U.S. Nuclear Regulatory Commission
Site-Specific
Written Examination

Applicant Information	
Name:	Region: I
Date: 8/10/01	Facility/Unit: **BVPS Unit 1**
License Level: **RO**	Reactor Type: **W**
Start Time:	Finish Time:

Instructions

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. The passing grade requires a final grade of at least 80.00 percent. Examination papers will be collected six hours after the examination starts.

Applicant Certification

All work done on this examination is my own. I have neither given nor received aid.

_____
Applicant's Signature

Results		
Examination Value	100.0	Points
Applicant's Score	_____	Points
Applicant's Grade	_____	Percent

ANSWER KEY (Corrected)
1LOT4 RO EXAMINATION

1. D	21. D	41. B	61. A	81. B
2. D	22. D	42. B	62. B	82. B
3. B	23. B	43. C	63. A	83. D
4. C	24. B	44. D	64. C	84. A
5. C	25. B	45. C	65. A or C	85. B
6. D	26. C	46. A	66. D	86. C
7. C	27. D	47. D	67. A	87. B
8. C	28. B	48. A	68. A	88. B
9. C	29. D	49. D	69. A	89. D
10. B	30. B	50. B	70. C	90. A
11. C or D	31. C	51. C	71. A	91. C
12. A	32. B	52. B	72. B	92. C
13. A	33. B	53. D	73. B	93. A
14. C	34. B	54. D	74. C	94. D
15. B	35. B	55. A	75. A	95. C
16. C	36. A	56. A	76. A	96. D
17. D	37. A	57. C	77. D	97. D
18. A	38. D	58. C or D	78. D	98. B
19. B	39. B	59. B	79. D	99. B
20. A	40. A	60. C	80. D	100. C

Question # 1 **1LOT4 RO Initial License Exam**

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	015/017 AK2.07	
	Importance Rating	2.9	

With the Unit operating at 100% power with all systems in their at-power, NSA configurations, the No. 2 seal on the 1A RCP has failed. For this failure, the 1A RCP seal vent pot level __(1)__ annunciator should be illuminated, the 1A RCP No. 1 seal leakoff flow should __(2)__ and the 1B RCP seal injection flow should __(3)__.

	__(1)__	__(2)__	__(3)__
A.	low	drop	drop
B.	low	rise	rise
C.	high	rise	remain constant
D.	high	drop	remain constant

Answer: D

Technical Reference(s): 1OM-6.4.ABC Issue 4, Rev. 2

References to be provided during examination: None

Learning Objective: 08-02-312 ELO 10.r; LOT-V-9 ELO 3-1

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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

10 CFR Part 55 Content: 55.41 X
55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	024AA2.02	
	Importance Rating	3.9	

Under which of the following conditions is Emergency Boration **NOT** required?

A. 80% power, NSA configurations, Control Bank D group step counter is below the rod insertion limit.

B. 100% power, NSA configurations, a Unit shutdown is required from the emergency shutdown panel.

C. Two control rods failed to fully insert following a reactor trip from 100% power, NSA configurations.

D. 100% power, NSA configurations, three control rods are declared inoperable due to being immovable.

Answer: D

Technical Reference(s): 1OM-7.4.S Issue 4, Rev. 3

References to be provided during examination: None

Learning Objective: 08-02-318 ELO 42.z

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge: X

Comprehension or Analysis

10 CFR Part 55 Content: 55.41 (10) No AA2's are 55.41

55.43 X

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	1	
	K/A #	E08EA2.2	
	Importance Rating	3.5	

Note: This is an open reference question.

Following a main steamline break, the Operators are responding to a red path condition on vessel integrity. All required actions are complete. At 1000 hours, it is determined per Step 29 of FR-P.1, Response To Imminent Pressurized Thermal Shock, that an RCS soak is required. The following RCS cold leg temperatures are subsequently recorded:

- 0900 = 445°F
- 1000 = 340°F
- 1030 = 310°F
- 1100 = 320°F
- 1130 = 300°F
- 1200 = 300°F

Based on this data, what is the earliest time that the RCS cooldown can be resumed?

A. 1200 hours.

B. 1230 hours.

C. 1300 hours.

D. 1330 hours.

Answer: B

Technical Reference(s): 1OM-53A.1.FR-P.1 Issue 1C, Rev. 0, Step 29

References to be provided during examination: 1OM-53A.1.FR-P.1, pg. 24

Learning Objective: LP-SQS-53.3 ELO 6

Question Source: Bank # LRT NRC #522Q

Modified Bank #

New

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge

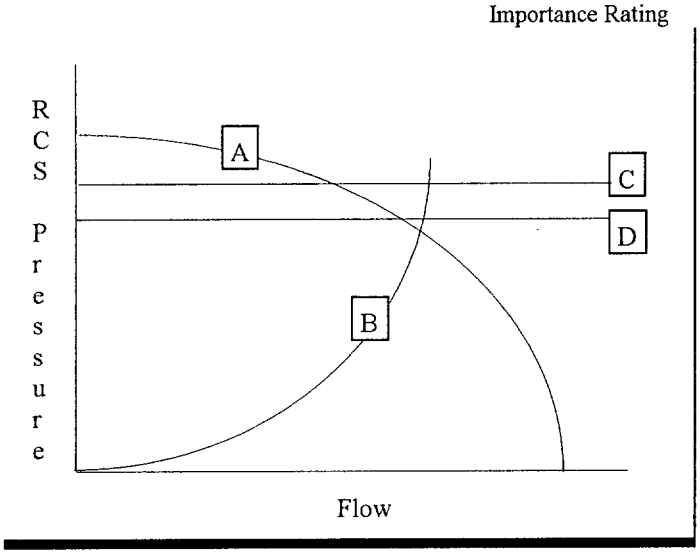
Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 (10) No EA2's are 55.41, this is an RO task

55.43 X

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	E03EA1.2	
	Importance Rating	3.7	



Given the following:

- A small break LOCA is in progress.
- Line A represents the pump capacity of two HHSI pumps.
- Line B represents break flow out the cold leg.
- Line C represents current RCS pressure.
- Line D represents current RCS saturation pressure.

Assume that automatic operation of the condenser steam dumps will maintain current RCS temperature stable and both HHSI pumps continue to run. If no Operator action is taken RCS pressure will …

A. remain at its current value.

B. drop and the RCS will remain subcooled.

C. drop to saturation pressure, then remain at saturation pressure.

D. continuously drop until superheated conditions are established at the core exit.

Answer: C

Technical Reference(s): 1OM-53.B.4.E-1 Issue 1B, Rev. 6 (Breaks 1" – 13 ½")

References to be provided during examination: None

Learning Objective: 1/2LP-ATA-4.2 ELO 4

Question Source: Bank # ATA-4

Question History: Previous NRC Exam Previous Quiz / Test

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

10 CFR Part 55 Content: 55.41 X 55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	2	
	K/A #	058AA2.01	
	Importance Rating	3.7	

Note: This is an open reference question.

Given the following lineup for the Vital Bus #1 Uninterruptible Power Supply (UPS), which of the following is providing power to Vital Bus #1?

- All associated breakers and safety switches external to the UPS are CLOSED.
- UPS Breaker Status:
  - Rectifier AC Input - CLOSED
  - Rectifier DC output - TRIPPED OPEN
  - Inverter Battery Input - TRIPPED OPEN
  - Inverter Output - CLOSED
  - Static Switch AC Output - CLOSED
  - UPS Control Switches:
  - Static Switch Transfer Toggle Switch - AUTOMATIC
  - Manual Bypass Switch - NORMAL

A. 480V MCC1-E9.

B. 125VDC Bus #1.

C. The Static Line Voltage Regulator [TRF-1015] via the Static Switch.

D. The Static Line Voltage Regulator [TRF-1015] bypassing the Static Switch.

Answer: C

Technical Reference(s): 1OM Fig. 38-1, Fig. 38-2, 38-3 and 1OM-38.1.C, Rev. 5, pg. 4-5

References to be provided during examination: 1OM Fig. 38-1, 38-2 and 38-3

Learning Objective: LP-SQS-38.1 ELO 2

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 (7) No AA2's are 55.41 55.43 X

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	3	
	K/A #	028AA1.03	
	Importance Rating	2.9	

Given the following:

- The Unit is operating at 100% power with all systems in their at-power, NSA configurations.
- The controlling PZR level channel has failed and [FCV-1CH-122], Charging Flow Control Valve is in manual.
- PZR level is 50%.
- All RCP seal injection flows are 8.5 gpm.
- Net charging is 0 gpm.

To return PZR level to program level, while maintaining seal injection flows in the required band, [FCV-1CH-122] must be throttled __(1)__ and [HCV-CH-186], RCP Seal Supply Hand Control Valve must __(2)__.

	__(1)__	__(2)__
A.	closed	remain as is
B.	open	be throttled closed
C.	closed	be throttled closed
D.	open	remain as is

Answer: D

Technical Reference(s): 1OM Fig. 7-1 and Fig. 7-4

References to be provided during examination: None

Learning Objective: 08-02-318 ELO 47.b

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	
	Group #	3	
	K/A #	065AK3.08	
	Importance Rating	3.7	

During performance of the EOP's, if instrument air header pressure cannot be maintained, the Operator is directed to check if AFW pumps need to be stopped because ...

A. the Turbine Driven AFW pump may be at runout conditions due to its governor valve failing open.

B. any of the three AFW pumps may be at runout conditions due to the AFW flow control valves failing open.

C. any of the three AFW pumps may overheat due to the AFW pump recirc valves failing closed.

D. the Motor Driven AFW pumps may overheat due to their motor cooler isolation valves failing closed.

Answer: **C**

Technical Reference(s): AOP-1.34.1 Issue 3A, Rev. 5

References to be provided during examination: None

Learning Objective: LP-SQS-53C.1 ELO 4

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

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 #	2	
	Group #	1	
	K/A #	001K3.02	
	Importance Rating	3.4	

Given the following:

- The Unit is operating at 75% power with all systems in their at-power, NSA configurations.
- Control rods are in automatic.
- Xenon concentration is rising at a relatively rapid rate.
- Annunciator A4-97 - ROD CONTROL SYSTEM NON-URGENT ALARM has just illuminated.

For the above conditions, control rods will ...

A. move out when the absolute value between Tave and Tref reaches 1.0 °F.

B. move in when the absolute value between Tave and Tref reaches 1.5 °F.

C. move out when the absolute value between Tave and Tref reaches 1.5 °F.

D. not move because the Rod Control System Non-Urgent Alarm inhibits all rod motion.

Answer: C

Technical Reference(s): 1OM-1.1.D Issue 4, Rev. 1

References to be provided during examination: None

Learning Objective: 08-02-303 ELO 16

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	013A1.02	
	Importance Rating	3.9	

The normal operating limits of CNMT internal pressure and temperature are based on preventing CNMT pressure from going below __(1)__ psia or above __(2)__ psig during a DBA LOCA, and such that the CNMT will return to sub-atmospheric conditions within __(3)__ minutes following a DBA LOCA.

	_(1)_	_(2)_	_(3)_
A.	6	40	30
B.	7	45	45
C.	8	45	60
D.	8	40	60

Answer: C

Technical Reference(s): TS 3.6.1.4 and 3.6.1.5 Bases

References to be provided during examination: None

Learning Objective: LP-SQS-47.1 ELO 8

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge: X

Comprehension or Analysis

10 CFR Part 55 Content: 55.41 X

55.43

Comments:

Question # 10 **1LOT4 RO Initial License Exam**

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	015A3.02	
	Importance Rating	3.7	

Given the following:

- The Unit is operating at 65% power with all systems in their at-power, NSA configurations.
- Power is being raised with rod control in automatic.
- Control Bank D group step counter is at 170 steps.
- ONLY the following annunciators are received:
  - [A4-59] NIS POWER RANGE LOW SETPOINT FLUX DEVIATION OR AUTO DEFEAT
  - [A4-68] NIS POWER RANGE COMPARATOR DEVIATION
  - [A4-76] COMPUTER ALARM ROD DEVIATION/SEQ NIS POWER RANGE TILTS

Which of the following events would cause the plant conditions listed above?

A. Rod control urgent failure on the Control Bank D group 1 power cabinet.

B. One control rod is misaligned from its group step counter by greater than 12 steps.

C. A single Rod Position Indicator in Control Bank D has failed at 157 steps.

D. A single control rod in close proximity to a power range neutron detector has dropped to the bottom of the core.

Answer: B

Technical Reference(s): 1OM-2.4.AAC Issue 3, Rev. 4 and 1OM-2.4.AAH Issue 3, Rev. 3

References to be provided during examination: None

Learning Objective: 1LP-LOT-III-1 ELO 2-1

Question Source:	Bank #	
	Modified Bank #	2LOT1 NRC Exam
	New	
Question History:	Previous NRC Exam	2LOT1 (1997)
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41	X
	55.43	X

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	1	
	K/A #	068 G 2.3.11	
	Importance Rating	2.7	

Given the following:

- Preparations to perform a radioactive liquid waste discharge from [LW-TK-7A], SG Drains Tank are in progress.
- Alternate HI-HI alarm setpoints have been implemented for [RM-1LW-104], Liquid Radwaste Effluent radiation monitor due to high background radiation levels.
- When performing a source check on [RM-1LW-104], Liquid Radwaste Effluent radiation monitor, it was observed that the meter indication did NOT move upscale.

Which of the following actions are required to be performed?

A. Flush [RM-1LW-104] with water from [LW-TK-7A], SG Drains Tank to the floor drain then re-perform the source check.

B. Flush [RM-1LW-104] with water from the [1LW-TK-5A or 5B], Evaporator Test Tanks to the floor drain then re-perform the source check.

C. Request health physics perform a calibration check on [RM-1LW-104] detector due to its lack of response to the source check.

D. Request Health Physics flash the [RM-1LW-104] detector with a portable source to verify an upscale increase in the existing count rate.

Answer: C or D

Technical Reference(s): 1OM-17.4A.D, Rev. 4

References to be provided during examination: None

Learning Objective: 1SQS-2379 ELO 7

Question Source: Bank # Modified Bank # New X

Question History: Previous NRC Exam

Previous Quiz / Test

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 #	2	
	Group #	1	
	K/A #	071A3.02	
	Importance Rating	2.8	

With [1GW-C-1A], 1A Waste Gas Compressor in automatic, Annunciator A2-4 - GASEOUS WASTE COMPRESSOR 1A SUCTION PRESSURE LOW has illuminated. What automatic actions occur upon receipt of this alarm and what are the adverse consequences of not promptly correcting this situation?

1. [1GW-C-1A], 1A Waste Gas Compressor trips.
2. [TV-1GW-108A], 1A Waste Gas Compressor Bypass Valve closes.
3. An explosive gas mixture of hydrogen and oxygen may be formed in the Waste Gas System.
4. The in service [1GW-TK-1A(1B)(1C)], Waste Gas Decay Tank could be damaged by imploding.

A. 1 and 3 only.

B. 2 and 4 only.

C. 1, 2 and 3 only.

D. 1, 2, 3 and 4.

Answer: A

Technical Reference(s): 1OM-19.4.AAD Issue 4, Rev. 1

References to be provided during examination: None

Learning Objective: 08-02-333 ELO 4.a

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

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 #	2	
	Group #	1	
	K/A #	072A1.01	
	Importance Rating	3.4	

Which of the following will occur if [RM-1RM-204], Incore Instrument Transfer Device Area Monitor High alarm is actuated when the unit is in Mode 5?

A. The CNMT warning system flashing red lights inside CNMT will actuate.

B. The CNMT polar crane upward motion will be inhibited.

C. An automatic CNMT isolation phase A signal will be generated.

D. All CNMT purge and exhaust dampers will automatically close.

Answer: A

Technical Reference(s): 1OM-43.4.AAV Issue 4, Rev. 1

References to be provided during examination: None

Learning Objective: 1SQS-2379 ELO 4

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

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 #	2	
	Group #	2	
	K/A #	002K6.03	
	Importance Rating	3.1	

Given the following:

- The Unit is defueled.
- A temporary tygon hose is installed on the "C" RCS loop for use as an RCS level indication.
- The RCS is being drained to midloop conditions.
- [LI-RC-482C], RCS Narrow Range Level Indicator is in service.
- While staging equipment outside the 1C RCP cubicle, the top of the tygon hose was pinched closed.

If the RCS draindown is continued under these conditions, the tygon level indicator will indicate __(1)__ than [LI-RC-482C] and the draindown should __(2)__.

	__(1)__	__(2)__
A.	higher	continue, considering [LI-RC-482C] as the most accurate indicator.
B.	lower	continue, considering the tygon hose as the most accurate indicator.
C.	higher	be stopped when it is identified that the two indicators disagree.
D.	lower	be stopped when it is identified that the two indicators disagree.

Answer: C

Technical Reference(s): 1OM-6.4.AV Issue 4, Rev. 0
References to be provided during examination: None
Learning Objective: 08-01-302 ELO 12
Question Source: Bank #
Modified Bank #
New X
Question History: Previous NRC Exam
Previous Quiz / Test
Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X
10 CFR Part 55 Content: 55.41 X
55.43
Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	016A2.02	
	Importance Rating	2.9	

The Unit is operating at 100% power with all systems in their at-power, NSA configurations. The fuse in the process instrument racks for the "A" loop Tcold instrument has just blown. How is the "A" loop OPΔT reactor trip setpoint affected by this failure?

A. It is not affected, Tcold does not input to the OPΔT setpoint calculation.

B. It remains as is, it will not change for the direction in which Tcold fails.

C. The calculated OPΔT setpoint will drop.

D. The calculated OPΔT setpoint will rise.

Answer: B

Technical Reference(s): TS Section 2.2 - Limiting Safety System Settings

References to be provided during examination: None

Learning Objective: 1LP-LOT-III-1 ELO 5-4 & 5-6

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41	X
	55.43	X

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	010K3.01	
	Importance Rating	3.8	

Given the following:

- The Unit is in Mode 5.
- The Reactor Vessel Overpressure Protection System (OPPS) is in service.
- Both CNMT instrument air compressors have tripped and cannot be restarted.
- CNMT instrument air pressure is 90 psig.

Is OPPS still capable of protecting the RCS from an overpressure condition?

A. No, CNMT instrument air pressure must be at least 95 psig for OPPS to actuate.

B. Yes, the driving force to open the PZR PORV's is RCS pressure.

C. Yes, but only for a limited number of cycles until the PZR PORV nitrogen accumulators depressurize.

D. Yes, but only until the CNMT instrument air receiver pressure drops below 80 psig.

Answer: C

Technical Reference(s): 1OM-6.1.D Issue 4, Rev. 1, pg. 16

References to be provided during examination: None

Learning Objective: 08-02-321 ELO 10.d

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

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 #	2	
	Group #	2	
	K/A #	014A4.01	
	Importance Rating	3.3	

With the Unit at 100% power, all systems in their at-power NSA configurations, and Tave equal to Tref, which of the following describes the indicated rod speed (in steps/minute) for the respective position on the Rod Control Bank Selector Switch?

	Automatic	Manual	Control Bank A	Shutdown Bank B
A.	8	48	64	48
B.	48	8	48	64
C.	48	8	64	48
D.	8	48	48	64

Answer: D

Technical Reference(s): 1OM-1.2.B, Rev. 8, pg. 10

References to be provided during examination: None

Learning Objective: 08-02-303 ELO 11

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge: X

Comprehension or Analysis

10 CFR Part 55 Content: 55.41 X

55.43

Comments:

Question # 18 **1LOT4 RO Initial License Exam**

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	026K1.02	
	Importance Rating	4.1	

With the Unit operating at 100% power and all systems in their at-power, NSA configurations, the Recirculation Spray Heat Exchangers are dry on __(1)__ side(s) of the heat exchanger. The design feature, that ensures that the boron concentration of the post accident recirculation water is not reduced, is to have the shell side of the heat exchanger at a __(2)__ pressure than the tube side.

	__(1)__	__(2)__
A.	one	higher
B.	both	higher
C.	both	lower
D.	one	lower

Answer: **A**

Technical Reference(s): 1OM-13.1.C Issue 4, Rev. 2, pg. 8

References to be provided during examination: None

Learning Objective: LP-SQS-13.1 ELO 1 & 7

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

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 #	2	
	Group #	2	
	K/A #	063K1.03	
	Importance Rating	2.9	

In the NSA configuration, the 125VDC Battery Charger Output Breakers are ...

A. closed, allowing the charger to maintain a continuous equalizing charge on the respective battery, and opens on a loss of AC input power to the charger.

B. closed, allowing the charger to supply the normal DC loads, and remain closed on a loss of AC input power to the charger.

C. open, and must be manually closed to charge the respective battery when its voltage drops below a preset value.

D. open, and close automatically to charge the respective battery when its voltage drops below a preset value.

Answer: B

Technical Reference(s): 1OM-39.1 Issue 4, Rev. 0

References to be provided during examination: None

Learning Objective: 1SQS-39.1 ELO 2

Question Source: Bank #

Modified Bank # 1LOT2 (1997)

New

Question History: Previous NRC Exam 1LOT2 (1997)

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge: X

Comprehension or Analysis

10 CFR Part 55 Content: 55.41 X

55.43

Comments:

Question # 20 **1LOT4 RO Initial License Exam**

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	2	
	K/A #	064K2.02	
	Importance Rating	2.8	

The Unit 1 EDG fuel oil system has one engine driven pump and one __(1)__ pump that draws fuel oil directly from the __(2)__.

	__(1)__	__(2)__
A.	125 VDC	[EE-TK-10A(B)], Engine Mounted Day Tank
B.	125 VDC	[EE-TK-2A(B)], Fuel Oil Day Tank
C.	120 VAC	[EE-TK-10A(B)], Engine Mounted Day Tank
D.	120 VAC	[EE-TK-2A(B)], Fuel Oil Day Tank

Answer: A

Technical Reference(s): 1OM-36.1.C, Rev. 3

References to be provided during examination: None

Learning Objective: 08-02-358 ELO 4.a & 5

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

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 #	2	
	Group #	2	
	K/A #	064A3.01	
	Importance Rating	4.1	

Given the following:

- The Unit is operating at 100% power with all systems in their at-power, NSA configurations.
- The 1AE 4KV Emergency Bus feeder breaker 1A10 was inadvertently tripped open.
- The 1AE bus is de-energized due to a Start Failure of the NO.1 EDG.

In addition to identifying and correcting the cause of the Start Failure, which of the following actions are necessary before a second start attempt can be successful?

A. Cycle the 125VDC control power for the NO.1 EDG output breaker 1E9.

B. Cycle the NO.1 EDG synch select switch out of, and then back into, the OFF position.

C. Perform a local annunciator test/reset on the NO.1 EDG engine control cabinet.

D. Simultaneously depress both of the NO.1 EDG Stop pushbuttons on BB-C.

Answer: D

Technical Reference(s): 1OM-53A.1.E-0 Issue 1B, Rev. 6, Step 6

References to be provided during examination: None

Learning Objective: 08-02-358 ELO 10

Question Source: Bank # LRT NRC # 0665J
Modified Bank #
New

Question History: Previous NRC Exam
Previous Quiz / Test

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 #	2	
	Group #	3	
	K/A #	005K2.03	
	Importance Rating	2.7	

Given the following:

- The Unit is in Mode 5.
- The "A" RHR Heat Exchanger is in service.
- The lower right corner of the BB-A label for [MOV-1RH-605], RHR Heat Exchanger Bypass valve states ACE2.
- The lower right corner of the BB-A label for [MOV-1RH-758], RHR Heat Exchanger Outlet valve states ACE3.
- [MOV-1RH-605], RHR Heat Exchanger Bypass valve is in manual.
- An electrical fault causes the loss of 480 VAC Emergency Substation 1-9 Bus 1P.

Under the current plant conditions, to increase the RCS cooldown rate from the control room _(1)_ will need to be throttled _(2)_.

	__(1)__	__(2)__
A.	[MOV-1RH-605]	closed
B.	[MOV-1RH-758]	closed
C.	[MOV-1RH-605]	open
D.	[MOV-1RH-758]	open

Answer: D

Technical Reference(s): 1OM-10.1.B, Issue 4, Rev. 0
References to be provided during examination: None
Learning Objective: 08-02-321 ELO 10.b
Question Source: Bank #
Modified Bank #
New X
Question History: Previous NRC Exam
Previous Quiz / Test
Question Cognitive Level: Memory or Fundamental Knowledge
Comprehension or Analysis X
10 CFR Part 55 Content: 55.41 X
55.43
Comments: 605 is powered from "B" train, 1P bus is "B" train

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	3	
	K/A #	007A2.05	
	Importance Rating	3.2	

Given the following:

- The Unit is in Mode 1.
- One PZR Safety Valve is know to be leaking excessively.
- Annunciator A4-37 - PZR RELIEF TANK PRESS HIGH is illuminated.
- PRT Pressure - 65 psig and slowly rising.

If the PRT pressure rise cannot be terminated, the first PRT over pressure protection action to occur is that the PRT __(1)__ relieving PRT pressure to the __(2)__.

