QUESTION 1 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐	
		Tier #	1	Group # 1	
		K/A #	295001 AK2.06		IR 3.8

Knowledge of the interrelationships between PARTIAL OR COMPLETE LOSS OF FORCED CORE FLOW CIRCULATION and the following: Reactor Power. (41.7)

Proposed Question:

The following conditions exist:

Reactor Power 2400 MWth
Core Flow 81 Mlbm/hour

If one reactor recirculation pump trips to OFF, reactor power will be approximately ___(1)___ and if both reactor recirculation pumps trip to OFF, reactor power will be ___(2)__.

A. (1) 70% power
(2) 42% power

B. (1) 42% power
(2) 0 % power

C. (1) 51% power
(2) 0% power

D. (1) 51% power
(2) 42% power

Proposed Answer: C.

Explanation:
A. See C.
B. See C.
C. Correct-Current rod line is 80%. As flow from the first pump trip drops off, core flow will be about half the original value. Moving to the left of the Power to Flow map on the 80% rod line to ~42.5Mlb/hr yields a core power value of ~1600MWth (~51%). If both pumps trip, continuing to move along the 80% rod line indicates that the Exclusion Region is entered which results in a reactor scram (0% power).
D. See C.

Technical Reference(s): AOP-0024 Rev24 Power to Flow Map

Proposed references to be provided to applicants during examination: AOP-0024 Attachment 1 Power to Flow Map

Learning Objective: RLP-STM-0053 Obj 14

Question Source: New Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 2 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	1	Group #	1
	K/A #	295003 AK3.02		IR 2.9

Knowledge of the reasons for the following responses as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER: Selective tripping. (41.5)

Proposed Question:

The plant is operating in Mode 1 with all systems in their normal lineup when a LOCA signal coincident with an ENS-SWG1A bus undervoltage signal is received.

The Division 1 diesel generator has started and is now supplying its associated bus.

Which of the following correctly describes the reasons for the status of the listed components?

A. BYS-CHGR1A will remain de-energized to reserve diesel generator capacity for essential loads.

B. BYS-CHGR1A will be energized when its load sequencing timer times out.

C. EHS-MCC14A will remain de-energized to reserve diesel generator capacity for essential loads.

D. EHS-MCC14A will be energized when its load sequencing timer times out.

Proposed Answer: A.

Explanation:
A. Correct – Although power from a safety related power source, BYS-CHGR1A is a non-essential load and is tripped and separated from the bus to ensure sufficient diesel capacity for essential loads.
B. BYS-CHR1A will not be re-energized during load sequencing.
C. EHS-MCC14A is an essential load and is re-energized upon diesel generator output breaker closure.
D. There is no load sequence timer associated with EHS-MCC14A. It is re-energized upon diesel generator output breaker closure.

Technical Reference(s): AOP-0004 Rev 41 Pg 30 of 72

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0300 Obj 4, 6

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 3 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	1	Group # 1	
	K/A #	295004 AA1.01		IR 3.3

Ability to operate and/or monitor the following as they apply to PARTIAL OR COMPLETE LOSS OF D.C. POWER: D.C. Electrical distribution systems. (41.7)

Proposed Question:

125 VDC distribution panel BYS-PNL02A2 is scheduled to be de-energized to support maintenance activities.

Which of the following represents the resultant response when this panel is de-energized?

A. Alternate Rod Insertion valves will open depressurizing the scram air header.

B. Alternate Rod Insertion valves will fail to open on a valid signal.

C. Division 1 Safety Relief Valve (SRV) solenoids de-energize to open the associated SRV.

D. Division 1 Safety Relief Valve (SRV) solenoids de-energize to prevent opening the associated SRV.

Proposed Answer: B.

Explanation:
A. ARI valves energize to open therefore will not fail open on loss of power.
B. ARI valves are powered by BYS-PNL02A2 and energized to open. On loss of power, they will be unable to open on a valid signal.
C. While the SRVs do utilize a 125 VDC power source, the SRV solenoids are powered by ENB-PNL02A and will not be affected by this failure. Additionally, the solenoids energize to open.
D. While the SRVs do utilize a 125 VDC power source, the SRV solenoids are powered by ENB-PNL02A and will not be affected by this failure.

Technical Reference(s): R-STM-0052 Rev 9 Page 28

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0052 Obj 2, 3

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 4 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	1	Group # 1	
	K/A #	295005 AA2.01		IR 2.6

Ability to determine and/or interpret the following as they apply to MAIN TURBINE GENERATOR TRIP: Turbine speed. (41.10)

Proposed Question:

A turbine speed of ________ will generate a turbine trip signal from the primary overspeed protection device.

A. 1890 rpm

B. 1926 rpm

C. 1980 rpm

D. 2000 rpm

Proposed Answer: C.

Explanation
A. This value equates to 105% rated speed which is the value where intercept valve will begin to close in an attempt to prevent an overspeed condition.
B. This value equates to 107% rated speed which is the value where intercept valve will be fully closed in an attempt to prevent an overspeed condition.
C. Correct-This value equals to 110% which is the turbine trip setpoint.
D. This is the setpoint of the backup overspeed trip device.

Technical Reference(s): AOP-0002 Rev 24 Pg 4 of 9

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0509 Obj 10b

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑2 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.10

Comments:

QUESTION 5 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	1	Group # 1	
	K/A #	295006 G2.4.46		IR 4.2

Ability to verify that the alarms are consistent with the plant conditions. SCRAM (41.10)

Proposed Question:

The reactor has scrammed from 100% power due to a turbine trip from low turbine bearing oil pressure.

Which of the choices below represents the status of the following alarms?

- H13-P680/05A/C08 SCRAM PILOT VLV AIR HEADER LOW PRESSURE
- H13-P680/03A/A08 MTS & FWP TRIP RX WATER HIGH LEVEL 8
- H13-P601/19A/G07 DIV 1 LOW RX LVL LEVEL 3 ADS CONFIRMATION

	H13-P680/05A/C08	H13-P680/03A/A08	H13-P601/19A/G07
A.	EXTINGUISHED	EXTINGUISHED	ALARMING
B.	ALARMING	ALARMING	EXTINGUISHED
C.	EXTINGUISHED	ALARMING	EXTINGUISHED
D.	ALARMING	EXTINGUISHED	ALARMING

Proposed Answer: D.

Explanation:
A. Scram air header low pressure alarm should be alarming.
B. Level 8 would not be alarming, but Level 3 would be alarming.
C. Scram air header low pressure alarm should be alarming. Level 8 would not be alarming, but Level 3 would be alarming.
D. Correct-The scram air header pressure will be low due to the venting of the header on a scram signal. Level 8 is not a normal occurrence on a scram. Level 3 is an expected occurrence due to the shrink which occurs as well as the pressure transient from the turbine trip.

Technical Reference(s): R-STM-0107 Rev 22 Pg70 of 101; R-STM-0052 Rev 9 Pg 22 of 68

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0051 Obj 12; RLP-STM-0052 Obj 6b

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.10

Comments:

QUESTION 6 Rev 0

Examination Outline Cross-Reference:	Level	RO ☑	SRO ☐
	Tier # 1	Group # 1	
	K/A # 295016 AK2.03		IR 2.9

Knowledge of the interrelations between the CONTROL ROOM ABANDONMENT and the following: Control Room HVAC. (41.5)

Proposed Question:

A fire in which of the following areas is likely to require control room abandonment?

A. Control Building 116’ ventilation room

B. Division 1 Remote Shutdown Room

C. HVK Chiller Room

D. Control Building 70’ Post Accident Monitoring Room

Proposed Answer: A.

Explanation:
A. The 116’ control building ventilation room is part of the control room pressure envelope and shares portions of the control room ventilation system. A fire in this area is more likely to affect the conditions in the main control room.
B. The main control room is maintained at a positive pressure, so smoke from this area would not be expected to enter the main control room.
C. The main control room is maintained at a positive pressure, so smoke from this area would not be expected to enter the main control room.
D. The main control room is maintained at a positive pressure, so smoke from this area would not be expected to enter the main control room.

Technical Reference(s): R-STM-0402 Rev 6 Page 17 of 74, AOP-0052 Rev 20 Att 2 Pg 10 of 17

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0402 Obj 3a

Question Source: Bank # RBS June 2007 NRC Exam #6

Question History: Last NRC Exam RBS June 2007 NRC Exam #6

Cognitive Level: Memory or Fundamental Knowledge ☑2 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.7

Comments: Revised slightly from 2007 exam to remove building location codes as this terminology is not commonly used when referring to these areas.

QUESTION 7 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	1	Group # 1	
	K/A #	295018 AK1.01		IR 3.5

Knowledge of the operational implications of the following concepts as they apply to PARTIAL OR COMPLETE LOSS OF COMPONENT COOLING WATER: Effects on component/system operation. (41.8)

Proposed Question:

The unit is operating at power when a complete loss of Turbine Plant Component Cooling Water (CCS) occurs. Which one of the following lists the critical equipment which has lost cooling that requires the operator to scram the reactor per AOP-0012, Loss of Turbine Plant Component Cooling?

A. Auxiliary boiler recirculating pumps and offgas refrigeration units.

B. Condenser air removal and generator stator cooling pumps.

C. Heater drain and condenser air removal pumps.

D. Reactor feedwater and condensate pumps.

Proposed Answer: D.

Explanation:

A. Although both receive cooling from CCS, auxiliary boiler recirc pumps are not required for continued operation.
B. Although both receive cooling from CCS, condenser air removal pumps are not required for continued operation.
C. Although both receive cooling from CCS, condenser air removal pumps are not required for continued operation.
D. Both receive cooling from CCS and the loss of either requires a scram due to the inability to maintain reactor water level.

Technical Reference(s): AOP-0012 Rev 12 Pg 3 of 6

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-OPS-AOP0012 Obj 2, 3a, 3b

Question Source: Bank # RBS-NRC-104

Question History: Last NRC Exam RBS NRC October 2000

Cognitive Level: Memory or Fundamental Knowledge ☑2 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.8

Comments:

QUESTION 8 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	1	Group # 1	
	K/A #	295019 AK3.02		IR 3.5

Knowledge of the reasons for the following responses as they apply to PARTIAL OR COMPLETE LOSS OF INSTRUMENT AIR: Standby air compressor operation. (41.5)

Proposed Question:

Instrument Air System (IAS) Sequencer is in Position 2
Service Air System (SAS) Sequencer is in Position 2

A line break in the IAS system has resulted in the following:

IAS-C2B & IAS-C2C are running and loaded
All 3 SAS compressors are running and loaded
SAS-AOV113 Cross Connect Valve is open
SAS-AOV110 Block Valve is shut
IAS Header Pressure is 112 psig

Which of the following describes the reason why IAS-C2A is not inservice even though all 3 SAS compressors are running and loaded?

A. IAS-C2A has failed to start when required. It should have started before the 3rd SAS compressor received a start signal.

B. SAS-C3A has started prematurely. All 3 IAS compressors should be running before the 3rd SAS compressor starts.

C. IAS-C2A has not yet received a start signal. It will start at a pressure below the starting pressure of the 3rd SAS compressor.

D. All 3 SAS compressors have started prematurely. All IAS compressors should be inservice prior to any SAS compressors starting.

Proposed Answer: C.

Explanation:
A. No failure has occurred IAS-C2A will not start until 109.5 psig.
B. All 3 SAS compressors have higher starting setpoints than the 3rd IAS compressor.
C. Correct - With the both sequencers in Position 2, IAS-C2A receives a start signal at 109.5 psig, while SAS-C3A starts at 114 psig. At the pressure given in the stem, all 3 SAS compressors should be inservice, but IAS-C2A has not yet reach its starting setpoint.
D. All 3 SAS compressors have higher starting setpoints than the 3rd IAS compressor.

Technical Reference(s): R-STM-0121 Rev 15 Pg 14 of 69

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0121 Obj 3 Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.5 Comments:

QUESTION 9 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	1	Group # 1	
	K/A #	295021 AK2.03		IR 3.6

Knowledge of the interrelations between LOSS OF SHUTDOWN COOLING and RHR Shutdown Cooling (41.7)

Proposed Question:

The plant is in Mode 4 with RHR "B" in the normal Shutdown Cooling lineup.

Which of the following valve positions will result in a loss of shutdown cooling?

A. E12-MOVF009, RHR SHUTDOWN COOLING INBD ISOL VALVE, Fully OPEN.

B. E12-MOV48B, RHR B HX BYPASS VALVE, Fully CLOSED

C. E12-MOVF037B, RHR B TO UPPER POOL FPC ASSIST, Fully CLOSED

D. E12-MOVF053B, RHR PUMP B SDC INJECTION VALVE, Fully CLOSED

Proposed Answer: D.

Explanation:
A. E12-MOVF009 provides the suction flowpath for SDC and would normally be open.
B. E12-MOV48B can be throttled fully closed and maintain SDC. All flow would be forced through the heat exchanger.
C. This position could result in a loss of decay heat removal if the Fuel Pool Cooling Assist flowpath were being used, but in Mode 4 with the RPV head in place return flow is though E12-MOV53B.
D. For the current plant conditions (Mode 4), SDC flow is returned to the vessel via E12-MOVF053B. If this valve were to be closed, a loss of Shutdown Cooling would result.

Technical Reference(s): SOP-0031 Rev 315 Pg 34 of 179

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0204 Obj 2b

Question Source: Modified Bank # Modified from RBS April 2010 NRC Exam #9

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 10 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	1	Group #	1
	K/A #	295023 AA1.02		IR 2.9

Ability to operate and/or monitor the following as they apply to REFUELING ACCIDENTS: Fuel pool cooling and cleanup system. (41.7)

Proposed Question:

During refueling activities, a fuel handling accident occurred in the Fuel Building when an irradiated fuel bundle was dropped causing significant damage to the bundle.

Which of the following should be performed in accordance with AOP-0027, FUEL HANDLING MISHAPS?

A. Maintain the Fuel Pool Cleanup filter in service while bypassing the demineralizer to avoid premature exhaustion of the resin.

B. Maintain the Fuel Pool Cleanup filter in service while maximizing flow through the demineralizer to reduce water activity.

C. Place both Fuel Pool Cleanup pumps in service on the spent fuel pool with both filters and the demineralizer bypassed to avoid clogging of the filters and premature exhaustion of the resin.

D. Secure all Fuel Pool Cooling and Cleanup to reduce airborne activity.

Proposed Answer: B.

Explanation:
A. See B.
B. Correct – AOP-0027 directs maximizing flow through the Fuel Pool Cleanup Demineralizer if fuel bundle damage occurs in the Fuel Building Spent Fuel Pool.
C. See B.
D. See B.

Technical Reference(s): AOP-0027 Rev 27 Pg 9 of 24

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-OPS-AOP027 Obj 4, 6

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑4 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 11 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	1	Group # 1	
	K/A #	295024 EA2.06		IR 4.1

Ability to determine and/or interpret the following as they apply to HIGH DRYWELL PRESSURE: Suppression pool temperature. (41.10)

Proposed Question:

The following conditions exist:

- Drywell Pressure 1.7 psid
- Suppression Pool Level 19’11”
- Suppression Pool Temp 110°F
- Steam Tunnel Temp 120°F
- RWCU Pump Room 90°F

Based on the above parameters a LOCA has occurred ______(1)______ and entry in the Emergency Operating Procedures is required due to ____(2)____.

A. inside the drywell; (2) suppression pool temperature

B. outside the drywell; (2) suppression pool temperature

C. inside the drywell; (2) steam tunnel temperature

D. outside the drywell; (2) steam tunnel temperature

Proposed Answer: A.

Explanation:
A. Correct – The elevated drywell pressure indicates that the LOCA has occurred inside the drywell. Sup Pool Temp has exceeded the EOP-2 entry condition of 100°F.
B. There is no indication of a leak outside the drywell. Steam tunnel and RWCU pump room parameters are at or below normal. Part 2 is correct.
C. Part 1 is correct, but EOP entry condition for steam tunnel temp is 144°F
D. There is no indication of a leak outside the drywell. Steam tunnel and RWCU pump room parameters are at or below normal. EOP entry condition for steam tunnel temp is 144°F

Technical Reference(s): EOP-0002, EOP-0003

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-HLO-514 Obj 3

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.10 Comments:

QUESTION 12 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	1	Group # 1	
	K/A #	295025 G2.1.32		IR 3.8

Ability to explain and apply system limits and precautions: High Reactor Pressure. (41.10)

Proposed Question:

The Reactor Coolant System Pressure Safety Limit of ___(1)___ sensed at the steam dome ensures that _____(2)____.

A. (1) 1325 psig; (2) 1375 psig is not exceed in the bottom head satisfying ASME Code requirements.

B. (1) 1250 psig; (2) assumptions in the Design Basis Calculations are met.

C. (1) 1094.7 psig; (2) rapid insertion of control rods will counteract the rise in flux due to void collapse from increased pressure.

D. (1) 1103 psig; (2) Safety Relief Valve operation will prevent reactor vessel pressure from exceeding design limits of 1375 psig in the steam dome.

Proposed Answer: A.

Explanation:
A. Correct – TS 2.1.2 describes the RPV Pressure SL as 1325 psig in the steam dome to ensure bottom head pressure is maintained below 1375 psig which is 110% of the RPV design pressure of 1250 psig satisfying ASME Code requirements.
B. 1250 psig is the design pressure of the RPV, but not the Safety Limit.
C. 1094.7 psig is the reactor pressure scram setpoint not the safety limit. The reason give is the basis for the scram signal, but not the basis for the safety limit.
D. 1103 psig is the lift pressure of the first SRV to lift not the safety limit. Design limit is 1250 psig, not 1375 psig.

Technical Reference(s): Tech Spec 2.1.2

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-HLO-401 Obj 2, 6

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑2 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.3

Comments:

QUESTION 13 Rev 0

Examination Outline Cross-Reference:

Level		RO ☑	SRO ☐
Tier #	1	Group # 1	
K/A #	295026 EK1.02		IR 3.5

Knowledge of the operational implications of the following concepts as they apply to SUPPRESSION POOL HIGH WATER TEMPERATURE: Steam Condensation. (41.8)

Proposed Question:

Operation in the SAFE Zone of the Heat Capacity Temperature Limit curve ensures it would be safe to emergency depressurize based on current suppression pool level and temperature without:

A. exceeding the Pressure Suppression Pressure limit.

B. energy release to containment beyond the capacity of the containment vent.

C. energy release to containment beyond the capacity of RHR Suppression Pool Cooling to maintain containment design limits.

D. introducing steam to the containment air space.

Proposed Answer: B.

Explanation:
A. See B.
B. Correct - The heat capacity limit is the highest suppression pool temperature from which ED will not raise containment temperature above the maximum temperature capability of the containment, nor containment pressure above the PCPL while the rate of energy transfer from the RPV to the containment is greater than the capacity of the containment vent.
C. See B.
D. See B.

Technical Reference(s): EPSTG-0002

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-OPS-HLO-517 Obj 2

Question Source: Bank # December 2010 NRC Exam #12

Question History: Last NRC Exam December 2010 NRC Exam #12

Cognitive Level: Memory or Fundamental Knowledge ☑3 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.9

Comments:

QUESTION 14 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐	
	Tier #	1	Group # 1		
	K/A #	295028 EK3.01		IR	3.6

Knowledge of the reasons for the following responses as they apply to HIGH DRYWELL TEMPERATURE: Emergency Depressurization (41.5)

Proposed Question:

Emergency Depressurization is required if drywell temperature can not be restored and maintained below 330°F due to __________________.

A. exceeding of the Technical Specification limit.

B. the inability to restore cooling water to drywell unit coolers.

C. the inability to determine water level caused by reference leg flashing.

D. drywell design temperature limit being reached.

Proposed Answer: D.

Explanation:
A. TS Limits is 145°F. This temp does not require ED.
B. Cooling water may not be restored above 200°F. This temp does not require ED.
C Ref. leg flashing is dependent upon RPV pressure as well as DW/Cont. temp as indication in EOP Caution 1.
D. Correct – 330°F is the design temperature limit for the drywell. Inability to restore and maintain temperature below this level requires ED per EOP-0002.

Technical Reference(s): EOP-0002 DWT 6, EPSTG B 8-6

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0057 Obj 4

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑2 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.9

Comments:

QUESTION 15 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐	
	Tier #	1	Group #	1	
	K/A #	295030 EA1.03			IR 3.4

Ability to operate and/or monitor the following as they apply to LOW SUPPRESSION POOL WATER LEVEL: HPCS (41.7)

Proposed Question:

The High Pressure Core Spray pump is the only available injection source and is injecting into the RPV. Its suction source is aligned to the suppression pool following a low CST level.

Suppression pool level has been lowering and is now approaching 15 feet. The CST level has been restored to 10 feet above the low level setpoint.

The CRS has directed that the HPCS suction again be aligned to the CST, while maintaining maximum HPCS flow to the RPV. Which of the following describes how this must be accomplished?

A. First open the CST suction valve and when full open, close the suppression pool suction valve.

B. First close the suppression pool suction valve and when dual position indication is obtained, open the CST suction valve.

C. First open the CST suction valve and when dual position indication is obtained, close the suppression pool suction valve.

D. First close the suppression pool suction valve and when full closed position indication is indication is obtained, open the CST suction valve.

Proposed Answer: B.

Explanation:
A. CST valve will not open with suppression pool valve FULL open.
B. Correct
C. CST valve will not open with suppression pool valve FULL open.
D. Although this method will satisfy the interlock, HPCS flow will not be maintained throughout and the risk of pump damage due to loss of suction is possible.

Technical Reference(s): R-STM-0203 Rev 8 Pg. 12 of 38

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0203 Obj 4a, 4b Question Source: Bank # RBS-NRC-896

Question History: Last NRC Exam RBS NRC Sept 2004

Cognitive Level: Memory or Fundamental Knowledge ☑3 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.7

Comments: Revised from 2004 exam to remove reference to MCFI as this is no longer part of the RPV flooding mitigation strategy.

QUESTION 16 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	1	Group # 1	
	K/A #	295031 EA2.03		IR 4.2

Ability to determine and/or interpret the following as they apply to REACTOR LOW WATER LEVEL: Reactor Pressure. (41.10)

Proposed Question:

During an ATWS, the CRS has directed the ATC operator to lower level to a band of -60" to -140".

Based on the above, reactor pressure will…

A. fluctuate erratically due to flux oscillations resulting from the level reduction.

B. lower due to a reduction in power from reduced subcooling from the exposure of the feedwater sparger to the steam space.

C. rise due to the increase in coolant temperature from the rise in feedwater temperature from increase heating by exposing the feedwater sparger to the steam space.

D. rise due to a reduction in heat removal capability from the core due to the reduced volume of coolant.

Proposed Answer: B.

Explanation:
A. Lowering level is required in an ATWS to mitigate flux oscillations caused by securing the recric pumps.
B. Correct – Level is lowered in an ATWS to allow pre-heating of the feedwater by exposing the feedwater sparger to the steam space. Raising FW temp caused the moderator to be less dense, ultimately lowering reactor power. Pressure lowers due to the reduction in power.
C. Pressure will lower as power lowers.
D. Pressure will lower as power lowers.

Technical Reference(s): EPSTG EOP-1A RLA-13-15

Proposed references to be provided to applicants during examination: None

Learning Objective: R-LPOPS-HLO-513 Obj 4

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑4

10 CFR Part 55 Content: 55.41b.10

Comments:

QUESTION 17 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	1	Group # 1	
	K/A #	295037 G2.2.37		IR 3.6

Ability to determine operability and/or availability of safety related equipment: (41.7)

Proposed Question:

While operating at 100% power, an ATWS occurred. The CRS has directed maximization of the Control Rod Drive (CRD) system. During startup of the standby CRD pump, the auxiliary lube oil pump failed to start.

How does this condition affect the availability of the CRD pump and CRD system maximization?

A. The standby CRD pump is available. The shaft driven oil pump will supply needed lubrication once the pump is started. The operator should continue with maximization of the Flow Control Valve and Pressure Control Valve

B. The standby CRD pump is <u>NOT</u> available due to the inability to satisfy start permissives. The operator should continue with maximization of the Flow Control Valve and Pressure Control Valve.

C. The standby CRD pump is available but will run without lubrication. The operator should continue with maximization of the Flow Control Valve and Pressure Control Valve.

D. The standby CRD pump is <u>NOT</u> available. The operator should discontinue the maximization efforts.

Proposed Answer: B.

Explanation:
A. Lube oil pressure must be 3 psig before the pump is allowed to start. The shaft driven pump can not supply this pressure unless the pump is running.
B. Correct – Start permissive can not be met without auxiliary oil pump, but the FCV and PCV can still be maximized.
C. Pump can not be started without meeting permissive of 3 psig lube oil pressure.
D. First part is correct, but the operator should continue with maximizing FCV and PCV.

Technical Reference(s): OSP-0053 Hard Card Att. 14; R-STM-0052 Rev 9 Pg 10 of 68

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0052 Obj 4a

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.6 Comments:

QUESTION 18 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	1	Group # 1	
	K/A #	295038 EK1.01		IR 2.5

Knowledge of the operational implications of the following concepts as they apply to HIGH OFF-SITE RELEASE RATE: Biological effects of radioisotope injestion. (41.8).

Proposed Question:

During a loss of coolant accident, with a high offsite release rate, proper operation of which plant component reduces the public exposure to radioisotopes with the potential to cause damaging biological affects?

A. Offgas Charcoal Adsorbers

B. Standby Gas Treatment Charcoal Adsorbers

C. Control Building Filter Train Charcoal Adsorbers

D. Fuel Building Filter Train Charcoal Adsorbers

Proposed Answer: B.

Explanation:
A. During accident conditions, offgas would be isolated from containment.
B. Correct – During accident conditions, GTS adsorbers reduce the overall exposure to the public (offsite)
C. The CB filter train processes air supply to the control room, not air discharged to the environment.
D. The Fuel Building Filter Train is provided to reduce offsite exposure during a fuel handling accident in the fuel building, not a LOCA

Technical Reference(s): R-STM-0257 Rev 4 Pg 4 of 28

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0257 Obj 1

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑2 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.13

Comments:

QUESTION 19 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	1	Group #	1__
	K/A #	600000 AK2.04		IR 2.5

Knowledge of the interrelations between Plant Fire on Site and: Breakers, relays and disconnects.

Proposed Question:

A fire outside the main control room has resulted in a short in the circuitry for Division 1 Safety Relief Valve (SRV) logic such that the “smart fire” relay has been energized due to a high current condition.

How does energization of this relay affect operations of Div 1 SRV solenoids?

A. Div 1 SRV solenoids can not be energized until the high current condition no longer exists.

B. Div 1 SRV solenoids can only be energized by activation of the ADS logic.

C. Div 1 SRV solenoids can only be energized by activation of the manual control switch on H13-P601.

D. Div 1 SRV solenoids can be energized from either the ADS logic or the manual control switch on H13-P601.

Proposed Answer: D.

Explanation:
A. The smart fire relay logic only affects the relief mode of SRV operation. Manual and ADS are not affected.
B. The smart fire relay logic only affects the relief mode of SRV operation. Manual and ADS are not affected.
C. The smart fire relay logic only affects the relief mode of SRV operation. Manual and ADS are not affected.
D. Correct -The smart fire relay logic only affects the relief mode of SRV operation. Manual and ADS are not affected.

Technical Reference(s): R-STM-0109 Rev 9 Pg 51 of 95

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0109 Obj 6

Question Source: Bank # RBS Audit March 2010

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑4 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 20 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐	
		Tier #	1	Group # 1	
		K/A #	700000 AK3.01		IR 3.9

Knowledge of the reasons for the following responses as they apply to GENERATOR VOLTAGE AND ELECTRIC GRID DISTURBANCES: Reactor and turbine trip criteria. (41.4,5 or 7)

Proposed Question:

The reactor has scrammed and the Main Turbine has tripped from 100% power operation. The transient was initiated by a grid disturbance which caused a trip of the Main Generator.

Which of the following describes the reasons these trips occurred?

The turbine tripped to ______(1)______.
The reactor scrammed _____(2)_______.

A. (1) provide protection from a turbine overspeed condition due to the sudden unloading of the generator.
(2) in anticipation of pressure and flux transients due to the tripping of the turbine.

B. (1) protect the Main Generator from motoring.
(2) in anticipation of pressure and flux transients due to the tripping of the turbine.

C. (1) provide protection from a turbine overspeed condition due to the sudden unloading of the generator.
(2) due to an RPV high water level condition resulting from the turbine trip.

D. (1) protect the Main Generator from a reverse power condition.
(2) due to an RPV high water level condition resulting from the turbine trip.

Proposed Answer: A.

Explanation:
A. On any generator trip the turbine trips to avoid a turbine overspeed condition due to no load on the generator. The reactor scrams in anticipation of pressure and flux transients due to the tripping of the turbine.
B. The output breakers opening protects the main generator from motoring.
C. The reactor scram is in anticipation of pressure and flux transients due to the tripping of the turbine. The pressure rise from a turbine trip would cause a reduction in RPV level.
D. The generator protection from reverse power is the opening of the output breakers, not a turbine trip. The reactor scram is in anticipation of pressure and flux transients due to the tripping of the turbine. The pressure rise from a turbine trip would cause a reduction in RPV level.

Technical Reference(s): R-STM-0110 Rev 10 Pg 7 of 50; R-STM-0508 Rev 6 Pg 13 of 59

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0509 Obj 1, 3; RLP-STM-0508 Obj 2

Question Source: Bank # RBS NRC December 2010 Question History: Last NRC Exam RBS Dec 2010

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.5 Comments:

QUESTION 21 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	1	Group # 2	
	K/A #	295007AA1.05		IR 3.7

Ability to operate and/or monitor the following as they apply to HIGH REACTOR PRESSURE: Reactor/turbine pressure regulating system (41.7)

Proposed Question:

Reactor power is 75% and reactor pressure is 1050 psig when a Control Rod drop accident results in a 2 psi rise in reactor pressure.

How will the EHC pressure regulating system respond to this transient?

A. Control Valves open to return pressure to the pre-transient value.

B. Control Valves close to return pressure to the pre-transient value.

C. Combined Intercept Valves open to return pressure to the pre-transient value.

D. Combined Intercept Valves close to return pressure to the pre-transient value.

Proposed Answer: A.

Explanation:
A. Correct – Control valves will receive a signal to open equating to 3.33% flow per 1 psi of pressure rise.
B. On a rising pressure control valves open, on a lowering pressure control valves close to maintain pressure. Since pressure has risen, the control valves will open.
C. CIVs are part of the EHC system, but are normally open and close based on turbine speed vs. reactor pressure.
D. CIVs are part of the EHC system, but are normally open and close based on turbine speed vs. reactor pressure.

Technical Reference(s): R-STM-0509 Rev 13 Pg 6 of 81

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0509 Obj A-16, B-13, 14

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑2

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 22 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐	
	Tier #	1	Group #	2	
	K/A #	295009 AA2.02			IR 3.6

Ability to determine and/or interpret the following as they apply to LOW REACTOR WATER LEVEL : Steam flow/feed flow mismatch (41.10)

Proposed Question:

While operating at 50% power in Three Element Control with the Master Controller in automatic, a downscale failure of one steam flow instrument to the Feedwater Level Control System occurs.

Which of the following describes the plant response to the steam flow/feed flow mismatch?

A. Reactor level will rise high enough to cause a High Reactor Water Level scram.

B. Reactor level will rise but stabilize at a higher level below the High Reactor Water Level scram.

C. Reactor level will drop low enough to cause the Low Reactor Water Level scram.

D. Reactor level will lower, but stabilize at a lower level above the Low Reactor Water Level scram setpoint.

Proposed Answer: D.

Explanation:
A. Level will lower as the system attempts to match feed flow to steam flow which is sensed at 25% below feed flow.
B. Level will lower as the system attempts to match feed flow to steam flow which is sensed at 25% below feed flow.
C. Level control will stabilize the lowering level before reaching the scram setpoint.
D. Correct – The control system will sense that steam flow is 25% less than feed flow and will try to match these signals by lowering feed flow resulting in level lowering. As level lowers below the setpoint, the control system will attempt to stabilize level resulting in level stabilizing at a level lower than normal but above the scram setpoint.

Technical Reference(s): R-STM-0107 Rev 22 Pg 68 of 101

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0107 Obj 13, 14

Question Source: Bank # RBS-NRC-73

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.4

Comments:

QUESTION 23 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	1	Group # 2	
	K/A #	295013 AK2.01		IR 3.6

Knowledge of the interrelations between HIGH SUPPRESSION POOL TEMPERATURE and the following: Suppression pool cooling (41.7)

Proposed Question:

The following conditions exist:

- Reactor Pressure 700 psig
- Sup Pool Temp 120°F
- Sup Pool Level 19' 8"
- Drywell Temp 130°F
- Drywell Pressure 1.0 psid
- Reactor Level -40 inches
- Containment Temp 100°F

- All control rods are fully inserted
- All ECCS Systems are available

Which of the following actions should be performed?

A. Operate all available Drywell Cooling

B. Open 7 ADS SRVs

C. Start RHR in Suppression Pool Cooling

D. Maximize CRD

Proposed Answer: C.

Explanation:
A. Drywell temperature has not reached 145°F. When temp can not be maintained below 145°F direction is provided to operate all available DW cooling.
B. Opening 7 ADS SRVs will emergency depressurize the RPV. None of the given parameters have reached ED criteria.
C. Correct Above SP temps of 100°F, direction is given to operate all available suppression pool cooling.
D. Maximize CRD is performed during ATWS or as an alternate level source. With all rods inserted and all ECCS systems available, maximizing CRD is not required.

Technical Reference(s): EOP-0002

Proposed references to be provided to applicants during examination: EOP Figure 2 HCTL Curve

Learning Objective: RLP-HLO-514 Obj 6

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑4

10 CFR Part 55 Content: 55.41b.10 Comments:

QUESTION 24 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	1	Group # 2	
	K/A #	295015 AK3.01		IR 3.4

Knowledge of the reasons for the following responses as they apply to INCOMPLETE SCRAM : Bypassing rod insertion blocks ((41.5)

Proposed Question:

An incomplete scram has occurred resulting in 6 control rods remaining fully withdrawn. The CRS has directed installation of EOP Enclosure 14, DEFEATING RC&IS INTERLOCKS AND EMERGENCY CONTROL ROD INSERTION DATA SHEET to __________________.

A. bypass Rod Insertion Blocks from the Rod Pattern Controller

B. bypass Rod Insertion Blocks from the Rod Withdrawal Limiter

C. bypass the Settle Function of the Rod Motion Timer

D. allow use of the Continuous Insert function of the Rod Control and Information System.

Proposed Answer: A.

Explanation:
A. Correct-Enclosure raises the value on the 1st Stage Turbine Pressure trip units to a value above the LPSP where the Rod Pattern Controller is bypassed. This will bypass any Insertion Block due to being outside the constraints of the Rod Pattern Controller.
B.See A.
C. See A.
D. See A.

Technical Reference(s): Enclosure 14

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-HLO-516 Obj 1; RLP-STM-0500 Obj 2b, 22a

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑3 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.5

Comments:

QUESTION 25 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	1	Group # 2	
	K/A #	295022 G2.1.28		IR 4.1

Knowledge of the purpose and function of major system components and controls. (41.7)

Proposed Question:

The purpose of the Control Rod Drive (CRD) Accumulators is…

A. to dampen system pressure surges during normal control rod movement.

B. to provide system pressure requirements to insert and withdraw control rods during normal rod movement during all conditions including a loss of CRD pumps.

C. to provide sufficient pressure to scram control rods under all conditions including a loss of CRD pumps.

D. to provide a free volume to accept the discharge of the CRD mechanism over-piston volume during a scram.

Proposed Answer: C.

Explanation:
A. See C.
B. See C.
C. The purpose of the CRD accumulator is to ensure that the control rods scram at varying reactor conditions. The accumulator stores sufficient energy to fully insert a control rod at any reactor vessel pressure.
D. See C.

Technical Reference(s): R-STM-0052 Rev 9 Pg 21 of 68

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0052 Obj 2h

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑2 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 26 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	1	Group # 2	
	K/A #	295032 EA1.03		IR 3.7

Ability to operate and/or monitor the following as they apply to HIGH SECONDARY CONTAINMENT AREA TEMPERATURE : Secondary containment ventilation (41.7)

Proposed Question:

During the performance of STP-000-0001 DAILY OPERATING LOGS, the auxiliary building operator reports a high temperature condition in the High Pressure Core Spray pump room.

The Unit Operator verifies the status of HVR-UC5 on _____(1)____ and verifies the alignment of cooling water on _____(2)______.

A. (1) H13-P863; (2) H13-P601 or H13-P863

B. (1) H13-P870; (2) H13-870 or H13-P863

C. (1) H13-P863; (2) H13-P863 or H13-P870

D. (1) H13-P870; (2) H13-P601 or H13-P863

Proposed Answer: C.

Explanation:
A. Part 1 is correct, but the cooling water indication lights on H13-P601 are for the HPCS Diesel Generator. Cooling water indication is found on H13-P863 and indications and controls are on H13-P870.
B. HVR-UC5 control switch is on H13-P863. Part 2 is correct.
C. Correct – The control switch and status lights for HVR-UC5 are on H13-P863. The control switch and indicating lights are on H13-P870. Additionally a set of valve position indicating lights are located on H13-P863.
D. HVR-UC5 control switch is on H13-P863 and the cooling water indication lights on H13-P601 are for the HPCS Diesel Generator. H13-P863 is correct and H13-P870 also contains control switches and indicating lights.

Technical Reference(s): R-STM-0409 Rev 6 Page 12 of 40, SOP-0018 Rev 52 Pg 151-154 of 158 Att. 4B

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0409 Obj 4

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑3 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 27 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	1	Group # 2	
	K/A #	295035 EK1.01		IR 3.9

Knowledge of the operational implications of the following concepts as they apply to SECONDARY CONTAINMENT HIGH DIFFERENTIAL PRESSURE : Secondary Containment Integrity (41.8 to 41.10)

Proposed Question:

While in Mode 3, the following annunciator is received in the main control room:

- ANNULUS PRESSURE HIGH

There is no indication of a primary system leak. Associated ventilation has been verified as working properly and the alarm has been verified to represent a valid condition.

Which of the following is correct concerning the above conditions?

A. A loss of primary containment integrity exists. Primary containment integrity IS required in this mode.

B. A loss of secondary containment integrity exists. Secondary containment integrity IS required in this mode.

C. A loss of primary containment integrity exists. Primary containment integrity IS NOT required in this mode

D. A loss of secondary containment integrity exists. Secondary containment integrity IS NOT required in this mode.

Proposed Answer: B.

Explanation:
A. The annulus or shield building is part of secondary containment, not primary containment.
B. Correct – The annulus is normally maintained at a negative pressure. This alarm indicates that annulus pressure is above normal. This could be caused by a ventilation problem or loss of integrity. Secondary containment integrity is required in Modes 1, 2 and 3.
C. The annulus or shield building is part of secondary containment, not primary containment.
D. First part is correct, but secondary containment integrity is required in Mode 3.

Technical Reference(s): ARP-P863/72A/A01; TS 3.6.4.1

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0403 Obj 13

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑3 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.9 Comments:

QUESTION 28 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 1	
	K/A #	203000 A2.09		IR 3.3

Ability to (a) predict the impacts of the following on the RHR/LPCI: INJECTION MODE (PLANT SPECIFIC) ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Inadequate system flow (41.5)

Proposed Question:

Following a plant transient, the following conditions exist:

- Reactor level -45 inches
- Reactor pressure 850 psig
- Suppression Pool Temp 120°F
- Suppression Pool Level 19'10"
- CST Level 20'2"

High Pressure Core Spray is being used for reactor level control with its suction aligned to the suppression pool when the minimum flow valve, system flow indication and motor amperage indications all begin to fluctuate.

RHR 'B' which is in the suppression pool cooling lineup begins to experience the same indications.

Which of the following contains the impact of this condition and the action to be taken?

A. The ability to cool the suppression pool is impacted. The RHR 'B' suction strainer should be back flushed. No other action is required.

B. The ability to maintain adequate core cooling is impacted. The HPCS suction strainer should be flushed. No other action is required.

C. The ability to cool the suppression pool and maintain adequate core cooling are impacted. Both RHR 'B' and HPCS suction strainers should be back flushed.

D. The ability to cool the suppression pool and maintain adequate core cooling are impacted. RHR 'B' suction strainer should be back flushed and HPCS suction should be aligned to the CST.

Proposed Answer: D.

Explanation:
A. Action must be taken to address HPCS.
B. Action must be taken to address RHR B
C. Although both systems are addressed, HPCS should be aligned to the CST where it will not be affected by suppression pool debris.
D. Correct Parameters indicate ECCS suction strainer blockage. In accordance with AOP-0059, HPCS should be aligned to the CST and RHR B suction strainer should back flushed.

Technical Reference(s): AOP-0059 Rev 5 Learning Objective: RLP-OPS-553 Obj 1 & 5
Proposed references to be provided to applicants during examination: None
Question Source: New Question History: Last NRC Exam NA
Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑4
10 CFR Part 55 Content: 55.41b.7, 55.41b.10 Comments:

QUESTION 29 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 1	
	K/A #	205000 A3.03		IR 3.5

Ability to monitor automatic operations of the SHUTDOWN COOLING SYSTEM (RHR SHUTDOWN COOLING MODE) including: Lights and alarms (41.7)

Proposed Question:

The plant is operating in Mode 4 with Residual Heat Removal (RHR) Loop A in service. Surveillance testing has resulted in receipt of the following indications on H13-P601:

DIV 1 & 4 OUTBOARD HALF ISOLATION	Amber Light ON
RWCU	White light ON
MSL DRAINS	White light ON
BOP	White light ON
RHR E12-F040	White light ON
RHR E12-F008	White light OFF
RX WATER SAMPLE B33-F020	White light ON

Based on the above, what is the status of RHR A Shutdown Cooling?

A. The shutdown cooling flowpath is isolated, but the pump remains in service.

B. The shutdown cooling flowpath is isolated, and the pump has tripped.

C. Shutdown cooling remains in service but a ¼ isolation signal is present.

D. Shutdown cooling remains in service but a ½ isolation signal is present.

Proposed Answer: B.

Explanation:
A. The pump will not remain in service with E12-F008 isolated.
B. Correct – The amber half isolation indicates the an outboard isolation has occurred. The E12-F008 indicates that the RHR SDC suction and return to feedwater has received an isolation signal. The RHR pump breaker trips due to the loss of flowpath.
C. The white light alone would indicate a ¼ isolation, but the presence of the amber light indicates an isolation has occurred.
D. In this case, the term half isolation indicates one division has isolated. SDC will not remain in affect with an isolation present.

Technical Reference(s): AOP-0003 Rev 31, R-STM-0204 Rev 10; R-STM-0058 Rev 08

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0204 Obj 5; RLP-STM-0058 Obj 2f, 3c

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.7 Comments:

QUESTION 30 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 1	
	K/A #	209001 A4.03		IR 3.7

Ability to manually operate and/or monitor in the control room: LOW PRESSURE CORE SPRAY Injection valves (41.7)

Proposed Question:

A steam line rupture has resulted in the following conditions:

Reactor pressure	430 psig.
Reactor water level	-125 inches inches (lowest reached was -130 inches)
Drywell pressure	1.2 psid (highest reached was 1.4 psid)

Low Pressure Core Spray pump was running for testing prior to the transient.

With the above conditions, which of the following describes operation of the Low Pressure Core Spray Injection Valve (E21-MOVF005)?

A. E21-MOVF005 has automatically opened and will allow injection flow to the RPV when vessel pressure lowers below pump shutoff head.

B. E21-MOVF005 can be manually opened to allow injection flow to the RPV when vessel pressure lowers below pump shutoff head.

C. E21-MOVF005 is overridden shut preventing injection flow to the RPV

D. E21-MOVF005 will automatically open when RPV pressure drops below the injection pressure permissive.

Proposed Answer: B.

Explanation:
A. E21-MOVF005 automatically open on Level 1 (-143”) or High Drywell Pressure (1.68 psid) if RPV pressure <487 psig. There is currently no Level 1 or Hi DW pressure signal present.
B. Correct – With RPV pressure below 487 psig, the LPCS injection valve can be manually open to provide injection to the RPV.
C. An ECCS initiation signal is required to override E21-MOVF005. No initiation signal is present, so the valve can not be overridden.
D. Pressure is already below the injection permissive. The valve has not auto-opened due to not having an initiation signal present.

Technical Reference(s): R-STM-0205 Rev 5 Pg 11 of 33

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0205 Obj 5b

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.7 Comments:

QUESTION 31 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group #	1
	K/A #	209002 G2.2.22		IR 4.0

Knowledge of limiting conditions for operations and safety limits for HIGH PRESSURE CORE SPRAY. (41.5)

Proposed Question:

In accordance with Technical Specification 3.5.1, ECCS-OPERATING, High Pressure Core Spray must be operable in Modes ____(1)_____. In addition, if RPV steam dome pressure is >100 psig ______(2)_____ must also be operable to ensure RPV injection will occur during a small break LOCA coincident with a failure of High Pressure Core Spray.

A. (1) 1, 2, & 3 (2) Automatic Depressurization System (ADS)

B. (1) 1 & 2 only (2) Automatic Depressurization System (ADS)

C. (1) 1, 2, & 3 (2) Reactor Core Isolation Cooling (RCIC)

D. (1) 1 & 2 only (2) Reactor Core Isolation Cooling (RCIC)

Proposed Answer: A.

Explanation:
A. Correct – Applicability for LCO 3.5.1 is Modes 1,2,3. ADS is also required if RPV pressure is >100psig.
B. Part 2 is correct, but HPCS is also required in Mode 3.
C. Part 1 is correct, but RCIC is not included in the LCO 3.5.1. It is included in LCO 3.5.3.
D. HPCS is required in Mode 3 and RCIC is not included in the LCO 3.5.1. It is included in LCO 3.5.3.

Technical Reference(s): TS 3.5.1

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0203 Obj 14

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑3 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.5

Comments:

QUESTION 32 Rev 0

Examination Outline Cross-Reference:	Level	RO ☑	SRO ☐
	Tier # 2	Group # 1	
	K/A # 211000 K1.07		IR 2.6

Knowledge of the physical connections and/or cause/effect relationships between STANDBY LIQUID CONTROL SYSTEM and the following: Jet pump differential pressure indication: Plant-Specific (41.2 to 41.9)

Proposed Question:

Non-calibrated jet pump differential pressure transmitters receive a high pressure input from ____________.

A. Standby Liquid Control sparger line.

B. the associated jet pump's diffuser section.

C. the above core plate pressure tap.

D. High Pressure Core Spray sparger.

Proposed Answer: A.

Explanation:
A. The SLC sparger line or below core plate pressure tap provides the HP tap for non-calibrated jet pumps.
B. Only calibrated jet pumps have a diffuser section tap.
C. See A.
D. See A.

Technical Reference(s): R-STM-0051 Rev 4 Figure 21 & Pg 16 of 47

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0053 Obj 1g, 5h

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑3 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.2

Comments:

QUESTION 33 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 1	
	K/A #	212000 K2.01		IR 3.2

Knowledge of electrical power supplies to the following: RPS motor-generator sets (41.7)

Proposed Question:

The power supply to the "A" Reactor Protection System (RPS) Motor Generator Set is __________.

A. NHS-MCC10A2

B. NHS-MCC10B

C. EHS-MCC14A

D. EHS-MCC14B

Proposed Answer: A.

Explanation:
A. Correct-NHS-MCC10A2 supplies the "A" RPS MG set.
B. NHS-MMC10B supplies the "B" RPS MG set.
C. EHS-MCC14A supplies the RPS A alternate power source.
D. EHS-MCC14B supplies the RPS B alternate power source.

Technical Reference(s): EE-001LA

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0508 Obj 4a

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑3 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 34 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 1	
	K/A #	215003 K3.01		IR 3.9

Knowledge of the effect that a loss or malfunction of the INTERMEDIATE RANGE MONITOR (IRM) SYSTEM will have on following: RPS (41.7)

Proposed Question:

A reactor startup is in progress with the reactor mode switch in START UP/HOT STBY. All IRMs are on Range 4.

The ATC operator attempts to Uprange IRM 'D', but the channel fails to uprange.

Which of the following is the expected response?

A. When IRM "D" UP light on H13-P680 illuminates, a Reactor Protection System (RPS) half scram signal will be generated.

B. When IRM "D" channel output reaches a value of 120/125 a Rod Control & Information System (RC&IS) Control Rod Insertion Block will be generated.

C. When IRM "D" channel output reaches a value of 120/125 a Reactor Protection System (RPS) half scram signal will be generated.

D. When IRM "D" UP light on H13-P680 illuminates, a Rod Control & Information System (RC&IS) Control Rod Withdrawal Block will be generated.

Proposed Answer: C.

Explanation:
A. There are not automatic functions from the UP light which illuminates at 75/125. The RPS half scram occurs at 120/125.
B. Control Rod Insertion Blocks are not initiated from Nuclear Instrumentation. Only the Rod Pattern Controller initiates Insertion Blocks. Additionally, the withdrawal block occurs at 108/125.
C. Correct – A division 2 half scram will be initiated when IRM "D" reaches 120/125.
D. UP light serves no automatic function. It will illuminate at 75/125, RC&IS withdrawal block occurs at 108/125.

Technical Reference(s): R-STM-0503 Rev 7 Figure 30, Figure 63

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0503 Obj 36a

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 35 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 1	
	K/A #	215004 K4.05		IR 2.5

Knowledge of SOURCE RANGE MONITOR (SRM) SYSTEM design feature(s) and/or interlocks which provide for the following: Alarm seal-in (41.7)

Proposed Question:

During a reactor startup, the Source Range Monitors reached the following values before being withdrawn.

SRM A	1.2×10^5 cpm	SRM C	2.4×10^4 cpm
SRM B	2.2×10^5 cpm	SRM D	9.2×10^3 cpm

SRM(s) __(1)__ has (have) sealed in upscale alarm(s) which can be reset from __(2)__.

A. (1) A & B; (2) H13-P680

B. (1) D; (2) SRM D back panel drawer

C. (1) D; (2) H13-P680

D. (1) A & B; (2) SRM A and B individual back panel drawers;

Proposed Answer: D.

Explanation:
A. SRM upscale alarms at 1.0×10^5 cpm but the reset capability is on the individual SRM drawers.
B. SRM D value is below the alarm setpoint.
C. SRM D value is below the alarm setpoint and the reset switch is on the SRM drawer.
D. Correct - SRM upscale alarms at 1.0×10^5 cpm and the reset capability is on the individual SRM drawers.

Technical Reference(s): R-STM-0503, Rev 7, Pg 19 of 111

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0503 Obj 1 & 6

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 36 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 1	
	K/A #	215005 K5.05		IR 3.6

Knowledge of the operational implications of the following concepts as they apply to AVERAGE POWER RANGE MONITOR/LOCAL POWER RANGE MONITOR SYSTEM : Core flow effects on APRM trip setpoints (41.5)

Proposed Question:

The APRM "B" Reactor Recirculation System Flow Converter has failed (resulting in zero output) with the reactor operating at 100% power

Which of the following describes what will be generated by APRM Channel B?

A. Downscale Alarm and a Rod Block

B. Rod Block only

C. Half scram signal only

D. Rod Block and Half Scram signal

Proposed Answer: D

Explanation:
A. See D.
B. See D.
C. See D.
D. As the reactor recirculation flow input to the flow control trip reference card lowers, the resultant APRM trip setpoints for both rod blocks and half scrams are also reduced. Since the stem indicates that power is at 100%, both a rod block and half scram will be generated to discontinue operation in a region of instability.

Technical Reference(s): R-STM-0503 Rev 7 Pg 61 of 111

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0503 Obj 27, 39d

Question Source: Bank # RBS-NRC-13

Question History: Last NRC Exam RBS 1997

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.2

Comments:

QUESTION 37 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 1	
	K/A #	217000 K6.03		IR 3.5

Knowledge of the effect that a loss or malfunction of the following will have on the REACTOR CORE ISOLATION COOLING SYSTEM (RCIC) : Suppression pool water supply (41.7)

Proposed Question:

Suppression Pool Temp	145°F
Suppression Pool Level	20'5"
Condensate Storage Tank Level	0'

The primary concern with RCIC injection to the RPV under these conditions is…

A. equipment damage due to lack of lube oil cooling.

B. inadequate Net Positive Suction Head leading to cavitation.

C. air entrainment due to vortexing.

D. water quality of injection source.

Proposed Answer: A.

Explanation:
A. Correct - The elevated sup pool temp could lead to bearing damage from lack of lube oil cooling.
B. Suction source swapped to SP at 20'3.5" therefore NPSH is not a concern. SP Level >10' and SP Temp <160°F
C. Suction source swapped to SP at 20'3.5" therefore vortexing is not a concern. SP Level >10' and SP Temp <160°F
D. Although the suction source has realigned to the Sup Pool the water quality of the pool is sufficient for injection.

Technical Reference(s): EOP Caution 3

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0209 Obj 16b

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 38 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 1	
	K/A #	218000 A1.04		IR 4.1

Ability to predict and/or monitor changes in parameters associated with operating the AUTOMATIC DEPRESSURIZATION SYSTEM controls including: Reactor pressure (41.5)

Proposed Question:

The following conditions exist:

- Reactor power 0%, all rods inserted
- Reactor level -155 inches, stable
- Reactor pressure 1050 psig, slight upward trend
- Drywell pressure 1.7 psid
- Low Low Set Logic light is illuminated

Following 2 minutes of operation with above conditions, which of the following describes the effect on reactor pressure?

Reactor pressure is…

A. …cycling between 1063 psig and 956 psig due to the operation of 2 SRVs.

B. …cycling between 1063 psig and 956 psig due to the operation of 1 SRV.

C. …trending lower and will continue to lower until the vessel is depressurized.

D. …trending lower and will continue to lower until Automatic Depressurization System (ADS) Manual Inhibit switches are placed in INHIBIT following ADS actuation.

Proposed Answer: C.

Explanation:
A. 105 seconds after reaching the above conditions, ADS will actuate lowering RPV pressure to a depressurized state. Additionally, if ADS signals weren't present, only 1 SRV would be required to control pressure.
B. This answer would be correct if ADS initiation logic parameters were not met.
C. Correct – ADS logic is satisfied: (Level 1, Hi DW, LP ECCS pumps (start on Level 1), Conf. Level 3, 105 second timer). ADS valves open and remain open.
D. First part is correct, but ADS valves will not close by using the Inhibit switch after they've already actuated.

Technical Reference(s): R-STM-0202, Rev 2 Pg 4, 14 of 36

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0202 Obj 2 & 7

Question Source: New Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.7 Comments:

QUESTION 39 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑ SRO ☐	
	Tier #	2	Group # 1	
	K/A #	223002 A2.09		IR 3.6

Ability to (a) predict the impacts of the following on the PRIMARY CONTAINMENT ISOLATION SYSTEM/NUCLEAR STEAM SUPPLY SHUT-OFF ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: System initiation (41.5)

Proposed Question:

RHR ‘A’ is running in the Fuel Pool Cooling Assist Mode with suction aligned via SFC-MOV121, FPC PMP OUTBD ISOL and SFC-MOV139, PRFCN RTN INBD ISOL when an inadvertent Balance of Plant (BOP) isolation occurs.

(1) What is the impact of this condition and (2) what actions should be taken?

A. (1) RHR ‘A’ will trip;
(2) In accordance with STP-000-0700, RCS PRESSURE/TEMPERATURE LIMITS VERIFICATION, monitor the vessel heat up rate.

B. (1) RHR ’A’ will trip;
(2) In accordance with AOP-0020, ALTERNATE METHODS OF DECAY HEAT REMOVAL, aligned an alternate method of decay heat removal.

C. (1) RHR ‘A’ will continue to run without a suction path;
(2) In accordance with SOP-0031, RESIDUAL HEAT REMOVAL, open an alternate suction path.

D. (1) RHR ‘A’ will continue to run without a suction path;
(2) In accordance with AOP-0003, AUTOMATIC ISOLATIONS, secure RHR ‘A’ to avoid pump damage.

Proposed Answer: D.

Explanation:
A. Listed SFC MOVs will isolate. The position of the listed SFC valves are not in the breaker tripping logic for RHR A therefore the pump will continue to run.
B. Listed SFC MOVs will isolate. The position of the listed SFC valves are not in the breaker tripping logic for RHR A therefore the pump will continue to run.
C. Part 1 is correct. See D.
D. Correct – The position of the listed SFC valves are not in the breaker tripping logic for RHR A therefore the pump will continue to run despite the suction path isolation. AOP-0003 gives guidance to secure the pump if this situation occurs.

Technical Reference(s): AOP-0003 Rev 31 Pg 5 of 22
Proposed references to be provided to applicants during examination: None
Learning Objective: RLP-HLO-522 Obj 3,4,5 Question Source: New
Question History: Last NRC Exam NA
Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3
10 CFR Part 55 Content: 55.41b.7 & b.10
Comments:

QUESTION 40 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group #	1
	K/A #	239002 A3.06		IR 4.1

Ability to monitor automatic operations of the RELIEF/SAFETY VALVES including: Reactor pressure (41.7)

Proposed Question:

An ATWS is in progress with the following conditions:

- MSIVs are shut
- Reactor power 23%
- 3 SRVs are open

With the above conditions, the expected reactor pressure trend is ___(1)____. To change the direction of reactor pressure trend with the minimum number of SRVs, a total of __(2)__ SRVs should be open.

A. (1) rising; (2) 4

B. (1) lowering; (2) 2

C. (1) rising; (2) 5

D. (1) lowering; (2) 1

Proposed Answer: A.

Explanation:
A. Correct – Each SRV has a capacity of 6-7% of rated steam flow. Three SRVs can help the steam flow of ~18-21% power, therefore if power is 23%, reactor pressure trend is rising. To turn the direction of trend, an additional SRV must be open (which would handle ~24-28% rated steam flow).
B. See A.
C. Five will change the direction of trend, but 5 is not the minimum number of SRVs that can change the direction of trend.
D.See A.

Technical Reference(s): R-STM-0109 Rev 9 Pg 9 of 95

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0109 Obj 3b, 28b

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.3 Comments:

QUESTION 41 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐	
	Tier #	2	Group #	1	
	K/A #	259002 A4.01			IR 3.8

Ability to manually operate and/or monitor in the control room: All individual component controllers in the manual mode for Reactor Water Level Control. (41.7)

Proposed Question:

A feedwater level control system failure has resulted in the output of Master controller failing to 100% demand. Attempts to control the Master controller in manual were unsuccessful.

The reactor has been scrammed in accordance with AOP-0006, CONDENSATE & FEEDWATER FAILURES. The startup regulating valve is not available for service.

Which of the following actions should be performed to control feed flow to the RPV?

A. Trip all feedwater pumps

B. Place individual feedwater regulating valve controllers in manual mode and throttle as necessary using the OPEN/CLOSED pushbuttons

C. Throttle the feedwater regulating valves isolation MOV

D. Isolate the feedwater regulating valves isolation MOV

Proposed Answer: B.

Explanation:
A. It is not necessary to secure feedwater. The regulating valves may be controlled individually in manual.
B. Correct – In manual the regulating valves will no longer be affected by the failure of the Master controller. Injection flow can still be controlled in manual.
C. These MOVs can not be throttle from the control room. Although they could be manually controlled by an operator in the field, this method of control will not provide as fine control as option B. Additionally, there is no procedure guidance for this method.
D. This will completely isolate feedwater from the RPV and will require a different injection source. Option B still allows use of feedwater controlled from the main control room.

Technical Reference(s): R-STM-0107 Rev 22 Pg 64 of 101

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0107B Obj 3,5,13

Question Source: New Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑3 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.7 Comments:

QUESTION 42 Rev 0

Examination Outline Cross-Reference:	Level	RO ☑	SRO ☐
	Tier # 2	Group # 1	
	K/A # 261000 G2.4.2		IR4.5

Knowledge of SGTS system setpoints, interlocks and automatic actions associated with EOP entry conditions. (41.7)

Proposed Question:

Which of the following parameters will initiate Standby Gas Treatment and is also an entry condition to the Emergency Operating Procedures? (Consider specific values for setpoints and entry conditions).

A. Reactor Water Level 3

B. Reactor Water Level 2

C. Reactor Water Level 1

D. Drywell Pressure 1.68 psid

Proposed Answer: D.

Explanation:
A. Although an entry condition to EOP-1, Level 3 will not initiate SGTS.
B. Although Level 2 will initiate SGTS, Level 2 is not an entry condition to the EOPs.
C. Level 1 is not an entry condition to the EOPs, nor will it initiate SGTS.
D. 1.68 psid drywell differential pressure will initiate SGTS and is an entry condition to EOP-1.

Technical Reference(s): EOP-1, R-STM-0403 Rev 8, Pg 10 of 28

Proposed references to be provided to applicants during examination: NA

Learning Objective: R-LPOPS-HLO-512 Obj 3; RLP-STM-0257 Obj 5a

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑2

10 CFR Part 55 Content: 55.41b.7 & b.10

Comments:

QUESTION 43 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 1	
	K/A #	262001 K1.03		IR 3.4

Knowledge of the physical connections and/or cause/effect relationships between A.C. ELECTRICAL DISTRIBUTION and the following: Off-site power sources (41.2 to 41.9)

Proposed Question:

Entergy Line personnel will be performing maintenance on the 230 kV North Bus at the Fancy Point Switchyard. The bus will be de-energized to support the maintenance activities.

How is the River Bend AC Electrical Distribution System affected by this outage?

A. Line RSS-1 will be de-energized.

B. Line RSS-2 will be de-energized.

C. Both offsite power sources will remain available via the 500 kV switchyard

D. Both offsite power sources will remain available via the 230 kV South Bus

Proposed Answer: D.

Explanation:
A. See D.
B. See D.
C. There no direct physical connection between the 500 kV yard and RSS-1 and RSS-2.
D. The ring bus arrangement at the Fancy Point switchyard allows for both offsite power sources to remain available when either north or south bus is de-energized. Each bus is capable of carrying the total connected load.

Technical Reference(s): R-STM-0300 Rev 24 Pg 6 of 148

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0300 Obj 2, 14

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑3 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 44 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 1	
	K/A #	262002 K3.01		IR 3.1

Knowledge of the effect that a loss or malfunction of the Uninterruptible Power Supply (AC/DC) will have on Water Level Control. (CFR 41.7)

Proposed Question:

A failure of Uninterruptible Power Supply BYS-INV01B will result in Feedwater Regulating Valves failing ____(1)_____ due to a loss of control signal from ____(2)_______.

A. (1) as-is; (2) VBN-PNL01B1

B. (1) as-is; (2) VBS-PNL01B

C. (1) open; (2) VBN-PNL01B1

D. (1) open; (2) VBS-PNL01B

Proposed Answer: A.

Explanation:
A. Correct – Feed reg valves fail as-is or locked up due loss of signal. The control logic power is supplied by VBN-PNL01B1 which is powered by BYS-INV01B1.
B. Part 1 is correct. VBS is powered by ENB-PNL01B and does not supply Feedwater Level Control.
C. Valves lock up or fail as is on loss of signal. Part 2 is correct.
D. Valves lock up or fail as is on loss of signal. VBS is powered by ENB-PNL01B and does not supply Feedwater Level Control.

Technical Reference(s): AOP-0042 Rev 35 Pg 7-8 of 89, R-STM-0107 Rev 22 Pg 67, 70 of 101

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0107B Obj 6,10,15

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 45 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 1	
	K/A #	263000 K2.01		IR 3.1

Knowledge of electrical power supplies to the following: Major D.C. loads (CFR: 41.7)

Proposed Question:

ENB-MCC1 is powered from ______________.

A. BYS-SWG1A

B. BYS-SWG1B

C. ENB-SWG1A

D. ENB-SWG1B

Proposed Answer: C.

Explanation:
A. See C.
B. See C.
C. ENB-SWG1A provides 125 VDC power to ENB-MCC1.
D. See C.

Technical Reference(s): EE-001AC

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0305 Obj 2

Question Source: Bank # RBS March 2010 Audit #10

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑4 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 46 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐	
	Tier #	2	Group # 1		
	K/A #	264000 K4.04			IR 2.6

Knowledge of EMERGENCY GENERATORS (DIESEL/JET) design feature(s) and/or interlocks which provide for the following: Field flashing (CFR: 41.7)

Proposed Question:

When starting a Standby Emergency Diesel Generator, initial excitation is provided by _____(1)_____ and following initial start, excitation is maintained by ______(2)______

A. (1) a 125 VDC field flashing circuit; (2) the output of the generator.

B. (1) the output of the generator; (2) an external 125 VDC power source.

C. (1) a 125 VDC field flashing circuit; (2) the same 125 VDC power source.

D. (1) residual magnetism; (2) the output of the generator.

Proposed Answer: A.

Explanation:
A. Correct – Initial excitation is provided by ENB-PNL03A(B) 125VDC to establish the generator field. Excitation is later maintained by the generator output.
B. See A.
C. See A.
D. See A.

Technical Reference(s): R-STM-0309S Rev 13 Pg 5 of 117

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0309S Obj 3f

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑3 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 47 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 1	
	K/A #	300000 K5.01		IR 2.5

Knowledge of the operational implications of the following concepts as they apply to the INSTRUMENT AIR SYSTEM: Air compressors (41.5)

Proposed Question:

The instrument air compressors are all available and operating with the local SEQUENCE CONTROL switch in Position 3 (C-A-B). Only the IAS-C2C has been operating to maintain system pressure.

A relay failure in the control circuit for compressor IAS-C2C causes it to shutdown.

With no change in Instrument Air System usage, which of the following describes the effect of the compressor shutdown on the Instrument Air System?

A. IAS-C2A operates alone, maintaining a lower header pressure.

B. IAS-C2B operates alone, maintaining a lower header pressure.

C. Both compressors IAS-C2A and C2B are operating, maintaining the same header pressure.

D. Both compressors IAS-C2A and C2B are operating, maintaining a lower header pressure.

Proposed Answer: A.

Explanation:
A. Correct-IAS-C2A is the second compressor to sequence on in Position 3, so it will start as pressure lowers to the mid range setpoint (115.5 psig) which is lower than the pressure setpoint for the start of IAS-C2C (118.5 psig).
B. IAS-C2B is the third compressor to start in Position 3 (109.5 psig), therefore it will not run before IAS-C2A.
C. With system demand unchanged, there is no need for two compressors to run. Additionally, system pressure will not be maintained the same as before (118.5 psig) the failure because IAS-C2A is being controlled by the mid range pressure switches (115.5 psig) in Position 3.
D. With system demand unchanged, there is no need for two compressors to run.

Technical Reference(s): R-STM-0121 Rev 15 Pg 14 of 69

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0121 Obj 3a

Question Source: Bank # RBS-NRC-917

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑4

10 CFR Part 55 Content: 55.41b.5 Comments:

QUESTION 48 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 1	
	K/A #	400000 K6.05		IR 2.8

Knowledge of the effect that a loss or malfunction of the following will have on the CCWS: Motors (41.7)

Proposed Question:

CCP-P1A, (REACTOR PLANT COMPONENT COOLING WATER) motor has an internal short which caused the associated breaker to trip due to an overcurrent condition.

Which of the following describes the CCP system response to the trip of CCP-P1A?

A. The standby CCP pump will automatically start on the trip of the running pump.

B. The standby CCP pump will automatically start after system pressure drops below a low pressure setpoint.

C. Standby Service Water will initiate after system pressure drops below a low pressure setpoint.

D. Control Rod Drive pump will trip after system pressure drops below a low pressure setpoint.

Proposed Answer: A.

Explanation:
A. Correct – The trip of a running CCP pump automatically starts the standby CCP pump.
B. Although a low pressure signal will start the standby CCP pump, the pump will have already started due to the trip of the inservice pump.
C. The standby CCP pump will start and restore pressure prior to reaching the Standby Service Water initiation signal.
D. The standby CCP pump will start and restore pressure prior to reaching the CRD pump trip signal.

Technical Reference(s): R-STM-0115 Rev 6 Pg 7 of 35.

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0115 Obj 3a, 4b

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑3 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 49 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 1	
	K/A #	203000 A1.01		IR 4.2

Ability to predict and/or monitor changes in parameters associated with operating the RHR/LPCI: INJECTION MODE (PLANT SPECIFIC) controls including: Reactor water level (41.5)

Proposed Question:

A LOCA occurred resulting in complete depressurization of the RPV. No injection sources were available causing level to lower to -287 inches.

One Low Pressure Coolant Injection (LPCI) subsystem has been restored and is available to inject. The source of the leak has been identified and isolated.

Assuming a volume of 200 gallons per inch in the reactor vessel, which of the following represents the minimum time it will take for the LPCI system to restore level to above the top of active fuel (TAF)?

A. 3 minutes

B. 5 minutes

C. 7 minutes

D. 9 minutes

Proposed Answer: B.

Explanation:
A. Even if operated at runout conditions 6060 gpm, it would still take in excess of 4 minutes to restore level above TAF.
B. Correct – TAF is -162”. Level must rise 125 inches. At 200 gallons per inch, 25000 gallons are required to raise level above TAF. Design flow of LPCI when depressurized is approximately 5000 gpm (5165 gpm)
C. In 7 minutes, level will be above TAF, but this doesn’t represent the minimum time. Distractor chosen to represent the expected value if a 4000 gpm design flow rate is assumed.
D. In 9 minutes, level will be above TAF, but this doesn’t represent the minimum time. Distractor chosen to represent the expected value if a 3000 gpm design flow rate is assumed.

Technical Reference(s): R-STM-0204 Rev 10 Pg 7 of 63, R-STM-0051 Rev 4 Figure 2

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0204 Obj 10

Question Source: New Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.7 Comments:

QUESTION 50 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 1	
	K/A #	212000 A2.06		IR 4.1

Ability to (a) predict the impacts of the following on the REACTOR PROTECTION SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: High reactor power (41.5)

Proposed Question:

A plant transient has resulted in a high reactor power condition detected by all Average Power Range Monitors at a value higher than their setpoints.

How does this impact the Reactor Protection System (RPS) and what action(s) should the operator take?

The RPS scram pilot valves are ___(1)___ and in accordance with AOP-0001 the operator should __(2)___.

A. (1) energized; (2) Place the mode switch in the SHUTDOWN position

B. (1) de-energized; (2) Place the mode switch in the SHUTDOWN position

C. (1) energized; (2) Arm and depress all 4 manual scram pushbuttons

D. (1) de-energized; (2) Arm and depress all 4 manual scram pushbuttons

Proposed Answer: B.

Explanation:
A. RPS is normally energized and de-energizes when actuated. Part 2 is correct.
B. Correct – RPS de-energizes when actuated. AOP-1 directs placing the mode switch in SHUTDOWN.
C. RPS is normally energized and de-energizes when actuated. The 4 manual scram pushbuttons are only depressed if the control rods fail to insert.
D. Part 1 is correct but the 4 manual scram pushbuttons are only depressed if the control rods fail to insert.

Technical Reference(s): AOP-0001, R-STM-0508 Rev 6 Pg 21 of 59

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0508 Obj 14a; RLP-HLO-0520 Obj 4

Question Source: New

Question History: Last NRC Exam None

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.6 & b.10

Comments:

QUESTION 51 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 1	
	K/A #	262001 A3.03		IR 3.4

Ability to monitor automatic operations of the A.C. ELECTRICAL DISTRIBUTION including: Load shedding (41.7)

Proposed Question:

A LOCA signal coincident with a loss of offsite power has resulted in activation of Load Shedding and Sequencing timers.

Which of the following loads has been shed from the bus and will NOT be re-energized following completion of sequencing?

A. EJS-ACB51, ENB-CHGR1B 125 VDC STANDBY BATTERY CHARGER

B. EJS-ACB64, HVR-UC11B, AUX BUILDING UNIT COOLER

C. EJS-ACB76, HVR-UC1B,CONTAINMENT UNIT COOLER

D. EJS-ACB66, NHS-MCC102B DW COOLING MCC SUPPLY BREAKER

Proposed Answer: D.

Explanation:
A. See D.
B. See D.
C. See D.
D. Correct – ACB51 is re-energized upon output breaker closure, ACB64 is re-energized within 20 seconds of output breaker closure, ACB76 is re-energized within 600 seconds of output breaker closure.

Technical Reference(s): AOP-0004 Rev 41 Attachment 1 & 2

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0300 Obj 6

Question Source: New

Question History: Last NRC Exam None

Cognitive Level: Memory or Fundamental Knowledge ☑2 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 52 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 1	
	K/A #	262002 K6.02		IR 2.8

Knowledge of the effect that a loss or malfunction of the following will have on the Uninterruptible Power Supply (AC/DC) DC Electrical Power (41.7)

Proposed Question:

BYS-INV01A displays the following information:

- Rectifier Output 0 VDC
- Battery Output 135 VDC
- Inverter Output 122 VAC

Under these conditions, what is the status of the loads normally supplied by this inverter?

A. Loads are currently being supplied by the battery via the inverter.

B. Loads are currently being supplied by the normal AC source via the inverter.

C. Loads have automatically swapped to Manual Bypass mode and are being supplied by the alternate AC source.

D. Loads are currently de-energized.

Proposed Answer: A.

Explanation
A. Correct – The DC supply from the rectifier normally supplies the inverter, but if the rectifier output voltage drops below the Battery Output voltage, the load will continue to be supplied by the inverter with the battery as its input source.
B. The normal AC source is supplied via the rectifier. If the rectifier output is 0 VDC, the normal AC source can not be supplying the loads.
C. There is no automatic swap to the Manual Bypass mode. The static switch automatically swaps to the alternate source, but to swap to the Manual Bypass mode, manual action is required.
D. Uninterruptible Power Supplies utilize redundant power sources to avoid unanticipated load of power to important buses. The loss of the rectifier as indicated in the stem would not result in a loss of power to the loads.

Technical Reference(s): R-STM-0300 Rev 24, Pg 23-25 of 148

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0300 Obj 13d

Question Source: Bank # RBS 2008 Audit #49

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41_____

Comments:

QUESTION 53 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 1	
	K/A #	400000 G2.1.7		IR 4.4

Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation. (41.5)

Proposed Question:

With the plant operating at 100%, the following annunciators are received:

- TURB CMPNT CLG WTR SYS SURGE TK LOW LEVEL
- TURB CMPNT CLG WATER SYSTEM LOW PRESSURE

On H13-P870, the unit operator observes:

- All 3 Turbine Plant Component Cooling Water (CCS) pumps are running with elevated amps
- MWS-AOV132 TPCCW SURGE TK MAKE-UP VALVE is OPEN

Which of the following is the cause of the above and can plant operation continue?

A. CCS-PV111 MINIMUM FLOW AND PRESSURE CONTROL VALVE, has failed CLOSED. Plant operation can <u>NOT</u> continue.

B. CCS-TV104 COMP CLG WTR HT EXCH BYPASS has failed CLOSED. Plant operation can continue with maximum cooling to CCS.

C. CCS-LT113, SURGE TANK LEVEL TRANSMITTER has failed low. Plant operation can continue.

D. CCS piping failure is causing a loss of inventory. Plant operation can <u>NOT</u> continue.

Proposed Answer: D.

Explanation:
A. CCS-PV111 failing closed would raise pressure, not lower it.
B. This condition would cause max cooling, but would not account for the loss of inventory or lowering pressure.
C. The failed transmitter would cause the makeup valve to open and the low tank level alarm, but would not cause all 3 pumps to run.
D. Correct – A large leak would cause all the above mentioned indications, low pressure which starts stby pump, max amps as the pumps operate in runout condition, and loss of inventory which causes the surge tank low level and opening of the makeup valve. This would constitute a loss of CCS requiring plant shutdown.

Technical Reference(s): ARP-P870-55-B01, C02, PID 09-07A, AOP-0012 Rev 12
Proposed references to be provided to applicants during examination: None
Learning Objective: RLP-STM-116 Obj 1,2, 5
Question Source: Bank # RBS-March 2010 Audit #6
Question History: Last NRC Exam NA
Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3
10 CFR Part 55 Content: 55.41b.4 Comments:

QUESTION 54 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑ SRO ☐
	Tier #	2	Group # 2
	K/A #	201001 K1.01	IR 3.1

Knowledge of the physical connections and/or cause/effect relationships between CONTROL ROD DRIVEHYDRAULIC SYSTEM and the following: Condensate system
(41.2 to 41.9)

Proposed Question:

The preferred suction source for the Control Rod Drive Hydraulic System is __________.

A. gravity fed from the Condensate Storage Tank (CST)

B. from the CST off the discharge of the Condensate Makeup Storage and Transfer pumps

C. the Condensate System prior to the Condensate Demineralizers

D. the Condensate System after the Condensate Demineralizers

Proposed Answer: D.

Explanation:
A. Gravity feed from the CST does supply CRD, but it is the alternate source, not the preferred.
B. The CST is the alternate source not the preferred and this alternate source is gravity fed.
C. Condensate System is correct, but the tap off is after the demineralizers to provide high purity water.
D. Correct – At the outlet of the Condensate Demineralizers, a tap off is provide to the CRD as the preferred suction source.

Technical Reference(s): R-STM-0052 Rev 9 Pg 6 of 68

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0052 Obj 5

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑2 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.4

Comments:

QUESTION 55 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 2	
	K/A #	201003 K3.01		IR 3.2

Knowledge of the effect that a loss or malfunction of the CONTROL ROD AND DRIVE MECHANISM will have on following:
Reactor power
(41.7)

Proposed Question:

Regarding Control Rod Drive Mechanism malfunctions, ______(1)______ will result in a ______(2)______ reactor power.

A. (1) a stuck collet piston; (2) rise in

B. (1) excessive cooling water flow; (2) rise in

C. (1) a leaking scram valve; (2) rise in

D. (1) a rod drop due to an uncoupled rod; (2) lowering of

Proposed Answer: A.

Explanation:
A. Correct – A stuck collet piston prevents the rod from settling at the intended position, continuing to withdraw from the core resulting in a rise in reactor power.
B. Excessive cooling water flow will cause the control rod to insert causing reactor power to lower.
C. A leaking scram valve will insert the control rod causing power to lower.
D. A rod drop causing the rod to be fully withdrawn resulting in a rise in power.

Technical Reference(s): R-STM-0052 Rev 9 Pg 63 of 68; ARP-P680/7A/B02

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0052 Obj 9, 10

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑ 3

10 CFR Part 55 Content: 55.41b.6

Comments:

QUESTION 56 Rev 0

Examination Outline Cross-Reference:

Level		RO ☑	SRO ☐
Tier #	2	Group # 2	
K/A #	202002 K2.02		IR 2.6

Knowledge of electrical power supplies to the following: Hydraulic power unit: Plant-Specific (CFR: 41.7)

Proposed Question:

If the “A” Reactor Recirculation Hydraulic Power Unit (HPU) shuts down due to a loss of power to ___(1)___ it will cause the Reactor Recirculation Flow Control Valve “A” to fail ____(2)____.

A. (1) NHS-MCC2E, (2) closed

B. (1) EHS-MCC2E, (2) closed

C. (1) NHS-MCC2E, (2) as is

D. (1) EHS-MCC2E, (2) as is

Proposed Answer: C.

Explanation:
A. The power supply is correct, but the FCV fails as is.
B. Incorrect power source and the FCV fails as is.
C. Correct – NHS-MCC2E provides power to the “A” Reactor Recirc HPU and the FCV locks up or fails as is when the HPU trips off.
D. Incorrect power source, but the valve failure mode is correct.

Technical Reference(s): SOP-0003 Rev 308 Pg 85 of 100; R-STM-0053 Rev 11 Pg 21 of 76

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0053 Obj 18, 20a

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑3 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 57 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 2	
	K/A #	216000 K4.09		IR 3.3

Knowledge of NUCLEAR BOILER INSTRUMENTATION design feature(s) and/or interlocks which provide for the following: Protection against filling the main steam lines from the feed system (41.7)

Proposed Question:

The design feature which protects the main steam lines from overfilling from the feedwater system is the Level 8 _______________.

A. turbine trip from narrow range instrumentation.

B. turbine trip from wide range instrumentation.

C. feedwater pump trip from narrow range instrumentation.

D. feedwater pump trip from wide range instrumentation.

Proposed Answer: C.

Explanation:
A. The level 8 turbine trip protects the turbine from water impingement but not the main steam lines.
B. The level 8 turbine trip protects the turbine from water impingement but not the main steam lines. Additionally, the turbine trips from narrow range Level 8 instrumentation.
C. Correct - Tripping the feedpump from Level 8 narrow range prevents further water addition prior to reaching the level of the steam lines.
D. Feedpump trip is correct, but the instrumentation is narrow range, not wide range.

Technical Reference(s): R-STM-0051 Rev 4 Pg 8 of 47

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0051 Obj 3

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑3 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 58 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑ SRO ☐	
	Tier #	2	Group # 2	
	K/A #	219000 K5.04		IR 2.9

Knowledge of the operational implications of the following concepts as they apply to RHR/LPCI: TORUS/SUPPRESSION POOL COOLING MODE : Heat exchanger operation (41.5)

Proposed Question:

Residual Heat Removal (RHR) “A” is running in the suppression pool cooling mode when a High Drywell Pressure signal is received.

Which of the following describes the effect on the operation of the RHR heat exchanger 5 minutes after the High Drywell Pressure signal is received?

A. E12-F048A RHR A HX BYPASS VALVE is full open, E12-F068A RHR HX A SVCE WTR RTN is in its pre-transient position

B. E12-F048A RHR A HX BYPASS VALVE is full closed, E12-F068A RHR HX A SVCE WTR RTN is in its pre-transient position

C. E12-F048A RHR A HX BYPASS VALVE is full open, E12-F068A RHR HX A SVCE WTR RTN is closed

D. E12-F048A RHR A HX BYPASS VALVE is full closed, E12-F068A RHR HX A SVCE WTR RTN is closed

Proposed Answer: A.

Explanation:
A. Correct - E12-F048A opens bypassing the heat exchanger to allow maximum flow for RPV injection to due the reduced pressure drop in the bypass line as compared to the heat exchanger. E12-F068 will remain at its pre-transient position continuing to supply cooling to the reduced amount of flow still flowing through the heat exchanger.
B. E12-F048A is full open due to the Drywell Pressure signal.
C. E12-F068A does not isolate on a High Drywell Pressure signal.
D. E12-F048A is full open due to the Drywell Pressure signal. E12-F068A does not isolate on a High Drywell Pressure signal.

Technical Reference(s): R-STM-0204 Rev 10 Pg 48 of 63

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0204 Obj 6f, 9, 11h

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.7 Comments:

QUESTION 59 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑ SRO ☐	
	Tier #	2	Group # 2	
	K/A #	223001 K6.13		IR 3.2

Knowledge of the effect that a loss or malfunction of the following will have on the PRIMARY CONTAINMENT SYSTEM AND AUXILIARIES : Applicable plant air system/ nitrogen make-up system (41.7)

Proposed Question:

Containment Low Volume Purge is in service due to elevated airborne radiation levels in containment.

Which of the following describes the effect of a complete loss of instrument air on the containment purge system?

A. Line up is unaffected and the fans remain in service.

B. Flow path is isolated and the fans trip OFF.

C. Line up is unaffected, but the fans trip OFF.

D. Flow path is isolated but the fans remain in service.

Proposed Answer: B.

Explanation:
A. See B.
B. Correct Containment purge dampers in this lineup have a safety function to close during accident conditions therefore they also close on a loss of air. The fans will trip based on damper position.
C. See B.
D. See B.

Technical Reference(s): R-STM-0403 Rev 8 Pg 21, 22, & 28 of 50.

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0403 Obj 11, 12

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 60 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 2	
	K/A #	256000 A1.01		IR 2.9

Ability to predict and/or monitor changes in parameters associated with operating the REACTOR CONDENSATE SYSTEM controls including: System flow (41.5)

Proposed Question:

Securing a Heater Drain Pump will cause Condensate Demineralizer flow rates to ___(1)___ and injection flow to the RPV will ____(2)_____.

A. (1) rise, (2) lower

B. (1) rise, (2) remain the same

C. (1) lower, (2) lower

D. (1) lower, (2) remain the same

Proposed Answer: B.

Explanation:
A. Condensate demeralizer flow will rise, but injection flow to the RPV will be controlled by Feedwater level control which will maintain the same injection flowrate in order to maintain the same level.
B. Correct – Condensate demineralizer flow rate will rise due to the loss of the drains being pumped forward from the HDL pump. FWLC will adjust regulating valve position to maintain the required level therefore RPV injection flow will remain the same.
C. Condensate demin flow rate must rise due to the loss of the drains being pumped forward from the HDL pump. Injection flow to the RPV will be controlled by Feedwater level control which will maintain the same injection flowrate in order to maintain the same level.
D. Condensate demin flow rate must rise due to the loss of the drains being pumped forward from the HDL pump.

Technical Reference(s): SOP-0010 Rev 44, Pg 8 of 168

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0108 Obj 16

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.5

Comments:

QUESTION 61 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐	
	Tier #	2	Group # 2		
	K/A #	271000 A2.03			IR 3.5

Ability to (a) predict the impacts of the following on the OFFGAS SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Main steamline high radiation (41.5)

Proposed Question:

While operating at 100%, fuel failure has resulted in elevated radiation levels sensed by the Main Steamline Radiation Monitors. If radiation levels continue to rise, (1) what is the resultant effect on the Offgas system and (2) what actions should the crew take to mitigate the condition?

- AOP-0001, REACTOR SCRAM
- AOP-0005, LOSS OF CONDENSER VACUUM, TRIP OF CIRCULATING WATER PUMP
- AOP-0039, HYDROGEN DEFLAGRATION, LEAKS IN THE OFFGAS SYSTEM

A. (1) N64-F060, OFFGAS DISCHARGE TO VENT VALVE will isolate.
(2) Purge the Offgas charcoal adsorber beds with nitrogen per AOP-0039.

B. (1) N64-F060, OFFGAS DISCHARGE TO VENT VALVE will isolate.
(2) Lower power to maintain vacuum in the acceptable region of AOP-0005 and scram the reactor per AOP-0001 when unable to maintain in the acceptable region of AOP-0005.

C. (1) ARC-AOV1A(B), SJAE SUCTION VALVE will isolate.
(2) Lower power to maintain vacuum in the acceptable region of AOP-0005 and scram the reactor per AOP-0001 when unable to maintain in the acceptable region of AOP-0005.

D. (1) ARC-AOV1A(B), SJAE SUCTION VALVE will isolate.
(2) Purge the Offgas charcoal adsorber beds with nitrogen per AOP-0039.

Proposed Answer: B.

Explanation:
A. Part 1 is correct. Purging the charcoal with N2 is performed for fire in the bed and will not combat the isolation.
B. Correct – N64-F060 isolated on Hi-Hi-Hi Rad Levels on Offgas Post Treatment radiation monitor. The isolation will result in a lowering condenser vacuum as air and non-condensables can not longer be removed from the condenser. AOP-5 directs power reduction.
C SJAE suction valve does not isolate on high radiation. Only isolates on low steam flow to 2nd stage ejector. Part 2 is correct.
D. SJAE suction valve does not isolate on high radiation. Only isolates on low steam flow to 2nd stage ejector. Purging the charcoal with N2 is performed for fire in the bed and will not combat the isolation.

Technical Reference(s): R-STM-0606 Rev 7 Pg 6 of 69; AOP-0005
Proposed references to be provided to applicants during examination: None
Learning Objective: RLP-STM-0606 Obj 7, 13, 14f
Question Source: New Question History: Last NRC Exam NA
Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3
10 CFR Part 55 Content: 55.41b.10 Comments:

QUESTION 62 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	2	Group # 2	
	K/A #	272000 A3.10		IR 3.3

Ability to monitor automatic operations of the RADIATION MONITORING SYSTEM including: Lights and alarms (41.7)

Proposed Question:

A Digital Radiation Monitor has just generated an audible alarm. The operator identifies a radiation monitor indication that is blinking and is now Yellow in color.

Which of the following is the cause for the alarm?

A. The monitor has exceeded its ALARM setpoint.

B. The monitor has exceeded its ALERT setpoint.

C. The monitor data is corrupt.

D. The monitor is in PURGE mode.

Proposed Answer: B.

Explanation:
A. Color would be RED if in ALARM.
B. Correct – When the ALERT setpoint is exceeded, the indication for that monitor will turn yellow and blink until acknowledged.
C. Color would be Magenta.
D. Purge mode would not cause a change in status to Yellow.

Technical Reference(s): R-STM-0511 Rev 15 Pg 13 of 68

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0511 Obj 5b

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑2 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.11

Comments:

QUESTION 63 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐	
	Tier #	2	Group #	2	
	K/A #	286000 A4.04			IR 2.8

Ability to manually operate and/or monitor in the control room: Fire main pressure: Plant-Specific (41.7)

Proposed Question:

An electrical short in the motor for FPW-P3, PRESS MAINTENANCE PUMP has resulted in a trip of its supply breaker.

Which of the following provides indication of the resultant system pressure drop as observed from the main control room?

A. Indication of an auto start of FPW-P2, MOTOR DRIVEN FIRE PUMP on the Plant Process Computer Video Service screen on H13-P680.

B. Indication of an auto start of FPW-P1A, DIESEL DRIVEN FIRE PUMP from annunciation on H13-P863.

C. Indication of an auto start of FPW-P1B, DIESEL DRIVEN FIRE PUMP from annunciation on H13-P863.

D. Annunciation of FPW low pressure annunciation on H13-P870.

Proposed Answer: A.

Explanation:
A. FPW-P2 starts prior to FPW-P1A & FPW-P1B. Indication of this pump running is displayed on the Plant Process Computer screen on H13-P680.
B. FPW-P1A would not be expected to start since FPW-P2 starts at a higher pressure and would maintain pressure prior to reaching the starting setpoint for FPW-P1A. Additionally, there is no annunciator for FPW-P1A on H13-P863.
C. FPW-P1B would not be expected to start since FPW-P2 starts at a higher pressure and would maintain pressure prior to reaching the starting setpoint for FPW-P1A. Additionally, there is no annunciator for FPW-P1B on H13-P863.
D. There is no FPW low pressure annunciator on H13-P870.

Technical Reference(s): R-STM-250 Rev 6 Pg 11 of 65

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0250 Obj 14

Question Source: New

Question History: Last NRC Exam None

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 64 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐	
	Tier #	2	Group # 2		
	K/A #	288000 G2.4.11			IR 4.0

Knowledge of abnormal condition procedures for PLANT VENTILATION. (41.10)

Proposed Question:

Within 1 hour of the passage of a tornado, AOP-0029, SEVERE WEATHER, OPERATION, directs performance of ATTACHMENT 3, TORNADO DAMPER VERIFICATION CHECKLIST to ensure plant ventilation dampers are returned to the ___(1)___ position. Position of the tornado dampers are determined by _____(2)______.

A. (1) open; (2) damper position indicating lights on control room panels.

B. (1) open; (2) control room annunciator status.

C. (1) closed; (2) damper position indicating lights on control room panels.

D. (1) closed; (2) control room annunciator status.

Proposed Answer: B.

Explanation:
A. Part 1 is correct, but there is no limit switch position indication on the tornado dampers.
B. Correct – Dampers are normally open and will close if a low atmospheric pressure exists to protect the building duct work. If the dampers shuts, a control room annunciator will be present.
C. Dampers are normally open and there is no panel indication provided for position indication.
D. Dampers are normally open. Part 2 is correct.

Technical Reference(s): AOP-0029 Rev 29 Pg 29-36 of 38

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0409 Obj 6

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑4 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.10

Comments:

QUESTION 65 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐	
	Tier #	2	Group # 2		
	K/A #	290001 K1.06			IR 3.4

Knowledge of the physical connections and/or cause/effect relationships between SECONDARY CONTAINMENT and the following: Auxiliary building isolation: BWR-6
(41.2 to 41.9)

Proposed Question:

During RPV low level conditions, Secondary Containment Integrity is maintained through ___(1)___ isolation of the Auxiliary Building ____(2)_____.

A. (1) manual, (2) by operating both Auxiliary Building (Pushbuttons) and Annulus Mixing Manual Initiation (Tee Handle) switches in accordance with OSP-0053 Hard Card.

B. (1) manual, (2) by operating Annulus Mixing Manual Initiation (Tee Handle) switches ONLY in accordance with OSP-0053 Hard Card.

C. (1) automatic, (2) on a Level 2 signal.

D. (1) automatic, (2) on a Level 1 signal.

Proposed Answer: C.

Explanation:
A. Manual isolation of the Aux Bldg is required due to high radiation, not low level. Low level isolation is automatic.
B. Manual isolation of the Aux Bldg is required due to high radiation, not low level. Low level isolation is automatic.
C. Correct – Level 2 and high drywell pressure both result in automatic isolation of the Auxiliary Building
D. Auxiliary building isolation occurs on Level 2, not Level 1.

Technical Reference(s): AOP-0003, Rev 31, Pg 18 of 22

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0409 Obj 8a

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.4b.9

Comments:

QUESTION 66 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	3	Group #	Cond of Ops
	K/A #	G2.1.20		IR 4.6

Ability to interpret and execute procedure steps.(41.10)

Proposed Question:

In accordance with EN-HU-106, PROCEDURE AND WORK INSTRUCTION USE AND ADHERENCE, the use of the word ___(1)___in a procedure denotes a strong recommendation and indicates an action that is expected to be performed, while the use of the word ____(2)_____denotes possibility or permission and is neither a recommendation nor a requirement.

A. (1) shall; (2) should

B. (1) shall; (2) may

C. (1) should; (2) shall

D. (1) should; (2) may

Proposed Answer: D.

Explanation:
A. See D.
B. See D.
C. See D.
D. EN-HU-106 defines "should" as denoting a strong recommendation and indicates an action that is expected to be performed as described unless there is a compelling reason not to. EN-HU-106 defines "may" as denoting possibility or permission and is neither a recommendation nor a requirement.

Technical Reference(s): EN-HU-106 Rev 0 Pg 5-6 of 24.

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-HLO-202 Obj 3

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑2 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.10

Comments:

Comments:

QUESTION 67 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	3	Group #	Cond of Ops
	K/A #	G2.1.25		IR 3.9

Ability to interpret reference materials, such as graphs, curves, tables, etc. (41.10)

Proposed Question:

Which of the following sets of reactor pressure and suppression pool parameters represents a condition in which operation is occurring in the UNSAFE zone of the Heat Capacity Temperature Limit?

- SPT = Suppression Pool Temperature
- SPL = Suppression Pool Level

A. RPV pressure 900 psig, 130°F SPT, 17’3” SPL

B. RPV pressure 1000 psig, 130°F SPT, 19’8” SPL

C. RPV pressure 800 psig, 140°F SPT, 19’4” SPL

D. RPV pressure 700 psig, 140°F SPT, 19’7” SPL

Proposed Answer: C.

Explanation:
A. See C.
B. See C.
C. Correct – Using Figure 2 HCTL to plot the listed parameters yield 800 psig & 140°F as requiring a minimum SPL of 19’6” to be in the safe zone of the HCTL. A SPL of 19’4” is insufficient heat capacity.
D. See C.

Technical Reference(s): EOP Figure 2 HCTL Curve

Proposed references to be provided to applicants during examination: EOP Figure 2 HCTL

Learning Objective: R-LPOPS-HLO-517 Obj 2

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.10

Comments:

QUESTION 68 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	3	Group #	Cond of Ops
	K/A #	G2.1.30		IR 4.4

Ability to locate and operate components, including local controls. (41.7)

Proposed Question:

Which of the following accurately describes the generic locations of alarms, meters and valve control switches on Main Control Room panel inserts?

A. Alarms are on Insert A, Meters are on Insert B, Valve control switches are on Insert C

B. Valve control switches are on Insert A, Meters are on Insert B, Alarms are on Insert C

C. Meters are on Insert A, Valve control switches are on Insert B, Alarms are on Insert C

D. Valve control switches are on Insert A, Alarms are on Insert B, Meters are on Insert C

Proposed Answer: A.

Explanation:
A. Correct – The top insert of panel is insert A (alarms section). The middle vertical section (B) contains meters and other indications. The lowest section of the panel (C) contains control switches.
B. See A.
C. See B
D. See C.

Technical Reference(s): Any Alarm Response Procedure

Proposed references to be provided to applicants during examination: None

Learning Objective: None identified.

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑2 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 69 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	3	Group #	Eq Control
	K/A #	G2.2.36		IR 3.1

Ability to analyze the effect of maintenance activities, such as degraded power sources, on the status of limiting conditions for operations. (41.10)

Proposed Question:

The plant is in Mode 1. The Division 1 Diesel Generator has been tagged out for maintenance.

Per Technical Specifications, which of the following must be performed in 1 hour?

A. Administrative verification of operability of the Division 2 Diesel Generator

B. STP-000-0102, POWER DISTRIBUTION ALIGNMENT CHECK

C. STP-000-0201, MONTHLY OPERATING LOGS

D. Declare systems supported by the Division 1 Diesel Generator inoperable when the redundant required feature(s) are inoperable.

Proposed Answer: B.

Explanation:
A. There is no 1 hour action associated with verification of Div 2 DG.
B. Correct – TS 3.8.1 dictates performance of SR 3.8.1.1 within 1 hour of declaration of DG inoperability. STP-000-0102 performs this surveillance requirement.
C. The Monthly Operating Logs do not satisfy the requirements of SR 3.8.1.1.
D. This is a 4 hour action; not a 1 hour action.

Technical Reference(s): TS 3.8.1; STP-000-0102

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0309S Obj 12

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑4 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.10

Comments:

QUESTION 70 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	3	Group #	Eq Control
	K/A #	G2.2.40		IR 3.4

Ability to apply Technical Specifications for a system.
(41.10)

Proposed Question:

In accordance with Technical Specification 3.6.5.5, DRYWELL AIR TEMPERATURE, the drywell average air temperature shall be _______ in Modes 1, 2, and 3.

A. ≤90°F

B. ≤100°F

C. ≤145°F

D. ≤200°F

Proposed Answer: C.

Explanation:
A. This is the Tech Spec limit for containment temperature.
B. This is the Tech Spec limit for the suppression pool.
C. Correct – TS 3.6.5.5 limits DW average air temp to ≤145°F.
D. This is the temperature above which cooling water may not be restored to the drywell following isolation.

Technical Reference(s): TS 3.6.5.5

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0403 Obj 13

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑2 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.9

Comments:

QUESTION 71 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	3	Group #	Eq Control
	K/A #	G2.2.44		IR 4.2

Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions. (41.5)

Proposed Question:

A plant transient resulted in the initiation of High Pressure Core Spray. The E22-MOVF004 injection valve was initially open, but is now in the CLOSED position. The following indications are present:

HPCS INITIATION	White light illuminated
HPCS HIGH WATER LEVEL	White light illuminated
E22-MOVF004	Amber light OFF
RPV Level	45 inches

Which of the following is correct concerning the HPCS Injection Valve, E22-MOVF004?

A. E22-MOVF004 will open if the HPCS INITIATION RESET pushbutton is depressed.

B. E22-MOVF004 will NOT open on a Level 2 signal

C. E22-MOVF004 will open if the HPCS HIGH WATER LEVEL RESET pushbutton is depressed.

D. E22-MOVF004 will open if the operator takes the control switch to the OPEN position.

Proposed Answer: C.

Explanation:
A. If the initiation signal is reset, there will be no signal present to open E22-MOVF004.
B. E22-MOVF004 will open on Level 2. The only interlock that would keep the valve from opening on Level 2 is the injection valve override, but it is not present as indicated by the Amber light for E22-MOVF004 being OFF.
C. Correct – The injection valve closed on the Level 8 signal. Level is now below Level 8 (51”), so if the signal is reset, the injection valve will open due to the presence of an initiation signal.
D. The valve will not open even by manual means with a HPCS HIGH WATER LEVEL signal sealed in.

Technical Reference(s): R-STM-0203 Rev 8 Pg 11,12 of 38

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0203 Obj 3d, 7

Question Source: New Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.7 Comments:

QUESTION 72 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	3	Group #	Rad Control
	K/A #	G2.3.4		IR 3.2

Knowledge of radiation exposure limits under normal or emergency conditions.
(41.12)

Proposed Question:

A nuclear worker has been contracted to work the upcoming refuel outage. His NRC Form 4 is current and his annual whole-body (TEDE) dose to date is 2.25 rem.

What is the MAXIMUM additional radiation dose he can be authorized to receive during the remainder of this year in accordance with federal limits?(Do not consider any site administrative limits).

A. 1.75 rem

B. 2.75 rem

C. 3.75 rem

D. 5.00 rem

Proposed Answer: B.

Explanation:
A. The work would still be in compliance with limits if he received 1.75 R, but this does not represent the MAXIMUM he can receive since he would only have receive a total of 4.0 R.
B. Correct-If the worker received an additional 2.75 R to his 2.25 R, he would have received a total of 5.0 R which is the maximum allowed by federal limits.
C. If the worker received 3.75 R he would exceed federal limits by 1 R.
D. The total allowed is 5.0R, the previous 2.25 R he has already received must be included, therefore if he receives 5.0 R, he will have exceeded federal limits by 2.25 R.

Technical Reference(s): 10CFR20.1201

Proposed references to be provided to applicants during examination: NA

Learning Objective: Nantel Generic Rad Worker Training Obj 13

Question Source: Modified Bank # RBS-NRC-434

Question History: Last NRC Exam RBS 2007 NRC #71 (modified)

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑2

10 CFR Part 55 Content: 55.41.12

Comments:

QUESTION 73 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	3	Group #	Rad Control
	K/A #	G2.3.14		IR 3.4

Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities. (41.12)

Proposed Question:

During which of the following evolutions should the affected areas be evacuated to protect personnel from radiological hazards?

A. Opening of Main Steam Line Drains

B. Operation of Suppression Pool Cooling

C. Opening of the Main Turbine Bypass Valves

D. Opening of Safety Relief Valves

Proposed Answer: D.

Explanation:
A. Operation of steam line drains does not affect areas normally occupied while at power.
B. Operation of suppression pool cooling does not significantly affect radiological conditions in the associated areas.
C. Operation of bypass valves does not affect areas normally occupied while at power.
D. Correct - Operation of safety relief valves can affect the radiological conditions in the containment which may be occupied during normal plant operation therefore a plant announcement is made to evacuate the containment during SRV operation.

Technical Reference(s): AOP-0035 Rev 18 Pg 4 of 10

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-OPS-AOP035 Obj 6

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑2 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.12

Comments:

QUESTION 74 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	3	Group #	E Plan
	K/A #	G2.4.1		IR 4.6

Knowledge of EOP entry conditions and immediate action steps. (41.10)

Proposed Question:

The reactor has just scrammed. The following plant conditions exist:

Reactor power	0%, all rods in
Reactor water level	17 inches (lowest level observed was 15 inches)
Reactor pressure	1105 psig
Suppression Pool Level	19’10”
Drywell Temp	140°F
Drywell Pressure	0.2 psid

Which of the following procedures require entry?

A. EOP-1 only

B. EOP-1 & EOP-2

C. EOP-2 only

D. EOP-1A & EOP-2

Proposed Answer: A.

Explanation:
A. The only EOP entry conditions present is high reactor pressure (>1094.7 psig), therefore EOP-1 is the only procedure which requires entry.
B. EOP-2 entry is not required (SP Level is <20’ and Drywell temp is <145°F)
C. EOP-2 entry is not required (SP Level is <20’ and Drywell temp is <145°F)
D. EOP-1A is not required since all rods are inserted. EOP-2 entry is not required (SP Level is <20’ and Drywell temp is <145°F)

Technical Reference(s): EOP-1

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-HLO-512 Obj 3, 4

Question Source: Modified Bank # December 2010 NRC #73 (Changed stem to make a different answer correct).

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.41b.10

Comments:

QUESTION 75 Rev 0

Examination Outline Cross-Reference:	Level		RO ☑	SRO ☐
	Tier #	3	Group #	E Plan
	K/A #	G2.4.45		IR 4.1

Ability to prioritize and interpret the significance of each annunciator or alarm (41.10).

Proposed Question:

During a plant transient involving a reactor scram and entry into the Emergency Operating Procedures, Transient Alarm Response is in effect per EN-OP-115-08, ANNUNCIATOR REPONSE.

Which of the following alarms are required to be reported to CRS?

A. All annunciators must be reported to the CRS.

B. Only unexpected annunciators must be reported to the CRS

C. Only unexpected annunciators and expected annunciators which have not been previously flagged must be reported to the CRS.

D. Only those alarms significant to the implementation of the AOP and EOPs must be reported to the CRS.

Proposed Answer: D.

Explanation:
A. See D.
B. See D.
C. See D.
D. Correct – During transient conditions alarms are silenced/acknowledged as soon as practical so as not to interfere with transient response. The announcement of transient alarms during AOP/EOP implementation is not required. In such cases the operators are expected to announce those alarms that are significant to the implementation of the applicable AOP/EOP.

Technical Reference(s): EN-OP-115-08 Rev 1 Pg 7 of 14

Proposed references to be provided to applicants during examination: None

Learning Objective: None identified

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑3 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.41b.10

Comments:

QUESTION 76 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑
	Tier #	1	Group # 1	
	K/A #	295001 AA2.05		IR 3.4

Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF FORCED CORE FLOW CIRCULATION : Jet pump operability (43.5)

Proposed Question:

The plant has just experienced a transient which resulted in the following changes from normal operating conditions:

- Reactor power output has lowered
- Core plate differential pressure has lowered
- Jet Pump #1 differential pressure is significantly lower than normal
- Jet Pumps #11-20 differential pressures are slightly higher than normal
- Jet Pumps #2-10 differential pressures are slightly lower than normal
- Both A & B Recirc Loop flows are slightly higher than normal

Which of the following procedures should the CRS enter to address this condition?

A. AOP-0024, THERMAL HYDRAULIC STABILITY CONTROL

B. AOP-0062, JET PUMP FAILURES

C. GOP-0004, SINGLE LOOP OPERATION

D. SOP-0003, REACTOR RECIRCULATION

Proposed Answer: B.

Explanation:
A. There are no indications of a recirc pump trip or downshift, nor indications of instability.
B. Correct – Parameters given indicate a displaced mixer on jet pump #1 which requires entry into AOP-0062.
C. An inoperable jet pump will ultimately require a plant shutdown due to Tech Specs. Single Loop Operations is not appropriate.
D. This is the normal operating procedure for the reactor recirculation system, but provides no guidance for the conditions present.

Technical Reference(s): AOP-0062 Rev 1 Pg 4 of 5

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-OPS-AOP062 Obj 2 Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.43b.5 Comments:

QUESTION 77 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑
	Tier #	1	Group # 1	
	K/A #	295006 G2.4.21		IR 4.6

Knowledge of the parameters and logic used to assess the status of safety functions, such as reactivity control, core cooling and heat removal, reactor coolant system integrity, containment conditions, radioactivity release control, etc. (43.5)

Proposed Question:

Following a reactor scram, the ATC operator reports that he is unable to verify full in position for 6 control rods due to unintelligible data at the full core display at H13-P680.

APRM recorders are downscale.

The CRS should direct performance of…

A. EOP Enclosure 14, DEFEATING RC&IS INTERLOCKS AND EMERGENCY CONTROL ROD INSERTION DATA SHEET.

B. SOP-0071, ROD CONTROL AND INFORMATION SYSTEM Section 5.6 DETERMINING CONTROL ROD POSITION WITH THE FULL CORE DISPLAY OUT OF SERVICE.

C. EOP-1A, ANTICIPATED TRANSIENT WITHOUT SCRAM.

D. OSP-0053 Hard Card for Standby Liquid Control Injection.

Proposed Answer: B.

Explanation:
A. See B
B. With power level below 5% and only six rod at an unidentified position, the CRS should verify rod position using alternate indication prior to taking more complex actions related to an ATWS.
C. See B
D. See B

Technical Reference(s): SOP-0071 Rev 26 Pg 12 of 44

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0500 Obj 11c

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.43b.5

Comments:

QUESTION 78 Rev 0

Examination Outline Cross-Reference: Level RO ☐ SRO ☑
Tier # 1 Group # 1
K/A # 295016 AA2.06 IR 3.5

Ability to determine and/or interpret the following as they apply to CONTROL ROOM ABANDONMENT : Cooldown rate (43.5)

Proposed Question:

The control room has been abandoned due to a fire. Plant cooldown is in progress from the Division 1 Remote Shutdown Panel.

Evaluate the data below and determine if the cooldown rate is in compliance with Technical Specification Limitations. Normal operating pressure was 1050 psig before the transient.

Time	Pressure (psig)	Time	Pressure (psig)
1600	1050	1700	500
1615	900	1715	300
1630	700	1730	225
1645	550	1745	150

A. Cooldown rate is in compliance with TS Limits

B. Cooldown rate limit was exceeded at 1715 and was NOT restored within the required completion time.

C. Cooldown rate limit was exceeded at 1630, but has been restored.

D. Cooldown rate limit was exceeded, but no longer applies in the current mode.

Proposed Answer: B.

Explanation:
A. See B.
B. During the hour between 1615 and 1715, pressure lowered from 900 psig (533°F) to 300 psig (421°F). This exceeds the 100°F per hour cooldown rate limit. Condition A required restoration to within limits by 1745, but at 1745 the cooldown rate is still in excess of 100°F/hr.
C. Even though the 15 minute interval exceed 25°F, the hourly rate was less than 100°F so the limit was not exceeded.
D. The cooldown rate limit applies in all modes.

Technical Reference(s): TS 3.4.11; AOP-0031, Rev 315 Attachment 2

Proposed references to be provided to applicants during examination: TS 3.4.11; AOP-0031 Attachment 2

Learning Objective: RLP-STM-0050 Obj 11 Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.43b.2 Comments:

QUESTION 79 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑	
	Tier #	1	Group #	1	
	K/A #	295019 G2.1.32			IR 4.0

Ability to explain and apply system limits and precautions. (43.2)

Proposed Question:

The plant was operating at 95% with no abnormal conditions.

A transient occurred resulting in the following conditions:

• Reactor power	95%
• Core Flow	81 Mlbm/hr
• RPV Level	35 inches
• RPV Pressure	1055 psig
• Feedwater Temp	420°F
• IAS Header Pressure	109 psig

Which of the following should the CRS enter?

A. AOP-0024, THERMAL HYDRAULIC STABILITY CONTROL

B. AOP-0008, LOSS OF INSTRUMENT AIR

C. AOP-0007, LOSS OF FEEDWATER HEATING

D. AOP-0001, REACTOR SCRAM

Proposed Answer: B.

Explanation:
A. There are no indications of abnormal recirc parameters. Entry is not appropriate.
B. Correct – Normal conditions for IAS are 118-120 psig header pressure. The AOP requires entry below 110 psig.
C. Feedwater temperature at 95% power is ~420-425°F. Entry is not appropriate.
D. There are no conditions which require a scram.

Technical Reference(s): AOP-0008 Rev 33, Pg 3 of 21

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-OPS-527 Obj 2

Question Source: Bank # RBS March 2010 Audit #94

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.4b.5 Comments:

QUESTION 80 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑
	Tier #	1	Group # 1	
	K/A #	295021 AA2.01		IR 3.6

Ability to determine and/or interpret the following as they apply to LOSS OF SHUTDOWN COOLING : Reactor water heatup/cooldown rate (43.5)

Proposed Question:

Consider the following conditions:

Mode 4	
RPV Level	85 inches
Time after shutdown	48 hours
Reactor Water Temp	150°F

Subsequent to the above conditions, a loss of all RHR shutdown cooling occurs.

(1) Which procedure should the CRS enter and (2) approximately how long before a mode change occurs.

A. (1)AOP-0051, LOSS OF DECAY HEAT REMOVAL; (2) 60 minutes

B. (1)AOP-0051, LOSS OF DECAY HEAT REMOVAL; (2) 33 minutes

C. (1)AOP-0020, ALTERNATE DECAY HEAT REMOVAL METHOD; (2) 33 minutes

D. (1)AOP-0020, ALTERNATE DECAY HEAT REMOVAL METHOD; (2) 60 minutes

Proposed Answer: B.

Explanation:
A. AOP-0051 is correct, but 60 minutes is incorrect but plausible because if the performer fails to use the required multiplier (0.55) the answer would be 60 minutes
B. Correct – AOP-0051 provides guidance for a trip of shutdown cooling. Utilizing Att 9 of OSP-0037 Pg 30 of 62, and the given conditions, it can be determined that the time to mode change (200°F) is ~33 minutes.
C. AOP-0020 provides guidance for flooding the main steam lines as an alternate method of decay heat removal. It should only be used when no other method of decay heat removal lis available. Time is correct.
D. Incorrect procedure, incorrect time.

Technical Reference(s): AOP-0051 Rev 311, OSP-0037 Rev 27

Proposed references to be provided to applicants during examination: OSP-0037 Attachment 9

Learning Objective: None identified

Question Source: Modified Bank # RBS April 2010 NRC # 95 Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.43b.5

Comments: Modified Reactor Water Temp in stem from 90°F to 150°F. This changes the time to mode change from 74 minutes to 33 minutes.

QUESTION 81 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑
	Tier #	1	Group # 1	
	K/A #	295024 G2.4.1		IR 4.8

Knowledge of EOP entry conditions and immediate action steps. (43.5)

Proposed Question:

The steam cooling leg of EOP-0001 is entered at _____(1)______. Initial action regarding reactor pressure is____(2)____.

A. (1) -162”, when no injection system is available;
(2) stabilize pressure to avoid accelerating the rate of inventory loss and ensuring the assumptions of the Minimum Zero Injection Reactor Water Level limit (MSIRWL).

B. (1) -206” with at least one injection source available;
(2) to lower pressure to below the shutoff head of the available injection source.

C. (1) -162” with at least one injection source available;
(2) to lower pressure to below the shutoff head of the available injection source.

D. (1) -186” with no injection source available;
(2) stabilize pressure to avoid accelerating the rate of inventory loss and ensuring the assumptions of the Minimum Zero Injection Reactor Water Level limit (MSIRWL).

Proposed Answer: A.

Explanation:
A. Correct – Steam cooling is required when RPV level drops to -162” and no injection source is available. The initial action of this leg requires stabilization of reactor pressure. Lowering pressure would increase the rate of inventory loss. Rising pressure could invalidate the assumptions of the MZIRWL calculation.
B. -206” is the MZIRWL limit. This is the lower end of steam cooling range. When level drops to -206” Emergency Depressurization is required. Also, lowering pressure is not appropriate in Steam Cooling.
C. Level is correct, but steam cooling is not appropriate with an injection source available. Lowering pressure is not appropriate because this would accelerate the inventory loss.
D. At -186”, steam cooling should have been entered at -162”. Part 2 is correct.

Technical Reference(s): EPSTG*0002 B-6-70

Proposed references to be provided to applicants during examination: None

Learning Objective: R-LPOPS-HLO-512 Obj 5& 7

Question Source: New Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑4 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.43b.5

Comments: Justified as an SRO-only question, because it requires knowledge of diagnostic steps and decision points in the EOP that involve a transition to a specific sub-procedure versus initial entry conditions which are typically RO knowledge level. In addition, Part 2 of this question requires knowledge of the EOP bases for the initial actions taken.

QUESTION 82 Rev 0

Examination Outline Cross-Reference:	Level	RO ☐	SRO ☑
	Tier # 1	Group # 1	
	K/A # 600000 AA2.14	IR 3.6	

Ability to determine and interpret the following as they apply to PLANT FIRE ON SITE: Equipment that will be affected by fire suppression activities in each zone

Proposed Question:

Fire fighting activities are in progress for a fire located in the Auxiliary Building.

Which of the following procedures should the CRS direct to identify specific equipment which may be utilized to attain safe shutdown of the reactor without being affected by the fire or fire suppression activities?

A. SEP-FPP-RBS-002, Fire Fighting Procedure

B. SOP-0037, Fire Protection Water System Operating Procedure

C. SEP-FPP-RBS-001, River Bend Fire Protection Program

D. AOP-0052, Fire Outside the Main Control Room in Areas Containing Safety Related Equipment

Proposed Answer: D.

Explanation:
A. See D
B. See D
C. See D
D. Correct- This procedure identifies the specific equipment available for safe shutdown based on the location of the fire.

Technical Reference(s): AOP-0052, Rev 20

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-HLO-544 Obj 1

Question Source: Bank # RBS Nov 2010 Audit # 82

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑2

10 CFR Part 55 Content: 55.43b.5

Comments:

QUESTION 83 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑
	Tier #	1	Group # 2	
	K/A #	295015 G2.2.25		IR 4.2

Knowledge of the bases in Technical Specifications for limiting conditions for operations and safety limits related to Incomplete SCRAM. (43.2)

Proposed Question:

The basis for the operability requirements for Technical Specification 3.3.4.2 ATWS-RPT Instrumentation is to ensure the reactor recirculation pumps ___________.

A. trip to OFF to insert negative reactivity due to voiding caused by the reduction in core circulation during a failure to scram.

B. transfer to SLOW speed to insert negative reactivity due to voiding caused by the reduction in core circulation during a failure to scram.

C. trip to OFF to reduce the peak reactor pressure resulting from a turbine trip or generator load rejection transient to provide additional margin to core thermal MCPR safety limits.

D. transfer to SLOW speed to reduce the peak reactor pressure resulting from a turbine trip or generator load rejection transient to provide additional margin to core thermal MCPR safety limits.

Proposed Answer: A.

Explanation:
A. Correct – The tripping of the recirculation pumps during an ATWS inserts negative reactivity as more voiding occurs in the core to the reduced removal of heat due to less core circulation/heat removal.
B. The reason is correct, but the pumps trip to OFF, not SLOW speed.
C. Trip to off is correct, but the reason is incorrect. This reasoning is the bases for the End of Cycle Recirc Pump Transfer.
D. This describes the bases for TS 3.3.4.1 for the End of Cycle Recirc Pump Transfer.

Technical Reference(s): TS 3.3.4.2 and Basis

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0053 Obj 11

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑3 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.43b.2

Comments:

QUESTION 84 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑
	Tier #	1	Group # 2	
	K/A #	295029 EA2.03		IR 3.5

Ability to determine and/or interpret the following as they apply to HIGH SUPPRESSION POOL WATER LEVEL : Drywell/containment water level (43.5)

Proposed Question:

Due to a loss of RPV level indication and an inability to ensure the core was covered by other means, efforts are in progress to flood the containment. Suppression Pool Level indication is reading greater than the upper end of the scale (off scale –high).

Which of the following should the CRS direct to determine actual water level in containment?

A. TSG-1 Technical Support Guidelines

B. EOP Enclosure 23, Primary Containment Water Level Determination

C. SAP-0001 Severe Accident Procedure

D. EOP-0004, RPV Flooding

Proposed Answer: B.

Explanation
A. Although TSG-1 contains the specific levels water must be raised to cover the core, it does not provide the guidance to determine actual level.
B. Correct – This EOP Enclosure provides the specific steps to determine containment water level when suppression pool level indication is off scale-high.
C. SAP-0001 gives guidance on actions to take at certain water levels, but does not give specific steps to determine level.
D.EOP-0004 does not provide guidance to determine containment water level.

Technical Reference(s): EOP Enclosure 23

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-HLO-0516 Obj 1

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑2 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.43.b5

Comments:

QUESTION 85 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑
	Tier #	1	Group #	2
	K/A #	295033 G2.2.37		IR 4.6

Ability to determine operability and/or availability of safety related equipment as related to Secondary Containment High Radiation Levels. (43.5)

Proposed Question:

In accordance with the EOP Bases document, during elevated radiation conditions in Secondary Containment, operating above __________________ may result in the unavailability of equipment required for safe shutdown?

A. Maximum Safe HVAC Exhaust Radiation Levels

B. Maximum Normal HVAC Exhaust Radiation Levels

C. Maximum Safe Area Radiation Levels

D. Maximum Normal Area Radiation Levels

Proposed Answer: C.

Explanation:
A. See C.
B. See C.
C. Correct – In accordance with EPSTG*0002, the Maximum Safe Operating Radiation Level is the highest radiation level at which neither equipment necessary for the safe shutdown of the plant will fail nor personnel access necessary for the safe shutdown of the plant will be precluded.
D. See C.

Technical Reference(s): EPSTG*0002 Pg A-22

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-OPS-HLO-0517 Obj 3.9

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑3 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.4b.5

Comments:

QUESTION 86 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑	
	Tier #	2	Group #	1	
	K/A #	209001 A2.03			IR 3.6

Ability to (a) predict the impacts of the following on the LOW PRESSURE CORE SPRAY SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: A.C. failures(45.6)

Proposed Question:

During normal plant operations, the power supply breaker to E21-C002 LPCS/RHR DIV 1 LINE FILL PUMP unexpectedly tripped.

(1) What is the impact of this condition and (2) what procedure(s) should the CRS direct to address this condition?

A. (1) Only Low Pressure Core Spray System (LPCS) will experience a low header pressure condition.
   (2) SOP-0032 to place LPCS in Test Return Lineup

B. (1) Both Residual Heat Removal (RHR) ‘A’ and LPCS will experience a low header pressure condition.
   (2) SOP-0032 and SOP-0031 to place both RHR ‘A’ and LPCS in Test Return lineups.

C. (1) Neither RHR ‘A’, nor LPCS will experience a low header pressure condition.
   (2) EN-WM-100 to initiate a work request to repair the tripped power supply breaker.

D. (1) Both Residual Heat Removal (RHR) ‘A’ and LPCS will experience a low header pressure condition.
   (2) OSP-0052 to rack out both pump breakers.

Proposed Answer: D.

Explanation:
A. Both systems share a line fill pump, so both RHR A and LPCS will experience a low pressure condition.
B. First part is correct, but they share a common test return line so they cannot both be in Test flowpath simultaneously.
C. The line fill pump maintains the system pressurized. Shortly after the pump trip, both systems will experience a low pressure condition.
D. Correct – Both systems will receive a low pressure alarm and the appropriate action is to rack out the pump breakers to prevent an auto start with a depressurized header.

Technical Reference(s): R-STM-0205 Rev 5 Pg 8 of 33, ARP-P601-20-C04 Rev 303; ARP-P601-21A-C07 Rev 309

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0205 Obj 19f; RLP-STM-0204 Obj 17d

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.4b.5 Comments:

QUESTION 87 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑
	Tier #	2	Group #	1
	K/A #	211000 G2.1.7		IR 4.7

Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation.
(43.5)

Proposed Question:

The plant has experienced an ATWS, coincident with a loss of ENS-SWG1B 4160 VAC. The CRS directed initiation of Standby Liquid Control "A" (SLC).

- SLC initial tank level 3350 gallons
- 40 mins later tank level is 2870 gallons

Evaluate the performance of SLC and determine the appropriate action.

A. SLC is injecting as designed. Take no further action until Hot Shutdown Boron Weight is injected.

B. SLC is not operating as designed. Secure SLC and enter EOP Enclosure 15, ALTERNATE SLC INJECTION

C. SLC is injecting as designed. Take no further action until Cold Shutdown Boron Weight is injected.

D. SLC is not operating as designed. Secure SLC A and inject with SLC B.

Proposed Answer: B.

Explanation:
A. See B.
B. Correct - SLC is not operating as designed. From the data, SLC is only injecting at 12 gpm vs a design flow rate of 41.2 gpm. At this injection rate, the negative reactivity addition from SLC may not be able to compensate for the positive reactivity effects from cooldown and Xenon decay. SLC should be injected via the alternate method with Enclosure 15.
C. See B.
D. While it is correct that SLC is not operating as designed as stated in Explanation B, SLC B is not available for injection due to the loss of ENS-SWG1B as stated in the stem.

Technical Reference(s): R-STM-0201 Rev 7, Pg 13 of 37 ; TS 3.1.7 Bases

Proposed references to be provided to applicants during examination: OSP-0053 Att 13 Pg 2 of 2

Learning Objective: RLP-STM-0201 Obj 1d, 2e

Question Source: Modified Bank # RBS Audit March 2010 #33,

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑4

10 CFR Part 55 Content: 55.4b.5

Comments:

QUESTION 88 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑
	Tier #	2	Group #	1
	K/A #	215004 A2.05		IR 3.5

Ability to (a) predict the impacts of the following on the SOURCE RANGE MONITOR (SRM) SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Faulty or erratic operation of detectors/system (45.6)

Proposed Question:

A plant startup is in progress. SRM 'A' is bypassed due to failing upscale. IRMs are on Range 3. Power is slowly rising to the point of adding heat. The SRMs were selected to begin driving out of the core. SRM D failed to retract:

(1) Which of the following describes the impact of this condition as power continues to rise and (2) select the procedure or action the CRS should perform to address this condition?

A. (1) Half scram due to SRM D; (2) perform SOP-0074 Section 5.3 for failure of the detector to retract

B. (1) Half scram due to SRM D; (2) bypass the SRM and continue with the startup.

C. (1) Control Rod Block due to SRM D; (2) perform SOP-0074 Section 5.3 for failure of the detector to retract

D. (1) Control Rod Block due to SRM D; (2) bypass the SRM and continue with the startup.

Proposed Answer: C.

Explanation:
A. With the shorting links installed the scram signal from SRMs is bypassed. Part 2 is correct.
B. With the shorting links installed the scram signal from SRMs is bypassed. It would be inappropriate to continue with the startup without taking SOP-0074 actions for a failure to retract because the high flux would burn out the detector if it were to remain in the core during higher power conditions.
C. Correct – A rod block will occur at $1x10^5$ cps. The actions of SOP-0074 will protect the detector from burning out by de-energizing the detector.
D. Part 1 is correct, but it would be inappropriate to continue with the startup without taking SOP-0074 actions for a failure to retract because the high flux would burn out the detector if it were to remain in the core during higher power conditions. Additionally, the startup can not continue due to SRM A already being bypassed preventing the bypassing of SRM D.

Technical Reference(s): SOP-0074, Rev 306 Sect. 5.3

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0503 Obj 7

Question Source: New Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.4b.5 Comments:

QUESTION 89 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑	
	Tier #	2	Group # 1		
	K/A #	217000 G2.4.8			IR 4.5

Knowledge of how abnormal operating procedures are used in conjunction with EOPs. (43.5)

Proposed Question:

A plant transient has resulted in a loss of all injection sources except Reactor Core Isolation Cooling (RCIC). Reactor pressure is 260 psig and continues to slowly lower.

As pressure continues to lower toward the steam supply pressure isolation setpoint, which of the following should the CRS direct?

- Enclosure 2, DEFEATING RCIC LOW PRESSURE ISOLATION INTERLOCKS
- AOP-0003, AUTOMATIC ISOLATIONS

A. Install EOP Enclosure 2 before RCIC isolates at 150 psig.

B. Install EOP Enclosure 2 before RCIC isolates at 60 psig.

C. Verify RCIC isolates at 60 psig in accordance with AOP-0003.

D. Verify RCIC isolates at 150 psig in accordance with AOP-0003.

Proposed Answer: B.

Explanation:
A. The action is correct, but 150 psig is the LCO applicability value not the isolation setpoint.
B. Correct – Even though the isolation normally would occur at 60 psig, the EOP takes priority over the AOP isolation verification because the system is needed to maintain adequate core cooling. In the hierarchy of documents, the EOP takes precedence over the AOP. Subsequent guidance exists in EOP-0003 to isolate RCIC if it were to begin leaking into secondary containment.
C. Allowing RCIC isolation is inappropriate since it is the only injection source available. RCIC should be protected from isolation from guidance in the EOPs versus verification of isolation per the AOP.
D. . Allowing RCIC isolation is inappropriate since it is the only injection source available. RCIC should be protected from isolation from guidance in the EOPs versus verification of isolation per the AOP.

Technical Reference(s): EOP-1

Proposed references to be provided to applicants during examination: None

Learning Objective: R-LPOPS-HLO-512 Obj 7

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.43.b5

Comments:

QUESTION 90 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑
	Tier #	2	Group # 1	
	K/A #	264000 A2.07		IR 3.7

Ability to (a) predict the impacts of the following on the EMERGENCY GENERATORS (DIESEL/JET) ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Loss of off-site power during full-load testing (45.6)

Proposed Question:

The Division 1 Standby Diesel Generator is running paralleled to the grid for monthly surveillance testing when a loss of power to the Fancy Point Switchyard occurs.

- Division 2 Standby Diesel Generator failed to start.
- Division 3 diesel generator started and is supplying its associated bus.

(1) What is the status of the Div 1 DG output breaker and (2) which procedure should the CRS enter for this condtion?

A. (1) Open; (2) AOP-0050, STATION BLACKOUT

B. (1) Closed; (2) AOP-0004, LOSS OF OFFSITE POWER

C. (1) Open; (2) AOP-0004 LOSS OF OFFSITE POWER

D. (1) Closed; (2) AOP-0050, STATION BLACKOUT

Proposed Answer: B.

Explanation:
A. The output breaker will remain close to supply the bus. AOP-00050 is not appropriate with Div 1 DG supplying the bus.
B. Correct – The output breaker will remain close to supply the bus. AOP-0004 provides the appropriate guidance for the loss of offsite power.
C. Part 1 is incorrect. See A.
D. Part 2 is incorrect See. A.

Technical Reference(s): R-STM-0309S Rev 13 Pg 67 of 117, AOP-0004 Rev 41 Pg 3 of 71

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0309S Obj 15

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.43b.5 Comments:

QUESTION 91 Rev 0

Examination Outline Cross-Reference:	Level	RO ☐	SRO ☑
	Tier # 2	Group # 2	
	K/A # 223001 G2.2.36		IR 4.2

Ability to analyze the effect of maintenance activities, such as degraded power sources, on the status of limiting conditions for operations for Primary Containment and Auxiliaries. (43.2)

Proposed Question:

During the last performance of Hydrogen Igniter surveillance testing, 4 individual hydrogen igniters in the Division 2 system failed to reach a surface temperature of 1700°F. All other igniters met surveillance requirements.

Subsequently, the Division 1 diesel generator is declared inoperable during the performance of a scheduled surveillance.

How does this affect the operability of the hydrogen igniter subsystems?

A. Both Div 1 and Div 2 are INOPERABLE

B. Only Div 1 is INOPERABLE

C. Only Div 2 is INOPERABLE

D. Both Div 1 and Div 2 are OPERABLE

Proposed Answer: D.

Explanation:
A. Less than or equal to 5 igniters failed the surveillance so Division 2 is operable. Per LCO 3.0.6, Div 1 Hydrogen Igniters are not required to be declared inoperable due to the support system being inoperable since the redundant division is operable (LCO 3.8.1. Action B).
B. Per LCO 3.0.6, Div 1 Hydrogen Igniters are not required to be declared inoperable due to the support system being inoperable.
C. Less than or equal to 5 igniters failed the surveillance so the Division is operable.
D. Correct – Division 2 is operable despite the 4 igniters which failed the surveillance (5 or less can be inoperable without causing the Division to be inoperable). Division 1 is not required to be declared in operable due to its support system being inoperable (LCO 3.0.6; LCO 3.8.1 Action B)

Technical Reference(s): LCO 3.0.6, LCO 3.6.3.2 & Bases, LCO 3.8.1

Proposed references to be provided to applicants during examination: LCO 3.6.3.2 & Bases; LCO 3.8.1

Learning Objective: RLP-STM-0057 Obj 22, 27; RLP-STM-0309S Obj 12

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.43b.2 Comments:

QUESTION 92 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑	
	Tier #	2	Group # 2		
	K/A #	239003 A2.02			IR 3.3

Ability to (a) predict the impacts of the following on the MSIV LEAKAGE CONTROL SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Outboard MSIV valves leakage

Proposed Question:

Following a Loss of Coolant Accident, Divisions 1 & 2 MS-PLCS have been initiated. Outboard Main Steam Isolation Valve, B21-F028A has not seated properly resulting in a 15 scfm leak past the valve seat.

Based on the above determine the impact of this condition and select the action the CRS should take?

A. Division 1 MS-PLCS will isolate within 5 minutes. Enter AOP-0003 to verify MS-PLCS isolations.

B. Division 2 MS-PLCS will isolate within 5 minutes. Enter AOP-0003 to verify MS-PLCS isolations.

C. Division 1 & 2 MS-PLCS will continue to operate. Enter SOP-0031 to establish Shutdown Cooling.

D. Both Division 1 & Division 2 MS-PLCS are unavailable. Enter AOP-0050 Station Blackout to manually align the Instrument Air System as a backup to MS-PLCS.

Proposed Answer: A.

Explanation
A. Correct – Division 1 MS-PLCS pressurizes the area between the inboard and outboard MSIVs. A 5 minute timer bypasses any high flow isolation signals during the initial flow of air as the system is being pressurized. After 5 minutes, if air flow is still high, the system will isolate. In the stem it is stated that seat leakage was 15 scfm which is higher than the 14 scfm isolation signal. Isolations are verified by AOP-0003.
B. Div 2 does not attempt to pressurize the area between the inboard and outboard MSIVs so will not be affected by the failure.
C. Division 1 will not continue to operate. See A.
D. Division 2 will be unaffected. In addition the referenced procedure section from AOP-0050 applies when the MS-PLCS air source is not available which is not the case here.

Technical Reference(s): R-STM-0208 Rev 5 Table 3

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0208 Obj 2, 3, 4

Question Source: New Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑4

10 CFR Part 55 Content: 55.43b.5

Comments:

QUESTION 93 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑	
	Tier #	2	Group # 2		
	K/A #	256000 G.2.2.38			IR 4.5

Knowledge of conditions and limitations in the facility license regarding Reactor Condensate. (43.1)

Proposed Question:

The minimum allowable Feedwater Temperature of 326°F listed in the Facility License is based on operating at rated conditions.

Select the procedure below which provides guidance to determine the minimum allowable feedwater temperature for power levels below rated conditions and requires a reactor scram if this prohibited region is entered.

A. AOP-0007, Loss of Feedwater Heating

B. SOP-0010, MSR and FW Heaters Extraction Steam and Drains

C. AOP-0024, Thermal Hydraulic Stability Controls

D. SOP-0007, Condensate System

Proposed Answer: A.

Explanation:
A. Correct – The AOP-0007 Attachment 1, Feedwater Temperature vs Core Thermal Power graph identifies the prohibited region based on core thermal power and feedwater temperature below which a reactor scram is required.
B. SOP-0010 provides guidance for operation of feedwater heaters, but does not provide limiting temperatures for operation..
C. AOP-0024 graphs provide information regarding acceptable areas of operation based on reactor power vs core flow, not feedwater temperature.
D. SOP-0010 provides guidance for operation of the tube side flow of the Feedwater Heaters, but does.

Technical Reference(s): NPF-47 Station Operating License Condition 2(c)13, AOP-0007 Rev 27 Pg 10

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-HLO-0526 Obj 7

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑4 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.43b.1

Comments: Nearly 90% of the pre-heating of feedwater occurs in components in the Reactor Condensate system therefore there is no KA mismatch despite that the words “Reactor Condensate” do not appear in the stem of the question.

QUESTION 94 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑
	Tier #	3	Group #	Cond of Ops
	K/A #	G 2.1.25		IR 4.2

Ability to interpret reference materials, such as graphs, curves, tables, etc. (43.5)

Proposed Question:

While reviewing Control Building rounds, the CRS discovers the control building operator has recorded the following readings for the Division 3 Diesel Generator:

- Fuel Oil Storage Tank Level 80%
- Fuel Oil Day Tank Level 60%

Which of the following is appropriate for the Division 3 DG?

A. Declare Div 3 DG inoperable immediately due to storage tank level

B. Restore fuel oil storage tank level to >86% within 48 hours

C. Restore fuel oil day tank level to >86% within 48 hours

D. Declare Div 3 DG inoperable immediately due to day tank level

Proposed Answer: B.

Explanation:
A 48 hours are allowed to restore level as long as level remains above 38996 gals.
B. Correct – Using SOP-0052 Attachment 5 to convert % to gallons, storage tank level is in the range of 38996 gals to 45495 gals which requires entry into Action A of LCO 3.8.3
C. Day tank level is >316.3 gals, so no action is required due to day tank level.
D Day tank level is >316.3 gals, so no action is required due to day tank level.

Technical Reference(s): SOP-0052 Rev 42 Att 5 & 7; TS 3.8.1 and TS 3.8.3

Proposed references to be provided to applicants during examination: SOP-0052 Attachment 5 & 7; TS 3.8.1 & 3.8.3

Learning Objective: RLP-STM-0309S Obj 12

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.43b.2

Comments:

QUESTION 95 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑
	Tier #	3	Group #	Cond of Ops
	K/A #	G2.1.36		IR 4.1

Knowledge of procedures and limitations involved in core alterations. (43.6)

Proposed Question:

During a refuel outage, the Outage Control Center notifies the main control room that core alterations are scheduled to commence next shift.

Select the procedure below which the CRS utilizes to ensure that <u>all</u> requirements for core alterations have been met.

A. STP-000-0005, DAILY REFUELING LOGS

B. GMP-0102, REACTOR VESSEL DISASSEMBLY

C. FHP-0001, CONTROL OF FUEL HANDLING AND REFUELING OPERATIONS

D. FHP-0003, REFUEL PLATFORM OPERATION

Proposed Answer: C.

Explanation:
A. See C.
B. See C.
C. Correct – FHP-0001 Attachment 2 contains a list of Applicalbe Mode 5 Tech Specs which includes (section 2) a list of requirements to commence core alterations.
D. See C.

Technical Reference(s): FHP-0001 Rev 34 Pg 4, 35 of 40

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0055 Obj 6 & 9

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑3 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.43b.5

Comments:

QUESTION 96 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑
	Tier #	3	Group #	Eq Control
	K/A #	G 2.2.12		IR 4.1

Knowledge of surveillance procedures. (45.13)

Proposed Question:

STP-053-3001, JET PUMP OPERABILITY TEST has a DUE DATE of 11/1/2012 @ 2230 and a LATE DATE of 11/2/2012 @ 0430. The actual performance was completed and signed off on 11/1/2012 at 2215.

If the surveillance frequency is 24 hours, what are the (1) DUE DATE and (2) LATE DATE for the next performance of this test procedure?

A. (1) 11/2/2012 @ 2215; (2) 11/3/2012 @ 0415

B. (1) 11/2/2012 @ 2230; (2) 11/3/2012 @ 0430

C. (1) 11/2/2012 @ 1615; (2) 11/2/2012 @ 2215

D. (1) 11/2/2012 @ 2215; (2) 11/2/2012 @ 2230

Proposed Answer: A.

Explanation
A. Correct – Due date is 24 hours from completion of last performance. Late date includes 1.25 tolerance per Tech Spec S.R.3.0.2
B. Next performance is based on completion time of previous performance; not on previous due dates and late dates.
C. In this case the Late Date is 24 hours from the last performance. This options did not include the 1.25 tolerance allowance.
D. Part 1 is correct, but the Part 2 answer did not taken into account the 1.25 tolerance allowance.

Technical Reference(s): SR 3.0.2; ADM-0015 Rev 36 Pg 4-5 of 42

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-OPS-HO221 Obj 1,5

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.43b.2, b.5

Comments:

QUESTION 97 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑
	Tier #	3	Group #	Eq Control
	K/A #	G2.2.40		IR 4.7

Ability to apply Technical Specifications for a system. (43.2 / 43.5)

Proposed Question:

The following occurred during Mode 1 operation:

- 11/1/2012 @ 1530 HVR-UC1A tripped; HVR-UC1B remains in service
- 11/1/2012 @ 1540 HVR-UC1C is placed in service,
- 11/1/2012 @ 1540 Peak containment temperature is 81°F

Which of the following defines the Technical Specification requirements?

A. Per TS 3.6.1.7 PRIMARY CONTAINMENT UNIT COOLERS, HVR-UC1A must be restored to OPERABLE by 11/8/2012 @ 1530. Entry into TS 3.6.1.5 PRIMARY CONTAINMENT AIR TEMPERATURE is required.

B. TS 3.6.1.7 was entered at 1530 and exited at 1540. Entry into TS 3.6.1.5 PRIMARY CONTAINMENT AIR TEMPERATURE is required.

C. TS 3.6.1.7 was entered at 1530 and exited at 1540. Entry into TS 3.6.1.5 PRIMARY CONTAINMENT AIR TEMPERATURE is <u>NOT</u> required.

D. Per TS 3.6.1.7 PRIMARY CONTAINMENT UNIT COOLERS, HVR-UC1A must be restored to OPERABLE by 11/8/2012 @ 1530. Entry into TS 3.6.1.5 PRIMARY CONTAINMENT AIR TEMPERATURE is <u>NOT</u> required.

Proposed Answer: D,

Explanation:
A. First part is correct, but entry into the Containment Temperature Spec is not required until temperature exceeds 90°F
B. HVR-UC1C does not satisfy TS 3.6.1.7 and the Containment Temp Limit is 90°F.
C. HVR-UC1C does not satisfy TS 3.6.1.7. Part 2 is correct.
D. Correct – HVR-UC1C does not satisfy the requirements of TS 3.6.1.7 and cannot be counted towards the two required operable coolers. Condition A must be entered at the time of the UC trip. Condition A has a Completion Time of 7 days therefore restoration is required by 11/8/2012 @ 1530. The TS limit for containment temperature is >90°F so entry into that specification is not required.

Technical Reference(s): TS 3.6.1.7 and Bases; TS 3.6.1.5

Proposed references to be provided to applicants during examination: TS 3.6.1.7 and bases

Learning Objective: RLP-STM-0403 Obj 13 Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑3

10 CFR Part 55 Content: 55.43b.2

Comments:

QUESTION 98 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑
	Tier #	3	Group #	Rad Control
	K/A #	G 2.3.6		IR 3.8

Ability to approve release permits. (43.4)

Proposed Question:

Which of the following is required to discharge an LWS tank to the Mississippi River if RMS-RE107 is INOPERABLE?

A. Two independent samples of the tank are analyzed. One qualified member of the Chemistry staff and one qualified member of the Radwaste staff independently verify the release rate calculations and the discharge valve lineup.

B. A single sample is analyzed by two qualified members of the Chemistry staff independently. Two qualified members of the Radwaste staff independently verify the discharge valve lineup.

C. Two independent samples of the tank are analyzed. Two qualified members of the Chemistry staff independently verify the release rate calculations. Two qualified members of the Radwaste staff independently verify the discharge valve lineup.

D. A single sample of the tank is analyzed. One qualified member of the Chemistry staff verifies the release rate calculation and one qualified member of the Radwaste staff verifies the discharge valve lineup.

Proposed Answer: C.

Explanation:
A. See C.
B. See C.
C. Correct – ADM-0054 Section 5.5 requires 2 independent samples, 2 Chemistry technicians to verify calculations and 2 qualified members of the Radwaste staff to verify the discharge valve lineup.These actions satisfy the requirements of TRM 3.3.11.2.
D. See C.

Technical Reference(s): TRM 3.3.11.2 & ADM-0054 Rev 6A Section 5.5 Pg 9 of 12.

Proposed references to be provided to applicants during examination: None

Learning Objective: RLP-STM-0603 Obj 8c

Question Source: Bank # 2008 RBS NRC #97

Question History: Last NRC Exam 2008 RBS NRC #97

Cognitive Level: Memory or Fundamental Knowledge ☑4 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.43b.2 & b.4

Comments:

QUESTION 99 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑
	Tier #	3	Group #	E Plan
	K/A #	G 2.4.18		IR 4.0

Knowledge of the specific bases for EOPs. (43.1)

Proposed Question:

EOP-0002 PRIMARY CONTAINMENT CONTROL requires Emergency Depressurization if Suppression Pool Level can NOT be maintained above ___(1)____. The bases for this action is _____(2)____

A. (1) 13’3”
(2) steam released from the RPV may not be fully quenched in the suppression pool leading to pressurization of containment due to level in the pool being at the horizontal vents..

B. (1) 13’3”
(2) inadequate Net Postivie Suction Head for ECCS pumps challenging the ability to reflood following depressurization.

C. (1) 15’3”
(2) inadequate Net Postivie Suction Head for ECCS pumps challenging the ability to reflood following depressurization.

D. (1) 15’3”
(2) steam released from the RPV may not be fully quenched in the suppression pool leading to pressurization of containment due to level in the pool being less than 2 feet above the horizontal vents.

Proposed Answer: D.

Explanation:
A. ED is required at 15’3”.
B. ED is required at 15’3”.
C. 15’3” is correct, but the reason is incorrect.
D. ED is required at 15’3” due to suppression pool level being 2 feet above the horizontal vents. If level were to go below this point, steam release from the RPV may overpressurize containment due to inadequate suppression or quenching in the pool.

Technical Reference(s): EOP Bases Step SPL-12 B-8-25

Proposed references to be provided to applicants during examination: None

Learning Objective: R-LPOPS-HLO-514 Obj 5 & 6

Question Source: New

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☑3 Comprehension or Analysis ☐

10 CFR Part 55 Content: 55.43b.5

Comments:

QUESTION 100 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑
	Tier #	3	Group #	E Plan
	K/A #	G 2.4.40		IR 4.5

Knowledge of SRO responsibilities in emergency plan implementation. (43.5)

Proposed Question:

At time 1630, indications are present in the Main Control Room which require an emergency declaration.

The declaration must be made by ___(1)__

Offsite notifications to state and local agencies must be made by __(2)_

The NRC must be notified by __(3)___

A. (1) 1645; (2) 1700; (3) 1730

B. (1) 1645; (2) 1700; (3) 1745

C. (1) 1630; (2) 1645; (3) 1745

D. (1) 1630; (2) 1645; (3) 1700

Proposed Answer: B.

Explanation:
A. Part 3 is incorrect. See B.
B. Correct – Once conditions are present, 15 minutes are allowed to make the declaration. Once declared, 15 minutes are allowed to notify state and local agencies. The NRC is notified after state and local agencies, but not to exceed one hour following declaration.
C. 15 minutes are allowed to make the declaration after conditions are present to detect the event in progress.
D. 15 minutes are allowed to make the declaration after conditions are present to detect the event in progress.

Technical Reference(s): EIP-2-001 Rev 23, Pg 10 of 170, EIP-2-006 Rev 40 Pg 2 of 18

Proposed references to be provided to applicants during examination: NA

Learning Objective: EIP Objectives 6

Question Source: Bank # RBS 2008 Audit # 99

Question History: Last NRC Exam NA

Cognitive Level: Memory or Fundamental Knowledge ☐ Comprehension or Analysis ☑2

10 CFR Part 55 Content: 55.43b.5

Comments: