to grant permission to commence)

- A. Refueling Controller and Fuel Handling Supervisor
- B. Refueling SRO and Shift Manager
→ same as Fuel handling Supervisor?
- C. Shift Manager and Refueling Director
- D. Refueling Director and Refueling SRO

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. Refueling Controller not directly responsible for core alterations
- B. Correct.
- C. Incorrect. Refueling Director is in charge of refueling, but not directly responsible for core alterations
- D. Incorrect. Refueling Director is in charge of refueling, but not directly responsible for core alterations

Technical Reference(s) OP-010-006 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: (As available)

Question Source: Bank # X
Modified Bank # (Note changes or attach parent)

New _____

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 10
55.43 7

Comments:

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

3

Group #

2

K/A #

G2.2.23

Importance Rating

2.6

Ability to track limiting conditions for operations.

Proposed Question: Common 70

K/A mismatch?

Given the following conditions:

- The plant is in Mode 5
- Emergency Feedwater Pump "A" is out of service for repair that will take 2 to 3 days to complete.

Which ONE (1) of the following describes the HIGHEST OPERATIONAL MODE that may be entered with the Pump out of service?

- A. Mode 4
- B. Mode 3
- C. Mode 2
- D. Mode 1

Proposed Answer: A

Explanation (Optional):

- A. Correct. TS 3.0.4 applies and the pump is required in Modes 1, 2, 3
- B. Incorrect. MDEFW is required for modes above Mode 4, and TS 3.0.4 applies, requiring MDEFW operability prior to Mode 3 entry
- C. Incorrect. Same as B
- D. Incorrect. Same as B, C. RO required to know applicability of LCOs

Technical Reference(s) TS 3.7.1.2, 3.0.4

(Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-EFW00, Obj 8, 9 (As available)

Question Source: Bank # X
Modified Bank # (Note changes or attach parent)
New

Question History: Last NRC Exam WTSI Bank Item

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis

10 CFR Part 55 Content: 55.41 10
55.43 2

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	3	
Group #	3	
K/A #	G2.3.4	
Importance Rating	2.5	

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

Proposed Question: Common 71

Given the following:

- A LOCA has occurred.
- A General Emergency has been declared.
- The Emergency Response Organization is fully staffed.
- An operator has suffered life-threatening injuries in the RAB.

None of this is needed to OK

Which ONE of the following describes the MAXIMUM TEDE dose allowed to attempt a rescue of the individual, in accordance with EP-002-030, Emergency Radiation Exposure Guidelines and Controls?

- A. 25 Rem; may NOT be exceeded under any circumstances.
- B. 25 Rem; may ONLY be exceeded by volunteers fully aware of the risks involved.
- C. 75 Rem; may NOT be exceeded under any circumstances.
- D. 75 Rem; may ONLY be exceeded by volunteers fully aware of the risks involved.

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. May be exceeded per step 5.2.3
- B. Correct.
- C. Incorrect. Max dose for lens of the eye
- D. Incorrect. Max dose for lens of the eye, but correct application of rule

Technical Reference(s) EP-002-030 (Attach if not previously provided)

Proposed references to be provided to applicants during examination:

None

Learning Objective: WLP-OPS-EP02 OBJ 3 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 10, 12
55.43 _____

Comments:

New item but have similar in WTSI bank

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	3	
Group #	3	
K/A #	G2.3.9	
Importance Rating	2.5	

Knowledge of the process for performing a containment purge.

Proposed Question: Common 72

Containment Purge is in progress on a Continuous Release Permit.

A Gas Decay Tank release is planned.

Which ONE of the following describes the restriction(s), if any, associated with the Decay Tank release with Containment Purge in progress?

- A. The Decay Tank release may proceed because Containment Purge is on a Continuous release.
- B. The Decay Tank release must be postponed until the Containment Purge is complete.
- C. The Decay Tank release may NOT be performed because Containment Purge is on a Continuous release.
- D. The Decay Tank release may be performed ONLY if Plant Stack flow is raised AND ambient barometric pressure is within limits.

Proposed Answer: A

Explanation (Optional):

- A. Correct.
- B. Incorrect. Release may proceed as long as Batch Purge is not in progress.
- C. Incorrect. Opposite of actual limitation, applicant may assume incorrect mode of purge.
- D. Incorrect. Restriction on barometric pressure is a limitation associated with Purge, not Decay Tank. Decay Tank release must be secured if plant stack flow is interrupted.

Technical Reference(s) OP-002-010 (Attach if not previously provided)

Proposed references to be provided to applicants during examination:	None
--	------

Learning Objective: HVR00 Obj 4 (As available)

Question Source: Bank # _____
 Modified Bank # _____ (Note changes or attach
 parent)
 New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content:	55.41	<u>13</u>
	55.43	

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	
	Group #	3	
	K/A #	G2.3.1	
	Importance Rating	2.6	

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

Proposed Question: Common 73

An accessible area with a dose rate of 96 mrem per hour and contamination level of 32,550 DPM/100 CM² beta/gamma will be posted as a...

- A. Contamination area and Radiation area
- B. Contamination area and High Radiation area
- C. High Contamination area and Radiation area
- D. High Contamination area and High Radiation area

Proposed Answer: A

Explanation (Optional):

- A. Correct. Greater than 5 but less than 100 mr/hr is radiation area, greater than 1,000/100 cm² is contaminated area.
- B. Incorrect. Plausible but must exceed 100 mr/hr to be called a High Radiation Area.
- C. Incorrect. Plausible but must exceed 150,000 DPM/100 cm² to be High Contamination Area.
- D. Incorrect. Plausible but must exceed 150,000 DPM/100 cm² to be High Contamination Area and 100 mr/hr to be called a High Radiation Area.

Technical Reference(s) 10CFR20 Standards for Radiation Protection (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: _____ (As available)

Question Source: Bank # X

Modified Bank # _____ (Note changes or attach
parent)
New _____

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 12

Comments:
SONGS 2007 NRC #72

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

3

Group #

4

K/A #

G2.4.15

Importance Rating

3.0

Knowledge of communications procedures associated with EOP implementation

Proposed Question: Common 74

Given the following:

- A LOCA has occurred.
- The crew is performing EOP actions related to the event.
- The Emergency Response Organization has been staffed.

Which ONE of the following describes the radio frequency that will be used for emergency activities, and who has the primary responsibility for completion of the Notification Message Forms (NMF)?

- A. Operations Channel; Emergency Communicator.
- B. Maintenance Channel; Emergency Communicator.
- C. Operations Channel; Shift Manager/Emergency Coordinator.
- D. Maintenance Channel; Shift Manager/Emergency Coordinator.

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. Wrong channel. Communicator will call in the info on the form, but SM/EC is responsible
- B. Incorrect. Correct channel, wrong person responsible
- C. Incorrect. Wrong channel but correct person responsible
- D. Correct.

Technical Reference(s) WLP-OPS-EP01

(Attach if not previously provided)

Proposed references to be provided to applicants during

None

examination: _____

Learning Objective: WLP-OPS-EP01 Obj 6, 10 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach
parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 10
55.43 _____

Comments:

Level	RO	SRO
Tier #	3	
Group #	4	
K/A #	G2.4.18	
Importance Rating	2.7	

Proposed Question: Common 75

- A. Prevent overpressurizing the RCS as pressurizer level rises due to RCS heatup.
- B. Prevent excessive loss of RCS inventory in the event of a stuck open pressurizer safety valve.
- C. Prevent operating RCPs without adequate NPSH, due to RCS heatup.
- D. Extend time to SG dryout by limiting heat input into the RCS.

- A. Incorrect. Pressure will rise for event, but not reason for pump trip
- B. Incorrect. A safety valve may stick open because RCS pressure will rise due to loss of heat sink, and SBLOCA criteria could apply to RCPs, but for the condition presented, they are tripped to prevent excessive heat input that may prevent a SV failure
- C. Incorrect. NPSH will be reduced, but not enough to require tripping RCPs. RCS pressure will not be low enough
- D. Correct.

Technical Reference(s) OP-902-006 TG (Attach if not previously provided)

Proposed references to be provided to applicants during examination:	None
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Learning Objective: WLP-OPS-PPE06 Obj (LP (As available)

not found)

Question Source: Bank # X
Modified Bank # _____ (Note changes or attach
parent)
New _____

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 X
55.43 _____

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	_____	1
Group #	_____	1
K/A #	007 EA2.02	_____
Importance Rating	_____	4.6

Ability to determine or interpret the following as they apply to a reactor trip: Proper actions to be taken if the automatic safety functions have not taken place

Proposed Question: SRO 76

Given the following:

- A failure of SBCS resulted in an automatic LPD trip.
- Reactor Trip Circuit Breakers remained closed.
- The crew attempted to trip the reactor manually.
- The RO performed ALL contingency actions for Reactivity Control.
- 4 CEAs remained stuck fully out.
- The crew is unable to establish Emergency Boration due to Volume Control Tank Discharge Valve (CVC-183) failed open..
- Reactor power is stable at 8%.

What are the proper actions by the operating crew in response to this event?

- A. Refer to OP-901-103, Emergency Boration, while continuing in OP-902-000.
- B. Immediately transition to OP-902-008, Safety Function Recovery Procedure.
- C. Complete the Standard Post Trip Actions, then diagnose a Reactor Trip Recovery event in accordance with OP-902-001.
- D. Complete the Standard Post Trip Actions, then diagnose a Functional Recovery entry in accordance with OP-902-008.

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. Reactivity control is satisfied if a boration is in progress, but in this case it is not. OP-901-103 would not be performed for stuck CEAs post trip.
- B. Incorrect. Immediate transition not required, although Reactivity Control is not satisfied. Complete SPTAs prior to transition.
- C. Incorrect. Would be correct if Reactivity Control was satisfied but it is not.

D. Correct. Reactivity Control is NOT satisfied.

Technical Reference(s) OP-902-000 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: WLP-OPS-PPE00 Obj 1 (As available)

Question Source: Bank # X
Modified Bank # _____ (Note changes or attach
New _____ parent)

Question History: Last NRC Exam SONGS 2006

Question Cognitive Level:	Memory or Fundamental Knowledge	<u> </u>
	Comprehension or Analysis	X

10 CFR Part 55 Content:	55.41	
	55.43	5

Comments:

10CFR55.43(b) item 5 is met because the SRO is required to assess plant conditions and select/determine procedural guidance for the event and conditions presented

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	_____	1
Group #	_____	1
K/A #	025 AA2.05	_____
Importance Rating	_____	3.5

Ability to determine and interpret the following as they apply to the Loss of Residual Heat Removal System: Limitations on LPI flow and temperature rates of change

Proposed Question: SRO 77

Given the following:

- The plant is in Mode 6.
- The plant has been shutdown for 244 hours.
- RCS temperature is 109°F.
- Shutdown Cooling Train B is in service.

Subsequently, LPSI Pump B trips and cannot be restarted.
RCS temperature has risen to 118°F.

Which ONE of the following describes the MINIMUM Shutdown Cooling flow, and the MAXIMUM RCS cooldown rate allowed by technical specifications when flow is restored?

- A. MINIMUM flow rate of 4000 GPM; 50°F/Hr.
- B. MINIMUM flow rate of 4000 GPM; 100°F/Hr.
- C. MINIMUM flow rate of 3000 GPM; 50°F/Hr.
- D. MINIMUM flow rate of 3000 GPM; 100°F/Hr.

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. 4000 GPM is requirement for shutdown less than 175 hours. 50 degrees F/Hr is natural circulation cooldown rate, administratively controlled.
- B. Incorrect. 4000 GPM is requirement for shutdown less than 175 hours. Cooldown rate restriction is correct
- C. Incorrect. 50 degrees F/Hr is natural circulation cooldown rate, administratively controlled. Flow rate is correct for time after shutdown.

D. Correct.

Technical Reference(s) OP-901-131 (Attach if not previously provided)
TS 3.4.8

Proposed references to be provided to applicants during examination:	None
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Learning Objective: _____ (As available)

Question Source: Bank # _____
 Modified Bank # _____ (Note changes or attach
 parent)
 New X

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content:	55.41	
	55.43	2

Comments:

10CFR55.43(b) item 2 is met because the SRO must know II of the technical specification required flow rates during mode 6 operations, depending on time after shutdown

Examination Outline Cross-reference:

Level	RO	SRO
Tier #		1
Group #		1
K/A #	026 AA2.03	
Importance Rating		2.9

Ability to determine and interpret the following as they apply to the Loss of Component Cooling Water: The valve lineups necessary to restart the CCWS while bypassing the portion of the system causing the abnormal condition

Proposed Question: SRO 78

Given the following:

- The plant is at 100% power.
- CCW Pump AB is out of service.
- CCW Surge Tank level is cycling on AUTO Makeup.
- The crew enters OP-901-510, Component Cooling Water System Malfunction.
- The crew splits the A and B headers in accordance with the procedure.
- AB header is aligned to the B loop.
- CCW Surge Tank B is 50% and stable.
- CCW Surge Tank A is 48% and lowering.

Which ONE of the following describes the location of the leak, and action required?

- A. The leak is confined to the A CCW safety header; Verify ACCW Pump A in service, place Train A Chiller CCW Cooling Mode Control Switch to the Wet Tower position. Determine TS operability of Train A ACCW and Essential Chiller.
- B. The leak is confined to the A CCW safety header; Stop Essential Chiller A and declare it inoperable; place Train A LPSI, HPSI, and Containment Spray Pumps OFF.
- C. The leak may be on the AB CCW header OR the A CCW safety header; Verify ACCW Pump A in service, place Train A Chiller CCW Cooling Mode Control Switch to the Wet Tower position. Determine TS operability of Train A ACCW and Essential Chiller.
- D. The leak may be on the AB CCW header OR the A CCW safety header; Stop Essential Chiller A and declare it inoperable; place Train A LPSI,

HPSI, and Containment Spray Pumps OFF.

Proposed Answer: A

Explanation (Optional):

- A. correct.
- B. Incorrect. Would not stop chiller. May be declared inoperable but would be determined by TS. Action for pumps is correct
- C. Incorrect. Leak would not be on the AB header.
- D. Incorrect. Leak would not be on the AB header. Would not stop chiller, but action for pumps is correct

Technical Reference(s) OP-901-510 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-PPO10 OBJ 5 (As available)

Question Source: Bank #
Modified Bank # (Note changes or attach parent)
New X

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41
55.43 2, 5

Comments:

10CFR55.43(b) item 5 is met because the SRO is required to assess plant conditions and select/determine procedural guidance for the event and conditions presented. Additionally, the SRO must know that technical specifications are potentially impacted by this failure, due to Dry Tower isolation and ACCW operation

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

Group #

1

K/A #

027 G2.4.30

Importance Rating

3.6

Emergency Procedures / Plan Knowledge of which events related to system operations/status should be reported to outside agencies.

Proposed Question: SRO 79

Which ONE of the following events requires a 1 Hour notification to the NRC?

- A. Initiation of a plant shutdown in accordance with T.S. 3.0.3
- B. Vehicle crash in the Owner Controlled Area
- C. Confirmed violation of Fitness for Duty requirements
- D. Pressurizer Safety Valve failure resulting in SIAS actuation and SI flow to the core

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. 4 Hours
- B. Incorrect. 24 Hours
- C. Incorrect. 24 Hours if Licensed Operator
- D. Correct.

Technical Reference(s): 10CFR50.72 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: (As available)

Question Source:

Bank #

X

Modified Bank #

(Note changes or attach parent)

New

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 10
55.43 5

Comments:

10CFR55.43(b) item 5 because the SRO must assess the event and reportability, and determine the correct time to meet the NRC commitment.

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

Group #

1

K/A #

038 G2.4.4

Importance Rating

4.3

Emergency Procedures / Plan Ability to recognize abnormal indications for system operating parameters which are entry level conditions for emergency and abnormal operating procedures.

Proposed Question: SRO 80

Given the following:

- The reactor has tripped.
- A Steam Generator Tube Rupture is in progress.
- The crew is performing OP-902-007, Steam Generator Tube Rupture Recovery.
- SG #1 has been diagnosed as the ruptured SG and has been isolated.
- Containment pressure is 16.6 psia and rising slowly.
- Containment temperature is 118°F and rising slowly.
- Containment Area Radiation Monitors are rising.

Which ONE of the following describes the status of Containment Safety Functions, and the action required?

- A. ONLY Containment Temperature and Pressure Control is NOT satisfied; remain in OP-902-007 while restoring Containment parameters to normal.
- B. ONLY Containment Temperature and Pressure Control is NOT satisfied; go to OP-902-008, Function Recovery to mitigate the symptoms of multiple events.
- C. Containment Isolation AND Containment Temperature and Pressure Control are NOT satisfied; remain in OP-902-007 while restoring Containment parameters to normal.
- D. Containment Isolation AND Containment Temperature and Pressure Control are NOT satisfied; go to OP-902-008, Function Recovery to mitigate the symptoms of multiple events.

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. Containment Isolation is not satisfied due to radiation and pressure.
- B. Incorrect. Containment Isolation is not satisfied due to radiation and pressure.
- C. Incorrect. Would not remain in OP-902-007 for dual event. Would only remain if actions in progress were mitigating event
- D. Correct.

Technical Reference(s) OP-902-007 SFSC (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-PPE08 OBJ 1 (As available)

Question Source: Bank #
Modified Bank # (Note changes or attach parent)
New X

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41
55.43 5

Comments:

10CFR55.43(b) item 5 is met because the SRO is required to assess plant conditions and select/determine procedural guidance for the event and conditions presented

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

1

Group #

1

K/A #

E06 G2.4.6

Importance Rating

4.0

Emergency Procedures / Plan Knowledge symptom based EOP mitigation strategies.

Proposed Question: SRO 81

Initial conditions:

- The plant is at 50% power.
- Main Feedwater Pump B is out of service.
- EDG B is out of service.

Initiating event:

- Main Feedwater Pump A tripped.
- EFAS-1 and EFAS-2 actuated.
- EFW Pump A/B tripped.

Current conditions: (20 minutes later)

- Off-site power is lost.
- 30 seconds later, EDG A trips.

Which ONE of the following describes the EOP strategy for this event?

- A. Enter OP-902-006, Loss of Main Feedwater, upon completion of SPTAs; Enter OP-902-008, Function Recovery, when off-site power is lost.
- B. Enter OP-902-006, Loss of Main Feedwater, upon completion of SPTAs; Enter OP-902-008, Function Recovery, when EDG A is lost.
- C. Enter OP-902-001, Reactor Trip Recovery, upon completion of SPTAs; Enter OP-902-008, Functional Recovery, when off-site power is lost.
- D. Enter OP-902-001, Reactor Trip Recovery, upon completion of SPTAs; Enter OP-902-008, Functional Recovery, when EDG A is lost.

Examination Outline Cross-reference:

Level	RO	SRO
Tier #		1
Group #		2
K/A #	003 AA2.01	
Importance Rating		3.9

Ability to determine and interpret the following as they apply to the Dropped Control Rod: Rod Position Indication to actual Rod Position

Proposed Question: SRO 82

Given the following:

- The plant is at 100% power.
- The following indications are observed for 1 of the Regulating Group 5 CEAs:
 - Amber light on the CEA Mimic is lit.
 - Pulse Counter indication for the CEA is zero.
 - RSPT 1 and 2 indicate zero for the CEA.

Which ONE of the following describes the actual CEA position, and an action required related to the condition?

- A. CEA is dropped; declare COLSS inoperable.
- B. CEA is dropped; if the CEA cannot be realigned within the required time requirement, declare COLSS inoperable.
- C. CPC is OOS and position indication is unavailable; declare COLSS inoperable.
- D. CPC is OOS and position indication is unavailable; if the CPC cannot be restored in 15 minutes, declare COLSS inoperable.

Proposed Answer: A

Explanation (Optional):

- A. Correct.
- B. Incorrect. The CEA will be misaligned by more than 19 inches if it has dropped. COLSS must be declared inoperable
- C. Incorrect. PMC is not OOS, indication is a dropped CEA. Only pulse counter

indication would be affected

D. Incorrect. PMC is not OOS, indication is a dropped CEA

Technical Reference(s) OP-901-102 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-CED00 OBJ 8 (As available)

Question Source: Bank #
Modified Bank # (Note changes or attach parent)
New X

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41
5.43 2

Comments:

10CFR55.43(b) item 2 is met because the SRO is responsible for determining component operability related to technical specifications

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	_____	1
	Group #	_____	2
	K/A #	005 G2.2.25	_____
	Importance Rating	_____	3.7

Equipment Control: Knowledge of bases in technical specifications for LCOs and safety limits

Proposed Question: SRO 83

With the plant operating at 90% power, one CEA is determined to be misaligned from its group by 20 inches.

Which ONE (1) of the following describes the required operator action within the next 15 minutes and the Technical Specification basis for the action?

- A. Requires a reduction of thermal power providing assurance of fuel integrity during continued operation.
- B. Requires a stabilization of thermal power providing assurance that minimum Moderator Temperature Coefficient is maintained.
- C. Requires a stabilization of thermal power providing assurance of fuel integrity during continued operation.
- D. Requires a reduction of thermal power providing assurance that minimum Moderator Temperature Coefficient is maintained.

Proposed Answer: A

Explanation (Optional):

- A. Correct. OP-901-102 requires a load reduction TS basis states reason
- B. Incorrect. Reduce power within 15 minutes (OP-901-102 first step is to stabilize)
- C. Incorrect. Reduce power within 15 minutes
- D. Incorrect. Maintaining MTC in analyzed range is a reason for CEA alignment and for minimum temperature for criticality

Technical Reference(s): TS 3.1.3.1 and basis (Attach if not previously provided)

OP-901-102

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-CED00 OBJ 8 (As available)

Question Source: Bank # X
Modified Bank # (Note changes or attach parent)
New

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41
55.43 2

Comments:

10CFR55.43(b) item 2 is met because the SRO must know the basis for technical specification LCOs and action statements

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	_____	1
Group #	_____	2
K/A #	028 G2.4.31	_____
Importance Rating	_____	3.4

Emergency Procedures / Plan Knowledge of annunciators alarms and indications, and use of the response instructions.

Proposed Question: SRO 84

Given the following:

- The plant is at 60% power.
- The following alarms are received on Cabinet H:
 - B-1, Pressurizer Level HI/LO
 - A-1, Pressurizer Level HI-HI
- Letdown flow is rising.
- PZR level indicator RC-ILI-110X indicates 75% and rising.
- PZR level indicator RC-ILI-110Y indicates 40% and lowering.

Which ONE of the following describes the technical specification operability of the pressurizer, and the action required?

- A. The pressurizer is OPERABLE in accordance with TS 3.4.3.1, Pressurizer; Go to OP-901-110, Pressurizer Level Control Malfunction.
- B. The pressurizer is OPERABLE in accordance with TS 3.4.3.1, Pressurizer; action required to stabilize pressurizer level is contained in the annunciator response procedures.
- C. The pressurizer is INOPERABLE in accordance with TS 3.4.3.1, Pressurizer; Go to OP-901-110, Pressurizer Level Control Malfunction.
- D. The pressurizer is INOPERABLE in accordance with TS 3.4.3.1, Pressurizer; action required to stabilize pressurizer level is contained in the annunciator response procedures.

Proposed Answer: A

Explanation (Optional):

- A. Correct.
- B. Incorrect. ARPs do NOT contain the action, they refer to OP-901-110
- C. Incorrect. PZR is operable due to level being high enough and heaters available
- D. Incorrect. PZR is operable due to level being high enough and heaters available

Technical Reference(s) OP-901-110 (Attach if not previously provided)
TS 3.4.3.1

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-PP01 OBJ 1,5 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 _____
55.43 2, 5

Comments:

10CFR55.43(b) item 5 is met because the SRO is required to assess plant conditions and select/determine procedural guidance for the event and conditions presented. Additionally, 10CFR55.43(b) item 2 is met because the SRO must determine technical specification operability of the component

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	_____	1
Group #	_____	2
K/A #	068 AA2.07	_____
Importance Rating	_____	4.3

Ability to determine and interpret the following as they apply to the Control Room Evacuation: PZR level

Proposed Question: SRO 85

Given the following:

- The control room has been evacuated due to a fire in the cable spreading room.
- The crew has established control in accordance with OP-901-502, Control Room Evacuation.
- RCPs are stopped.
- RCS boration is in progress.
- RCS cooldown and depressurization is in progress.
- During the depressurization, pressurizer level rises from 40% to 65%.
- The RO stops the pressure decrease and pressurizer level drops to 60%.

Which ONE of the following describes the MINIMUM emergency classification for this event and the reason the action required for the pressurizer level response?

Support to elicit a reason and required level

- A. Site Area Emergency; Voiding is occurring in the reactor vessel head; establish pressurizer level at 50%.
- B. Alert; Voiding is occurring in the reactor vessel head; establish pressurizer level at 50%.
- C. Site Area Emergency; RCS cooldown rate is too high for the RCS depressurization rate; establish pressurizer level at 33%.
- D. Alert; RCS cooldown rate is too high for the RCS depressurization rate; establish pressurizer level at 33%.

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. SAE is not required at this point.

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	_____	<u>2</u>
Group #	_____	<u>1</u>
K/A #	<u>010 G2.4.6</u>	_____
Importance Rating	_____	<u>4.0</u>

Emergency Procedures / Plan Knowledge symptom based EOP mitigation strategies.

Proposed Question: SRO 86

Given the following:

- A reactor trip has occurred.
- The crew is performing Standard Post Trip Actions.
- Pressurizer pressure indicates 2050 psia and lowering slowly.
- Pressurizer level indicates 22% and lowering rapidly.
- All available Charging Pumps are running.
- Containment temperature is 96°F and rising slowly.
- Containment pressure is 14.4 psia and rising slowly.

Which ONE of the following describes the status of the RCS pressure control safety function, and the procedure required upon transition from OP-902-000?

- A. RCS Pressure Control is NOT satisfied; manually operate heaters and spray and diagnose a Reactor Trip Recovery event.
- B. RCS Pressure Control is NOT satisfied; operate the Pressurizer Pressure Control System and diagnose a LOCA event.
- C. RCS Pressure Control is currently satisfied; manually operate heaters and spray and diagnose a Reactor Trip Recovery event.
- D. RCS Pressure Control is currently satisfied; operate the Pressurizer Pressure Control System and diagnose a LOCA event.

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. RTR will be wrong diagnosis because pressure and level are lowering. Cntmt parameters are rising
- B. Correct.

10CFR55.43(b) item 5 is met because the SRO is required to assess plant conditions and select/determine procedural guidance for the event and conditions presented. The diagnostic determines procedure selection, therefore equivalent to procedure selection

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	_____	<u>2</u>
Group #	_____	<u>1</u>
K/A #	012 A2.02	_____
Importance Rating	_____	<u>3.9</u>

Ability to (a) predict the impacts of the following malfunctions or operations on the RPS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Loss of Instrument power

Proposed Question: SRO 87

Given the following:

- The plant is ^{are} at 100% power.
- All systems in normal alignments.
- PPS Channel "A" is in BYPASS for RPS trip testing.
- A loss of SUPS MB occurs.

Which ONE of the following describes the impact on the plant, and the action required?

- A. The reactor will trip; Perform Standard Post Trip Actions; TS LCO 3.8.3.1 for On-Site electrical distribution may be exited when the reactor is tripped.
- B. The reactor will trip; Perform Standard Post Trip Actions; TS LCO 3.8.3.1 for On-Site electrical distribution remains applicable after the reactor is tripped and the plant is stabilized in Mode 3.
- C. The reactor will NOT trip; perform actions of OP-901-312, Loss of Vital Instrument Bus; TS LCO 3.3.1 for RPS Instrumentation may NOT be exited until BOTH PPS channels are restored.
- D. The reactor will NOT trip; perform actions of OP-901-312, Loss of Vital Instrument Bus; TS LCO 3.3.1 for RPS Instrumentation may be exited when PPS Channel "A" is removed from BYPASS, or when SUPS MB is restored.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. No reactor trip for trip of 1 channel while other channel is bypassed.

- 3.8.3.1 is applicable in Modes 1-4
- B. Incorrect. No reactor trip for trip of 1 channel while other channel is bypassed.
 - C. Correct.
 - D. Incorrect. TS exit may not be performed because action is required for any 1 channels OOS

Technical Reference(s) TS 3.3.1, 3.8.3.1 (Attach if not previously provided)

OP-901-312

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-PPS00 OBJ 8 (As available)

Question Source: Bank # _____

Modified Bank # _____ (Note changes or attach parent)

New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 _____

55.43 2, 5

Comments

10CFR55.43(b) item 5 is met because the SRO is required to assess plant conditions and select/determine procedural guidance for the event and conditions presented. 10CFR55.43(b) item 2 is also met because the test item requires interpretation of technical specification applicability

Examination Outline Cross-reference:

Level	RO	SRO
Tier #		2
Group #		1
K/A #	059 A2.05	
Importance Rating		3.4

Ability to (a) predict the impacts of the following malfunctions or operations on the MFW; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:
Rupture in MFW suction or discharge line

Proposed Question: SRO 88

Given the following:

- The plant is at 60% power.
- A large feedwater line break occurs at the feedwater inlet piping weld connection to SG #1.
- A reactor trip occurs.
- Containment pressure is rising.

Which ONE of the following describes the impact on the plant, and the procedure diagnosis upon transition from Standard Post Trip actions?

- A. SG #1 pressure will lower until stabilized by the MSIS signal; OP-902-004, Excess Steam Demand Recovery.
- B. SG #1 pressure will lower until stabilized by the MSIS signal; OP-902-006, Loss of Feedwater Recovery.
- C. SG #1 pressure will lower and will continue to lower after the MSIS signal is generated; OP-902-004, Excess Steam Demand Recovery.
- D. SG #1 pressure will lower and will continue to lower after the MSIS signal is generated; OP-902-006, Loss of Feedwater Recovery.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. If the break is on the inlet weld, then MSIS will not stop the pressure decrease, because the leak is unisolable. Leak would be just downstream of EFW check valves
- B. Incorrect. If the break is on the inlet weld, then MSIS will not stop the pressure decrease, because the leak is unisolable. Leak would be just downstream of EFW

C. Correct.

D. Incorrect. OP-902-006 would not be used because feed is still available to other SG

Proposed references to be provided to applicants during examination:	None
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Question History: Last NRC Exam

10 CFR Part 55 Content:	55.41	
	55.43	5

10CFR55.43(b) item 5 is met because the SRO is required to assess plant conditions and select/determine procedural guidance for the event and conditions presented

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

Group #

1

K/A #

063 G2.4.4

Importance Rating

4.3

Emergency Procedures / Plan Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.

Proposed Question: SRO 89

Given the following:

- The plant is operating at 100% power.
- The following alarms, among others, are received:
 - Cabinet C, L-8, Battery Charger SA1 Trouble
 - Cabinet C, N-8, Battery SA Trouble
- DC Bus A voltage indicates 75 VDC and lowering.

procedures that will be entered

Which ONE of the following describes the ~~procedure entry required~~ for these conditions?

- A. OP-901-313, Loss of a 125 Volt DC Bus ONLY.
- B. OP-902-000, Standard Post Trip Actions ONLY.
- C. OP-902-000 ^{is} performed to completion, and then actions of OP-901-313 ^{the} are performed to restore DC Bus A.
- D. OP-902-000 and OP-901-313 performed concurrently to stabilize the plant. _{are}

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. Loss of 125 VDC Bus A or B will result in a reactor trip due to RTCBs opening
- B. Incorrect. OP-902-000 is correct, but indications are received for loss of DC also. Plausible because EOPs do take priority over AOPs except where noted

- C. Incorrect. OP-901-313 has guidance for parallel performance
- D. Correct.

Technical Reference(s) OP-901-313 (Attach if not previously provided)

Proposed references to be provided to applicants during examination:	None
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Learning Objective: _____ (As available)

Question Source: Bank # _____
 Modified Bank # _____ (Note changes or attach
 parent)
 New X

Question History: Last NRC Exam

Question Cognitive Level:	Memory or Fundamental Knowledge	<u> </u>
	Comprehension or Analysis	<u> X </u>

10 CFR Part 55 Content:	55.41	
	55.43	5

Comments:

10CFR55.43(b) item 5 is met because the SRO is required to assess plant conditions and select/determine procedural guidance for the event and conditions presented

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	_____	<u>2</u>
Group #	_____	<u>1</u>
K/A #	<u>076 A2.02</u>	_____
Importance Rating	_____	<u>3.1</u>

Ability to (a) predict the impacts of the following malfunctions or operations on the SWS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Service water header pressure

Proposed Question: SRO 90

Given the following:

- The plant is at 100% power.
- TCW Pump B is in service.
- TCW Pump A is tagged for repair.
- The following alarms are received in the control room:
 - TURB CLNG WTR PUMP B TRIP/TROUBLE
 - TURB CLNG WATER DISCH HDR PRESS LO
- Operator actions fail to restore TCW flow.

Which ONE of the following describes the impact of this event, AND the procedural actions required for these conditions?

- A. Generator Winding damage; Enter OP-901-512, Loss of Turbine Cooling Water; Trip the reactor based on loss of all turbine cooling water.
- B. Loss of Generator Hydrogen; Enter OP-901-512, Loss of Turbine Cooling Water; Trip the reactor based on inability to maintain generator hydrogen cooling.
- C. Generator Winding damage; refer to alarm response procedures and initiate a plant shutdown in accordance with OP-901-212, Rapid Downpower, to remove the main generator from service.
- D. Loss of Generator Hydrogen; refer to alarm response procedures and initiate a plant shutdown in accordance with OP-901-102, Rapid Downpower, to remove the main generator from service.

→ CEDM MALF

Proposed Answer: A

Explanation (Optional):

- A. Correct. Section E1 of AOP
- B. Incorrect. Main Generator will be damaged if operating for 2-3 minutes with no TCW. Generator H2 will be maintained by air side and hydrogen side seal oil.
- C. Incorrect. A reactor trip is required because the Main Generator will be damaged if operating for 2-3 minutes with no TCW
- D. Incorrect. A reactor trip is required because the Main Generator will be damaged if operating for 2-3 minutes with no TCW

Technical Reference(s) OP-901-512, E1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-PPO50 obj 3 (As available)

Question Source: Bank # X
Modified Bank # (Note changes or attach parent)
New

Question History: Last NRC Exam Editorially Modified – context intact – 2007 Retake

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis

10 CFR Part 55 Content: 55.41 10
55.43 5

Comments:

Editorially Modified from 2007 Retake exam
10CFR55.43(b) item 5 is met because the SRO is required to assess plant conditions and select/determine procedural guidance for the event and conditions presented

Examination Outline Cross-reference:

Level

RO

SRO

Tier #

2

Group #

2

K/A #

028 G2.1.32

Importance Rating

3.8

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

Proposed Question: SRO 91

Which ONE of the following describes the requirement for post-accident use of Hydrogen Recombiners, in accordance with OP-008-006, Hydrogen Recombiner?

To ensure hydrogen concentration remains below design basis limits, Hydrogen Recombiners should be placed in service....

- A. ONLY when Containment Hydrogen exceeds 0.6%; maintaining recombinder temperature $>1400^{\circ}\text{F}$ assures hydrogen recombination at low hydrogen concentrations.
- B. ONLY when Containment Hydrogen exceeds 0.6%; maintaining recombinder temperature $>1225^{\circ}\text{F}$ assures hydrogen recombination at low hydrogen concentrations.
- C. Prior to Containment Hydrogen exceeding 2.0%; maintaining recombinder temperature $>1400^{\circ}\text{F}$ assures hydrogen recombination at low hydrogen concentrations.
- D. Prior to Containment Hydrogen exceeding 2.0%; maintaining recombinder temperature $>1225^{\circ}\text{F}$ assures hydrogen recombination at low hydrogen concentrations.

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. First part is correct, but operation above 1400°F is not allowed in accordance with the procedure
- B. Correct.
- C. Incorrect. Will not place in service at less than 0.6%. Plausible because the reason for placing them in service is to limit hydrogen concentration
- D. Incorrect. Will not place in service at less than 0.6%. Plausible because the reason for placing them in service is to limit hydrogen concentration. Correct

temperature is used

Technical Reference(s) OP-008-006 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-HRA Obj 1 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 _____
55.43 1

Comments:

10CFR55.43(b) item 1 is met because the SRO is responsible for understanding conditions and limitations in the facility license.

Examination Outline Cross-reference:

Level	RO	SRO
Tier #		2
Group #		2
K/A #	035 A2.03	
Importance Rating		3.6

Ability to (a) predict the impacts of the following mal-functions or operations on the GS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations:
Pressure/level transmitter failure

Proposed Question: SRO 92

Given the following:

- The plant is at 100% power.
- SG level control selector switch is in BOTH for each SG.
- SG #2 level transmitter SG-ILT-1121 is rising and currently indicates 88%.
- All other SG #2 level indications are stable.

Which ONE of the following describes the impact on the plant and the action required?

- A. SG #2 High Level Override will actuate; enter OP-901-201, Steam Generator Level Control Malfunction, and place all SG #2 control in MANUAL.
- B. SG #2 High Level Override will actuate; trip the reactor and perform Standard Post Trip Actions. SG level control will be restored in OP-902-001, Reactor Trip Recovery.
- C. FWCS #2 controllers shift to MANUAL; enter OP-901-201, Steam Generator Level Control Malfunction, and stabilize SG level in accordance with the general action flow chart.
- D. FWCS #2 controllers shift to MANUAL; SG level has exceeded a reactor trip setpoint; trip the reactor and perform Standard Post Trip Actions while restoring Feedwater control to SG #2 in accordance with OP-901-201.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. HLO will not actuate with only 1 SG level channel above the setpoint. Other actions are correct

Comments:

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	_____	<u>2</u>
Group #	_____	<u>2</u>
K/A #	<u>075 A2.02</u>	_____
Importance Rating	_____	<u>2.7</u>

Ability to (a) predict the impacts of the following malfunctions or operations on the circulating water system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: Loss of circulating water pumps

Proposed Question: SRO 93

Given the following:

- The plant is at 100% power.
- The following alarm is received on alarm cabinet E in the control room:
 - B-11, CW Pump A Trip/Trouble
- Circ Water Pump A control switch amber light is illuminated.
- Computer alarms are received on CWP A.
- Condenser Vacuum indicates 25 INHG and slowly lowering.

Which ONE of the following describes the impact of this event, and the procedure action required?

- A. Liquid Waste releases may exceed 10CFR20 limits due to inadequate dilution flow. Stop any liquid Waste release in progress. Dispatch an operator to determine and correct the cause of the pump trip, and attempt to restart the pump, in accordance with the alarm response.
- B. Liquid Waste releases may exceed 10CFR20 limits due to inadequate dilution flow. Stop any liquid Waste release in progress, and enter OP-901-220, Loss of Condenser Vacuum; ensure the vacuum pumps are operating and there is no water in the air separator sight glasses.
- C. Condenser vacuum may lower to the point where a turbine trip is required. Dispatch an operator to determine and correct the cause of the pump trip, and attempt to restart the pump, in accordance with the alarm response. If the pump will not start, commence a power reduction in accordance with OP-901-212, Rapid Downpower.
- D. Condenser vacuum may lower to the point where a turbine trip is required.

Enter OP-901-220, Loss of Condenser Vacuum; ensure the vacuum pumps are operating, and commence a power reduction in accordance with OP-901-212, Rapid Downpower.

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. Effect can be correct. Actions are incorrect because pump restart will not be attempted in ARP
- B. Incorrect. Action incorrect because water will be half full if system is operating normally
- C. Incorrect. Actions are incorrect because pump restart will not be attempted in ARP
- D. Correct.

Technical Reference(s) OP-901-220 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-PPO20 OBJ 9 (As available)

Question Source: Bank #
Modified Bank # (Note changes or attach parent)
New X

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41
55.43 5

Comments:

10CFR55.43(b) item 5 is met because the SRO is required to assess plant conditions and select/determine procedural guidance for the event and conditions presented

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	_____	3
	Group #	_____	1
	K/A #	G2.1.10	_____
	Importance Rating	_____	3.9

Knowledge of conditions and limitations in the facility license.

Proposed Question: SRO 94

What ONE (1) of the following is the MOST RESTRICTIVE event associated with Technical Specification requirements for Shutdown Margin?

- A. Excessive cooldown resulting from a Main Steam Break at end of core life from 0% power conditions.
- B. Positive reactivity addition resulting from a Rod Ejection event at end of core life from 100% power conditions.
- C. Positive reactivity addition resulting from a Rod Ejection event beginning of core life from 0% power conditions.
- D. Excessive cooldown resulting from a Main Steam Break at beginning of core life from 100% power conditions.

Proposed Answer: A

Explanation (Optional):

- A. Correct. From 0% power, there is more mass in the SG. End of cycle conditions have the most negative MTC. Therefore, the reactivity transient is most severe.
- B. Incorrect. PDILs are based on Rod Ejection event
- C. Incorrect. PDILs are based on Rod Ejection event
- D. Incorrect. MTC less negative and less mass for boil-off.

Technical Reference(s): TS Basis 3.1.1.1 (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-TS02 OBJ 2 (As available)

Question Source: Bank # X
Modified Bank # (Note changes or attach parent)
New

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41
55.43 1

Comments:

St. Lucie 2006

10CFR55.43(b) items 1 and 2 are met because the SRO is responsible for understanding and applying technical specification bases and knowing accident analysis assumptions

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	_____	<u>3</u>
Group #	_____	<u>1</u>
K/A #	<u>G2.1.11</u>	_____
Importance Rating	_____	<u>3.8</u>

Knowledge of less than one hour technical specification action statements for systems.

Proposed Question: SRO 95

Given the following:

- The plant is in Mode 3.
- RCS heatup is in progress.
- RCPs are in operation

Which ONE of the following describes the Technical Specification limit on RCS heatup rate, and the MAXIMUM time allowed to restore heatup rate to within limits if it is exceeded?

- A. 60°F/Hr as indicated by the lowest Tcold; 30 minutes
- B. 100°F/Hr as indicated by the lowest Tcold; 30 minutes
- C. 60°F/Hr as indicated by average Tcold; 60 minutes
- D. 100°F/Hr as indicated by average Tcold; 60 minutes

Proposed Answer: A

Explanation (Optional):

- A. Correct.
- B. Incorrect. 30 minutes is correct, but 100 is the limit on cooldown rate.
- C. Correct. 30 minutes to restore.
- D. Incorrect. 100 is the limit on cooldown rate

Technical Reference(s): TS 3.4.8.1 (Attach if not provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-RCS00 Obj 8 (As available)

Question Source: Bank #
Modified Bank # (Note changes or attach parent)
New X

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis

10 CFR Part 55 Content: 55.41
55.43 2

Comments:

Have similar in bank but different values and modes
10CFR55.43(b) item 2 is met because the SRO must determine entry to technical specifications as well as know parameters monitored to satisfy the technical specification

Examination Outline Cross-reference:

Level	RO	SRO
Tier #		3
Group #		2
K/A #	G2.2.25	
Importance Rating		3.7

Knowledge of bases in technical specifications for limiting conditions for operations and safety limits.

Proposed Question: SRO 96

Which ONE of the following describes (1) the technical specification basis for the setpoint of the Local Power Density High reactor trip, and (2) ONLY parameters that are measured or calculated to provide direct input to the trip? ^{the}

- A. (1) Ensures the Linear Heat Rate (KW/ft) in the limiting fuel rod does not exceed the fuel design limit for anticipated operational occurrences;
(2) Core inlet temperature, Excore NI Power, RCS pressure.
- B. (1) Ensures the Linear Heat Rate (KW/ft) in the limiting fuel rod does not exceed the fuel design limit for anticipated operational occurrences;
(2) Axial Power Distribution, Delta T Power, CEA position.
- C. (1) Ensures that a reactor trip is provided on power density that compensates for the decalibrating effects of changes in RCS temperature in the reactor vessel downcomer;
(2) Core inlet temperature, Excore NI Power, RCS pressure.
- D. (1) Ensures that a reactor trip is provided on power density that compensates for the decalibrating effects of changes in RCS temperature in the reactor vessel downcomer;
(2) Axial Power Distribution, Delta T Power, CEA position.

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. Basis correct but only 1 input is correct. Tcold input is a DNBR trip
- B. Correct.
- C. Incorrect. Basis description is for VOP trip. Tcold input is for DNBR trip
- D. Incorrect. Basis description is for VOP trip, but inputs are correct for LPD trip

Technical Reference(s): Tech Spec 2.1.2 basis (Attach if not previously provided)

Proposed references to be provided to applicants during examination: NONE

Learning Objective: WLP-OPS-PPS00 OBJ 9 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis _____

10 CFR Part 55 Content: 55.41 _____
55.43 2

Comments:

10CFR55.43(b) item 2 is met because the SRO is required to know technical specification bases for limiting safety system settings

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	_____	<u>3</u>
Group #	_____	<u>2</u>
K/A #	<u>G2.2.18</u>	_____
Importance Rating	_____	<u>3.6</u>

Knowledge of the process for managing maintenance activities during shutdown operations.

Proposed Question: SRO 97

Given the following:

- The plant is in Mode 5.
- Maintenance requests to remove Battery Charger 1A from service for scheduled work.
- Shutdown EOOS assigned an ORANGE risk level to the configuration resulting from removal of the Charger.

Which ONE of the following describes a requirement related to the request for removing the charger from service?

- A. The Duty Plant Manager must approve the entry to the orange condition. The Outage Risk Assessment Team (ORAT) must perform a qualitative assessment.
- B. The Duty Plant Manager must approve the entry to the orange condition. A qualitative assessment is not required with the plant in Mode 5.
- C. The Shift Manager may authorize entry to the orange condition. The Outage Risk Assessment Team (ORAT) must perform a qualitative assessment.
- D. The Shift Manager may authorize entry to the orange condition. A qualitative assessment is not required with the plant in Mode 5.

Proposed Answer: A

Explanation (Optional):

- A. Correct.
- B. Incorrect. Qualitative assessment is still required because EOOS may not be completely accurate. Credible because a main reason for assigning risk is plant trip probability. Since plant is tripped, it is credible that a level 2 assessment would

C. Incorrect. SM may not authorize by themselves if condition will be orange, but must approve yellow entry

D. Incorrect. SM may not authorize by themselves if condition will be orange, but must approve yellow entry

Technical Reference(s) OI-037-000 (Attach if not previously provided)

Proposed references to be provided to applicants during examination:	None
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Learning Objective: WLP-OPS-ORA Obj 2 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach
parent)
New X

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis

10 CFR Part 55 Content:	55.41	
	55.43	3

Comments:

10CFR55.43(b) item 3 is met because the SRO must be able to determine risk for configuration control, including approval authority for plant changes, and equipment removal from service or plant/procedure changes

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	_____	<u>3</u>
Group #	_____	<u>3</u>
K/A #	<u>G2.3.2</u>	_____
Importance Rating	_____	<u>2.9</u>

Knowledge of facility ALARA program.

Proposed Question: SRO 98

Given the following:

- The plant is in Mode 5 in preparation for a startup.
- Operators are performing valve lineups in the Auxiliary Building.
- The initial positioning of a valve requiring independent verification will result in 80 millirem of radiation exposure to the operator.

Which ONE of the following guidelines shall be followed for the independent verification of this valve?

- A. Perform a pre-job brief and ALARA plan prior to the valve alignment. Perform independent verification as required.
- B. Perform a pre-job brief and ALARA plan prior to the valve alignment. Concurrent verification may be performed for this valve
- C. Suspend independent verification for this valve, and perform a Functional Verification based on observation of a plant process to ensure it is positioned correctly.
- D. Perform independent OR concurrent verification accompanied by an HP Technician that has surveyed the area prior to entry.

Proposed Answer: C

Explanation (Optional):

- A. Incorrect. For high radiation exposure, IV may be waived, but if it were to be performed, there would be an ALARA brief
- B. Incorrect. CV will only result in double the exposure, but if it were to be performed, there would be an ALARA brief
- C. Correct.
- D. Incorrect. HP technician coverage would be provided for jobs related to high dose, but the IV may be waived

Proposed references to be provided to applicants during examination:	None
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Question Source: Bank # X
Modified Bank # _____ (Note changes or attach
New _____ parent)

Question Cognitive Level: Memory or Fundamental Knowledge X
Comprehension or Analysis

SRO criteria is met because 10CFR55.43(b) item 4 is met. The SRO will determine whether IV may be waived due to ALARA concerns.

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	_____	<u>3</u>
Group #	_____	<u>3</u>
K/A #	<u>G2.3.10</u>	_____
Importance Rating	_____	<u>3.3</u>

Ability to perform procedures to reduce excessive levels of radiation and guard against personnel exposure.

Proposed Question: SRO 99

Initial conditions:

- #1 Steam Generator Tube Rupture has occurred.
- When a manual reactor trip was performed, off-site power was lost.
- EDG 'A' tripped upon starting and CANNOT be restarted.

Current conditions:

- RCS pressure is 1550 psia and stable
- #1 SG pressure is 950 psia and rising. NR level indicates 90%.
- #2 SG pressure is 900 psia and stable. NR level indicates 45%.
- Standard Post Trip Actions are complete.

Which ONE of the following describes the procedure required for this event, and the SG isolation strategy required for the event in progress?

- A. OP-902-007, Steam Generator Tube Rupture Recovery; isolate the affected SG ADV.
- B. OP-902-007, Steam Generator Tube Rupture Recovery; place the affected SG ADV in AUTO, controlling at 980 psia.
- C. OP-902-008, Functional Recovery; isolate the affected SG ADV.
- D. OP-902-008, Functional Recovery; place the affected SG ADV in AUTO, controlling at 980 psia.

Proposed Answer: B

Explanation (Optional):

- A. Incorrect. Would not isolate ADV because if SG continues to fill, there would be

- an unmonitored and uncontrolled radioactive release through MSSVs
- B. Correct.
- C. Incorrect. OP-902-008 not required because there is still 1 emergency diesel available and operating. Event is SGTR with LOOP
- D. Incorrect. OP-902-008 not required because there is still 1 emergency diesel available and operating. Event is SGTR with LOOP

Technical Reference(s) OP-902-007, Step 16 and basis (Attach if not previously provided)

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-PPE07 OBJ 1,4 (As available)

Question Source: Bank # _____
Modified Bank # _____ (Note changes or attach parent)
New X

Question History: Last NRC Exam _____

Question Cognitive Level: Memory or Fundamental Knowledge _____
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 _____
55.43 4, 5

Comments:

10CFR55.43(b) item 5 is met because the SRO is required to assess plant conditions and select/determine procedural guidance for the event and conditions presented

Examination Outline Cross-reference:

Level	RO	SRO
Tier #	_____	3
Group #	_____	4
K/A #	G2.4.5	_____
Importance Rating	_____	3.6

Knowledge of the organization of the operating procedures network for normal, abnormal, and emergency evolutions.

Proposed Question: SRO 100

Given the following:

- The plant tripped due to a 300 gpm Loss of Coolant Accident (LOCA).
- OP-902-002, Loss of Coolant Accident Recovery, has been entered.
- RCS pressure is 1550 psia and lowering slowly
- RCS temperature is 515 degrees F and stable
- Five minutes later, the following conditions are observed:
 - SG #1 pressure is indicating 450 psia and lowering
 - RCS temperature is 440 deg F and lowering
 - RCS pressure is 1350 psia and lowering

Which ONE of the following describes the strategy for the current plant conditions?

- A. Remain in OP-902-002. Refer to OP-901-104, Inadvertent Positive Reactivity Addition, for actions required to terminate the RCS cooldown.
- B. Go to the OP-902-004, Excess Steam Demand Recovery, to isolate the SG #1 and stabilize RCS temperature.
- C. Go to OP-902-008, Functional Recovery, and isolate the SG #1 by use of the appropriate RCS Inventory Control Success Path.
- D. Go to OP-902-008, Functional Recovery, and isolate the SG #1 by use of the appropriate RCS Heat Removal Success Path.

Proposed Answer: D

Explanation (Optional):

- A. Incorrect. For conditions given, would not refer to an AOP as parallel actions
- B. Incorrect. If no LOCA was in progress, would go to ESD
- C. Incorrect. Heat Removal is the correct success path for this event
- D. Correct.

Technical Reference(s): SFSC for OP-902-002 (Attach if not previously provided)
OP-902-008 HR-2

Proposed references to be provided to applicants during examination: None

Learning Objective: WLP-OPS-PPE08 OBJ 1,8 (As available)

Question Source: Bank # X
Modified Bank # (Note changes or attach parent)
New

Question History: Last NRC Exam

Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41
55.43 5

Comments:

St. Lucie 2006

10CFR55.43(b) item 5 is met because the SRO is required to assess plant conditions and select/determine procedural guidance for the event and conditions presented