	__(1)__	__(2)__
A.	rupture disc will fail	primary drains transfer tank 1DG-TK-1.
B.	rupture disc will fail	CNMT atmosphere.
C.	relief valve will open	CNMT atmosphere.
D.	relief valve will open	primary drains transfer tank 1DG-TK-1.

Answer: B

Technical Reference(s): 1OM-6.5 fig 6-2

References to be provided during examination: None

Learning Objective: 08-02-313 ELO 11.e & 11.f

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43 X

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	3	
	K/A #	007A4.10	
	Importance Rating	3.6	

Note: This is an open reference question.

Given the following:

- An RCS cooldown is in progress.
- There is a steam bubble in the PZR.
- PZR pressure is 415 psig and slowly dropping.
- PRT pressure is 10 psig and slowly rising.
- CNMT vacuum is broken, CNMT is at atmospheric pressure.
- A PZR Code Safety valve is suspected to be leaking.

Which of the following PZR Code Safety valve tail pipe temperatures would indicate that the safety valve is leaking?

A. 450°F

B. 330°F

C. 240°F

D. 212°F

Answer: B

Technical Reference(s): Steam Tables

References to be provided during examination: Steam Tables

Learning Objective: LP-MCD-1.1 ELO 8

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41	X
	55.43	

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	
	Group #	3	
	K/A #	041A4.08	
	Importance Rating	3.0	

With all systems in NSA for the listed plant conditions and the steam dumps available, which of the following describes the proper method of RCS temperature control?

A. Mode 3, immediately following a Rx trip from full power, steam dumps in steam pressure control mode.

B. Mode 3, Rx Startup about to begin, steam dumps in steam pressure control mode.

C. Mode 2, Rx critical at 1E-8 amps, steam dumps in Tavg control mode with rod control in manual.

D. Mode 2, Rx power at 3%, steam dumps in steam pressure control mode with rod control in automatic.

Answer: B

Technical Reference(s): 1OM-50.4.D, Rev. 36 and 1OM-51.4.C Issue 4, Rev. 18

References to be provided during examination: None

Learning Objective: 08-02-335 ELO 9

Question Source: Bank # LRT NRC # 227Q B

Modified Bank #

New

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A #	026AA2.02	026AA2.02
	Importance Rating	2.9	3.6

The Unit is in Mode 1 at 100% power and Operators are performing 1OM-15.4.H - Securing A CCR Pump Or Placing The Spare CCR Pump In Service During Two Pump Operation, with the following system status:

- [1CC-P-1B] "B" Component Cooling Pump is running.
- [1CC-P-1C] "C" Component Cooling pump is racked on the 1AE 4KV Bus.
- [1CC-P-1A] "A" Component Cooling Pump control switch is in PTL.

A loss of offsite power then occurs. All ESF equipment operated as designed except for the NO. 2 EDG which failed to start. Two minutes later, the Operators note that annunciator A6-35 - PRI COMP COOL PUMP DISCH PRESS LOW is lit.

Which of the following is causing annunciator A6-35 to be lit?

A. [PCV-1CC-100] CCR pressure control valve has failed closed.

B. [1CC-P-1C] control switch is in After Start.

C. [1CC-P-1A] is still racked on the 1AE 4KV bus.

D. 1AE 4KV Stub Bus tie breaker 1E5 has opened as designed.

Answer: C

Technical Reference(s): 1OM-15.4.H Issue 4, Rev. 5

References to be provided during examination: None

Learning Objective: 08-02-329 ELO 6.b

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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

10 CFR Part 55 Content: 55.41 (7) 55.43 X

Comments:

Examination Outline Cross-reference: Level		RO	SRO
	Tier #	1	1
	Group #	1	2
	K/A #	027AK1.02	027AK1.02
	Importance Rating	2.8	3.1

Given the following:

- The Unit is operating at 100% power with all systems in their at-power, NSA configurations with the following conditions:
  - PZR Level - on program.
  - PZR Pressure - 2235 psig.
  - PZR Liquid Temperature - 654°F.
  - Letdown Flow - 105 gpm.
- A control circuit malfunction has caused the loss of the PZR heaters.
- The cause of the failure has been identified and corrected.
- When the PZR heaters are returned to service, the following conditions exist:
  - PZR Level - on program.
  - PZR Pressure - 1955 psig.
  - PZR Liquid Temperature - 633°F.
  - Letdown Flow - 97 gpm.
- The PZR heaters are then returned to service and placed in automatic.

When new equilibrium conditions are established, as compared to when the PZR heaters were returned to service, [FCV-1CH-122], Charging Flow Control Valve will be...

A. at the same position because PZR level will still be on program.

B. throttled further closed due to the thermal expansion of the liquid in the PZR.

C. throttled further open due to the thermal expansion of the liquid in the PZR.

D. throttled further open due to the rise in PZR pressure.

Answer: D

Technical Reference(s): Thermodynamics

References to be provided during examination: None

Learning Objective: 08-02-318 ELO 47.b

Question Source: Bank # Modified Bank # New X

Question History: Previous NRC Exam
Previous Quiz / Test

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

10 CFR Part 55 Content: 55.41 X 55.43

Comments: Higher RCS pressure will restore L/D flow to 105 therefore charging flow must rise.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A #	040AA1.04	040AA1.04
	Importance Rating	4.3	4.3

Which of the following will cause a Main Steam Line Isolation?

	SI Status	CNMT Pressure	Steam Line Pressure
A.	Not Blocked	1.9 psig	550 psig
B.	Blocked	3.2 psig	450 psig
C.	Blocked	1.3 psig	450 psig
D.	Not Blocked	2.3 psig	550 psig

Answer: B

Technical Reference(s): 1OM-53A.1.1-K Issue 1C, Rev. 0

References to be provided during examination: None

Learning Objective: LP-SQS-1.1 ELO 9

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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

10 CFR Part 55 Content: 55.41 X
55.43

Comments: The CNMT pressure SLI signal is not blocked when SI is blocked.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A #	051AK3.01	051AK3.01
	Importance Rating	2.8	3.1

Given the following:

- The Unit is operating at 100% full power with all systems in their at power, NSA alignments.
- A reactor trip concurrent with a total loss of offsite power then occurs.

Assuming that all systems functioned as designed and no operator actions are taken, at what temperature will RCS temperature stabilize?

A. 547°F

B. 549°F

C. 550°F

D. 553°F

Answer: D

Technical Reference(s): 1OM-21.1.D Issue 4, Rev. 1

References to be provided during examination: None

Learning Objective: LP-SQS-21.1 ELO 9

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge:	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41	X
	55.43	

Comments: Steam dumps disabled by C-9, RCS temperature will be maintained by the SG ADV controller on the pop open feature (1060 psig/553 F) because these controllers are maintained in manual in NSA.

Question # 30 **1LOT4 RO/SRO Initial License Exam**

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A #	055EK3.02	055EK3.02
	Importance Rating	4.3	4.6

When responding to a loss of all AC power in ECA-0.0 - Loss Of All Emergency 4KV AC Power, the RCS cooldown is stopped when SG pressures are 250 psig. What is the bases for stopping the SG depressurization at this point in the recovery actions?

A. To minimize the adverse effects of Pressurized Thermal Shock.

B. To prevent N_2 injection from disrupting natural circulation flow in the RCS.

C. To maintain adequate shutdown margin.

D. To maintain the minimum required RCP seal Delta-P.

Answer: B

Technical Reference(s): 1OM-53B.4.ECA-0.0 Issue 1C, Rev. 0

References to be provided during examination: None

Learning Objective: LP-SQS-53.3 ELO 3

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41	X
	55.43	

Comments: Cooldown is stopped to isolate SI accumulators.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A #	055EA2.03	055EA2.03
	Importance Rating	3.9	4.7

Note: This is an open reference question.

Which of the following buses will be energized when the Station Blackout (SBO) cross-tie is established to provide power to BVPS Unit 1 Bus 1AE from the BVPS Unit 2 EDG 2-1?

1. Unit 1 Normal 4KV bus 1A.
2. Unit 1 Normal 480V bus 1A.
3. Unit 1 Emergency 480V bus 1N.
4. Unit 2 Normal 4KV bus 2A.

A. 3 only.

B. 1 and 4 only.

C. 1, 3 and 4 only.

D. 1, 2 and 3 only.

Answer: C

Technical Reference(s): 1OM-53A.1.2-M-AE Issue 1C, Rev. 0

References to be provided during examination: 1OM-53A.1.2-M-AE

Learning Objective: 08-02-357 ELO 10 & 11.e

Question Source: Bank # LRT NRC # 0588J
Modified Bank #
New

Question History: Previous NRC Exam
Previous Quiz / Test

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

10 CFR Part 55 Content: 55.41
55.43 X

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A #	057AK3.01	057AK3.01
	Importance Rating	4.1	4.4

When attempting to restore power to Vital Bus II, the procedure directs the Operator to place the Transfer Toggle Switch located on the Vital Bus II Static Switch, to the "TO BYPASS" position. Placing this switch in this position will ...

A. bypass the mechanical interlock on the Manual Bypass Switch, thus allowing it to be operated.

B. manually force the Static Switch to the alternate 480 VAC source, in the event the automatic transfer did not occur.

C. bypass the "In Synch" lockout on the Vital Bus, thus allowing a dead bus, which is not synchronized with the alternate source, to be energized.

D. electrically isolate the Static Switch from the Manual Bypass Switch to prevent a fault in the Static Switch from affecting the Manual Bypass Switch.

Answer: B

Technical Reference(s): 1OM-38.4.AAC Issue 4, Rev. 3

References to be provided during examination: None

Learning Objective: LP-SQS-38.1 ELO 4

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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	1
	Group #	2	1
	K/A #	059AK2.01	059AK2.01
	Importance Rating	2.7	2.8

Which of the following radiation monitor High-High Alarm signals represents the logic required to automatically terminate a radioactive liquid release to the environment from [LW-TK-6A], Laundry and Contaminated Drains Tank?

A. Only [RM-1LW-104], Liquid Waste Effluent Monitor.

B. Only [RM-1LW-116], Liquid Waste Contaminated Drain Monitors.

C. Either [RM-1LW-104], Liquid Waste Effluent -OR- [RM-1LW-116], Liquid Waste Contaminated Drain Monitors.

D. Both [RM-1LW-104], Liquid Waste Effluent -AND- [RM-1LW-116], Liquid Waste Contaminated Drain Monitors.

Answer: B

Technical Reference(s): 1OM-43.4.ACQ Issue 3, Rev. 3, 1OM-43.4.ACR Issue 3, Rev. 4

References to be provided during examination: None

Learning Objective: 1SQS-2379 ELO 4; LP-SQS-WD ELO 3

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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	1
	Group #	1	1
	K/A #	062AK3.03	062AK3.03
	Importance Rating	4.0	4.2

AOP 1.30.2 - River Water/Normal Intake Structure Loss directs that any liquid waste discharges in progress be secured if CCR Heat Exchanger RW pressure cannot be maintained > 20 psig because with a low CCR Heat Exchanger RW pressure...

A. the radioactive liquid waste discharge pumps will be damaged due to overheating.

B. dilution flow for the radioactive liquid release will not be at the value assumed in the RWDA-L.

C. the Aux RW system will be in service and it does not discharge into the same blowdown line as the radioactive liquid release line.

D. the Aux RW system will be in service and dilution flow for the radioactive liquid release cannot be determined if the Aux RW system pumps are in service.

Answer: B

Technical Reference(s): 1OM-30.1.D Issue 4, Rev. 3 and 1/2OM-17.4A.D, Rev. 4

References to be provided during examination: None

Learning Objective: 1SQS-2379 ELO 2

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge:	X
	Comprehension or Analysis	
10 CFR Part 55 Content:	55.41	X
	55.43	

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A #	067AK1.02	067AK1.02
	Importance Rating	3.1	3.9

In the event of a fire at the Intake Structure, who has the primary authority for fighting the fire?

A. The Shippingport Fire Department.

B. The Unit 1 Fire Brigade, with Unit 2 assistance.

C. The Unit 2 Fire Brigade, with Unit 1 assistance.

D. The Midland Volunteer Fire Department.

Answer: B

Technical Reference(s): 1OM-56B.4.1.B, Rev. 8

References to be provided during examination: None

Learning Objective: FB-9337 ELO 7; FB-9340 ELO 5

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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	1
	Group #	1	1
	K/A #	068AK3.18	068AK3.18
	Importance Rating	4.2	4.5

Given the following:

- The Control Room has been evacuated due to a fire.
- [1FW-P-3A], Motor Driven Auxiliary Feedwater Pump is the only operating auxiliary feedwater pump.
- The Operator is directed to locally monitor the temperature of the pump bearings on [1FW-P-3A].

Which of the following is the reason for monitoring the temperature of [1FW-P-3A]?

A. As the auxiliary feed throttle valves are throttled closed, pump heat will raise the temperature of the cooling water for the pump's oil coolers.

B. With the EDG's running, the Auxiliary Building river water pressure is reduced, causing a reduction in cooling water flow to the pump's oil coolers.

C. All but one CCR heat exchanger is removed from service, which raises the temperature of the cooling water for the pump's oil coolers.

D. The auxiliary feedwater pump recirculation valves fail open, causing a reduction in cooling water flow to the pump's oil coolers.

Answer: **A**

Technical Reference(s): 1OM-56C.4.C Rev. 15, pg. 22

References to be provided during examination: None

Learning Objective: LP-SQS-56C.1 ELO 6.d; 08-02-338 ELO 20.c

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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	1
	Group #	1	1
	K/A #	069AA1.01	069AA1.01
	Importance Rating	3.5	3.7

Note: This is an open reference question.

Given the following:

- The Unit is operating at 100% power with all systems in their at-power, NSA configurations.
- It is determined that [LCV-1CH-460A], Letdown Isolation Valve will not close from the Control Room.
- All other required equipment is operable.

Which of the following, if any, are required to be performed to satisfy the CNMT Integrity Technical Specifications?

A. No action is required, the required number of operable CNMT penetration isolation valves in the letdown line is still met.

B. Within 4 hours, isolate the letdown flowpath by closing, de-energizing, and placing a clearance on [LCV-1CH-460B].

C. Station a dedicated Operator at the letdown orifice isolation valve control switches, and direct him to close them in the event of an accident.

D. Isolate the letdown flowpath with [1CH-2], Non-Regen HX Outlet Manual Isolation Valve within 8 hours.

Answer: A

Technical Reference(s): BVPS-1 LRM Table 5.1-1

References to be provided during examination: TS 3.6.3.1

Learning Objective: 08-02-318 ELO 51; 08-04-006 ELO 5; 04-04-002 ELO 3

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge:	X
	Comprehension or Analysis	
10 CFR Part 55 Content:	55.41	X
	55.43	

Comments: This valve is not a CNMT isolation valve.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	1
	Group #	1	1
	K/A #	074EA1.06	074EA1.06
	Importance Rating	3.6	3.9

Given the following:

- The Operators are responding to an event and are currently in FR-C.1 - Response to Inadequate Core Cooling.
- "A" SG NR level is 10%.
- "B" SG NR level is 5%.
- "C" SG NR level is 15%.
- All RCP's are stopped.
- All CCR flow to the RCP's has been lost.
- The Operators are not able to start a HHSI pump.
- Core Exit TC temperatures are 1225°F and rising.

SG pressures cannot be reduced and the Operators are directed to start an RCP. Which of the following must be performed?

A. Establish seal injection or CCR flow to the "C" RCP and then start it.

B. Establish seal injection or CCR flow to the "B" RCP and then start it.

C. Start the "B" RCP regardless of seal injection or CCR flow.

D. Start the "C" RCP regardless of seal injection or CCR flow.

Answer: D

Technical Reference(s): 1OM-53A.1.FR-C.1 Issue 1C, Rev. 0, EOP Attachment 2-C

References to be provided during examination: None

Learning Objective: LP-SQS-53.3 ELO 3

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X

10 CFR Part 55 Content: 55.41 X 55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A #	008AK3.02	008AK3.02
	Importance Rating	3.6	4.1

The throttling process through a leaking PZR PORV is a constant ...

A. enthalpy process, which always results in saturation conditions at the PORV outlet, dependent only upon PRT pressure.

B. enthalpy process, which could result in saturation or superheated conditions at the PORV outlet, dependent upon the enthalpy of the steam at the PORV inlet and PRT pressure.

C. entropy process, which could result in saturation or superheated conditions at the PORV outlet dependent upon the entropy of the steam at the PORV inlet and the PRT pressure.

D. entropy process, which always results in saturation conditions at the PORV outlet dependent only upon the PRT pressure.

Answer: B

Technical Reference(s): GFE Thermodynamics

References to be provided during examination: None

Learning Objective: LP-TMO-5, ELO 7

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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

10 CFR Part 55 Content: 55.41 X
55.43

Comments:

Question # 40 **1LOT4 RO/SRO Initial License Exam**

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A #	009EA1.01	009EA1.01
	Importance Rating	4.4	4.3

Given the following:

- ES-1.2 - Post LOCA Cooldown and Depressurization is in progress.
- "A" and "B" HHSI pumps are in the Injection Mode.
- The "C" RCP is the only RCP that is running.
- PZR pressure is 1785 psig and stable.
- PZR level is 5% and stable.
- RCS subcooling is 56°F and stable.
- All PZR heaters are in Pull-To-Lock.
- The Operators have just opened both PZR spray valves.

Which of the following will rise?

A. HHSI flow and PZR level.

B. HHSI flow and RCS subcooling.

C. PZR level and break flow.

D. RCS subcooling and PZR level.

Answer: A

Technical Reference(s): 1OM-53B.4.ES-1.2 Issue 1C, Rev. 0

References to be provided during examination: None

Learning Objective: LP-SQS-53.3 ELO 3

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41 X	55.43

Comments:

Question # 41 **1LOT4 RO/SRO Initial License Exam**

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	1
	Group #	2	1
	K/A #	011EK2.02	011EK2.02
	Importance Rating	2.6	2.7

Given the following:

- The Unit is operating at 100% power with all systems in their at-power, NSA configurations.
- A large break LOCA has occurred.
- When the main generator tripped, the 1A Normal 4KV bus failed to transfer to the off-site power source (SSST).
- It has been exactly 3 minutes and 15 seconds since a CIB occurred.

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

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

Answer: B

Technical Reference(s): 1OM-53A.1.E-0 Issue 1C, Rev. 0, EOP Attachment 1K and 1OM-13.2.B

References to be provided during examination: None

Learning Objective: 08-02-357 ELO 11; LP-SQS-53.3 ELO 6

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge: X

Comprehension or Analysis

10 CFR Part 55 Content: 55.41 X 55.43

Comments: RS pump timers set at 3 minutes 30 seconds and 3 minutes 45 seconds

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	1
	Group #	2	1
	K/A #	E04.EA1.1	E04EA1.1
	Importance Rating	4.0	4.0

The Operators are responding to an event and are at step 2 of ECA-1.2 - LOCA Outside CNMT. This step directs the Operator to manually close [MOV-1SI-890A], LHSI To RCL Hot Legs Isolation Valve. [MOV-1SI-890A] is open. Which of the following is the MINIMUM action required to complete this task?

A. Place the BB-A control switch to Close.

B. Install the shorting bar and place the BB-A control switch to Close.

C. Install the shorting bar and close the circuit breaker for the valve control circuit.

D. Install the shorting bar, close the circuit breaker for the valve control circuit and place the BB-A control switch to Close.

Answer: B

Technical Reference(s): 1OM-53A.1.ECA-1.2 Issue 1C, Rev. 0, 1OM-11.1.D

References to be provided during examination: None

Learning Objective: 08-02-323 ELO 7.c

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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	1
	Group #	2	2
	K/A #	E11EA2.2	E11EA2.2
	Importance Rating	3.4	4.2

Note: This is an open reference question.

Given the following:

- The Operators are responding to an event and are currently in ECA-1.1 - Loss Of Emergency Coolant Recirculation, Step 11 - Check Containment Recirculation Spray Effectiveness.
- CNMT pressure has peaked at 12.5 psig and is currently 10.7 psia and stable.
- No Quench Spray pumps are running.
- RWST level is 8.0 feet.

Which of the following actions are required to be taken next?

A. Check if HHSI is in service.

B. Transition to ES-1.3 - Transfer To Cold Leg Recirculation.

C. Verify [1RW-199], RW Flow to Unit 2 Blowdown is closed.

D. Verify all available Recirculation Spray Pumps are running.

Answer: **C**

Technical Reference(s): 1OM-53A.1.ECA-1.1 Issue 1C, Rev. 0, pg. 8

References to be provided during examination: 1OM-53A.1.ECA-1.1, pg. 7-9

Learning Objective: LP-SQS-53.3 ELO 3 & 6

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41 (10)	
	55.43 X	

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A #	022AA1.08	022AA1.08
	Importance Rating	3.4	3.3

Given the following:

- The Unit is operating at 100% power with all systems in their at-power, NSA configurations.
- [FCV-1CH-113B], Blender to VCT Out Flow Control Valve is failed closed.
- An inadvertent CNMT Phase A (CIA) signal has been actuated.

With no Operator action, VCT level will …

A. cycle between 50 and 81%.

B. cycle between 20 and 43%.

C. stabilize somewhere between 20 and 43%.

D. stabilize at 5%.

Answer: D

Technical Reference(s): 1OM-7.5.A.39, Rev. 8

References to be provided during examination: None

Learning Objective: 08-02-318 ELO 44.a

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41	X
	55.43	

Comments: Auto M/U will be locked out on deviation flow, VCT level will drop due to seal injection flow with no letdown and stabilize when charging pump suction swaps to the RWST.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A #	025AK1.01	025AK1.01
	Importance Rating	3.9	4.3

Given the following:

- RCS temperature is 300°F.
- RCS pressure is 325 psig.
- PZR level is 22%.
- Only one train of RHR is operable and is in service.
- [MOV-1CH-142], RH Ltdn To Non Regen Hx In Flow Cont Vlv has gone closed and cannot be reopened.

Which of the following are the operational implications of this failure?

A. The RCS will reach boiling conditions in less than 2 hours.

B. Flashing of letdown will occur at the outlet of the non-regenerative HX.

C. Charging and seal injection flow will need to be reduced to minimum.

D. RCS activity levels will drop dramatically.

Answer: **C**

Technical Reference(s): 1OM-10.1.D Issue 4, Rev. 0

References to be provided during examination: None

Learning Objective: 08-02-321 ELO 3 & 12

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41	X
	55.43	

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A #	032AK2.01	032AK2.01
	Importance Rating	2.7	3.1

Given the following:

- The Unit is in Mode 2.
- Both source range instruments are in service.
- Permissive P-6 has been met.
- The Operators are about to block the source range high flux trips and de-energize the source range instruments.

If the Operators place the HV Manual On/Off switch on the N-31 and N-32 Source Range Instrument drawers to the "HV OFF" position instead of placing the BB-B Block Source Range Trip Train A and Train B control switches to the "BLOCK" position, the source range instruments will…

A. de-energize but on a subsequent Rx S/D, will not energize until the HV Manual On/Off switches are taken out of the "HV OFF" position.

B. de-energize but on a subsequent Rx S/D, will not energize until the Block Source Range Trip Train A and B control switches are placed in "RESET".

C. not de-energize until reactor power is greater than the P-10 Permissive setpoint.

D. operate normally, the BB-B switches are redundant to the SR NI drawer switches.

Answer: A

Technical Reference(s): 1OM-2.1.D Issue 4, Rev. 0

References to be provided during examination: None

Learning Objective: LP-SQS-2.1 ELO 3 & 8

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam X
Previous Quiz / Test

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	1
	Group #	2	2
	K/A #	033AK1.01	033AK1.01
	Importance Rating	2.7	3.0

With the Unit operating at 100% power with all systems in their at-power, NSA configurations, Intermediate Range Channel N-35 compensating voltage drifts to a significantly higher value than required. If the reactor would trip, N-35 will indicate...

A. high, preventing the source range from automatically energizing when required.

B. high, and the source range will be energized when N-35 is > P-6.

C. low, and the source range will be energized as soon as N-35 is < P-6.

D. low, and the source range will be energized as soon as N-36 is < P-6.

Answer: D

Technical Reference(s): 2OM-2.1.B Issue 4, Rev. 1, pg. 17

References to be provided during examination: None

Learning Objective: LP-SQS-2.1 ELO 4

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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

10 CFR Part 55 Content: 55.41 X
55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A #	037G2.2.25	037G2.2.25
	Importance Rating	2.5	3.7

What is the most restrictive accident upon which the maximum allowable Technical Specification primary-to-secondary leakage limit is based?

A. Main Steam Line Break Outside CNMT.

B. Steam Generator Tube Rupture.

C. Loss of Offsite Power.

D. Steam Generator Tube Rupture with a Loss of Offsite Power.

Answer: A

Technical Reference(s): TS 3.4.6.2 Bases

References to be provided during examination: None

Learning Objective: 08-04-006 ELO 5

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge: X

Comprehension or Analysis

10 CFR Part 55 Content: 55.41 (5)

55.43 X

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	1
	Group #	2	2
	K/A #	038EK3.06	038EK3.06
	Importance Rating	4.2	4.5

During the response to a SG Tube Rupture, the Operator is directed to close the affected SG MSIV. Which of the following is the primary reason that the ruptured SG MSIV is closed?

A. To ensure heat sink requirements are maintained during the subsequent RCS cooldown.

B. To minimize challenges to the ruptured SG code safety valves.

C. To ensure that the thermal blanket on the ruptured SG U-tubes is maintained during the subsequent RCS cooldown.

D. To ensure that adequate RCS subcooling exists during the subsequent RCS depressurization.

Answer: D

Technical Reference(s): 1OM-53B.4.E-3 Issue 1C, Rev. 0

References to be provided during examination: None

Learning Objective: LP-SQS-53.3 ELO 3

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

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	1
	Group #	2	2
	K/A #	E05EK1.2	E05EK1.2
	Importance Rating	3.9	4.5

Given the following:

- The Operators are responding to an event and are currently in FR-H.1 - Response to Loss of Secondary Heat Sink.
- All SG's have been classified as "Hot/Dry SG's".
- RCS bleed and feed is in progress.
- RCS temperatures are stable.
- Feedwater capability is then restored via the dedicated Auxiliary Feed Pump.
- The Operators then establish feedwater flow to only one SG.

The reason for feeding **only one SG** under these conditions is to ...

A. prevent a rapid cooldown of the RCS that could lead to a pressurized thermal shock condition.

B. ensure that if a SG failure occurs due to excessive stresses, the failure is limited to one SG.

C. prevent the dedicated Auxiliary Feed Pump from reaching runout conditions.

D. maximize the available feed flow to one SG to restore the RCS heat sink as soon as possible.

Answer: B

Technical Reference(s): 1OM-53.B.4.FR-H.1 Issue 1B, Rev. 4

References to be provided during examination: None

Learning Objective: LP-SQS-53.3 ELO 3

Question Source: Bank #
Modified Bank # LRT NRC # 556Q
New

Question History: Previous NRC Exam
Previous Quiz / Test

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	1
	Group #	2	2
	K/A #	061AK3.02	061AK3.02
	Importance Rating	3.4	3.6

The annunciator response procedure for [RM-1RM-218A(B)], Control Room Area Gamma Radiation Monitor High alarm requires the Operator to ensure [1VS-F-41A,B], Control Room Emergency Supply Fans are in the "STOP" position. Which of the following is the reason that these fans are required to be in the "STOP" position rather than in the "AUTOMATIC" position?

A. The auto start of [1VS-F-41A or B] will cause [1VS-D-40-1A or B], Control Room Air Intake Damper to open.

B. The auto start of [1VS-F-41A or B] will de-activate CREBAPS on Unit 2.

C. The lead fans for a CREBAPS actuation are [2HVC-FN241A(B)], the Unit 2 fans; [1VS-F41A and B] are for manual backup only.

D. Maintaining [1VS-F-41A(B)] in "STOP" ensures that their associated timers are not started, thereby ensuring a complete discharge of the CREBAPS bottles.

Answer: C

Technical Reference(s): 1OM-43.4.ADP Issue 4, Rev. 2

References to be provided during examination: None

Learning Objective: 08-02-013 ELO 2.b & 6

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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	1
	Group #	2	2
	K/A #	E16EK3.1	E16EK3.1
	Importance Rating	2.9	3.1

Throughout the EOP network, many process parameter setpoints are listed using Normal and Adverse CNMT values. If CNMT radiation levels exceed 1E+5 R/Hr then subsequently drop below 1E+5 R/Hr, Adverse CNMT parameter values ...

A. need to be continued, because once CNMT radiation levels exceed 1E+5 R/Hr, the CNMT instrument integrated dose limit will have already been exceeded.

B. need to be continued, because the control room team has no way of determining whether the CNMT instrument integrated dose limit has been exceeded.

C. do not need to be continued, because once CNMT radiation levels drop below 1E+5 R/Hr, the accuracy of the CNMT instruments will return to within acceptable limits.

D. do not need to be continued, because if CNMT radiation levels drop below 1E+5 R/Hr, the CNMT instrument integrated dose limit could not have been exceeded.

Answer: B

Technical Reference(s): 1OM-53B.5.GI-2 Issue 1B, Rev. 2

References to be provided during examination: None

Learning Objective: LP-SQS-53.2 ELO 15; LP-SQS-53.1 ELO 1

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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	1
	Group #	3	3
	K/A #	E13EK1.2	E13EK1.2
	Importance Rating	3.0	3.3

Note: This is an open reference question.

The Operators are responding to an event and are currently in E-3 - Steam Generator Tube Rupture with the following conditions:

- CNMT parameters are at pre-event values.
- "C" SG has been isolated per E-3.
- "A" and "B" SG NR levels are 3%.
- "C" SG NR level is 65%.
- "A" & "B" SG's have a total of 200 gpm AFW flow.
- Due to equipment problems, no additional AFW flow can be obtained.
- "A" and "B" SG pressures are 1010 psig.
- "C" SG pressure is 1100 psig.

Which of the following applies to the above listed conditions?

A. FR-H.1 - Response to Loss of Secondary Heat Sink must be implemented immediately.

B. FR-H.2 - Response to Steam Generator Overpressure must be implemented immediately.

C. FR-H.3 - Response to Steam Generator High Level may be implemented at the ANSS discretion.

D. FR-H.4 - Response to Loss of Normal Steam Release Capabilities may be implemented at the ANSS discretion.

Answer: D

Technical Reference(s): 1OM-53A.1.FR-H.4 Issue 1C, Rev. 0

References to be provided during examination: 1OM-53.A.1.F-O.3

Learning Objective: LP-SQS-53.3 ELO 6

Question Source: Bank # Modified Bank # New X

Question History: Previous NRC Exam

Previous Quiz / Test

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

10 CFR Part 55 Content: 55.41 X 55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A #	003K3.01	003K3.01
	Importance Rating	3.7	4.0

Given the following:

- The unit is in Mode 3.
- Tave is 547°F.
- PZR Pressure is 2235 psig.
- 2 sets of PZR backup heaters are energized.
- All 3 RCP's are running.

If the "C" RCP were to trip under these conditions, the flow through [PCV-1RC-455B], PRZ Spray Valve will __(1)__ and indicated "C" RCS loop flow will stabilize at a value __(2)__ 0%.

	__(1)__	__(2)__
A.	rise	equal to
B.	drop	equal to
C.	rise	greater than
D.	drop	greater than

Answer: D

Technical Reference(s): 1OM-1.4.IF, Rev. 4 and Simulator Response

References to be provided during examination: None

Learning Objective: 1/2 LP-ATA-3.2 ELO 1.e; 1LP-LOT-II-1 ELO 1-4

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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

10 CFR Part 55 Content: 55.41 X 55.43

Comments: B spray valve is off of the 'C' loop. 'C' loop flow will reverse causing indicated flow to be > 0%.

Question # 55 **1LOT4 RO/SRO Initial License Exam**

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A #	003A2.02	003A2.02
	Importance Rating	3.7	3.9

Given the following:

- The Unit is returning to operation from an outage.
- Shutdown Bank "A" is fully withdrawn.
- Shutdown Bank "B" is being withdrawn.
- Annunciator A3-82 - REACTOR COOL PP BRG OIL RESERVOIR LOW has just illuminated for the 1A RCP.
- Shutdown Bank "B" rod motion is stopped at 175 steps.
- An emergency CNMT entry was made and the Operator reports that there is a large leak in the 1A RCP oil piping and recommends that the RCP be shutdown.

Which of the following describes the required actions for this situation?

A. Trip the 1A RCP, a reactor trip is not required, refer to the Alarm Response Procedure for 1A RCP Low Flow.

B. Trip the reactor, trip the 1A RCP, but do not enter E-0 - Reactor Trip or Safety Injection because E-0 is not applicable for this mode of operation.

C. Trip the 1A RCP, wait three minutes, then trip the reactor.

D. Trip the reactor, wait three minutes, then trip the 1A RCP.

Answer: **A**

Technical Reference(s): 1OM-6.4.AAI, Issue 4, Rev. 2

References to be provided during examination: None

Learning Objective: 08-02-312 ELO 10.t & 10.u

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X 55.43 X

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A #	004K6.07	004K6.07
	Importance Rating	2.7	2.8

Given the following conditions:

- Reactor power is 90%.
- PZR level is 51% and stable.
- VCT level is 30% and rising.
- Auto makeup is not in progress.
- Letdown flow on [FI-1CH-150] is 60 gpm.
- Charging flow on [FI-1CH-122] is 45 gpm.
- RCP seal injection flows are 1A - 8 gpm, 1B - 10 gpm, 1C - 8 gpm.
- RCP No. 1 seal leakoff flows are 1A - 4 gpm, 1B - 4 gpm, 1C - 3 gpm.
- No annunciators are illuminated.

Which of the following is causing the above listed conditions?

A. There is a tube leak in the seal water heat exchanger.

B. [MOV-1CH-307], RCP #1 Seal Bypass Valve is open.

C. [PCV-1CH-145], Letdown Pressure Control Valve has failed open.

D. There is a tube leak in the non-regenerative heat exchanger.

Answer: A

Technical Reference(s): 1OM-15.4.AAC Issue 4, Rev. 7 and Simulator Response

References to be provided during examination: None

Learning Objective: 08-02-318 ELO 48

Question Source: Bank # 1LOT2 (1997)
Modified Bank #
New

Question History: Previous NRC Exam 1LOT2 (1997)
Previous Quiz / Test

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

10 CFR Part 55 Content: 55.41 X
55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A #	004A2.18	004A2.18
	Importance Rating	3.1	3.1

Given the following:

- The Unit is in Mode 3 with all systems in their NSA configurations.
- Tave is 547°F.
- PZR pressure is 2235 psig.
- VCT level is 40%.
- An RCS cooldown is then commenced at 50°F/hr.

Which of the following VCT level transmitter failures will result in gas binding the HHSI pumps if no Operator action is taken?

A. [LT-1CH-112] fails as is.

B. [LT-1CH-112] fails low.

C. [LT-1CH-115] fails as is.

D. [LT-1CH-115] fails low.

Answer: C

Technical Reference(s): 1OM-7.5.A.39, Rev. 8

References to be provided during examination: None

Learning Objective: 08-02-318 ELO 47 & 48

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43 X

Comments: Auto M/U comes off of 115. Failed as is, auto swap to RWST will not occur (2/2 required < 5%).

Question # 58 **1LOT4 RO/SRO Initial License Exam**

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A #	013K4.13	013K4.13
	Importance Rating	3.7	3.9

Given the following:

- The Unit is operating at 100% power with all systems in their at-power, NSA configurations.
- An automatic Safety Injection occurred due to a Main Steam Line Break downstream of the MSIV's.
- All MSIV's are closed.
- The Operators have transitioned to FR-H.1 - Response To Loss Of Secondary Heat Sink due to a loss of all auxiliary feedwater.
- Safety Injection has not been reset.
- All Safety Injection first out annunciators have cleared.
- The Operators are preparing to start a main feedwater pump.

Under these conditions, resetting _____ required to allow the main feedwater pump to start.

A. only the SI signal is

B. only the FWI signal is

C. the SI and FWI signals is

D. the SI and FWI signals is NOT

Answer: C or D

Technical Reference(s): 1OM-11.2.A Issue 4, Rev. 2

References to be provided during examination: None

Learning Objective: 08-02-338 ELO 10.a & 11.a

Question Source:	Bank #	Modified Bank #	
	New		X
Question History:	Previous NRC Exam		
	Previous Quiz / Test		
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 #	2	2
	Group #	1	1
	K/A #	015K1.01	015K1.01
	Importance Rating	4.1	4.2

Given the following:

- The Unit is operating at 100% power with all systems in their at-power, NSA configurations except for Power Range Channel N-41, which has been removed from service in accordance with the respective AOP.
- The control power fuses for Power Range Channel N-42 then blow.

Under these conditions, the reactor __(1)__ automatically trip and the Source Range Nuclear Instruments __(2)__ automatically energize when required.

	__(1)__	__(2)__
A.	should	will
B.	should	will not
C.	should not	will
D.	should not	will not

Answer: B

Technical Reference(s): 1OM-2.2.A, Rev. 2

References to be provided during examination: None

Learning Objective: LP-SQS-2.1 ELO 5 & 12

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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

10 CFR Part 55 Content: 55.41 X
55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A #	017K5.02	017K5.02
	Importance Rating	3.7	4.0

Note: This is an open reference question.

Under which of the following conditions would the RCS be 50°F subcooled?

	5 Hottest Core Exit TC's (°F)	RCS Pressure (psig)
A.	658	2000
B.	667	1735
C.	524	1250
D.	430	750

Answer: C

Technical Reference(s): Steam Tables

References to be provided during examination: Steam Tables

Learning Objective: LP-TMO-5 ELO 5

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A #	022A1.01	022A1.01
	Importance Rating	3.6	3.7

Note: This is an open reference question.

What are the Technical Specification limits for CNMT average air temperature when the Ohio River water temperature is 87.5°F?

A. $\geq 75°F$ and $\leq 105°F$

B. $\geq 75°F$ and $\leq 95°F$

C. $\geq 95°F$ and $\leq 105°F$

D. $\geq 100°F$ and $\leq 105°F$

Answer: **A**

Technical Reference(s): TS 3.6.1.5, 3.6.1.4 and Fig 3.6-1

References to be provided during examination: TS 3.6.1.5, 3.6.1.4 and Fig 3.6-1

Learning Objective: 08-04-006 ELO 5; 04-04-002 ELO 7

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41 X	
	55.43	

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A #	056A2.04	056A2.04
	Importance Rating	2.6	2.8

With the Unit operating at 100% power with all systems in their at-power, NSA configurations, a main condensate pump trips. Which of the following describes the plant response to this pump trip?

A. The standby condensate pump will automatically start and there will be little to no effect on SG feed flow.

B. The reactor will trip on low SG water levels unless power is reduced until Annunciator A7-6 - SG FEED PUMP SUCT PRESS LOW clears.

C. Main feed pump suction pressure will be maintained acceptable by the combination of the running condensate pump and the heater drain pumps.

D. Main feed pump suction pressure will be maintained acceptable for four minutes by the automatic opening of [TV-1CN-100], Feedwater Heater Bypass valve.

Answer: B

Technical Reference(s): 1OM-22.4.AAE Issue 4, Rev. 2

References to be provided during examination: None

Learning Objective: 08-02-338 ELO 22

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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

10 CFR Part 55 Content: 55.41 X
55.43 X

Comments:

Question # 63 **1LOT4 RO/SRO Initial License Exam**

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A #	059K4.08	059K4.08
	Importance Rating	2.5	2.7

Given the following:

- The Unit is operating at 80% power with all systems in their at-power, NSA configurations.
- Annunciator A7-42 - LOOP 1 FEEDWATER FLOW GREATER THAN STEAM FLOW has just energized.
- Control rods are stepping out.
- "A" SG NR level is 46% and rising.
- "B" SG NR level is 44% and stable.
- "C" SG NR level is 44% and stable.
- Main Generator output is stable.

Which of the following is the cause of this transient?

A. [PT-1MS-475], Main Steam Pressure Transmitter has failed high.

B. [PT-1MS-446], Turbine Impulse Pressure Transmitter has failed low.

C. [FCV-1FW-478], Main Feed Regulating Valve has lost its air supply.

D. A Rod Control System failure is causing an uncontrolled rod withdrawal.

Answer: A

Technical Reference(s): 1OM-24.1.D Issue 4, Rev. 2

References to be provided during examination: None

Learning Objective: 08-02-338 ELO 21.d

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41	X
	55.43	

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A #	059A4.12	059A4.12
	Importance Rating	3.4	3.5

Given the following:

- The Unit is operating at 28% power with all systems in their at-power, NSA configurations.
- "A" Main Feed Pump is in service.
- "A" and "B" Main Feed Regulating Valves (MFRV's) are in auto.
- "A" and "B" Bypass Feed Regulating Valves (BFRV's) are in manual and closed.
- "C" MFRV and BFRV are in manual and both are throttled.
- Due to a controller malfunction, annunciator A7-44 - "A" SG HI-HI LEVEL illuminates.

Which of the following describes the expected status of the "C" MFRV and "A" Main Feed Pump?

	"C" MFRV	"A" Main Feed Pump
A.	Closed	Running
B.	Throttled	Tripped
C.	Closed	Tripped
D.	Throttled	Running

Answer: C

Technical Reference(s): UFSAR Logic Fig. 7.2-1 Sh. 13

References to be provided during examination: None

Learning Objective: 08-02-338 ELO 11.b

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X 55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A #	061K1.01	061K1.01
	Importance Rating	4.1	4.1

Regarding the AFW system, [1FW-P-3A,] "A" Motor Driven AFW Pump has the capability of feeding __(1)__ AFW header(s) and the AFW line to each SG penetrates the CNMT wall through __(2)__ CNMT penetration.

	_(1)_	_(2)_
A.	1	the main feed line
B.	1	its own
C.	2	the main feed line
D.	2	its own

Answer: A or C

Technical Reference(s): 1OM Figure 24-1

References to be provided during examination: None

Learning Objective: 08-02-338 ELO 5 & 8

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

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 #	2	2
	Group #	1	1
	K/A #	061A2.04	061A2.04
	Importance Rating	3.4	3.8

Given the following:

- The Unit was operating at 100% power with all systems in their at-power, NSA configurations when a tornado passing through the site causes the following damage:
  - A loss of offsite power with all diesel generators, including the ERF "Black" diesel generator, starting and loading as required.
  - A rupture of [WT-TK-11], Turbine Plant Demineralized Water Tank resulting in it being totally unavailable.
- Annunciator A7-7 - STEAM UNAVAILABLE TO TURBINE DRIVEN FEED PUMP is illuminated.
- [MOV-1MS-105], Steam Supply to Turbine Driven AFP is open.
- All NR SG water levels are offscale low.
- All SG pressures are 1000 psig and slowly rising.

Assuming that an Operator is NOT dispatched to manipulate field components, in addition to [1FW-P-3A(B)], Motor Driven AFW Pumps, which of the following, if any, are currently capable of providing feed flow to the SG's?

A. Turbine Driven Auxiliary Feed Pump.

B. Condensate Pump.

C. Dedicated Auxiliary Feed Pump.

D. There is currently no additional source of feed flow to the SG's.

Answer: D

Technical Reference(s): 1OM-24.4.AAN, Issue 3, Rev. 2 and 1OM Figure 22-1

References to be provided during examination: None

Learning Objective: 08-02-338 ELO 4 & 5; 08-02-357 ELO 11.e

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41 X	55.43 X

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A #	068K1.07	068K1.07
	Importance Rating	2.7	2.9

The Unit 1 Liquid Waste Disposal System receives an input from all of the following EXCEPT the ...

A. Primary Drains Transfer Tank pump discharge.

B. Unit 1 High Level Waste Drain Tanks.

C. Aerated Drains from the PAB sumps.

D. Reactor CNMT sump pump discharge.

Answer: A

Technical Reference(s): 1OM Figures 17-1, 17-2 and 17-3

References to be provided during examination: None

Learning Objective: LP-SQS-17.1 ELO 2

Question Source: Bank # U1 LOT
Modified Bank #
New

Question History: Previous NRC Exam
Previous Quiz / Test

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

10 CFR Part 55 Content: 55.41 X
55.43

Comments: Primary Drains Discharge Tank Pumps discharge to the degassifiers.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A #	071K4.01	071K4.01
	Importance Rating	2.6	3.0

A malfunction in the Unit 1 Waste Gas System is causing [GW-TK-1A], Waste Gas Decay Tank pressure to steadily rise. With no Operator action, which of the following will occur first?

A. A pressure regulating valve will open, causing an in line rupture disc to fail, allowing the PCV to regulate pressure.

B. A relief valve will open, causing an in line pressure control valve to open and regulate pressure.

C. A relief valve will cycle open and closed to maintain pressure.

D. A rupture disc, with an in line restricting orifice, will fail.

Answer: **A**

Technical Reference(s): 1OM-19.1.D Issue 4, Rev. 0

References to be provided during examination: None

Learning Objective: 08-02-333 ELO 4.d

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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 #	2	2
	Group #	1	1
	K/A #	072K4.01	072K4.01
	Importance Rating	3.3	3.6

Which of the following is the minimum required to cause the automatic isolation of a CNMT purge?

A. 1/2 CNMT Purge Exhaust Monitors [RM-1VS-104A or B] in HIGH-HIGH alarm.

B. 2/2 CNMT Purge Exhaust Monitors [RM-1VS-104A and B] in HIGH-HIGH alarm.

C. 1/2 CNMT Purge Exhaust Monitors [RM-1VS-104A or B] in HIGH-HIGH alarm and a CIB CNMT isolation signal.

D. 2/2 CNMT Purge Exhaust Monitors [RM-1VS-104A and B] in HIGH-HIGH alarm and a CIB CNMT isolation signal.

Answer: A

Technical Reference(s): 1OM-44C.1.B Issue 4, Rev. 0 and 1OM-43.1.C Issue 4, Rev. 3

References to be provided during examination: None

Learning Objective: 1SQS-2379 ELO 4; LP-SQS-44C.1 ELO 5

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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 #	2	2
	Group #	2	2
	K/A #	002K4.02	002K4.02
	Importance Rating	3.5	3.8

Which of the following RVLIS indications must be monitored when determining reactor vessel level when the "A" RCP is the only RCP in service?

A. Only the Full Range.

B. Only the Upper Range.

C. Only the Dynamic Range.

D. RVLIS is not available with only one RCP in service.

Answer: C

Technical Reference(s): 1OM-6.1.D Issue 4, Rev. 1

References to be provided during examination: None

Learning Objective: 08-02-316 ELO 4

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

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 #	2	1
	Group #	2	1
	K/A #	006A4.08	E02EK2.2
	Importance Rating	4.2	3.9

Which of the following is the proper sequence to terminate Safety Injection in accordance with ES-1.1 - SI Termination after one (1) HHSI pump is stopped?

1. Check PZR pressure stable or rising.
2. Isolate BIT flow.
3. Restore CNMT Instrument Air.
4. Establish normal charging flow.

A. 3, 1, 4, 2.

B. 4, 2, 1, 3.

C. 3, 2, 4, 1.

D. 1, 2, 4, 3.

Answer: A

Technical Reference(s); 1OM-53A.1.ES-1.1 Issue 1C, Rev. 0

References to be provided during examination: None

Learning Objective: LP-SQS-53.3 ELO 6

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A #	010A4.01	010A4.01
	Importance Rating	3.7	3.5

Given the following:

- The PZR pressure master controller is in automatic with a setpoint of 2235 psig.
- Both PRZR spray valve controllers are in manual.
- Actual RCS pressure is stable at 2235 psig.

If a set of back-up heaters is manually energized, the master PZR pressure controller output will __(1)__ and the PZR spray valves will __(2)__.

	__(1)__	__(2)__
A.	rise	throttle open
B.	rise	remain as is
C.	drop	throttle open
D.	drop	remain as is

Answer: **B**

Technical Reference(s): UFSAR Figs. 7.3-16 and 7.3-17

References to be provided during examination: None

Learning Objective: 08-02-313 ELO 5.f & 14

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A #	011K1.03	011K1.03
	Importance Rating	3.7	4.0

Note: This is an open reference question.

With the Unit in Mode 3 returning from a refueling outage, it has been reported that two PZR instrument root isolation valves have been found out of position. [RC-268] and [RC-269] are closed. All other systems are in their NSA configurations. Under these conditions, __(1)__ PZR PORV's, __(2)__ PZR Pressure protection instruments and __(3)__ PZR Level protection instruments may be considered operable?

	(1)	(2)	(3)
A.	0	1	1
B.	3	2	2
C.	1	2	3
D.	2	2	2

Answer: B

Technical Reference(s): 1OM Fig 6-1, TS 3.3.1, 3.4.11

References to be provided to applicants during examination: 1OM Figure 6-2 PZR Section Only

Learning Objective: 08-02-313 ELO 4

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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

10 CFR Part 55 Content: 55.41 X
55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A #	006K5.02	006K5.02
	Importance Rating	2.8	2.9

Given the following:

- The Unit is operating at 100% power with all systems in their at-power, NSA configurations.
- The "1A" SI Accumulator Level High - Low annunciators are lit.
- The "1A" SI Accumulator parameters are:
  - Level - 86%
  - Pressure - 655 psig

Which of the following must be done to the "1A" SI Accumulator to clear the annunciators without causing any other SI accumulator parameter to exceed its TS required value during the process?

A. Vent to 610 psig, then drain to 70%.

B. Fill to 95% and if necessary, vent to keep pressure below 670 psig.

C. Drain to 75% and if necessary, pressurize to keep pressure above 620 psig.

D. Fill to 95%, then vent to 610 psig.

Answer: **C**

Technical Reference(s): 1OM-11.4.AAM Issue 3, Rev. 2; 1OM-11.4.AAO Issue 3, Rev. 0; 1OM-11.4.AAF Issue 3, Rev. 2 and 1OM-11.4.AAH Issue 3, Rev. 3

References to be provided during examination: None

Learning Objective: 08-02-323 ELO 13.d; 1LP-LOT-II-2 ELO 3-2

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41	X
	55.43	

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A #	033A2.02	033A2.02
	Importance Rating	2.7	3.0

Note: This is an open reference question.

Given the following:

- The Unit is in Mode 6 with the refueling cavity being filled.
- Refueling cavity level is at the reactor vessel flange.
- A total loss of spent fuel cooling then occurs.
- Efforts to restore the spent fuel cooling system fail.

Recirculation of spent fuel pool water through which of the following could be used as an alternate method of providing spent fuel cooling?

A. Only the RWST and RWST coolers.

B. Only the RHR heat exchangers.

C. The RHR heat exchangers or the RWST and RWST coolers.

D. The RWST and RWST coolers or the Fire Protection Water System.

Answer: A

Technical Reference(s): 1OM-20.4.AAD Issue 4, Rev. 2

References to be provided during examination: 1OM-20.4.AAD

Learning Objective: 1SQS-2351 ELO 14

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41	X
	55.43	X

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A #	035K3.03	035K3.03
	Importance Rating	3.0	3.1

Given the following:

- The Unit is in Mode 3 with all systems in their NSA configurations.
- [TV-1BD-100A], SG Blowdown Isolation valve is open and controlled by [SOV-1BD-100A].
- [SOV-1BD-100A] is powered from [PNL-DC-3].
- "A" Main Feed Pump is in Pull-To-Lock.
- "B" Main Feed Pump is running maintaining SG water level.

Under which of the following conditions will [TV-1BD-100A] remain open?

A. An inadvertent Train "B" only CIA actuation.

B. The "1A" and "1B" Normal 4KV buses are de-energized.

C. "C" SG steam line break in the pipe tunnel area.

D. The "B" Main Feed Pump trips on overcurrent.

Answer: A

Technical Reference(s): 1OM-25.1.D Issue 4, Rev. 0

References to be provided during examination: None

Learning Objective: LP-SQS-25.1 ELO 5

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41	X
	55.43	

Comments: B and D will cause the TDAFW pump to auto start which trips the B/D isolation valves.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A #	039K4.02	039K4.02
	Importance Rating	3.1	3.2

Given the following:

- The Unit is operating at 100% power with all systems in their at-power, NSA configurations.
- A grid disturbance caused a main generator trip and a loss of all off site power.
- All equipment operated as designed and no Operator action was taken.

For the above listed conditions, RCS temperature is being controlled at …

A. 547°F by the condenser steam dumps.

B. 549°F by the condenser steam dumps.

C. 547°F by the atmospheric steam dumps.

D. 553°F by the atmospheric steam dumps.

Answer: D

Technical Reference(s): 1OM-21.2.B Issue 4, Rev. 2

References to be provided during examination: None

Learning Objective: 08-02-335 ELO 5

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41	X
	55.43	

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A #	055A3.03	055A3.03
	Importance Rating	2.5	2.7

A __(1)__ signal will automatically close [TV-1SV-100A], Air Ejector Discharge To CNMT, and to reopen the valve, no __(2)__ signal must be present.

1. [RM-1SV-100], Condenser Air Ejector Rad Monitor High-High alarm
2. CIA
3. CIB

	_(1)_	_(2)_
A.	1	3
B.	2	2
C.	3	1
D.	3	3

Answer: D

Technical Reference(s): 1OM-26.1.D Issue 4, Rev. 5, pg. 38

References to be provided during examination: None

Learning Objective: 08-02-340 ELO 5.b & 6.b

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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 #	2	2
	Group #	2	2
	K/A #	062A2.05	062A2.05
	Importance Rating	2.9	3.3

Given the following:

- 1D10 is the Normal 4KV Bus 1D To Emergency 4KV Bus 1DF ACB.
- 1F7 is the Emergency 4KV Bus 1DF To Normal 4KV Bus 1D ACB.

When re-energizing the 1DF Emergency 4KV Bus from the 1D Normal 4KV Bus, the Operator must first close ...

A. 1F7, then within 90 seconds, close 1D10.

B. 1D10, then within 90 seconds, close 1F7.

C. 1F7, then within 30 seconds, close 1D10.

D. 1D10, then within 30 seconds, close 1F7.

Answer: D

Technical Reference(s): 1OM-53.A.1.2-D Issue 1B, Rev. 2

References to be provided during examination: None

Learning Objective: 08-02-357 ELO 6

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge: X

Comprehension or Analysis

10 CFR Part 55 Content: 55.41 X

55.43 X

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	2	2
	K/A #	073A4.02	073A4.02
	Importance Rating	3.7	3.7

Given the following:

- It is desired to check [RM-1VS-103A], Fuel Building Vent Radiation Monitor High and High-High setpoints.
- The Operator observes a caution on the radiation monitor that states:

  CAUTION - TO PREVENT INADVERTANT M.F.B. ACTUATION, PLACE M.F.B. IN SERVICE PRIOR TO LEAVING "OPERATE"

Which of the following is the bases for this caution statement?

A. The Main Fuel Building automatic ventilation isolation will occur when the monitor Function Switch is placed to the "CAL" position and the High-High alarm pushbutton is depressed.

B. The Main Fuel Building automatic ventilation isolation will occur when the monitor Function Switch is returned to the "OPR" position if indicated level is greater than the associated alarm setpoint.

C. The Main Filter Banks will automatically be placed in service when the monitor Function Switch is placed to the "CAL" position and the High-High alarm pushbutton is depressed.

D. The Main Filter Banks will automatically be placed in service when the monitor Function Switch is returned to the "OPR" position if indicated level is greater than the associated alarm setpoint.

Answer: D

Technical Reference(s): 1OM-43.4.D Issue 3, Rev. 2

References to be provided during examination: None

Learning Objective: 1SQS-2379 ELO 7

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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 #	2	2
	Group #	2	2
	K/A #	075 G 2.1.32	075 G 2.1.32
	Importance Rating	3.4	3.8

When a main condenser section needs to be isolated for maintenance, the Operators are required to maintain a water level inside the waterbox above the top of the respective outlet valve. Which of the following can occur if this water level is not maintained?

A. Air in leakage from the waterbox to the main condenser could occur resulting in a loss of main condenser vacuum.

B. Air in leakage from the waterbox to the circulating water system could occur resulting in cooling tower pump cavitation.

C. Air in leakage from the circulating water system to the waterbox could occur resulting in a personnel safety hazard inside the waterbox.

D. The AMERTAP cleaning media (balls) could float above the outlet valve seat and impede or foul the valves seating surface.

Answer: B

Technical Reference(s): 1OM-31.4.G, Rev. 7

References to be provided during examination: None

Learning Objective: 08-02-348 ELO 17.a

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge: X

Comprehension or Analysis

10 CFR Part 55 Content: 55.41 X

55.43 X

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	3	3
	K/A #	005A2.02	005A2.02
	Importance Rating	3.5	3.7

Given the following:

- The Unit is in Mode 5 with all systems in their NSA positions for the current mode of operation.
- RCS pressure is 325 psig.
- RCS temperature is 160°F.
- A control malfunction has caused three sets of backup heaters to energize.

Which of the following will occur if no Operator action is taken?

A. All three PZR PORV's will open and close as necessary to limit RCS pressure. The RHR system will not automatically isolate.

B. Two PZR PORV's will open and close as necessary to limit RCS pressure. The RHR system will not automatically isolate.

C. All three PZR PORV's will open, but RCS pressure will continue to rise to the point where the RHR system automatically isolates.

D. The RHR system will automatically isolate on high RCS pressure, then the PZR PORV's will open and close as necessary to limit RCS pressure.

Answer: B

Technical Reference(s): 1OM-6.4.ACH, Issue 4, Rev. 0 and 1OM-10.4.A Issue 4, Rev. 19

References to be provided during examination: None

Learning Objective: 08-02-321 ELO 12

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41	X
	55.43	X

Comments: RHR auto isolation is defeated in Mode 5.

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	3	3
	K/A #	008K3.03	008K3.03
	Importance Rating	4.1	4.2

Given the following:

- The Unit is in Mode 3 with all systems in their NSA configurations for the current mode of operation.
- Annunciator A3-73 - REACT COOL PP THERMAL BARRIER COOL WATER DISCH FLOW HIGH has just illuminated.
- [TV-1CC-107A], RCP Th Barr CCR Outlet Isol Vlv is closed.

Which of the following describes the effect of this failure on the operation of the 1A RCP?

A. The 1A RCP must be tripped immediately.

B. [TV-1CC-107A] must be opened within 5 minutes otherwise the 1A RCP must be tripped.

C. The 1A RCP must be tripped within 5 minutes regardless of the status of [TV-1CC-107A].

D. The 1A RCP can be operated indefinitely provided seal injection flow is maintained.

Answer: D

Technical Reference(s): 1OM-6.4.AAH Issue 4, Rev. 3 and 1OM-15.1.D Issue 4, Rev. 1

References to be provided during examination: None

Learning Objective: 08-02-312 ELO 10.e & 12

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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 #	2	2
	Group #	3	3
	K/A #	045K1.20	045K1.20
	Importance Rating	3.4	3.6

Given the following:

- The Unit is operating at 55% power with all systems in their at-power, NSA configurations.
- Annunciator A4-54 - LOOP OVERTEMPERATURE ΔT AUTO TURB RNBK BLOCK ROD W/D is lit due to a Tcold instrument that has failed low.

For the above listed conditions, the Main Turbine should …

A. not runback, the turbine runback requires a 2/3 logic to actuate.

B. not runback, the turbine runback is defeated when permissive P-9 is in its current state.

C. runback for 1.5 seconds out of every 31.5 seconds until Operator action is taken to stop the runback.

D. runback for 1.5 seconds out of every 31.5 seconds until permissive P-9 is cleared.

Answer: **A**

Technical Reference(s): 1OM-1.4.AAK Issue 3, Rev. 1, 1OM-1.2.B, Rev. 8 and 1OM-6.4.IF Issue 4, Rev. 7

References to be provided during examination: None

Learning Objective: 08-02-314 ELO 11.h; 1LP-LOT-III-1 ELO 5-6

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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 #	2	2
	Group #	3	3
	K/A #	076A3.02	076A3.02
	Importance Rating	3.7	3.7

Given the following:

- The Unit is operating at 100% power with all systems in their at-power, NSA configurations.
- An event occurred that caused CNMT pressure to peak at 6 psig.
- Offsite power has remained available for the duration of the transient.

Under these conditions, through which of the following will river water flow exist?

	CCR HX's	EDG's	RSS HX's
A.	Yes	No	No
B.	Yes	Yes	No
C.	No	Yes	Yes
D.	Yes	Yes	Yes

Answer: B

Technical Reference(s): 1OM-30.1.B Issue 4, Rev. 4

References to be provided during examination: None

Learning Objective: 08-02-347 ELO 8.d

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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

10 CFR Part 55 Content: 55.41 X
55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	3
	Group #		
	K/A #	2.1.1	2.1.1
	Importance Rating	3.7	3.8

With the Unit in Mode 1, a routine RCS dilution needs to be performed. A trainee enrolled in an NRC approved training program to qualify for an Operator license ...

A. may perform this manipulation unsupervised provided they have already received the OJT and TPE qualification signatures for this manipulation.

B. may perform this manipulation unsupervised provided they have already performed and received signatures for 10 reactivity manipulations.

C. must be supervised by a licensed RO, and the intended results must be discussed with the NSS/ANSS.

D. must be supervised by a licensed RO, but for routine dilutions, the intended results need not be discussed with the NSS/ANSS.

Answer: C

Technical Reference(s): 1/2OM-48.1.B Issue 4, Rev. 1; Operations Expectation Handbook, Rev. 0

References to be provided during examination: None

Learning Objective: 3SQS-2389 ELO 1

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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 #	3	3
	Group #		
	K/A #	2.1.22	2.1.22
	Importance Rating	2.8	3.3

The Unit is said to transition into Mode 2 (Startup) as soon as __(1)__ bank rod withdrawal is commenced and into Mode 6 (Refueling) as soon as __(2)__.

	__(1)__	__(2)__
A.	shutdown	the first Rx head closure stud is detensioned.
B.	control	the first Rx head closure stud is detensioned.
C.	shutdown	Tcold is $\leq$ 140°F
D.	control	Tcold is $\leq$ 140°F

Answer: B

Technical Reference(s): 1OM-51.4.E Issue 4, Rev. 0 and 1OM-50.4.D Rev. 36

References to be provided during examination: None

Learning Objective: 1/2LP-SQS-TS.1 ELO 3; 08-04-006 ELO 3

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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

10 CFR Part 55 Content: 55.41 (10)
55.43 X

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	3
	Group #		
	K/A #	2.1.23	2.1.23
	Importance Rating	3.9	4.0

Given the following:

- The Unit is in Mode 3 and taking actions to enter Mode 4.
- The RCS is to be degassified using 1OM-7.4.G - Degassing the Reactor Coolant System From The VCT.
- The VCT is NOT bypassed.
- VCT level changes are to be accomplished via changes in PZR level.

Which of the following describes the proper sequence for conducting this evolution?

1. Open Hydrogen supply to VCT valve
2. Open Nitrogen supply to VCT valve
3. Open VCT vent valve
4. Close VCT vent valve
5. Reduce charging flow
6. Raise charging flow

A. 1, 3, 5, 4, 6

B. 2, 3, 5, 4, 6

C. 2, 3, 6, 4, 5

D. 1, 3, 6, 4, 5

Answer: B

Technical Reference(s): 1OM-51.4.C, Rev. 19 and 1OM-7.4.G, Rev.11

References to be provided during examination: None

Learning Objective: LP-SQS-7.1 ELO 9.h

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X

10 CFR Part 55 Content: 55.41 X 55.43 Comments:

Question # 89 **1LOT4 RO/SRO Initial License Exam**

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	3
	Group #		
	K/A #	2.1.27	2.1.27
	Importance Rating	2.8	2.9

[1CH-178, 179 & 180], RCP Seal Flow Throttle Valves ensure that ...

A. the RCP seals are not damaged by excessive flow.

B. the maximum design seal injection flow is maintained during a large break LOCA.

C. the RCP lower radial bearing receives maximum cooling flow under all postulated plant conditions.

D. HHSI/Charging pump flow is directed to the RCS injection points assumed in the accident analysis.

Answer: D

Technical Reference(s): TS 3.5.5 Bases

References to be provided during examination: None

Learning Objective: 08-02-318 ELO 23.a & 51

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
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 #	3	3
	Group #		
	K/A #	2.2.12	2.2.12
	Importance Rating	3.0	3.4

Note: This is an open reference question.

The "A" EDG is to be taken out of service for pre-planned maintenance at 1200. When must the initial and subsequent offsite to onsite breaker verifications be performed?

A. Between 1100 and 1200, and every 8 hours thereafter.

B. Anytime between 0400 and 2000, and every 8 hours thereafter.

C. Between 1200 and 1300, and every 8 hours thereafter.

D. Between 1200 and 1300, and every 24 hours thereafter.

Answer: A

Technical Reference(s): 1OST-36.7, Issue 2, Rev. 6, Pg. 1 and TS 3.8.1.1

References to be provided during examination: 1OST-36.7

Learning Objective: 08-02-357 ELO 15; 08-04-006 ELO 5

Question Source:	Bank #	U2 LRT NRC# 0285J
	Modified Bank #	
	New	
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41 X	
	55.43	

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	3
	Group #		
	K/A #	2.2.13	2.2.13
	Importance Rating	3.6	3.8

Assume that the valve actuator will not be removed for a motor operated valve with a "VDM" (valve drifts manually) designation on the respective VOND. In order to be used as a clearance boundary, the valve must be stroked closed __(1)__ and the minimum electrical components that must be RED DANGER tagged is (are) the respective __(2)__.

	__(1)__	__(2)__
A.	electrically	breaker and control switch
B.	manually	breaker and control switch
C.	electrically	breaker
D.	manually	breaker

Answer: C

Technical Reference(s): NPDAP 3.4, Rev. 14, pg. 17

References to be provided during examination: None

Learning Objective: 1/2LP-SQS-AP.2 ELO 5 & 6

Question Source: Bank #
Modified Bank #
New X

Question History: Previous NRC Exam
Previous Quiz / Test

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 #	3	3
	Group #		
	K/A #	2.2.26	2.2.26
	Importance Rating	2.5	3.7

Note: This is an open reference question.

During Refueling (Mode 6), the N-31 Source Range High Flux at Shutdown alarm setpoint should be set _____ background count rate(s).

A. one decade above the N-31

B. one decade above the average of the N-31 and N-32

C. 3.16 times the N-31

D. 3.16 times the average of the N-31 and N-32

Answer: C

Technical Reference(s): 1OM-51.4.F Issue 4, Rev. 0

References to be provided during examination: 1OM-51.4.F

Learning Objective: LP-SQS-2.1 ELO 11

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41	(10) RO is responsible for performing this task
	55.43	X

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	3
	Group #		
	K/A #	2.2.33	2.2.33
	Importance Rating	2.5	2.9

Given the following:

- The control rod full out position is 230 steps.
- The required bank overlap for the current fuel cycle is 102 steps.

When withdrawing control rods, Control Bank C rods should start to move when Control Bank B rod group step counter indicates __(1)__ steps and Control Bank C group step counter should indicate __(2)__ steps when Control Bank B reaches its full out position.

	__(1)__	__(2)__
A.	128	102
B.	230	000
C.	102	128
D.	128	128

Answer: A

Technical Reference(s): 1OM Figure 1.16

References to be provided during examination: None

Learning Objective: 08-02-303 ELO 4.d

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41	(10) RO is responsible for verifying proper overlap
	55.43	X

Comments:

Question # 94 **1LOT4 RO/SRO Initial License Exam**

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	3
	Group #		
	K/A #	2.3.1	2.3.1
	Importance Rating	2.6	3.0

Given the following:

- You need to make an entry into a locked high radiation area.
- Your year to date exposure is 2.2 Rem Total Effective Dose Equivalent (TEDE).
- The job is planned to take 20 minutes to complete with 5 minutes transit time each way.
- Transit path radiation levels are 200 mr/hr.
- Work area radiation levels are 1100 mr/hr.

Which of the following is correct concerning this task?

A. You will exceed the BVPS administrative TEDE limit and need special approval to perform this task.

B. You will exceed the BVPS administrative TEDE limit to the lens of the eye and will need special approval to perform this task.

C. You cannot perform the task because your current year to date exposure is already within 80% of the BVPS administrative TEDE limit.

D. You will not exceed the BVPS administrative TEDE limit and you can perform this task provided you are on a high radiation area RWP.

Answer: D

Technical Reference(s): 1/2-ADM-1601, Rev. 1

References to be provided during examination: None

Learning Objective: 08-01-801 ELO 32 & 33

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X

10 CFR Part 55 Content: 55.41 X 55.43 X

Comments: BVPS TEDE administrative limit = 4 R/yr. Total dose = 2.2 R + 400 mR = 2.6 R

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	3
	Group #		
	K/A #	2.3.2	2.3.2
	Importance Rating	2.5	2.9

You have received a high radiation area (HRA) briefing from an HP technician for a specific task prior to entering a HRA and have entered the HRA. If you leave the HRA ...

A. because your RADOS dose alarm went off you may re-enter the HRA without another HRA briefing.

B. and are to perform a different task in the same HRA you may re-enter the HRA without another HRA briefing.

C. for 5 minutes to answer a plant page you may re-enter the HRA without another HRA briefing.

D. for any reason, you must receive another HRA briefing prior to re-entering the HRA.

Answer: **C**

Technical Reference(s): 1/2-ADM-1601, Rev. 1

References to be provided during examination: None

Learning Objective: 08-01-801 ELO 32 & 33

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge: X

Comprehension or Analysis

10 CFR Part 55 Content: 55.41 X

55.43 X

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	3
	Group #		
	K/A #	2.4.16	2.4.16
	Importance Rating	3.0	4.0

The Operators are responding to an event and have transitioned from E-0 - Rx Trip or SI to E-1 - Loss of Reactor or Secondary Coolant. The STA began monitoring the CSFST's and completed F-0.1 through F-0.3 with the following results:

- F-0.1, Subcriticality - Orange Path
- F-0.2, Core Cooling - Orange Path
- F-0.3, Heat Sink - Yellow Path

The STA then announces that the operators should exit E-1 and enter FR-S.1 - Response to Nuclear Power Generation - ATWS. For the above listed conditions, the STA should have ...

A. called for the transition from E-1 to FR-S.1 as soon as the challenge to the Subcriticality CSF was diagnosed

B. called for a transition to the Core Cooling Orange Path procedure as it has priority over FR-S.1.

C. consulted with the ANSS, because in this case, it is at the ANSS's discretion as to which CSF procedure to utilize.

D. completed the remainder of the CSFST's, and then based on the results, recommended a transition to the highest priority procedure.

Answer: D

Technical Reference(s): 1/2OM-53B.2 Issue 1C, Rev. 0

References to be provided during examination: None

Learning Objective: LP-SQS-53.1 ELO 2; LP-SQS-53.3 ELO 5

Question Source: Bank # LRT NRC # 405Q
Modified Bank #
New

Question History: Previous NRC Exam
Previous Quiz / Test

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

10 CFR Part 55 Content: 55.41 X 55.43 X

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	3
	Group #		
	K/A #	2.4.6	2.4.6
	Importance Rating	3.1	4.0

The Operators are responding to an event in ECA-3.3 - SGTR Without PZR Pressure Control. After terminating SI flow and establishing normal charging and letdown flow, they are unable to establish auxiliary PZR spray flow. At this point in the event, how is the primary-to-secondary leak to be terminated?

A. Open the RCS loop drain valves and all RCS and PZR sample valves to depressurize the RCS.

B. Fill the affected SG with cold auxiliary feedwater to depressurize the ruptured SG and RCS via the break.

C. Set net charging flow to a negative value and allow the inventory mismatch to depressurize the RCS.

D. Set net charging flow to zero and allow the break flow to depressurize the RCS.

Answer: D

Technical Reference(s): 1OM-53A.1.ECA-3.3 Issue 1C, Rev. 0

References to be provided during examination: None

Learning Objective: LP-SQS-53.3 ELO 3; LOT-V-15 ELO 1-6

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History: Previous NRC Exam		
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41	X
	55.43	X

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	2	2
	Group #	1	1
	K/A #	001A1.01	001A1.01
	Importance Rating	3.8	4.2

Given the following:

- All systems are in their NSA configurations for the current power level.
- Reactor power is currently 3%.
- The Steam Dump System is in an equilibrium condition.

Which of the following describes the effect of inserting control rods 10 steps at this time?

A. Reactor power and Tave will remain constant; the steam dump valves will modulate further open to maintain steam demand constant.

B. Reactor power and Tave will drop; the steam dump valves will modulate in the closed direction.

C. Reactor power and Tave will drop; the steam dump valves will modulate further open which will cause Reactor power to return to its original value.

D. Reactor power will drop, Tave will remain constant; the steam dump valves will modulate in the closed direction.

Answer: B

Technical Reference(s): Simulator Response; GFE Reactor Operational Physics

References to be provided during examination: None

Learning Objective: 1/2LP-ATA-3.1 ELO 1.a

Question Source:	Bank #	
	Modified Bank #	
	New	X
Question History:	Previous NRC Exam	
	Previous Quiz / Test	
Question Cognitive Level:	Memory or Fundamental Knowledge	
	Comprehension or Analysis	X
10 CFR Part 55 Content:	55.41	X
	55.43	

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	1	2
	Group #	1	2
	K/A #	027 G 2.1.32	010K2.01
	Importance Rating	3.4	3.4

Given the following:

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

Which of the following, if any, is required to be done with the PZR heaters in response to the loss of the 1N bus?

A. Place Group A or B in Auto-After-Start.

B. Place Group B or E in Auto-After-Start.

C. No actions are required, Group D is still energized.

D. No actions are required, PZR heaters are not required to be energized.

Answer: B

Technical Reference(s): 1OM-6.2 P&L and 1OM-6.1.D

References to be provided during examination: None

Learning Objective: 08-02-313 ELO 5 & 11

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge

Comprehension or Analysis X

10 CFR Part 55 Content: 55.41 X

55.43

Comments:

Examination Outline Cross-reference:	Level	RO	SRO
	Tier #	3	2
	Group #		2
	K/A #	2.4.10	012K2.01
	Importance Rating	3.0	3.7

Given the following:

- The Unit is operating at 100% power with all systems in their at power, NSA configurations.
- Annunciator A4-75 - REACTOR PROTECTION SYSTEM TRAIN A TROUBLE has just illuminated.

If the cause of the alarm is due to a tripped power supply breaker, on which of the following vital busses, is this breaker located?

A. PNL-VITBUS-I or II.

B. PNL-VITBUS-II or III.

C. PNL-VITBUS-I or III.

D. PNL-VITBUS-II or IV.

Answer: C

Technical Reference(s): 1OM-1.4.AAL

References to be provided during examination: None

Learning Objective: LP-SQS-1.2 ELO 2

Question Source: Bank #

Modified Bank #

New X

Question History: Previous NRC Exam

Previous Quiz / Test

Question Cognitive Level: Memory or Fundamental Knowledge: X

Comprehension or Analysis

10 CFR Part 55 Content: 55.41 X

55.43

Comments: