December 2010 River Bend Station
NRC Initial License Examination
Reactor Operator

QUESTION 1 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 1
K/A # 295001 AK3.04 IR 3.4

Knowledge of the reasons for reactor scram as it applies to Partial or Complete Loss of Forced Core Flow Circulation.

Proposed Question:

What is the reason for an automatic scram upon entry into the Exclusion Region of the Power to Flow map?

A. To avoid exceeding the MCPR Safety Limit during flux oscillations.

B. To avoid exceeding the Reactor Pressure Safety Limit during flux oscillations.

C. To avoid exceeding the MAPRAT operating limit due to low coolant flow.

D. To avoid exceeding the LHGR operating limit due to low coolant flow.

Proposed Answer: A.

Explanation

A. The scram which occurs upon entry into the Exclusion Region of the power to flow map is initiated for the APRM flow control trip reference cards. The FCTR cards define the boundary to the area in the operating domain where reactor instability may occur. Flux oscillations in this region could result in exceeding the MCPR safety limit.
B. See A.
C. See A
D. See A

Technical Reference(s): AOP-0024, STM-0503, STM-0508

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0508 Obj H2

Question Source: Bank # RBS December 2008 NRC

Question History: Last NRC Exam RBS December 2008

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

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 G.2.1.7 IR 4.4

Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation related to a partial or complete loss of AC.

Proposed Question:

A loss of NNS-SWG1C has just occurred while operating at 100% power.

Based on this, operators should expect to see _____.

A. A reduction in feedwater inlet temperature

B. Div 3 Emergency Diesel Generator running

C. A rise in temperature in the Radwaste building

D. Rising lube oil temperatures on all three feedwater pumps

Proposed Answer: B.

Explanation:
A. Heater drain pumps are fed from NNS-SWG1A & B, but not C.
B. E22-S004 is supplied by NNS-SWG1C. An undervoltage signal on E22-S004 will cause the Div 3 DG to start.
C. Radwaste chillers are supplied by NNS-SWG4A&B. HVN-CHL1B supplied by NNS-SWG1C is located in the Turbine Building.
D. Even if CCS-P1C were in service, the standby CCS pump would auto start on the trip of CCS-P1C, therefore no change in feedpump lube oil temperatures will occur.

Technical Reference(s): EE-01AC, STM-0309H

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0309H Obj H14b

Question Source: Bank # RBS-NRC-01225

Question History: Last NRC Exam 2007 RBS NRC

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

10 CFR Part 55 Content: 55.41.b7

Comments:

QUESTION 3 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 1
K/A # 295004 AA2.04 IR 3.2

Ability to determine and interpret system lineups as it applies to Partial or Total Loss of DC Power.

Proposed Question:

Given the following:

- An extended Station Blackout is in progress
- RCIC is injecting into the RPV
- All DC power will soon be lost

Which of the following 125 volt DC buses should be aligned to receive power from the Station Blackout Diesel Generator to ensure continued RCIC operation?

A. ENB-SWG1A

B. ENB-SWG1B

C. E22-S001

D. IHS-SWG01D

Proposed Answer: A.

Explanation:

A. ENB-MCC1 which supplies RCIC DC components is supplied from ENB-SWG1A.
B. See A.
C. See A.
D. See A.

Technical Reference(s): AOP-0050, EE-01AC

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0305 Obj H10c

Question Source: Bank # RBS-NRC-01134

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 4 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 1
K/A # 295005 AA1.05 IR 3.6

Ability to operate and/or monitor reactor turbine pressure regulating system as it applies to Main Turbine Generator Trip.

Proposed Question:

Following a trip of the Main Generator from 100% power, which of the following represents the expected status of the reactor/turbine pressure regulating system?

	Turbine Stop Valves	Turbine Control Valves	Turbine Bypass Valves
A.	Closed	Closed	Open
B.	Closed	Open	Open
C.	Open	Open	Closed
D.	Open	Closed	Closed

Proposed Answer: A.

Explanation:
A. Any main generator trip is a turbine trip. On a turbine trip, both the stop valves and control valves are closed. The main turbine bypass valves open to control reactor pressure.
B. Incorrect because control valves close on a turbine trip.
C. Incorrect because both stop and control valves are closed on a turbine trip and the bypass valves would be open to control pressure.
D. Incorrect because the stop valves are closed on a turbine trip and the bypass valves would be open to control pressure.

Technical Reference(s): R-STM-0509

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0509 Obj 3c, 10d

Question Source: New

Question History: Last NRC Exam NA

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

10 CFR Part 55 Content: 55.41.b7

Comments:

QUESTION 5 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 1
K/A # 295006 AK1.03 IR 3.7

Knowledge of the operational implications of reactivity control as it applies to SCRAM.

Proposed Question:

Which of the following ensures sufficient time to fully insert all control rods on a scram signal by delaying the reset of RPS following a scram?

A. Scram Discharge Volume level trips must be bypassed with keylock switches prior to resetting RPS.

B. RPS scram signal from the Reactor Mode Switch position must be bypassed with keylock switches prior to resetting RPS.

C. RPS scram signal from the Reactor Mode Switch position is sealed in for 10 seconds following a reactor scram.

D. Scram Discharge Volume level trips are sealed in for 10 seconds following a reactor scram.

Proposed Answer: C.

Explanation:
A. While it is accurate that the SDV keylocks switch can bypass this RPS signal, they do not ensure sufficient time for control rod insertion.
B. The RPS mode switch scram signal is automatically bypassed after 10 seconds. There is no key lock switch associated with this interlock.
C. The reactor mode switch in shutdown provides a redundant scram signal. After 10 seconds, this signal is automatically bypassed to allow resetting of the scram. During the initial 10 seconds, the scram can not be reset ensuring full control rod insertion.
D. This trip is only bypassed by keylock switches. See A.

Technical Reference(s): R-STM-0508

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0508 Obj 2, 3b, 5c, 8

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.6

Comments:

QUESTION 6 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 1
K/A # 295016 G.2.4.35 IR 3.8

Knowledge of local auxiliary operator tasks during an emergency and the resultant operational effects related to Control Room Abandonement.

Proposed Question:

Which of the following tasks is performed by the reactor building operator during control room abandonment due to a fire in accordance with AOP-0031, Shutdown From Outside the Main Control Room?

A. Remove control power fuses from Feedwater pump breakers.

B. Secure RPS Motor Generator.

C. Transfer E51-MOVF063 to Div 1 alternate power.

D. Establish RPV makeup from Div 1 Remote Shutdown Panel.

Proposed Answer: C.

Explanation:
A. This action is performed by the unit operator per Attachment 13.
B. This action is performed by the ATC operator per Attachment 12.
C. The reactor operator performs Attachment 14 of AOP-0031 during control room abandonment due to a fire. This attachment requires establishing alternate Div 1 power to E51-F063 within 10 minutes of evacuation of the MCR.
D. This action is performed by the ATC operator per Attachment 12.

Technical Reference(s): AOP-0031

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-OPS-AOP031 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.10

Comments:

QUESTION 7 Rev 0

Examination Outline Cross-Reference:

Level		RO ☑	SRO ☐
Tier #	1	Group #	1
K/A #	295019 AK3.03		IR 3.2

Knowledge of the reasons for service air isolation as it applies to Partial or Total Loss of Instrument Air.

Proposed Question:

At IAS-PNL31, the following indications are observed:

- SAS-AOV133, SERVICE AIR HEADER BLOCK VLV CLOSED
- SAS-AOV134, IAS-SAS CROSS TIE VLV OPEN

Which of the following describes the reason for the indications above?

A. This is the normal valve lineup.

B. To allow IAS compressors to supply both the IAS and SAS headers.

C. To allow SAS compressors to supply both the IAS and SAS headers.

D. To allow SAS compressors to supply the IAS header ONLY.

Proposed Answer: D.

Explanation:
A. This is the reverse of the normal lineup. SAS-AOV133 is normally open and SAS-AOV134 is normally closed.
B. The flexibility in the design of the SAS-IAS systems was provided to allow the SAS compressors to automatically supply IAS. There is no automatic provision for IAS compressors to supply SAS.
C. If both valves were open, this would be correct, but with SAS-AOV133 closed, the SAS compressors can not supply the SAS header.
D. At 113 psig SAS-AOV134 opens to allow SAS compressors to supply both IAS and SAS headers. At 110 psig, SAS-AOV133 closes such that the SAS compressors only supply the IAS header. Given the indications, pressure is <110 psig and SAS compressor are only supplying the IAS header.

Technical Reference(s): R-STM-0121

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0121 Obj. 2, 3b, 3c

Question Source: New

Question History: Last NRC Exam NA

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

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 8 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 1
K/A # 295021 AA1.05 IR 3.0

Ability to operate and/or monitor reactor recirculation as it applies to Loss of Shutdown Cooling.

Proposed Question:

With the plant in Mode 4, the operating shutdown cooling loop tripped due to an isolation of E12-MOVF009, RHR SHUTDOWN COOLING INBD ISOL VALVE. Efforts to restore this valve have been unsuccessful. Reactor recirculation pumps are secured, but available. The reactor has been shutdown for 14 hours.

Which of the following actions should be performed under the above conditions?

A. Place the alternate RHR shutdown cooling loop in service.

B. Place RHR in the Fuel Pool Cooling Assist mode.

C. Place the Alternate Decay Heat Removal (ADHR) system in service.

D. Start a Reactor Recirculation pump.

Proposed Answer: D.

Explanation
A. The alternate RHR SDC loop would also require a flowpath through E12-MOVF009.
B. This action is required if forced circulation is not available. The stem states that reactor recirculation is secured, but available.
C. ADHR is not available for service until 20 hours after shutdown due to heat removal capability.
D. AOP-0051 LOSS OF DECAY HEAT REMOVAL, requires starting a reactor recirculation pump under these conditions.

Technical Reference(s): AOP-0051, SOP-0140

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-HLO-0543 Obj. 7

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 9 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 1
K/A # 295023 AA2.02 IR 3.4

Ability to determine and interpret pool levels as it applies to refuel accident.

Proposed Question:

During movement of new fuel or control rods in the RPV, a minimum water level of ___(1)___ above the __(2)__ is required to ensure that the design basis for the postulated fuel handling accident analysis during refueling operations is met.

A. (1) 27 feet, (2) RPV flange

B. (1) 27 feet, (2) top of irradiated fuel assemblies seated in the RPV

C. (1) 23 feet, (2) RPV flange

D. (1) 23 feet, (2) top of irradiated fuel assemblies seated in the RPV

Proposed Answer: D.

Explanation:
A. Required level is 23 feet. 27 feet is nominal water level. Level is referenced to the flange when moving irradiated assemblies.
B. Required level is 23 feet. 27 feet is nominal water level.
C. Level is referenced to the flange when moving irradiated assemblies.
D. Tech Spec 3.9.7 requres ≥23 feet of water above irradiated fuel assemblies in the vessel when moving new fuel or control rods.

Technical Reference(s): TS 3.9.7

Proposed references to be provided to applicants during examination: NA

Learning Objective: R-STM-0055 Obj. 11, 13

Question Source: Modified Bank # Modified from April 2010 NRC #10

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: Modified the stem to ask about movement of new bundles or control rods (vs. irradiated fuel in original question). This change caused the answer to change to D. Answer in original was C.

QUESTION 10 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 1
K/A # 295024 EK2.06 IR 3.9

Knowledge of the interrelations between High Drywell Pressure and Emergency Generators.

Proposed Question:

A LOCA has occurred.

Reactor water level is being maintained by Condensate and Feedwater at 35 inches.

Drywell pressure is 2.2 psid.

4160V safety related buses have remained energized from offsite power.

Which of the following describes the operation of the diesel generators under these conditions?

A. Div 1 & 2 are operating and tied to their respective buses with only generator differential and diesel overspeed trips active. Div 3 is running unloaded with all normal trips active.

B. Div 1, 2 & 3 are all operating unloaded with only generator differential and overspeed trips active.

C. Div 1, 2 & 3 are operating loaded with all normal trips active.

D. Div 1 & 2 are operating unloaded with all normal trips active. Div 3 is operating loaded with only generator differential and overspeed trips active.

Proposed Answer: B.

Explanation:
Incorrect - With offsite power available, the Div 1 & 2 DGs will not be tied to the bus. Div 3 would not have all trips active on an automatic start due to high drywell pressure.
Correct – All 3 diesels have started on high drywell pressure but have not tied onto the bus due to the availability of offsite power. Only generator differential and overspeed trips are active on an auto start from high drywell pressure.
Incorrect – The diesels would not be loaded due to the availability of offsite power. Also, normal trips are not active on a high drywell pressure start.
Incorrect – Div 1 & 2 normal trips are not active on a high drywell pressure start. Div 3 would not be loaded due to the availability of offsite power.

Technical Reference(s): R-STM-0309S, R-STM-0309H

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0309H Obj 7, 8 RLP-STM-0309S Obj. 7, 8

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 11 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 1
K/A # 295025 EK1.01 IR 3.9

Knowledge of the operational implications of pressure effects on reactor power as it applies to High Reactor Pressure.

Proposed Question:

During an ATWS the following conditions exist:

- Reactor power is stable at 12%
- Reactor pressure is being controlled by the Main Turbine Bypass Valves at 920 psig.
- Reactor water level is being maintained at -100 inches

How will reactor power be affected if the Main Turbine Bypass Valves failed shut? Assume no operator actions taken.

A. Reactor power will rise due to a reduction in coolant temperature caused by the rise in pressure.

B. Reactor power will be unchanged as the steam line drains control reactor pressure.

C. Reactor power will lower due to the negative reactivity effect of coolant temperature rising.

D. Reactor power will rise due to a reduction in voids caused by rising reactor pressure.

Proposed Answer: D.

Explanation:
A. Incorrect – A rise in pressure would cause a rise in coolant temperature under saturated conditions.
B. Incorrect – The stem indicates no action has been taken. Operation of the steam line drains requires manual action.
C Incorrect – The negative reactivity due to voids has a larger affect the moderator temperature.
D. Correct – The closing of the BPVs will cause pressure to rise. The rise in pressure will cause a reduction in voids in the coolant, resulting in more moderation and higher power.

Technical Reference(s): R-STM-0509

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0509 Obj. 15a

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 12 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 steam condensation as it applies to Suppression Pool High Water Temperature.

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. Incorrect. See B.
B. The heat capacity limit is 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 great than the capacity of the containment vent.
C. Incorrect. See B.
D. Incorrect. See B.

Technical Reference(s): EPSTG-0002

Proposed references to be provided to applicants during examination: NA

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

Question Source: Bank # RBS 2007 Audit Exam # 34

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 13 Rev 0

Examination Outline Cross-Reference:

Level RO ☑ SRO ☐
Tier # 1 Group # 1
K/A # 295027 EK2.02 IR 3.2

Knowledge of the interrelations between High Containment Temperature and components internal to the containment.

Proposed Question:

Equipment in the primary containment needed to mitigate the effects of a design basis accident is expected to be capable of performing its function at a maximum temperature _____.

A. 90°F

B. 100°F

C. 170°F

D. 185°F

Proposed Answer: D.

Explanation:
A. Incorrect. See D.
B. Incorrect. See D.
C. Incorrect. See D.
D. Primary Containment Design temperature limit is 185°F. Components located in that area are designed to operate under accident conditions.

Technical Reference(s): R-STM-0057

Proposed references to be provided to applicants during examination: NA

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 14 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 1
K/A # 295028 EK2.03 IR 3.6

Knowledge of the interrelations between High Drywell Temperature and reactor water level indication.

Proposed Question:

EOP-0001, Caution 1, Part 2 identifies RPV levels above which RPV level instruments may be used when the containment or drywell temperature near the reference leg is at the specified limits.

If level were below these values at the elevated temperature specified, the instrument would…

A. fail offscale low.

B. continue to indicate level onscale when actual RPV level went below the variable leg tap.

C. continue to indicate level onscale when actual RPV level went offscale high (above the indicating range).

D. provide erratic level indication when actual RPV level went offscale low due to loss of the variable leg.

Proposed Answer: B.

Explanation:
A. Incorrect
B. Elevated temperatures in the vicinity of RPV level instrument reference legs can produce on-scale readings on some instruments even when the actual level is below the variable leg taps.
C.
D.

Technical Reference(s): R-STM-0051, EPSTG-0002

Proposed references to be provided to applicants during examination: EOP Caution 1

Learning Objective: RLP-STM-0051 Obj.3

Question Source: Bank # RBS-NRC-706

Question History: Last NRC Exam RBS 2003

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

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

QUESTION 15 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 1
K/A # 295030 EA2.03 IR 3.7

Ability to determine and interpret reactor pressure as it applies to Low Suppression Pool Water Level.

Proposed Question:

An ATWS has occurred following an inadvertent MSIV isolation.

Which of the following reactor pressure bands are appropriate for the given suppression pool temperatures and levels?

	Reactor Pressure	Suppression Pool Level	Suppression Pool Temperature
A.	500-700 psig	15'4"	130°F
B.	800-1090 psig	16'11"	128°F
C.	800-1090 psig	19'5"	140°F
D.	500-700 psig	21'3"	150°F

Proposed Answer: A.

Explanation:
A. Of the 4 sets of parameters given, only choice A allows full use of the pressure band without exceeding the HCTL curve, therefore it is the only appropriate band.
B. See A.
C. See A.
D. See A.

Technical Reference(s): EOP-0001 Figure 2 HCTL Curve

Proposed references to be provided to applicants during examination: EOP-0001 Fig 2

Learning Objective: RLP-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 16 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 1
K/A # 295031 EA2.04 IR 4.6

Ability to determine and interpret adequate core cooling as it applies to Reactor Low Water Level.

Proposed Question:

In which of the following sets of plant conditions is adequate core cooling assured?

A. RPV level -215" with 5100 gpm injection from HPCS

B. RPV level -209" with 2000 gpm injection from LPCS and 4000 gpm from HPCS

C. RPV level -175" with 2000 gpm injection from RHR B

D. RPV level -209" with no injection available

Proposed Answer: C.

Explanation
A. ACC from spray cooling requires a minimum level of -211"
B. ACC from spray cooling requires 5000 gpm from HPCS or LPCS, not cumulative spray flow.
C. Correct – Steam cooling with injection requires level above -186"
D. ACC from steam cooling with no inejection requires a minimum level of -206".

Technical Reference(s): EOP-0001

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-HLO-511 Obj.4

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: It should also be noted that this KA was also randomly selected for the Audit exam. The question, however is different. On this exam, the correct answer dealt with steam cooling with injection, whereas the answer on the Audit question is based on steam cooling without injection. Both stems read similarly, but all 4 answer choices are different than the audit exam.

QUESTION 17 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 1
K/A # 295037 EK2.03 IR 4.1

Knowledge of the interrelations between SCRAM condition present and reactor power above APRM downscale or unknown and ARI/RPT/ATWS.

Proposed Question:

A plant transient has occurred requiring a reactor scram. All immediate actions of AOP-0001 REACTOR SCRAM have been completed but no other actions have been taken. The following plant conditions exist:

Reactor Power 12%
RPV Level 35”
RPV Pressure 1055 psig

Assuming the ATWS failure mechanism is a hydraulic lock, which of the following represents the status of RPS and ARI?

	RPS	ARI
A.	De-energized	Energized
B.	De-energized	De-energized
C.	Energized	Energized
D.	Energized	De-energized

Proposed Answer: A.

Explanation
A. Following the completion of AOP-001 actions, RPS which is normally energized will be de-energized and ARI which is normally de-energized will be energized.
B. See A.
C. See A.
D. See A.

Technical Reference(s): R-STM-0052, R-STM-0508, AOP-0001

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0052 Obj. 2n, RLP-STM-0508 Obj. 3, RLP-OPS-HLO-520 Obj. 4

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.6 Comments:

QUESTION 18 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 1
K/A # 295038 EK3.02 IR 3.9

Knowledge of the reasons for system isolations as it applies to High Off-site Release Rate.

Proposed Question:

While operating at 100% power, a transient occurs resulting in the isolation of the following valves:

- N64-F060, OFFGAS DISCH VENT VLV
- N64-F054, PRE FLTR INLET DR VLV
- N64-F034A(B), CLR COND A(B) DRAIN VLV
- N64-F023, HOLDUP LINE DRAIN VLV

Which of the following conditions is the reason for this isolation?

A. Condenser low vacuum

B. SJAE 2nd stage low flow

C. SJAE supply pressure low

D. Post treatment radiation monitor levels exceeding 3 times normal levels

Proposed Answer: D.

Explanation:
A. Although the isolations provided in the stem would lead to a low vacuum condition, a low vacuum condition would not cause the isolation.
B. SJAE low flow would cause isolation of ARC-AOV1A(B) which is the inlet to Offgas, but not the outlet to Offgas.
C. SJAE supply pressure low has no direct interlock, but low supply pressure could lead to low flow which would isolate ARC-AOV1A(B) the inlet to Offgas, but not the Offgas outlet.
D. N64-F060 isolates due to 3X normal radiation levels at the Offgas Post Treatment Radiation monitor. The remaining 3 valves listed in the stem isolate due to N64-F060 being shut.

Technical Reference(s): R-STM-0606

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0606 Obj. 4, 7

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 19 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 1
K/A # 600000 AA1.05 IR 3.0

Ability to operate and/or monitor plant and control room ventilation systems as it applies to Plant Fire On Site.

Proposed Question:

A small fire occurred in the Main Control Room kitchen. Control Room evacuation was NOT necessary.

In order to remove smoke from the area, the operator started HVC-FN9, MCR SMOKE REMOVAL FAN at _____(1)_____ and opened HVC-AOD107 SMOKE REMOVAL FAN SUCTION and HVC-AOD108 SMOKE REMOVAL FAN SUCTION at _____(2)_____.

A. H13-P863; (2) H13-P863

B. H13-P861 FIRE PROTECTION CONSOLE; (2) H13-P863

C. H13-P863; (2) H13-P861 FIRE PROTECTION CONSOLE

D. H13-P861 FIRE PROTECTION CONSOLE; (2) H13-P861 FIRE PROTECTION CONSOLE

Proposed Answer: B.

Explanation:
A. See B.
B. HVC-FN9 control is located on H13-P861. HVC-AOD107 & 108 are located on H13-P863.
C. See B.
D. See B.

Technical Reference(s): R-STM-0402

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0402 Obj 7

Question Source: Bank # March 2010 Audit exam #64

Question History: Last NRC Exam NA

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

10 CFR Part 55 Content: 55.41b.4

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 reactor and turbine trip criteria as it applies to Generator Voltage and Electric Grid Disturbances.

Proposed Question:

The reactor has scrammed and the Main Turbine has tripped. 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?

A. The turbine tripped to provide protection from a turbine overspeed condition due to the sudden unloading of the generator. The reactor scrammed in anticipation of pressure and flux transients due to the tripping of the turbine.

B. The turbine tripped to protect the Main Generator from motoring. The reactor scrammed in anticipation of pressure and flux transients due to the tripping of the turbine.

C. The turbine tripped to provide protection from a turbine overspeed condition due to the sudden unloading of the generator. The reactor scrammed to protect the Main Turbine from an overspeed condition due to excess steam flow.

D. The turbine tripped to protect the Main Generator from a reverse power condition. The reactor scrammed to protect the Main Turbine from an overspeed condition due to excess steam flow.

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 main 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, not to protect the turbine from overspeed due to excess steam flow.
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, not to protect the turbine from overspeed due to excess steam flow.

Technical Reference(s): R-STM-0310, R-STM-0508

Proposed references to be provided to applicants during examination: NA

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

Question Source: Bank # March 2010 Audit exam #20

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 21 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 2
K/A # 295002 G.2.1.32 IR 3.8

Ability to explain and apply system limits and precautions regarding loss of main condenser vacuum.

Proposed Question:

A failure in the Offgas System has resulted in a loss of main condenser vacuum. The following conditions exist:

- Reactor power 7%
- Reactor water level -100 inches
- Reactor pressure 1050 psig, controlled with SRVs
- Sup Pool Temp 120°F
- Condenser Vacuum 0 inches Hg

Which of the following actions is correct concerning operation of the Condenser Air Removal System (ARC)?

A. One ARC pump should be started to restore condenser vacuum to allow pressure control with Bypass Valves.

B. Both ARC pumps should be started to restore condenser vacuum to allow pressure control with Bypass Valves Condenser due to the severity of plant conditions.

C. ARC should not be started due to the potential for ductwork leakage causing the turbine building to become an Airborne Area.

D. ARC should not be started due to the potential for ignition of explosive gases.

Proposed Answer: D.

Explanation:
A. ARC pumps should not be started with core thermal power >145 MWth. 7% power = 216 MWth.
B. ARC pumps should not be started with core thermal power >145 MWth. 7% power = 216 MWth.
C. The concern with ductwork leakage is for 2 pump operation.
D. The 145 MWth limit is due to the creation of higher H2 concentrations at higher power. ARC pumps are not operated above 145 MWth in any condition.

Technical Reference(s): SOP-0025

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0125 Obj. 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.10 Comments:

QUESTION 22 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 2
K/A # 295008 AA2.02 IR 3.4

Ability to determine and interpret steam flow feed flow mismatch as it applies to High Reactor Water Level.

Proposed Question:

While operating at 100%, C33-R607 FW Flow and MS Flow recorder shows steam flow and feed flow are matched when an instrument failure causes the blue feedwater flow indication to drop to 50% below its previous value.

What is the expected result as the feedwater level control system responds to the instrument failure?

A. Reactor water level rises and settles at a higher value below the high level scram setpoint.

B. Reactor water level lowers and settles at a lower value above the low level scram setpoint.

C. Reactor water level rises and the reactor scrams when it reaches the high level scram setpoint.

D. Reactor water level lowers and the reactor scrams when it reaches the low level scram setpoint.

Proposed Answer: C.

Explanation:
A. See C.
B. See C.
C. Correct – The indication provided in the stem is evidence of the failure of one of two feedwater flow signals. The feedwater level control system will attempt to match steam flow and feed flow by opening the feedwater regulating valves causing level to rise. As actual level rises, the level portion of the circuitry will attempt to lower level, but will be unable to recover from the 50% loss of feed signal causing the reactor to scram on Level 8.
D. See C.
Technical Reference(s): R-STM-0107

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0107 Obj. 14e

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.4 Comments:

QUESTION 23 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 2
K/A # 295014 AA1.02 IR 3.6

Ability to operate and/or monitor recirculation flow control system as it applies to Inadvertent Reactivity Addition.

Proposed Question:

When the ATC operator assumes the shift, reactor power is 100% and reactor recirculation loop flows are matched.

Later in the shift, the ATC operator notices the following indications:

- Core thermal power 3150 MW
- Recirc Loop A 31.5 Kgpm
- Recirc Loop B 33.0 Kgpm

Which of the following action is appropriate under these conditions?

A. Secure Recirc HPU A from H13-P680 by arming and depressing the HPU A Shutdown pushbutton. Recirc Flow Control Valve A is failing closed.

B. Secure Recirc HPU B from H13-P680 by arming and depressing the HPU B Shutdown pushbutton. Recirc Flow Control Valve B is failing open.

C. Secure the inservice HPU A subloop from H13-P614 by depressing the FAN MOTOR/PUMP MOTOR STOP pushbutton. Recirc Flow Control Valve A is failing closed.

D. Secure the inservice HPU B subloop from H13-P614 by depressing the FAN MOTOR/PUMP MOTOR STOP pushbutton. Recirc Flow Control Valve B is failing open.

Proposed Answer: B.

Explanation:
A. See B.
B. Based on stem indications, FCV B is failing open. Core thermal power of 3150 MW is higher than 100% so a method of positive reactivity addition is occurring. Additionally recirc loop flow of 33.0 kgpm is above the maximum loop flow of 32.5 kgpm indicating the problem is with the “B” loop. The appropriate method of securing is to secure the entire HPU from the arm and depress pushbutton on H13-P680. If only the in service subloop was secured from H13-P614, the stby subloop would start up and continue to supply hydraulic oil allowing the valve to further open.
C. See B.
D. See B.

Technical Reference(s): R-STM-0053

Proposed references to be provided to applicants during examination: NA Learning Objective: RLP-STM-0053 Obj. 1, 19a, 19b

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 24 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 2
K/A # 295017 AA2.03 IR 3.1

Ability to determine and interpret radiation levels as it applies to High Offsite Release Rate.

Proposed Question:

Consider the indications of the following radiation monitors:

- RMS-RE125 Main Plant Exhaust — Yellow status
- RMS-RE118 Turbine Bldg Vent Exhaust — Red status
- RMS-RE124 Cond Demin / Offgas Building Vent Exh — Green status
- RMS-RE110 Auxiliary Bldg Vent Exhaust — Green status

Based on the above indications, a leak is occurring in the _____.

A. Offgas Recombiner room

B. MSR Bay

C. RWCU Pump Room

D. RCIC Room

Proposed Answer: B.

Explanation:
A. See B.
B. Based on RMS-RE118 being in alarm, the leak can be determined to be in the turbine building. Leaks in Offgas would be detected on RMS-RE124. Leaks in the RWCU or RCIC rooms would be detected on RMS-RE110. Turbine Bldg ventilation exhausts to Main Plant exhaust also causing RMS-RE125 to be in alert status.
C. See B.
D. See B.

Technical Reference(s): R-STM-0511

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0511 Obj. 7

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.11

Comments:

QUESTION 25 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 2
K/A # 295032 EK2.01 IR 3.5

Knowledge of the interrelations between High Secondary Containment Area Temperature and area room coolers.

Proposed Question:

During the review of STP-000-0001, DAILY OPERATING LOGS, the unit operator notes that the HPCS Pump Room area temperature is reading 10 degrees higher than normal.

A malfunction in which of the following Auxiliary Building Area Coolers is the cause for this condition?

A. HVR-UC11A

B. HVR-UC11B

C. HVR-UC2

D. HVR-UC5

Proposed Answer: D.

Explanation:
A. HVR-UC11A cools 141' elevation of the Auxiliary Bldg.
B. HVR-UC11A cools 141' elevation of the Auxiliary Bldg.
C. HVR-UC2 cools the RWCU pump room.
D. HVR-UC 5 cools the HPCS cubicle.

Technical Reference(s): R-STM-0409

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0409 Obj. 2

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 26 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 2
K/A # 295033 G.2.4.8 IR 3.8

Knowledge of how abnormal operating procedures are used in conjunction with EOPs regarding Secondary Containment Area Radiation Levels.

Proposed Question:

RMS-RE11A & B, ANNULUS EXH RAD MONITOR A(B) have gone into high alarm condition requiring entry into AOP-0003, AUTOMATIC ISOLATIONS. This condition also requires entry into EOP-0003 SECONDARY CONTAINMENT AND RADIOACTIVE RELEASE CONTROL.

How should the AOP be used in conjunction with the EOP?

A. Execute all AOP steps before the EOP is entered.

B. Execute AOP steps after the EOP has been exited.

C. Execute the AOP concurrently with the EOP if it does NOT degrade equipment required by the EOP.

D. Execute the AOP concurrently with the EOP for only those steps that are specifically directed in the EOP steps.

Proposed Answer: C.

Explanation:
A. Procedures are executed concurrently.
B. Procedures are executed concurrently.
C. Procedures are executed concurrently. If procedures conflict, action is taken as directed in the EOP.
D. EOP steps typically do not address specific AOP actions.

Technical Reference(s): EPSTG-0002 Rev 13 B-4-7

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-HLO-511 Obj. 1

Question Source: Bank # RBS-NRC-928 (Stem revised)

Question History: Last NRC Exam Sept 2004 #73

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

10 CFR Part 55 Content: 55.41b.10

Comments:

QUESTION 27 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 1 Group # 2
K/A # 500000 EA2.03 IR 3.3

Ability to determine and interpret combustible limits for drywell as it applies to High CTMT Hydrogen Concentration.

Proposed Question:

Which of the following is the Drywell Hydrogen Deflagration Overpressure Limit?

A. 0.7% drywell hydrogen concentration

B. 6% drywell hydrogen concentration

C. 9% drywell hydrogen concentration

D. Drywell Hydrogen Deflagration Overpressure Limit is dependent upon drywell pressure and requires the use of Figure 5, HDOL curve to determine the limit.

Proposed Answer: C.

Explanation:
A. 0.7% is the minimum detectable concentration with equipment available at RBS.
B. 6% containment H2 is the concentration requiring shutting down of the H2 recombiners.
C. Correct-9% DW H2 is the DW HDOL.
D. The containment HDOL requires the use of the Figure 5 curve.

Technical Reference(s): EPSTG-0002 A-17

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-OPS-HLO-517 Obj. 3

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.9

Comments:

QUESTION 28 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 203000.G.2.4.18 IR 3.3

Knowledge of the specific bases for EOPs related to RHR/LPCI injection mode.

Proposed Question:

The reactor has scrammed. All rods are fully inserted. Current plant conditions required emergency depressurization.

During the implementation of EOP-0001 Emergency Depressurization with a High Drywell Pressure condition present, the EOPs direct terminating and preventing injection from those Low Pressure ECCS Injection systems not required for adequate core cooling.

These systems are terminated and prevented from injection because the depressurization will lower pressure below the injection shutoff head of these pumps which will result in _____.

A. unauthorized injection inside the shroud.

B. maximum ECCS injection and the pumps operating at runout conditions.

C. injection of large amounts cold unborated water into the core region.

D. complications in controlling RPV level.

Proposed Answer: D.

Explanation:
A. This action would be true during an ATWS, the stem addresses EOP-1 which is the non-ATWS RPV control EOP.
B. Although the pumps would be running at max flow, the reason for this step is described in “D” below.
C. This action would be true during an ATWS, the stem addresses EOP-1 which is the non-ATWS RPV control EOP.
D. With a starts signal present (1.68 psid) and actions taken to deliberately lower RPV pressure below the shutoff head of the LP ECCS pump, the injection valves will open resulting in maximum injection which will complicate RPV level control.

Technical Reference(s): EPSTG-0002 STEP ED-2

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-OPS-HLO-0512 Obj. 5

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 29 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 205000 A2.06 IR 3.4

Ability to (a) predict the impact of SDC/RHR pump trips on Shutdown Cooling and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of that abnormal operation.

Proposed Question:

The plant is in Mode 4 following completion of fuel shuffle and vessel assembly.
RHR 'A' was operating in shutdown cooling, but has just tripped.
RHR 'B' is tagged out.

The reactor coolant heatup rate will be ____(1)____ than what the heatup rate would have been had the shutdown cooling loss occurred before fuel shuffle, and the operators should place ___(2)___.

A. (1) greater; (2) ADHR in Configuration 2 per SOP-0140

B. (1) greater; (2) RWCU per SOP-0090.

C. (1) less; (2) ADHR in Configuration 1 per SOP-0140

D. (1) less; (2) ADHR in Configuration 3 per SOP-0140

Proposed Answer: C.

Explanation:
A. Following fuel shuffle, there is less decay heat in the core, so the heat up rate is less than before fuel shuffle. The vessel head must be removed for Config. 2.
B. fuel shuffle, there is less decay heat in the core, so the heat up rate is less than before fuel shuffle.
C.Correct fuel shuffle, there is less decay heat in the core, so the heat up rate is less than before fuel shuffle. Configuration 1 is available with the vessel head installed.
D. Vessel head must be removed for Configuration 3.

Technical Reference(s): SOP-0140, OSP-0037

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0204 Obj 16; RLP-STM-0656 Obj. 2

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.3

Comments:

QUESTION 30 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 209001 K3.02 IR 3.8

Knowledge of the effect that a loss or malfunction of the LPCS will have on ADS logic.

Proposed Question:

The plant has experienced a LOCA. All equipment functioned as expected except for LPCS which did not start.

How does the malfunction of LPCS affect the operation of ADS assuming all other logic requirements are met?

A. Automatic Depressurization will still occur but only with the Div 2 SRV solenoids.

B. Automatic Depressurization will still automatically occur with both the Div 1 & Div 2 SRV solenoids.

C. Automatic Depressurization will still automatically occur with the Div 2 SRV solenoids, but the Div 1 SRV solenoids must be manually actuated.

D. Automatic Depressurization can only be performed by use of the 4 manual initiation pushbuttons.

Proposed Answer: B.

Explanation:
A. Incorrect-Div 1 SRV solenoids can still actuate based on RHR A permissive signal.
B. Correct-Even though LPCS did not start, RHR A supplies the required permissive signal for Div 1 SRV solenoids so both Div 1 & Div 2 SRV solenoids can still automatically actuate.
C. Incorrect-Div 1 SRV solenoids can still actuate based on RHR A permissive signal.
D. Incorrect-Div 1 SRV solenoids can still actuate based on RHR A permissive signal. Also, Div 2 SRV solenoids are not affected by the LPCS failure.

Technical Reference(s): R-STM-0202

Proposed references to be provided to applicants during examination: NA

Learning Objective: R-STM-0202 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: 55.41b.7

Comments:

QUESTION 31 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 209002 K4.02 IR 3.4

Knowledge of HPCS design feature(s) and or interlock(s) which provide for preventing overfilling of the reactor vessel.

Proposed Question:

The High Pressure Core Spray design feature that will prevent overfilling the reactor vessel is the _____

A. HPCS pump trip at Level 8.

B. automatic closure of E22-MOVF004, HPCS INJECT ISOL VALVE at Level 8.

C. automatic closure of E22-MOVF001, HPCS PUMP CST SUCTION VALVE when CST level reaches 2.4 feet.

D. manual throttling of E22-MOVF004, HPCS INJECT ISOL VALVE to maintain level less than Level 8.

Proposed Answer: B.

Explanation:
A. See B.
B. E22-MOVF004 automatically isolates at Level 8 to prevent overfilling the reactor vessel.
C. See B.
D. See B.

Technical Reference(s): R-STM-0203

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0203 Obj 4

Question Source: Bank # RBS-NRC-01212

Question History: Last NRC Exam RBS 2007 # 33

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

10 CFR Part 55 Content: 55.41b.7

Comments:

QUESTION 32 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 211000 A1.03 IR 3.6

Ability to predict and/or monitor changes in parameters associated with operating SLC controls including pump discharge pressure.

Proposed Question:

While operating at 100% power an ATWS occurred.

The MSIVs closed due to loss of condenser vacuum.

Reactor pressure has been lowered to 650 psig to maintain in the safe zone of the Heat Capacity Temperature Limit curve.

The CRS has directed injection with Standby Liquid Control.

Which of the following is indicative of proper SLC operation under these conditions?

A. SLC pump discharge pressure 750 psig, SLC squib continuity light OFF

B. SLC pump discharge pressure 1400 psig, SLC squib continuity light OFF

C. SLC pump discharge pressure 1400 psig, SLC squib continuity light ON

D. SLC pump discharge pressure 750 psig, SLC squib continuity light ON

Proposed Answer: A.

Explanation
A. Proper SLC operation occurs when the squib valve has been fired. This is indicated by the continuity light being extinguished. Proper SLC discharge pressure is slightly above reactor pressure.
B. SLC discharge line relief valves lift at 1400 psig. Pressure this high is indicative of blockage in the discharge line.
C. SLC discharge line relief valves lift at 1400 psig. Pressure this high is indicative of blockage in the discharge line. If the squib continuity light is still lit. There's no available discharge path for injection.
D. If the squib continuity light is still lit. There's no available discharge path for injection.

Technical Reference(s): R-STM-0201

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0201 Obj. 2e

Question Source: Bank # RBS 2008 NRC # 34

Question History: Last NRC Exam RBS 2008 NRC #34

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

10 CFR Part 55 Content: 55.41b.6

Comments:

QUESTION 33 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 211000 A3.06 IR 4.0

Ability to monitor automatic operations of SLC including RWCU system isolation.

Proposed Question:

During an ATWS, the unit operator has initiated injection of Standby Liquid Control System 'A'. In addition to the expected changes associated with SLC 'A', the unit operator should also expect to see _____ isolate.

A. G33-MOVF004, PUMP SUCTION CNMT OUTBOARD ISOL valve

B. G33-MOVF001, PUMP SUCTION DRYWELL INBOARD ISOL valve

C. all Division 1 RWCU containment isolation valves

D. all RWCU containment isolation valves

Proposed Answer: A.

Explanation:
A. Only the RWCU suction valve isolates on SLC initiation. The outboard valve is associated with Div 1, so when SLC A is initiated, G33-MOVF004 isolates.
B. G33-MOVF001 isolates when Div 2 (SLC B) is initiated.
C. Only RWCU suction valves isolate due to SLC initiation.
D. Only RWCU suction valves isolate due to SLC initiation.

Technical Reference(s): R-STM-0201

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0201 Obj. 6

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.9

Comments:

QUESTION 34 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 212000 K5.02 IR 3.3

Knowledge of the operational implications of specific logic arrangements as it applies to RPS.

Proposed Question:

Due to a failure of the RPS Channel 'D' Level 3 trip instrumentation, Channel 'D' has been placed in the tripped condition to comply with Technical Specifications.

The mode switch is in STARTUP/HOT STBY.
Reactor power ascension is being held in the Intermediate Range.

Which of the following in conjunction with the above conditions would satisfy the RPS trip logic requirements and result in a full reactor scram?

A. Channel 'C' Scram Discharge Volume High Level of 49 inches

B. Channel 'A' Level 8 signal

C. Channel 'B' Level 3 signal

D. B21-F022A INBOARD MSIV fails closed

Proposed Answer: A.

Explanation:
A. Correct – Div 2 ½ scram is all ready present. SDV high level in the 'C' channel will trip Div 1 RPS resulting in a full scram.
B. Level 8 signal is only active with the mode switch in RUN.
C. Channel B & D are both cause Div 2 RPS to trip.
D. MSIV isolation trips are bypassed when the mode switch is not in RUN.

Technical Reference(s): R-STM-0508

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0508 Obj. 3, 5, 13, 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.6

Comments:

QUESTION 35 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 215003 K2.01 IR 2.5

Knowledge of the electrical power supplies to IRM channels/detectors.

Proposed Question:

IRM 'F' detector is powered by _____.

A. RPS A

B. RPS B

C. NHS-MCC2E

D. VBN-PNL01B1

Proposed Answer: B.

Explanation:
A. RPS A supplies power to IRMs A, C, E, & G.
B. RPS B supplies power to IRMs B, D, F, & H.
C. NHS-MCC2E supplies power to the IRM drive mechanism, but not the detectors.
D. VBN-PNL01B1 supplies the IRM recorders.

Technical Reference(s): R-STM-0503

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0503 Obj. 16

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.2

Comments:

QUESTION 36 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 215003 A1.01 IR 3.4

Ability to predict and/or monitor changes in parameters associated with operating IRM controls including detector position.

Proposed Question:

The mode switch is in STARTUP/HOT STBY.
All IRMs are on Range 2.

With IRM 'G' selected, the DRIVE OUT pushbutton is depressed on H13-P680.

Which of the following describes the expected response?

A. A control rod block is generated and IRM 'G' is prevented from withdrawing.

B. The IRM 'G' RETRACT PERMIT status light illuminates and IRM 'G' fully withdraws.

C. A half scram signal is generated and IRM 'G' is prevented from withdrawing.

D. A control rod block is generated and IRM 'G' fully withdraws.

Proposed Answer: D.

Explanation:
A. A rod block is generated, but the detector is not prevented from withdrawing.
B. The RETRACT PERMIT status light only illuminates when the Mode switch is in RUN and the associate detector is not full out.
C. RPS actuations are not generated due to detector position.
D. Correct. A rod block is generator due DETECTOR WRONG POSITION, but the IRM is allow to fully withdraw.

Technical Reference(s): R-STM-0503

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0503 Obj.10, 13, 15, 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.2

Comments:

QUESTION 37 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 215004 A2.01 IR 2.7

Ability to (a) predict the impact of degraded power supply on the Source Range Monitor and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of that abnormal operation.

Proposed Question:

A reactor startup began with all SRMs operable. Subsequently, the power supply voltage on SRM 'A' has lowered to <95% of its normal value.

Assuming that the shorting links are installed and Technical Specifications minimum requirements are verified to be met, how does this affect the SRM 'A' and what, if any actions must be taken to continue the plant startup?

A. SRM INOP alarm only is generated. Control rod blocks and RPS trips are bypassed. Power ascension may continue without further action.

B. No RPS or rod block actuations occur, but SRM 'A' detector reading will indicate lower than actual. Power ascension may continue without further action.

C. SRM INOP signal is generated resulting in a control rod block. SRM 'A' must be bypassed in order to continue the startup.

D. SRM INOP signal is generated resulting in a control rod block and half scram. SRM 'A' must be bypassed in order to continue the startup.

Proposed Answer: C.

Explanation:
A. RPS trips are bypassed with shorting links installed, but rod blocks are still active.
B. SRM INOP will be generated to power supply voltage <95% resulting in a rod block.
C. Correct-Power supply voltage <95% generates a SRM INOP signal and rod block.
D. RPS signal is bypassed due to shorting links.

Technical Reference(s): R-STM-0503

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0503 Obj. 37

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.2

Comments:

QUESTION 38 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 215005 K1.04 IR 3.6

Knowledge of the physical connections and/or cause-effect relationships between APRM/LPRM and LPRM channels.

Proposed Question:

APRM A contains _____(1)_____ LPRM inputs and will generate an APRM INOPERATIVE signal if _____(2)_____ are detected by the count circuit.

A. (1) 16; (2) <2 LPRM inputs per level

B. (1) 17; (2) <2 LPRM inputs per level

C. (1) 16; (2) <11 LPRM inputs

D. (1) 17; (2) <11 LPRM inputs

Proposed Answer: D.

Explanation:
A. Division 2 APRMs (B,D,F,H) contain 16 LPRM inputs.
B.17 is correct, but the 2 LPRM inputs per level is an administrative requirement which is not electronically monitored.
C. Division 2 APRMs (B,D,F,H) contain 16 LPRM inputs. 11 inputs is correct.
D. Division 1 APRMs (A,C,E,G) contain 17 LPRM inputs. <11 LPRM inputs generates an APRM INOP signal.

Technical Reference(s): R-STM-0503

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0503 Obj. 21, 23, 25

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 39 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 217000 G.2.1.23 IR 4.3

Ability to perform specific system and integrated plant procedures regarding RCIC during all modes of plant operation.

Proposed Question:

A station blackout has just occurred. The CRS has directed entry into AOP-0050 STATION BLACKOUT.

Which of the following actions should the unit operator perform in accordance with this procedure?

A. Arm and depress the HPCS MANUAL INITIATE pushbutton.

B. Manually start the HPCS pump and open E22-MOVF004, HPCS INJECT ISOL VALVE.

C. Arm and depress the RCIC MANUAL INITIATE pushbutton.

D. Manually open E51-F045, RCIC STEAM SUPPLY TURBINE STOP VALVE and manually open E51-F013, RCIC INJECT ISOL VALVE.

Proposed Answer: C.

Explanation:
A. See C.
B. See C.
C. The immediate action for station blackout is to manually initiate RCIC.
D. See C.

Technical Reference(s): OSP-0053, AOP-0050

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-HLO-541 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:

QUESTION 40 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 218000 K1.04 IR 3.9

Knowledge of the physical connections and/or cause-effect relationships between ADS and drywell/containment pressures;

Proposed Question:

A LOCA has occurred inside the drywell.

Drywell pressure momentarily rose above 1.68 psid then lowered below this value when drywell cooling was maximized.

Reactor water level has just reached -143 inches.

The ADS valves will

A. open when the 5 minutes time delay expires.

B. open when the 105 second time delay expires.

C. open immediately.

D. not open based on current conditions.

Proposed Answer: B.

Explanation:
A. This would be true if a drywell pressure signal had not been receive, but since the drywell pressure signal was received and seals in, this is incorrect.
B. Correct – All required signals for ADS will be met when the 105 sec timer expires (Level 1, Hi DW pressure (seals in), LP ECCS pump running (based on Level 1 and Hi DW initiation signals) Confirmatory Level 3 signal, 105 sec TD).
C. Once all signals are met, the 105 sec TD must expire before valves open.
D. See B.

Technical Reference(s): R-STM-0202

Proposed references to be provided to applicants during examination: NA

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 ☑4

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 # 218000 G.2.1.32 IR 3.8

Ability to explain and apply system limits and precautions for ADS.

Proposed Question:

A LOCA has occurred and High Pressure Core Spray failed to initiate.

The following conditions exist:

- ADS inhibit switches are in the INHIBIT position
- Drywell pressure is 1.05 psid and rising
- RPV pressure is 890 psig and lowering
- RPV water level is -155" and stable on wide range indication

Which of the following describes the operation of Automatic Depressurization System valves under the current condition?

A. ADS valves can be opened by using the ADS Manual Initiation pushbuttons.

B. ADS automatically initiates to open ADS valves when the 105 second timer has timed out.

C. ADS automatically initiates to open ADS valves when the 5 minute and 105 second timers have timed out.

D. ADS valves can only be opened with their individual handswitches.

Proposed Answer: A.

Explanation:
A. Based on level being <-143", it can be determined that the low pressure ECCS pumps are running since they auto start at -143". The manual initiation pushbuttons only require a LP ECCS pump be running to initiate ADS.
B. Auto initiation will not occur due to inhibit switches being in the INHIBIT position. Additionally, the drywell pressure signal is not present.
C. Auto initiation will not occur due to inhibit switches being in the INHIBIT position. Were it not for the position of these switches, this answer would have been correct.
D. ADS valves can always be open by their handswitches if power is available, but the word ONLY in this option makes it incorrect since operation by the manual initiate pushbutton (Choice A) is also a method of opening the ADS valves.

Technical Reference(s): SOP-0011 Precaution and Limitation 2.9

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0202 Obj.2 & 4

Question Source: Bank # RBS-NRC-1030

Question History: Last NRC Exam NA

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

10 CFR Part 55 Content: 55.41b.10

Comments:

QUESTION 42 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 223002 A3.01 IR 3.4

Ability to monitor automatic operations of Nuclear Steam Supply Shutoff including system indicating lights and alarms.

Proposed Question:

The plant is operating at rated conditions with all systems in their normal full power lineup. The CRVICS indication lights on H13-P601 DIV 1 & 4 OUTBOARD ISOLATION display have changed from their normal status to the following:

- HALF ISOLATION Amber light ON

- RWCU White light OFF
- MSL DRAINS White light ON
- BOP White light ON
- RHR E12-F040 F075A & B White light ON
- RHR E12-F008 White light OFF
- RX WATER SAMPLE B33-F020 White light ON

Based on plant conditions and the status of the CRVICS display above, which of the following describes the expected valve repositioning?

A. No valves have repositioned.

B. ONLY the RWCU Outboard valves have closed.

C. BOTH the RWCU Outboard valves and E12-F008 have closed.

D. ALL isolation valves controlled by the isolation logics with white lights ON have closed.

Proposed Answer: B.

Explanation:
A. The amber light on indicates that an actual isolation has occurred, so this is incorrect.
B. The amber light indicates that an isolation has occurred. The RWCU white light being on indicates that RWCU has isolated. E12-F008 was already isolated due to plant conditions (>135 psig).
C. E12-F008 was already isolated due to plant conditions so this portion of this distractors makes it incorrect.
D. Control systems with white lights ON have <u>not</u> isolated.

Technical Reference(s): R-STM-0058

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0058 Obj. 3

Question Source: Bank # RBS-NRC-873

Question History: Last NRC Exam RBS Feb 2003

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

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

QUESTION 43 Rev 0

Examination Outline Cross-Reference:

Level		RO ☑	SRO ☐
Tier #	2	Group #	1
K/A #	223002 A4.02		IR 3.9

Ability to manually operate and/or monitor manual initiation of the Nuclear Steam Supply Shutoff in the control room.

Proposed Question:

Which of the following actions will result in direct automatic isolation of the Inboard Main Steam Line Drain valves?

Arming & Depressing the…

A. "A" & "D" CRVICS pushbuttons. Simultaneous actuation is required.

B. "B" & "C" CRVICS pushbuttons. Simultaneous actuation is required.

C. "A" & "D" CRVICS pushbuttons. Simultaneous actuation is not required.

D. "B" & "C" CRVICS pushbuttons. Simultaneous actuation is not required.

Proposed Answer: D.

Explanation:
A. A & D are associated with the Outboard isolation logic and simultaneous actuation is not required because MSIV and Drain isolation signals seal in.
B. B & C are the correct buttons but MSIV and Drain logic seals in so simultaneous action is not required.
C. A & D are associated with the OUTBOARD logic.
D. Correct-B & C buttons are associated with the INBOARD logic and simultaneous action is not required since MSIV and Drain logic channels seal in when actuated.

Technical Reference(s): R-STM-0058

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0058 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 44 Rev 0

Examination Outline Cross-Reference:

Level		RO ☑	SRO ☐
Tier #	2	Group #	1
K/A #	239002 K2.01		IR 2.8

Knowledge of the electrical power supplies to SRV solenoids.

Proposed Question:

Which of the following power supplies are required <u>to open</u> a safety relief valve electrically?

A. ENB-PNL02A <u>AND</u> ENB-PNL02B

B. ENB-PNL02A <u>OR</u> ENB-PNL02B

C. BYS-PNL02A <u>AND</u> BYS-PNL02B

D. BYS-PNL02A <u>OR</u> BYS-PNL02B

Proposed Answer: B.

Explanation:
A. ENB-PNL02A and PNL02B both supply power to a Div 1 and Div 2 solenoid on each SRV, but only one SRV being energized will open the SRV.
B. Correct-ENB-PNL02A supplies power to Div 1 SRV solenoids and ENB-PNL02B supplies power to Div 2 SRV solenoids. Only one or the other is required.
C. Although BYS is a 125 VDC source, it is not the power supply to SRV solenoids.
D. Although BYS is a 125 VDC source, it is not the power supply to SRV solenoids.

Technical Reference(s): RLP-STM-0109

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0109 Obj. 21

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 45 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 259002 K3.01 IR 3.8

Knowledge of the effect that a loss or malfunction of the Reactor Water Level Control System will have on reactor water level.

Proposed Question:

A plant startup is in progress. Reactor power is being held at 1% power for the 900 psig drywell walkdown inspection. The following conditions exist:

Mode Switch	START UP/HOT STBY
RPV level	36 inches
Startup Level Controller	AUTO with Tape set at 36 inches

If the Startup Feedwater Regulating Valve drifts fully open, which of the following actions/signals will occur? (Assume no operator actions are taken).

A. Reactor water level rises and the reactor scrams at Level 8.

B. Reactor water level rises and the feedwater pumps trip at Level 8.

C. Reactor water level remains unchanged due to compensation by the Long Cycle Cleanup Level Controller (CNM-FV104).

D. Reactor water level stabilizes at 42 inches on the Narrow Range.

Proposed Answer: B.

Explanation
A. Level rises due to no other automatic method of control excess feed flow to the RPV but, Level 8 scram is only active with mode switch in RUN.
B. Level rises due to no other automatic method of control excess feed flow to the RPV. Feedpumps trip on Level 8.
C. No automatic level control capability via CNM-FV104.
D. No automatic method of stabilizing level. Stabilizing at a higher level is expected for other FWLC failures therefore this is a plausible distractor.

Technical Reference(s): R-STM-0107

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0107 Obj.13a

Question Source: Bank # RBS-NRC-348

Question History: Last NRC Exam RBS- July 1997

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

10 CFR Part 55 Content: 55.41b.4, b.7

Comments:

QUESTION 46 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 261000 A1.02 IR 3.1

Ability to predict and/or monitor changes in parameters associated with operating SGTS controls including primary containment pressure.

Proposed Question:

Standby Gas Treatment Train 'A' is running in the Containment Purge lineup. Containment pressure is stable.

Which of the following describes the effect on containment pressure if the 'A' Standby Gas Treatment Train STOP pushbutton is depressed?

- HVR-FN8, HIGH VOL CONTMT PURGE
- HVR-FN13, LOW VOL CONTMT PURGE

A. Containment Pressure will rise due to supply air from HVR-FN8

B. Containment Pressure will rise due to supply air from HVR-FN13

C. Containment Pressure will remain stable as HVR-FN8 trips

D. Containment Pressure will remain stable as HVR-FN13 trips

Proposed Answer: A.

Explanation:
A. When GTS runs in the containment purge lineup, it's associated supply fan is HVR-FN8. Both these fans are 10000scfm capacity fans. If GTS A is secured, HVR-FN8 will continue to supply 10000scfm air to containment resulting in rising pressure.
B. HVR-FN13 is the low volume supply fan for containment purge and would not be run in conjuction with GTS.
C. HVR-FN8 will not trip when GTS is stopped.
D. HVR-FN13 is the low volume supply fan for containment purge and would not be run in conjuction with GTS, nor would it trip if its associated exhaust fan (HVR-FN14) were to be secured when in the Containment Low Volume purge lineup.

Technical Reference(s): R-STM-0257

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0257 Obj 7 & 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: 55.41b.8 Comments:

QUESTION 47 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 261000 G.2.2.22 IR 4.0

Knowledge of limiting conditions for operations and safety limits regarding SGTS.

Proposed Question:

A plant transient has occurred resulting in the following conditions:

- Reactor water level 18 inches stable
- Reactor pressure 820 psig, cooldown in progress
- Drywell pressure 1.8 psid
- GTS A Tripped / Inoperable
- GTS B Running due to automatic initiation

Which of the following is correct concerning standby gas treatment LCO requirements?

A. LCO is not applicable in this mode.

B. LCO is applicable, and met because only 1 GTS train is required to be operable in this mode.

C. LCO is applicable, but not met because the operable train is in the containment purge flowpath.

D. LCO is applicable, but not met because both trains of GTS are required to be operable in this mode.

Proposed Answer: D.

Explanation:
A. At 820 psig, the plant is in Mode 3. 2 trains of GTS are required.
B. 2 trains are required.
C. LCO is applicable, but the reason it is not met is due to A train being inoperable. An auto start signal does not line up to the containment purge flowpath.
D. Correct. LCO 3.6.4.3 requires 2 trains be operable in modes 1,2, & 3.

Technical Reference(s): TS 3.6.4.3.

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0257 Obj. 9

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 48 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 262001 K2.01 IR 3.3

Knowledge of the electrical power supplies to Offsite Power Sources.

Proposed Question:

Concerning power supplies to Offsite Power Sources at Fancy Point Switch Yard, RSS-1 is capable of receiving power from _____.

A. The North bus of the 230 kV yard ONLY

B. The South bus of the 230 kV yard ONLY

C. Either the North or South bus of the 230 kV yard

D. The 500 kV yard

Proposed Answer: C.

Explanation:
A. See C.
B. See C.
C. The 230kV switchyard power loop is arranged so that either offsite power source RSS-1 or RSS-2 can be supplied from either North of South bus. Normal lineup is all breaker closed created a electrical loop with both North and South buses connected.
D. See C.

Technical Reference(s): EE-001AC

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0300 Obj. 2

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 49 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 262002 A2.01 IR 2.6

Ability to (a) predict the impact of undervoltage on the UPS and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of that abnormal operation.

Proposed Question:

While operating at 100% power, the breaker supplying normal AC power to BYS-INV01B trips due to a fault in the breaker.

Based on this, _____(1)_____, and operators should _____(2)_____.

A. (1) a reactor scram will occur; (2) enter EOP-1 and place the standby UPS (BYS-INV03) in service per SOP-0048, 120VAC.

B. (1) BYS-INV01B static switch will automatically shift to the bypass regulator; (2) open supply breaker to BYS-INV01B in NHS-MCC20B.

C. (1) RPV level will rapidly rise; (2) control feedwater flow in manual per AOP-0006, CONDENSATE AND FEEDWATER FAILURES.

D. (1) the vital bus continues to be supplied by the inverter, but the inverter input is supplied by 125VDC; (2) manually bypass the BYS-INV01B per SOP-0048, 120VAC.

Proposed Answer: D.

Explanation:
A. There will be no loss of voltage to the vital bus VBN-PNL01B since the backup DC supply will continue to supply voltage to the inverter. Therefore a scram will not occur.
B. The static switch will not shift since inverter output will remain unchanged due to being supplied by the DC backup input to the inverter.
C. There will be no loss of voltage to the vital bus VBN-PNL01B since the backup DC supply will continue to supply voltage to the inverter. Therefore level will not be affected.
D. Correct – The backup DC suppy will continue to supply input voltage to the inverter so there will be no loss to the vital bus.

Technical Reference(s): SOP-0048, R-STM-0300

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0300 Obj.13, 15, 16

Question Source: Bank # RBS-NRC-01227

Question History: Last NRC Exam RBS-June 2007

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

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

QUESTION 50 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 263000 A3.01 IR 3.2

Ability to monitor automatic operations of DC Electrical Distribution including meters, dials, recorders, alarms, and indicating lights.

Proposed Question:

The plant was operating at 100% power with AC and DC electrical distribution systems aligned for normal operation. Subsequently, the following conditions were noted:

- ENB-SWG1A bus voltage is 125 VDC

Based on this, ENB-SWG1A bus voltage indicates_____.

A. there is a failure of ENB-CHRG1A battery charger.

B. there is a low resistance ground on the bus.

C. the battery is on a continuous float charge by ENB-CHGR1A

D. the battery has been disconnected from the ENB-SWG1A bus.

Proposed Answer: A.

Explanation:
A. Normal voltage is 130-139VDC which is normally supplied by the charger.
B. This would be indicated by higher amps.
C. Normal float voltage is 130-139VDC
D. This would not lower bus voltage since the charger normally supplies the bus.

Technical Reference(s): R-STM-0305

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0305 Obj. 4, 10, 12

Question Source: Bank # RBS-NRC-01182

Question History: Last NRC Exam RBS-June 2007

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

10 CFR Part 55 Content: 55.41b.8

Comments:

QUESTION 51 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 264000 A3.01 IR 3.0

Ability to monitor automatic operations of EDGs including automatic starting of compressor and emergency generator.

Proposed Question:

An emergency start signal to the diesel generators has just been received.

Which of the following describes the expected system response?

A. Div 1 & 2 diesels should reach operating voltage and frequency within 10 seconds
Div 3 diesel should reach operating voltage and frequency within 13 seconds

B. Div 1 & 2 diesels should reach operating voltage and frequency within 13 seconds
Div 3 diesel should reach operating voltage and frequency within 10 seconds

C. Div 1 & 2 diesels should reach operating voltage and frequency within 34 seconds
Div 3 diesel should reach operating voltage and frequency with 10 seconds

D. Div 1 & 2 diesels should reach operating voltage and frequency within 10 seconds
Div 3 diesel should reach operating voltage and frequency with 34 seconds

Proposed Answer: A.

Explanation:
A. Div 1 & 2 DGs should reached operating condition within 10 seconds; Div 3 DG should reach operating conditions within 13 seconds.
B. See A.
C. See A. (Slow starts only occur as the result of a NORMAL start signal, not Emergency start.
D. See A. (Slow starts only occur as the result of a NORMAL start signal, not Emergency start.

Technical Reference(s): TS 3.8.1, STP-309-0203,R-STM-0309S(H)

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0309S Obj.12; RLP-STM-309H 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: 55.41b.7

Comments:

QUESTION 52 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 1
K/A # 300000 K6.13 IR 2.8

Knowledge of the effect that a loss or malfunction of filters will have on Instrument Air.

Proposed Question:

While operating at 100% power, the following annunciator is received on H13-P870:

- IAS DRYER PREFILTER AFTER FILTER TROUBLE

Local inspection found the inservice prefilter differential pressure gauge is pegged upscale. IAS system pressure has lowered to 114 psig.

Which of the following is correct concerning IAS system pressure restoration?

A. Automatic action will return IAS system header pressure to normal when SAS-AOV134, IAS-SAS CROSS TIE VLV opens at 113 psig.

B. Automatic action will return IAS system header pressure to normal when SAS-AOV133, SERVICE AIR HEADER BLOCK VLV closes at 110 psig.

C. Manual action will return IAS system header pressure to normal when the standby prefilter is placed in service.

D. Manual action will return IAS system header pressure to normal when the prefilter bypass line is placed in service.

Proposed Answer: C.

Explanation:
A. Service air tap from SAS-AOV134 is upstream of the prefilter, so the plugged filter is still in the flowpath and will not solve the issue.
B. Same reason as A.
C. Two 100% capacity prefilters are provided. Manually placing the standby filter in service will correct the condition.
D. Prefilters do not have a bypass line. If the issue were due to a plugged dryer, a dryer bypass is available.

Technical Reference(s): R-STM-0121

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0121 Obj. 14c

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.4 Comments:

QUESTION 53 Rev 0

Examination Outline Cross-Reference:

Level		RO ☑	SRO ☐
Tier #	2	Group #	1
K/A #	400000 K6.06		IR 2.9

Knowledge of the effect that a loss or malfunction of heat exchanges will have on Component Cooling Water.

Proposed Question:

Reactor Plant Component Cooling Water (RPCCW/CCP) heat exchangers have experienced scaling on their heat transfer surfaces.

Which of the following could occur as a result of this condition?

A. CCP 56 psig system isolations due to the heat exchanger bypass valve opening fully.

B. G33-MOVF001, PUMP SUCTION DRYWELL INBOARD ISOL isolation due to elevated system temperature.

C. G33-MOVF004, PUMP SUCTION CNMT INBOARD ISOL isolation due to elevated system temperature.

D. Full RWCU system isolation due to RWCU heat exchanger room high temperature.

Proposed Answer: C.

Explanation:
A. The heat exchanger bypass would open on high temp caused by ineffective heat transfer. Additionally, there are two valves in the system which operate on temp which keeps pressure constant.
B. G33-MOVF001 does not have a high temperature isolation.
C. Correct – G33-MOVF004 isolates at 140°F Non Regen Heat Exchanger outlet temperature.
D. Although RWCU does isolate on high HX room temperature, CCP does not cool this area. The area is cooled by the containment unit coolers which receiving cooling water from Turbine Building chilled water (HVN).

Technical Reference(s): R-STM-115, R-STM-0601

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-115 Obj 12f

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.4

Comments:

QUESTION 54 Rev 0

Examination Outline Cross-Reference:

Level		RO ☑	SRO ☐
Tier #	2	Group #	2
K/A #	201005 A4.03		IR 3.4

Ability to manually operate and/or monitor RC&IS back panel indicating lights in the control room.

Proposed Question:

The following annunciator has just been received:

- ROD CONTROL AND INFO SYS INOPERATIVE

The alarm response procedure directs the operator to determine if the RC&IS analyzer is scanning.

Where would the operator look to determine the status of the RC&IS analyzer?

A. H13-P680, RC&IS Operator Control Module

B. H13-P651, RACS 1 Cabinet

C. H13-P652, RACS 2 Cabinet

D. H13-P653, Rod Gang Drive Cabinet

Proposed Answer: D.

Explanation:
A. See D.
B. See D.
C. See D.
D. The System Analyzer is located in the H13-P653 Rod Gang Drive Cabinet.

Technical Reference(s): R-STM-0500

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0500 Obj. 20

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.2

Comments:

QUESTION 55 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 2
K/A # 202002 K1.12 IR 3.7

Knowledge of the physical connections and/or cause-effect relationships between Recirculation Flow Control and recirculation flow control valves.

Proposed Question:

The plant is operating at 100% power. Due to a failure in the Reactor Recirculation Hydraulic Power Unit, the 'B' Flow Control Valve (FCV) has been locked up to satisfy Technical Specification.

What is the expected response if a Recirculation Flow Control Runback occurs?

A. Both FCVs runback to minimum position.

B. Both FCVs runback to the 60% drive flow position.

C. 'A' FCV runback to minimum position.

D. 'A' FCV runback to the 60% drive flow position.

Proposed Answer: D.

Explanation:
A. With the B FCV locked up it can not runback. If it could, it would runback to 60% drive flow, not minimum position.
B. With the B FCV locked up it can not runback.
C. On a FCV runback, valves runback to 60% drive flow position, not minimum.
D. Correct-Only A FCV is capable of movement. On a runback signal it will runback to 60% drive flow position.

Technical Reference(s): R-STM-0053

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0053 Obj. 19c, d

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 # 216000 K4.13 IR 3.4

Knowledge of Nuclear Boiler Instrumentation design feature(s) and or interlock(s) which provide for overpressure protection for various low pressure systems.

Proposed Question:

Which of the following describes a Nuclear Boiler Instrumentation design feature which provides for overpressure protection of all 4 low pressure ECCS systems?

A. Interlocks provide for maximum flow through the system's heat exchangers for 10 minutes following a LOCA signal

B. System isolations occur at 135 psig reactor pressure

C. Injection valves are prevented from opening above 487 psig reactor pressure.

D. Minimum flow valves open during low flow conditions.

Proposed Answer: C.

Explanation:
A. This RHR interlock is to ensure maximum flow to the RPV during a LOCA.
B. This is a shutdown cooling isolation to protect the pump seals from degradation due to high temperature.
C. Correct – RHR A, B, C, & LPCS injection valves will not open in manual or automatic until reactor pressure is less than 487 psig.
D. Min flow protection does not provide overpressure protection.

Technical Reference(s): R-STM-0204

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0204 Obj. 6h, 17h; RLP-STM-0205 Obj. 5, 10, 11

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 57 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 2
K/A # 233000 K1.15 IR 2.9

Knowledge of the physical connections and/or cause-effect relationships between Fuel Pool Cooling/Cleanup and storage pools.

Proposed Question:

The plant has just been shutdown for a refueling outage. In preparation for vessel disassembly, the upper containment pool level is to be lowered to access the cavity.

Which of the following contains locations which are all acceptable for transfer of the upper pool contents via the SFC system?

A. Cask Storage Pool
Condensate Storage Tank
Liquid Radwaste System

B. Lower IFTS Transfer Pool
Condensate Storage Tank
Cask Storage Pool

C. Liquid Radwaste System
Main Condenser Hotwell
Dryer Storage Pool

D. Condensate Storage Tank
Liquid Radwaste System
Main Condenser Hotwell

Proposed Answer: D.

Explanation:
A. Cask Storage Pool is not an acceptable location for transfer of upper pool contents.
B. Lower IFTS pool is not an acceptable location for transfer of upper pool contents.
C. Dryer Storage Pool is not an acceptable location for transfer of upper pool contents.
D. Upper pool drain down is transferred to the CST, Radwaste or the Hotwell per SOP-0091,

Technical Reference(s): SOP-0091, R-STM-0602

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0602 Obj. 5

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.13 Comments:

QUESTION 58 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 2
K/A # 239001 K3.01 IR 3.2

Knowledge of the effect that a loss or malfunction of the Main and Reheat System will have on turbine generator.

Proposed Question:

While operating at 100%, a component malfunction has resulted in the isolation of MSS-MOV112, MSR 2 STEAM SUPPLY SHUTOFF.

Which of the following describes the primary concern with continued operation in this condition?

A. Excessive back pressure in MSR 1.

B. Erosion of low pressure turbine blades.

C. Loss of efficiency.

D. High turbine vibration.

Proposed Answer: D.

Explanation:
A. See D.
B. See D.
C. See D.
D. Although the MSRs improve efficiency and reduce erosion of the LP turbine blades, the primary concern for this condition is uneven heating due to only 1 MSR being in service. Uneven heating can lead to severe turbine vibration.

Technical Reference(s): SOP-0010, R-STM-0108

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0108 Obj. 7b

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.4

Comments:

QUESTION 59 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 2
K/A # 239003 A3.02 IR 3.1

Ability to monitor automatic operations of MSIV Leakage Control including main steamline pressure.

Proposed Question:

Consider the following parameters:

Reactor Pressure	10 psig
LSV-TK6A	115 psig
LSV-TK6B	20 psig

With the above conditions, what is the status of MS-PLCS if both Inboard and Outboard MS-PLCS OPERATE control switches are taken to the OPERATE position?

A. Only Div 1 MS-PLCS will initiate.

B. Only Div 2 MS-PLCS will initiate.

C. Both systems will initiate.

D. Neither system will initiate.

Proposed Answer: A.

Explanation:
A. Correct -Permissive for initiation are Reactor pressure <25 psig and System pressure >45 psig.
B. System pressure (20 psig) is below permissive pressure of 45 psig.
C. Div 2 will not initiate. See B.
D. Div 1 will initiate. See A.

Technical Reference(s): R-STM-0208

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0208 Obj. 3 & 4

Question Source: Modified Bank # From March 2010 Audit # 60

Question History: Last NRC Exam NA

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

10 CFR Part 55 Content: 55.41b.9

Comments: Original question had different parameters in the stem. (Rx press 30 psig) Changing reactor pressure from 30 psig to 10 psig, makes the correct answer A. The correct answer in the original was D. Neither system would initiate due to reactor pressure being above 25 psig. Concerning KA wording “mainsteam line pressure”: Reactor pressure is sensed at the Main Steam Line flow venturis.

QUESTION 60 Rev 0

Examination Outline Cross-Reference:

Level		RO ☑	SRO ☐
Tier #	2	Group #	2
K/A #	241000 K3.08	IR	3.7

Knowledge of the effect that a loss or malfunction of the Reactor/Turbine Pressure Regulator will have on control valves.

Proposed Question:

The plant is operating at 100% power. A failure in the EHC pressure regulator has caused the output of the regulator to fail low.

Which of the following describes the response of the control and bypass valves?

A. Control Valves will open further. Bypass valves will open.

B. Control Valves will close. Bypass valves will remain closed.

C. Control Valves will open further. Bypass valves will remain closed.

D. Control Valves will close. Bypass valves will open.

Proposed Answer: B.

Explanation:
A. See B.
B. The regulator output provides a signal to position the control valves. With zero output to the CVs they will be closed. The same regulator output positions the BPVs to provide for pressure control. With the output of the regulator failed low, the BPVs will also be closed.
C. See B.
D. See B.

Technical Reference(s): R-STM-0509

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-SMT-0509 Obj.15f & 15h

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 61 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 2
K/A # 245000 K4.06 IR 2.7

Knowledge of Main Turbine Generator Auxiliaries design feature(s) and or interlock(s) which provide for Generator Protection.

Proposed Question:

The plant is operating at rated conditions.

Consider the following Generator Stator Cooling Water System (GMC) parameters:

- GMC Flowrate 480 gpm
- GMC Temperature 68°C
- GMC Pressure 51 psig

Which of the following represents the status of the Main Generator Load Set and Stator Cooling Water Temperature Control Valve (TCV) and Pressure Control Valve(PCV)?

	Load Set Status	TCV	PCV
A.	Runback IS occurring	Locked up	Operating normally
B.	Runback IS occurring	Locked up	Locked up
C.	Runback is NOT occurring	Operating normally	Locked up
D.	Runback is NOT occurring	Operating normally	Operating normally

Proposed Answer: C.

Explanation:
A. No runback in progress with flow >420 gpm, Press > 48 psig, & Temp <79°C. TCV is not locked up with temp. at 68°C. PCV is locked up due to press < 54 psig.
B. No runback in progress with flow >420 gpm, Press > 48 psig, & Temp <79°C TCV is not locked up with temp. at 68°C. TCV locks up at 72°F.
C. Correct – PCV locked up due to pressure <54 psig.
D. PCV is locked up due to press < 54 psig.

Technical Reference(s): R-STM-123

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0123 Obj. 4, 8

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.4 Comments:

QUESTION 62 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 2
K/A # 256000 K2.01 IR 2.7

Knowledge of the electrical power supplies to Condensate system pumps.

Proposed Question:

The power supply to CNM-P1C, CNDS PUMP 1C is _____.

A. NPS-SWG1A

B. NPS-SWG1B

C. NPS-SWG1C

D. NPS-SWG1D

Proposed Answer: A.

Explanation:
A. Correct-NPS-SWG1A is the power source to CNM-P1C.
B. See A.
C. See A.
D. See A.

Technical Reference(s): EE-001AC

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0104 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.4

Comments:

QUESTION 63 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 2
K/A # 286000 K6.01 IR 3.1

Knowledge of the effect that a loss or malfunction of AC electrical distribution will have on Fire Protection.

Proposed Question:

A loss of offsite power has occurred. Emergency diesel generators have started and are supplying their respective buses.

Which of the following describes the response of the Fire Protection Water System to the current condition? Assume all time delays are satisfied.

A. FPW-P1A, DIESEL DRIVEN FIRE PUMP will start if system pressure lowers to 110 psig.

B. FPW-P1B, DIESEL DRIVEN FIRE PUMP will start if system pressure lowers to 140 psig and FPW-P1A, DIESEL DRIVEN FIRE PUMP is running.

C. FPW-P1A, DIESEL DRIVEN FIRE PUMP will start if system pressure lowers to 130 psig to perform the pressure maintenance function of FPW-P3, PRESS MAINTENANCE PUMP.

D. FPW-P1A and FPW-P1B DIESEL DRIVEN FIRE PUMPS will both start when their respective battery chargers lose power.

Proposed Answer: D.

Explanation
A. See D.
B. See D.
C. See D.
D. Correct- A loss of offsite power will result in a loss to components at the fire pump house. The emergency buses do not supply this area. Both diesel fire pumps start when power is loss to their respective battery charger.

Technical Reference(s): R-STM-0250

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0250 Obj. 14a

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.4 Comments:

QUESTION 64 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 2
K/A # 290001 K3.01 IR 4.0

Knowledge of the effect that a loss or malfunction of the Secondary Containment will have on offsite radioactive release rates.

Proposed Question:

Following a LOCA the following conditions exist:

- Both trains of Standby Gas Treatment (GTS) are operating
- Auxiliary Building Supply and Exhaust Fans are secured
- Auxiliary Building Supply and Exhaust Isolation Dampers have isolated
- Aux Bldg pressure is +0.25 psig

What is the concern in the current condition?

A. The Auxiliary Building is being pressurized by GTS.

B. Entry into the Auxiliary Building will be made difficult requiring use of the Door Assist Devices until one of the GTS trains is secured.

C. Damage to the Auxiliary Building duct work due to both GTS trains being in service.

D. A potential for elevated offsite release rate exists due to a malfunction of Secondary containment.

Proposed Answer: D.

Explanation:
A. GTS takes suction on the Aux Bldg so would not be lined up to pressurize the Aux Bldg.
B. When the Aux Bldg is at an extreme negative pressure, entry from the T-tunnel is difficult requiring use of the Door Assist Devices. With positive pressure in the Aux Bldg, the dp would force the doors open when entering.
C. It is expected for both trains to start on a valid signal. There are no precautions nor limitiations regarding duct work concerns in this configuration.
D. Positive pressure in the Aux Bldg is indicative of a failure of Secondary Containment. Leakage from the Aux Bldg. can occur without being processed by GTS affecting offsite release rates.

Technical Reference(s): RLP-STM-0257

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0257 Obj. 7 & 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: 55.41_____

Comments:

QUESTION 65 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 2 Group # 2
K/A # 290002 K5.06 IR 2.8

Knowledge of the operational implications of heat transfer mechanism as it applies to Reactor Vessel Internals.

Proposed Question:

Under certain conditions during a loss of decay heat removal, the operator is directed to raise reactor water level to above 75 inches.

How does this action improve heat transfer in the reactor vessel?

A. By providing a larger volume of water to absorb decay heat present in the fuel.

B. By providing adequate margin to the Top of Active Fuel in the event boiling should occur.

C. By providing a flow path for natural circulation by raising level above the Main Steam Lines.

D. By providing a flow path for natural circulation by raising level to above the bottom of the steam separators.

Proposed Answer: D.

Explanation:
A. See D.
B. See D.
C. See D. Steam line elevation is 105".
D. The reason for raising level is to promote heat transfer by natural circulation. Above 75" a flow path exists from inside the shroud to the downcomer area via the steam separators return back to the outside the shroud area.

Technical Reference(s): AOP-0051

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-HLO-0543 Obj. 5

Question Source: Bank # 2008 Audit # 9

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 66 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 3 Group # 1
K/A # G.2.1.1 IR 3.8

Knowledge of conduct of operations requirements.

Proposed Question:

According to EN-OP-115, Conduct of Operations, which of the following activities is NOT authorized for Two-Handed Operation at River Bend Station?

A. Downshifting Reactor Recirculation Pumps

B. Terminating and preventing injection from High Pressure Core Spray

C. Continual withdrawal of control rods

D. Adjusting reactor power using recirculation FCV controllers

Proposed Answer: D.

Explanation:
A. Recirculation logic requires both pushbuttons be depressed simultaneously. Allowed per EN-OP-115.
B. Allowed per EN-OP-115.
C. Allowed per EN-OP-115.
D. Not authorized at RBS.

Technical Reference(s): EN-OP-115.

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-OPS-H206 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.10

Comments:

QUESTION 67 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 3 Group # 1
K/A # G.2.1.31 IR 4.6

Ability to locate control room switches, controls, and indications, and to determine that they correctly reflect the desired plant lineup.

Proposed Question:

The main turbine has just tripped while operating at 40% power. The operator would expect to see _____

A. on H13-P691, all 8 Scram Pilot Solenoid Valve indicating lights out.

B. on H13-P680, Turbine Bypass Valves indicate open.

C. on H13-P808, ENS-SWG1A aligned to NNS –SWG1B.

D. on H13-P680, the main generator output breakers tripped and the exciter field breaker closed.

Proposed Answer: B.

Explanation:
A. The 8 scram pilot lights are on H13-P680.
B. Correct-Bypass valve indications are on H13-P680 and they would be open as a result of the turbine trip.
C. ENS-SWG1A is normally aligned to NNS-SWG1A. This transient would not change that lineup.
D. Exciter field breaker would also be tripped.

Technical Reference(s): AOP-0001, R-STM-0310

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0310 Obj. 8

Question Source: Bank # RBS-NRC-01183

Question History: Last NRC Exam RBS June 2007

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

10 CFR Part 55 Content: 55.41b.4

Comments:

QUESTION 68 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 3 Group # 2
K/A # G.2.2.39 IR 3.9

Knowledge of less than or equal to one hour Technical Specification action statements for systems.

Proposed Question:

With the plant operating in Mode 1, which of the following components, if declared inoperable would NOT require action within 1 hour to satisfy Technical Specifications?

A. High Pressure Core Spray

B. Reactor Core Isolation Cooling

C. Division 1 Diesel Generator

D. Standby Liquid Control Pump A

Proposed Answer: D.

Explanation
A. Required to verify RCIC operable within 1 hour.
B. Required to verify HPCS operable within 1 hour.
C. Required to perform power distribution surveillance within 1 hour.
D. No one hour action statement for this failure.

Technical Reference(s): Technical Specifications 3.5.1, 3.5.3, 3.8.1. 3.1.7

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0203 Obj 14, RLP-0209 Obj. 17 & 18, RLP-STM-0309S Obj. 12, RLP-STM-0201 Obj. 8

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 69 Rev 0

Examination Outline Cross-Reference:

Level		RO ☑	SRO ☐
Tier #	3	Group #	2
K/A #	G.2.2.40		IR 3.4

Ability to apply Technical Specifications for a system.

Proposed Question:

In accordance with Technical Specifications, RCIC is only required to be operable in Mode(s) _____.

A. Mode 1 & 2

B. Mode 1 & 2 with reactor steam dome pressure >150 psig.

C. Mode 1, 2 & 3

D. Mode 1, 2 & 3 with reactor steam dome pressure >150 psig.

Proposed Answer: D.

Explanation:
A. See D.
B. See D.
C. See D.
D. Technical Specification 3.5.3 applicability states that RCIC shall be operable in Modes 1, 2, & 3 with reactor steam some pressure >150 psig.

Technical Reference(s): TS 3.5.1, R-STM-0209

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0209 Obj. 17

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 70 Rev 0

Examination Outline Cross-Reference: Level RO ☑ SRO ☐
Tier # 3 Group # 3
K/A # G.2.3.5 IR 2.9

Ability to use radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc.

Proposed Question:

Which of the following radiation monitors does NOT have a unique RM-23 and must be operated from the RM-11 keyboard/console in the Main Control Room ATC area?

A. RMS-RE108, COOLING TOWER BLOWDOWN

B. RMS-RE6A, RADWST BLDG VENT EXH

C. RMS-RE126, MAIN PLANT EXHAUST

D. RMS-RE14A, MAIN CONTROL REMOTE INTAKE A

Proposed Answer: A.

Explanation:
A. Correct – No RM-23. Must be operated from RM-11.
B. RM-23 located on H13-P878.
C. RM-23 located on H13-P878.
D. RM-23 located on H13-P879.

Technical Reference(s): R-STM-0511

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0511 Obj. 17

Question Source: Modified Bank # RBS 2008 Audit #72

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: Stem is unchanged from original question, but all 4 answer options have been modified.

QUESTION 71 Rev 0

Examination Outline Cross-Reference:

Level		RO ☑	SRO ☐
Tier #	3	Group #	3
K/A #	G.2.3.13		IR 3.4

Knowledge of radiological safety procedures pertaining to licensed operator duties, such as response to radiation monitor alarms, containment entry requirements, fuel handling responsibilities, access to locked high-radiation areas, aligning filters, etc.

Proposed Question:

Which of the following is required to enter a Locked High Radiation Area, but is not required for entry into a Radiation Area?

A. Dosimeter of Legal Record (DLR).

B. Direct reading dosimeter.

C. Approved Radiation Work Permit (RWP).

D. Pre job brief.

Proposed Answer: D.

Explanation:
A. See D.
B. See D.
C. See D..
D. A pre job brief is required to enter a LHRA, but is not required for entry into a RA.

Technical Reference(s): EN-RP-101

Proposed references to be provided to applicants during examination: NA

Learning Objective: None noted.

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 72 Rev 0

Examination Outline Cross-Reference:

Level		RO ☑	SRO ☐
Tier #	3	Group #	3
K/A #	G.2.3.14		IR 3.4

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

Proposed Question:

Which of the following evolutions DOES NOT require notification to Radiation Protection prior to performance?

A. Slow roll startup of Reactor Core Isolation Cooling

B. Alternating Reactor Plant Component Cooling Water Pumps

C. Backwash of Reactor Water Cleanup Filter Demineralizer

D. Operation of both Standby Gas Treatment systems simultaneously with suction on the Auxiliary Building

Proposed Answer: B.

Explanation:
A. SOP-0035 requies notification to RP prior to performing RCIC slow roll startup due to potential for changing does rates in the RCIC room and containment.
B. There is no procedure requirement to contact RP prior to alternating RPCCW pumps.
C. SOP-0090 requies notification to RP prior to performing RWCU Flt/Demin BW due to potential for changing does rates containment.
D. SOP-0059 requires notification to RP prior to operating both trains of GTS with suction on the Aux Bldg due to potential for contamination in the vicinity of Aux Bldg floor drains.

Technical Reference(s): SOP-0035, SOP-0090, SOP-0059

Proposed references to be provided to applicants during examination: NA

Learning Objective: None identified

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 73 Rev 0

Examination Outline Cross-Reference:

Level		RO ☑	SRO ☐
Tier #	3	Group #	4
K/A #	G.2.4.1		IR 4.6

Knowledge of EOP entry conditions and immediate action steps.

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 150°F
- Drywell Pressure 0.2 psid

Which of the following represents the required EOP(s) to enter?

A. EOP-1 only

B. EOP-1 & EOP-2

C. EOP-2 only

D. EOP-1A & EOP-2

Proposed Answer: B.

Explanation:
A. EOP-1 is req'd due to 1105 psig, but EOP-2 is also required due to 150°F in the drywell.
B. Correct EOP-1: 1105 psig RPV pressure and EOP-2: 150°F drywell temperature
C. EOP-2 is required due to 150°F in the drywell, but EOP-1 is also req'd due to 1105 psig RPV pressure.
D. With power at 0% and all rods in, no ATWS exists, therefore EOP-1A is not required.

Technical Reference(s): EOP-1, EOP-2

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-OPS-HLO-512 Obj. 3; RLP-OPS-HLO-0514 Obj. 3

Question Source: Modified from RBS-NRC-132

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: Modified from RBS-NRC-132. Changed to conditions in stem to make a different answer correct.

QUESTION 74 Rev 0

Examination Outline Cross-Reference:

Level		RO ☑	SRO ☐
Tier #	3	Group #	4
K/A #	G.2.4.49		IR 4.6

Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.

Proposed Question:

In accordance with EN-OP-115, CONDUCT OF OPERATIONS, which of the following activities are exempt from in hand procedure usage requirements?

A. Immediate actions of Abnormal Operating Procedures.

B. Venting containment with HVR-FN14, CONTMT PURGE FLT EXH FAN

C. Initiating SLC during an ATWS

D. Rotating Turbine Building exhaust fans

Proposed Answer: A.

Explanation:
A. EN-OP-115 lists performance of immediate actions of AOPs as exempt from in hand procedure use during performance.
B. In hand procedure use required.
C. In hand procedure use required.
D. In hand procedure use required.

Technical Reference(s): EN-OP-115

Proposed references to be provided to applicants during examination: NA

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.10

Comments:

QUESTION 75 Rev 0

Examination Outline Cross-Reference:

Level		RO ☑	SRO ☐
Tier #	3	Group #	4
K/A #	G.2.4.50		IR 4.2

Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.

Proposed Question:

In accordance with EN-OP-115, CONDUCT OF OPERATIONS, which of the following describes annunciator response for EXPECTED annunciators?

A. Announce the alarm when it annunciates and reference the ARP for every occurrence.

B. Announce the alarm after each occurrence and reference the ARP the first time that alarm comes in on each shift.

C. Communicate annunciator to the crew prior to alarming. Announce that alarm is expected and reference the ARP for every occurrence.

D. Communicate annunciator to the crew prior to alarming. Announce that alarm is expected. ARP not normally referenced, but Control Room team may at times determine ARP actions are appropriate.

Proposed Answer: D.

Explanation:
A. This is the expected response for unexpected alarms.
B. This is the expected response for repeat alarms.
C. This is the expected response for unexpected alarms unless it is determined to be a nuisance alarm and the SRO determines this becoming a distraction to the crew.
D. Expected response for Expected alarms per EN-OP-115 section 5.10.

Technical Reference(s): EN-OP-115

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-OPS-H0206 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.10

Comments:

QUESTION 76 Rev 0

Examination Outline Cross-Reference: Level RO ☐ SRO ☑
Tier # 1 Group # 1
K/A # 295005 G.2.4.50 IR 4.0

Ability to verify system alarm setpoints and operate controls identified in the alarm response manual concerning Main Turbine Generator Trip.

Proposed Question:

While operating at 100% power, the following annunciator is received:

- MTS & FWP TRIP RX WATER HIGH LEVEL 8

The crew responds to the resultant transient. All control rods have inserted. Five minutes later, the ATC operator reports that the Main Generator output breakers and exciter field breaker are still closed. The station is operating on the Normal Station Service transformers.

Which of the following should the CRS direct?

A. Per AOP-0002, manually initiate a Main Generator Reverse Power trip by reducing VARs to 0.

B. Per SOP-0080, manually initiate a Main Generator Reverse Power trip by reducing VARs to 0.

C. Per AOP-0002, manually open the Main Generator output breakers.

D. Per SOP-0080, manually open the Main Generator output breakers.

Proposed Answer: A.

Explanation:
A. The main generator should have tripped on reverse power but has not. AOP-2 provides guidance to lower VARS to cause a reverse power trip.
B. Action is correct, but the guidance is in AOP-0002, not SOP-0080.
C. Manually opening the output breakers would cause a slow transfer. It is preferable to manually initiate a reverse power trip under these conditions.
D. Manually opening the output breakers would cause a slow transfer. It is preferable to manually initiate a reverse power trip under these conditions.

Technical Reference(s): AOP-0002

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-OPS-HLO-0521 Obj. 6 & 9

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.10 Comments:

QUESTION 77 Rev 0

Examination Outline Cross-Reference: Level RO ☐ SRO ☑
Tier # 1 Group # 1
K/A # 295018 AA2.03 IR 3.5

Ability to determine and interpret cause for partial or complete loss as it applies to Partial Loss of CCW.

Proposed Question:

A transient has occurred resulting in numerous alarms including the following:

- RECIRC PUMP A SEAL CLG WATER LOW FLOW
- RECIRC PUMP A WINDING CLG WATER LOW FLOW
- RECIRC PUMP B SEAL CLG WATER LOW FLOW
- RECIRC PUMP B WINDING CLG WATER LOW FLOW

The unit operator reports that several outboard containment isolation valves are closed. The CRD system remains in service. The plant is still online. Reactor power, pressure and level are all stable.

Which of the following should the CRS direct?

- AOP-0010, Loss of One RPS Bus
- AOP-0011, Loss of Reactor Plant Component Cooling Water

A. Enter AOP-0011, due to the loss of the Division 1 CCP safety loop.

B. Enter AOP-0011, due to the loss of the Division 2 CCP safety loop.

C. Enter AOP-0010, due to the loss of RPS Bus A.

D. Enter AOP-0010, due to the loss of RPS Bus B.

Proposed Answer: C.

Explanation:
A. If an isolation occurred affecting the safety loops, both loop would have isolated and CRD would have tripped. AOP-0011 provides no guidance for this condition.
B. If an isolation occurred affecting the safety loops, both loop would have isolated and CRD would have tripped. AOP-0011 provides no guidance for this condition.
C. The loss of cooling flow to the recirculation pumps along with outboard containment isolation valves being shut is indicative of a loss of RPS bus B.
D. See C.

Technical Reference(s): AOP-0010

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0508 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: 55.43b.10

Comments:

QUESTION 78 Rev 0

Examination Outline Cross-Reference: Level RO ☐ SRO ☑
Tier # 1 Group # 1
K/A # 295019 G.2.4.34 IR 4.1

Knowledge of RO tasks performed outside the main control room during an emergency and the resultant operational effects.

Proposed Question:

A fire has required abandonment of the Main Control Room. The CRS should direct the _____(1)_____ to conduct transfer of control from the control room in accordance with _____(2)_____.

A. (1) unit and ATC operators; (2) AOP-0031, SHUTDOWN FROM OUTSIDE THE MAIN CONTROL ROOM

B. (1) Fire Brigade Leader; (2) AOP-0052, FIRE OUTSIDE THE CONTROL ROOM IN AREA CONTAINING SAFETY RELATED EQUIPMENT

C. (1) unit and ATC operators; (2) SOP-0027, REMOTE SHUTDOWN SYSTEM

D. (1) Fire Brigade Leader; (2) FPP-0010, FIRE FIGHTING PROCEDURE

Proposed Answer: A.

Explanation:
A. AOP-0031 transfers control from the MCR to the RSS panels. These activities are performed by the unit and ATC operators.
B. AOP-0052 is not applicable since the fire is NOT outside the MCR and the FBL would be engaged in fire fighting activites.
C. Unit and ATC operators do transfer control, but not using SOP-0027.
D. FBL does not transfer control and FPP-0010 does not provide the guidance to transfer.

Technical Reference(s): AOP-0031

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0200 Obj. 11; RLP-OPS-AOP031Obj. 3 & 4

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.10

Comments:

QUESTION 79 Rev 0

Examination Outline Cross-Reference: Level RO ☐ SRO ☑
Tier # 1 Group # 1
K/A # 295023 G.2.4.45 IR 4.3

Ability to prioritize and interpret the significance of each annunciator or alarm regarding Fuel Handling Accidents.

Proposed Question:

The plant is in Mode 5. Refueling is in progress. An irradiated bundle is being moved from the cavity to the IFTS. The following annunciators are in alarm:

- REFUELING CAVITY LEVEL HIGH/LOW
- SPENT FUEL POOL WATER LEVEL HIGH/LOW
- REFUELING BELLOWS LEAKAGE

Reactor Cavity Level is 23'1" above the flange, slowly lowering
Spent Fuel Pool Level is 27'5" above the fuel, steady

Which of the following actions should the CRS take?

A. Stop all fuel handling activities immediately.

B. Place the in-transit bundle in a safe conservative location, and then stop all fuel handling activities.

C. Provide water addition to the spent fuel pool.

D. Provide water addition to the spent fuel pool and the reactor cavity.

Proposed Answer: B.

Explanation:
A. Securing fuel handling shall not preclude movement to a safe location.
B. Indications are that spent fuel pool level is high. Reactor cavity level is low due to leakage from the refueling bellows. Any bundles being moved are to be placed in a safe location, then movement halted.
C. Spent fuel pool level is high.
D. Spent fuel pool level is high.

Technical Reference(s): AOP-0027, ARP-601/19A/B06

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-OPS-AOP027 Obj. 9

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.7

Comments:

QUESTION 80 Rev 0

Examination Outline Cross-Reference: Level RO ☐ SRO ☑
Tier # 1 Group # 1
K/A # 295025 EA2.03 IR 4.1

Ability to determine and interpret suppression pool temperature as it applies to High Reactor Pressure.

Proposed Question:

The plant was operating at 100% power when a Safety Relief Valve failed open and unable to be closed. The Reactor Mode Switch was placed in SHUTDOWN.

The following conditions exist:

- Reactor power 8% and stable
- Reactor pressure 800 psig
- Suppression Pool Temp 140°F, slowly rising
- Suppression Pool Level 20 feet 1 inch, slowly rising

For the stated conditions, the CRS should first direct_____

A. lowering suppression pool level per EOP-0002.

B. lowering reactor pressure per EOP-0001A, exceeding the cooldown rate if necessary.

C. lowering reactor pressure per EOP-0001A, up to a 100°F per hour cooldown rate.

D. immediate Emergency Depressurization of the reactor per EOP-0001.

Proposed Answer: B.

Explanation:
A. Although suppression pool level is high, lowering pressure to maintain in the safe zone of the HCTL takes precedence over level reduction.
B. Pressure must be lowered to maintain in the safe zone of the HCTL. Exceeding the cooldown rate is allowed.
C. Exceeding the cooldown rate is allowed.
D. Currently in the safe zone, so ED is not yet required. Actions to lower pressure may eliminate the need to ED later.

Technical Reference(s): EOP-0002

Proposed references to be provided to applicants during examination: EOP-0002, Figure 2 HCTL

Learning Objective: RLP-HLO-514 Obj. 6 & 7

Question Source: Bank (Grand Gulf)

Question History: Last NRC Exam GGNS March 2007 SRO #80

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

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

QUESTION 81 Rev 0

Examination Outline Cross-Reference: Level RO ☐ SRO ☑
Tier # 1 Group # 1
K/A # 295028 EA2.02 IR 3.9

Ability to determine and interpret reactor pressure as it applies to High Drywell Temperature.

Proposed Question:

Following a design basis accident LOCA, the following conditions exist:

Drywell Temperature	250°F
Drywell Pressure	1.7 psid
Containment Temperature	105°F
Reactor water level	-105 inches, steady
Reactor pressure	0 psig

Which of the following actions should the CRS direct/perform?

A. Enter EOP-0004, RPV Flooding.

B. Enter the Severe Accident Procedures to flood the containment.

C. Maximize drywell cooling per EOP Enclosure 20.

D. Monitor RPV level instrumentation for indications of boiling in the instrument runs.

Proposed Answer: D.

Explanation:
A. RPV flooding is only required if level can not be determined.
B. Containment flooding is not required. Adequate core cooling is assured by submergence.
C. Drywell cooling can not be aligned with temperatures >200°F.
D. The bases for EOP Caution 1 states that continued use of a level instrument is allowed until indications of boiling are observed.

Technical Reference(s): EPSTG, EOP Caution 1

Proposed references to be provided to applicants during examination: EOP Caution 1

Learning Objective: RLP-OPS-HLO-511 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: 55.43b.10

Comments:

QUESTION 82 Rev 0

Examination Outline Cross-Reference: Level RO ☐ SRO ☑
Tier # 1 Group # 1
K/A # 295037 EA2.06 IR 4.1

Ability to determine and interpret reactor pressure as it applies to SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown.

Proposed Question:

In accordance with EOP-001A, when __(1)__ lbs of Boron have been injected into the vessel, the CRS should direct_____(2)_____

A. (1) 69; (2) depressurizing the RPV maintaining a 100°F / hour cooldown rate.

B. (1) 141: (2) depressurizing the RPV maintaining a 100°F / hour cooldown rate.

C. (1) 69; (2) stabilizing pressure until all control rods are inserted.

D. (1) 141; (2) stabilizing pressure until all control rods are inserted.

Proposed Answer: B.

Explanation:
A. 69 lbs boron is the Hot Shutdown Boron weight. Reaching this amount of boron allows water level to be raised to 10-51". Depressurization is not authorized.
B. 141 lbs of boron is the Cold Shutdown Boron weight. Reaching this amount of boron allows depressurization at the 100°F cooldown rate.
C. 69 lbs boron is the Hot Shutdown Boron weight. Reaching this amount of boron allows water level to be raised to 10-51".
D. 141 lbs of boron is the Cold Shutdown Boron weight. Reaching this amount of boron allows depressurization at the 100°F cooldown rate.

Technical Reference(s): EOP-001A

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-OPS-HLO- 513 Obj. 5

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.6

Comments:

QUESTION 83 Rev 0

Examination Outline Cross-Reference: Level RO ☐ SRO ☑
Tier # 1 Group # 2
K/A # 295008 AA2.01 IR 3.9

Ability to determine and interpret reactor water level as it applies to High Reactor Water Level.

Proposed Question:

While operating at 25% power during a plant startup, a failure of the Feedwater Level Control System has resulted in a reactor scram due to high water level. Reactor level is currently 47 inches and slowly lowering. All control rods are inserted.

Based on the above conditions, which of the following procedures should the CRS direct/enter?

- AOP-0001, REACTOR SCRAM
- AOP-0006, CONDENSATE AND FEEDWATER FAILURES
- AOP-0007, LOSS OF FEEDWATER HEATING
- EOP-0001, RPV CONTROL

A. AOP-0001 & EOP-0001

B. AOP-0001 & AOP-0006

C. AOP-0006 & AOP-0007

D. EOP-0001 & AOP-0006

Proposed Answer: B.

Explanation:
A. EOP-0001 entry is not required due to no entry condition mentioned in stem.
B. Correct – AOP-0001 due to the reactor scram, AOP-0006 due to the FWLC failure and feedpump trip on Level 8.
C. AOP-0007 is refered to in AOP-0006, but entry would not be required with the plant shutdown.
D. EOP-0001 entry is not required due to no entry condition mentioned in stem.

Technical Reference(s): AOP-0001, AOP-0006

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-OPS-HLO-0520 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.10 Comments:

QUESTION 84 Rev 0

Examination Outline Cross-Reference:

Level		RO ☐	SRO ☑
Tier #	1	Group #	2
K/A #	295013 AA2.01		IR 4.0

Ability to determine and interpret suppression pool temperature as it applies to High Suppression Pool Temperature.

Proposed Question:

SPT-4 of EOP-0002 requires entry into EOP-0001 and scramming the reactor prior to suppression pool temperature reaching ___(1)___. The bases for this action is because this temperature is the _____(2)_____.

A. (1) 100°F; (2) temperature at which a reactor scram is required by Technical Specifications.

B. (1) 100°F; (2) the highest temperature at which initiation of boron injection will permit injection of the Cold Shutdown Boron Weight of boron before suppression pool temperature exceeds the Heat Capacity Temperature Limit.

C. (1) 110°F; (2) temperature at which a reactor scram is required by Technical Specifications.

D. (1) 110°F; (2) the highest temperature at which initiation of boron injection will permit injection of the Cold Shutdown Boron Weight of boron before suppression pool temperature exceeds the Heat Capacity Temperature Limit.

Proposed Answer: C.

Explanation:
A. Temperature that requires a scram is 110°F.
B. Temperature that requires a scram is 110°F.
C. Correct. Per EOP-0002 bases the 110°F requirement is based on 110°F being the temperature at which a scram is required by Tech Specs.
D. Temp is correct, but bases is incorrect, See C.

Technical Reference(s): EPSTGs, EOP-0002, TS 3.6.2.1

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-HLO-0514 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: 55.43b.10 Comments:

QUESTION 85 Rev 0

Examination Outline Cross-Reference: Level RO ☐ SRO ☑
Tier # 1 Group # 2
K/A # 295032 G.2.4.47 IR 4.2

Ability to diagnose and recognize trends related to high secondary containment area temperatures in an accurate and timely manner utilizing the appropriate control room reference material.

Proposed Question:

Consider the following secondary containment parameters taken at 15 minute intervals:

Time	1215	1230	1245
Main Steam Tunnel	128°F	128°F	128°F
RCIC Room	99°F	99°F	99°F
RWCU Pump Room	102°F	165°F	148°F
RWCU Δflow	9 gpm	9 gpm	0 gpm

All 8 RWCU containment isolation valves have closed.

Which of the following procedures should the CRS enter under these conditions?

- AOP-0001, REACTOR SCRAM
- AOP-0003, AUTOMATIC ISOLATIONS
- EOP-0003, SECONDARY CONTAINMENT AND RADIOACTIVE RELEASE CONTROL

A. AOP-0003 & EOP-0003

B. EOP-0003 only

C. AOP-0003 only

D. AOP-0001 & AOP-0003

Proposed Answer: A.

Explanation:
A. RWCU has isolated on high room temperature. RWCU room temperature has exceeded max normal operating temperature.
B. AOP-0003 is also required.
C. EOP-0003 is also required.
D. AOP-0001 is not required. There is no condition present which requires a scram.

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

Proposed references to be provided to applicants during examination: EOP-0003 Table H

Learning Objective: RLP-HLO-522 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: 55.43b.5 Comments:

QUESTION 86 Rev 0

Examination Outline Cross-Reference: Level RO ☐ SRO ☑
Tier # 2 Group # 1
K/A # 209002 G.2.1.23 IR 4.4

Ability to perform specific system and integrated plant procedures during all modes of plant operation dealing with High Pressure Core Spray.

Proposed Question:

Following a LOCA, plant conditions have resulted in a loss of RPV level instrumentation due to reference leg flashing. EOP-0004, RPV FLOODING is being executed.

Which of the following should the CRS direct regarding the operation of High Pressure Core Spray (HPCS)?

A. SOP-0030, HIGH PRESSURE CORE SPRAY, to ensure HPCS suction remains aligned to the Condensate Storage Tank.

B. OSP-0053 Hard Card to ensure HPCS injection is terminated and prevented.

C. SOP-0030, HIGH PRESSURE CORE SPRAY, to ensure HPCS suction remains aligned to the Suppression Pool.

D. EOP Enclosure 19, DEFEATING HPCS HIGH RPV WATER LEVEL ISOLATION INTERLOCKS, to ensure E22-MOVF004 INJECTION ISOLATION VALVE, Level 8 isolation signal is bypassed.

Proposed Answer: D.

Explanation:
A. Either CST or SP are allowed as a suction source.
B. In RPV flooding condtions, HPCS injection is desired therefore it should not be terminated and prevented.
C. Either CST or SP are allowed as a suction source.
D. Correct – Due to reference leg flashing, level instrumentation will fail high resulting in a Level 8 isolation to E22-MOVF004 HPCS Injection Valve. Performance of Enclosure 19 defeats the Level 8 isolation allowing RPV flooding with HPCS.

Technical Reference(s): EOP-0004

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-HLO-516 Obj. 1

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 87 Rev 0

Examination Outline Cross-Reference: Level RO ☐ SRO ☑
Tier # 2 Group # 1
K/A # 211000 G.2.4.21 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.

Proposed Question:

The plant has experienced an ATWS. Attempts to start SLC pump 'A' have failed. SLC 'B' was placed in service with an initial tank level of 3800 gallons.

The following conditions exist 30 minutes later:

- Reactor water level -105 inches
- Reactor pressure 920 psig
- SLC discharge pressure 1400 psig
- SLC Tank level 3500 gallons

Based on the conditions given, determine the appropriate procedure based on the current status of SLC injection.

A. Continue injection per EOP-001A, ATWS until Hot Shutdown Boron weight has been injected. SLC is injecting as designed.

B. Direct EOP Enclosure 15, ALTERNATE SLC INJECTION. SLC is NOT injecting as designed.

C. Continue injection per EOP-001A, ATWS until Cold Shutdown Boron weight has been injected SLC is injecting as designed.

D. Direct performance of SOP-0028, STANDBY LIQUID CONTROL SYSTEM for alternate SLC injection. SLC is NOT injecting as designed.

Proposed Answer: B.

Explanation:
A. See B.
B. Correct – Only 300 gallons have been injected in 30 minutes indicating an injection rate of 10 gpm which does not meet the design of 43 gpm. SLC discharge pressure should be slightly above reactor pressure. The discharge pressure of 1400 psig indicates blockage in the discharge line cause the discharge line relief valve (set at 1400 psig) to lift. This would also account for the reduced flow rate. The appropriate action is alternate SLC injection per EOP Enclosure 15 since the A pump had previously failed.
C. See B.
D. See B.

Technical Reference(s): R-STM-0201, EOP-001A, EOP Enclosure 15

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0201 Obj. 1 & 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 88 Rev 0

Examination Outline Cross-Reference:	Level	RO ☐	SRO ☑
	Tier # 2	Group # 1	
	K/A # 215003 A2.02		IR 3.7

Ability to (a) predict the impact of an INOP condition on the IRMs and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of that abnormal operation.

Proposed Question:

A plant startup is in progress per GOP-0001, PLANT STARTUP with the plant in Mode 2. All IRMs are on Range 8.

IRM 'A' is inoperable because it failed to cause an upscale trip during surveillance testing.

Subsequently IRM 'C' experienced a power supply failure causing the instrument to be inoperable.

Which of the following describes the Technical Specification requirements and the effect on plant startup and entry into Mode 1?

A. The startup can not continue. Conduct an orderly shutdown per GOP-0002, PLANT SHUTDOWN. Be in Mode 3 in 12 hours.

B. The channel or trip system must be placed in trip within 6 hours. Mode change is not allowed. Remain in GOP-0001, PLANT STARTUP but stabilize at the current power level until one of the IRMs is restored to operable.

C. The channel or trip system must be placed in trip within 12 hours. Continue the plant startup per GOP-0001, PLANT STARTUP. No further actions required. Entry into Mode 1 is allowed since the actions taken may continue for an unlimited period of time.

D. The channel or trip system must be placed in trip within 12 hours. Continue startup per GOP-0001, PLANT STARTUP after bypassing IRM C. Entry into Mode 1 is allowed since IRMs are not required in Mode 1.

Proposed Answer: D.

Explanation:
A. B. C. See D.
D. TS 3.3.1.1 requires 3 IRMs per trip system. With A & C inoperable this is not met, therefore entry into Condition A is required. The channel or trip system must be placed in trip in 12 hours. The startup can continue after the IRM C is bypassed since the inop failure also results in a rod block. The failure mechanism of IRM A was downscale. This trip is bypassed above

Technical Reference(s): TS 3.3.1.1

Proposed references to be provided to applicants during examination: TS 3.3.1.1

Learning Objective: RLP-STM-0503 Obj. 17 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 89 Rev 0

Examination Outline Cross-Reference: Level RO ☐ SRO ☑
Tier # 2 Group # 1
K/A # 217000 A2.14 IR 3.4

Ability to (a) predict the impact of rupture disc failure on RCIC and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of that abnormal operation.

Proposed Question:

During a surveillance run on the RCIC turbine, both turbine exhaust rupture discs burst.

(1) Which of the following describes the impact of this condition AND (2) what procedure should be used to mitigate this event?

- AOP-0003, AUTOMATIC ISOLATIONS
- RMS-RE110, AUXILIARY BUILDING VENTILATION RADIATION MONITOR
- RMS-RE219, RCIC EQUIPMENT ROOM RADIATION MONITOR

A. (1) Release of steam to the RCIC room causing RMS-RE219 to alarm; (2) Utilize AOP-0003 to verify Auxiliary Building isolations cause by RMS-RE219 alarm AND RCIC isolations caused by RCIC Room High Temperature.

B. (1) Release of steam to D-Tunnel causing RMS-RE110 to alarm; (2) Utilize AOP-0003 to verify Auxiliary Building isolations caused by RMS-RE110 alarm AND verify RCIC isolations caused by RCIC Turbine Exhaust Pressure.

C. (1) Release of steam to the RCIC room causing RMS-RE219 to alarm; (2) Use ARP-RMS-DSPL230 to manually isolate the Auxiliary Building and start Standby Gas Treatment due to RMS-RE219 alarm AND Utilize AOP-0003 to verify RCIC isolations caused by RCIC Room High Temperature.

D. (1) Release of steam to D-Tunnel causing RMS-RE110 to alarm; (2) Use ARP-RMS-DSPL230 to manually isolate the Auxiliary Building and start Standby Gas Treatment due to RMS-RE110 alarm AND AOP-0003 to verify RCIC isolations caused by RCIC Turbine Exhaust Pressure.

Proposed Answer: D.

Explanation:
A. Rupture discs relieve to the D-tunnel, not the RCIC room. RMS-RE219 does not cause Aux Bldg automatic isolations.
B. RMS-RE110 does not cause automatic isolation of the Aux. Bldg.
C. Rupture discs relieve to the D-tunnel, not the RCIC room. Manual isolation of the Aux Bldg not required for RMS-RE219 alarm.
D. Rupture discs relieve to D-tunnel. RMS-RE110 does not cause automatic isolation, but manual isolation of the Aux Bldg and startup of Standby Gas Treatment is required when it alarms.

Technical Reference(s): R-STM-0209, ARP-RMS-DSPL30

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0209 Obj. 2, 7, 12; RLP-STM-0409 Obj. 7

Question Source: New

December 2010 River Bend Station
NRC Initial License Examination
Senior Reactor Operator

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 90 Rev 0

Examination Outline Cross-Reference:

Level		RO ☐	SRO ☑
Tier #	2	Group #	1
K/A #	300000 G.2.2.44		IR 4.4

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.

Proposed Question:

Consider the following plant conditions:

CCS header pressure	110 psig
CCS pumps	CCS-P1A and CCS-P1B are in service
IAS header pressure	110 psig
IAS Sequencer	Position 2, IAS-C2B and IAS-C2C are in service

All CCS and IAS components are in auto standby.

Which of the following should the CRS direct based on the given conditions?

- AOP-0008, LOSS OF INSTRUMENT AIR
- AOP-0012, LOSS OF TURBINE PLANT COMPONENT COOLING WATER

A. Enter AOP-0008 and depress the START pushbutton on H13-P870 for IAS-C2A.

B. Enter AOP-0008 and make a plant announcement to cease all non essential use of IAS.

C. Enter AOP-0012 and depress the START pushbutton on H13-P870 for CCS-P1C.

D. Enter AOP-0012 and insert a manual reactor scram.

Proposed Answer: B.

Explanation:
A. AOP-0008 is appropriate due to lower than normal IAS header pressure but, depressing the START pushbutton for IAS-C2A will have no effect with the compressor in auto standby.
B. Correct - AOP-0008 is appropriate due to lower than normal IAS header pressure. The immediate operator action is to make the plant announcement to cease all non essential use of IAS.
C. CCS parameters are normal. Entry into AOP-00012 is not required. CCS-P1C has not reached its auto start pressure of 96 psig.
D. CCS parameters are normal, reactor scram is not required.

Technical Reference(s): AOP-0008, STM-0121

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-OPS-AOP0008 Obj. 2, 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.5 Comments:

QUESTION 91 Rev 0

Examination Outline Cross-Reference: Level RO ☐ SRO ☑
Tier # 2 Group # 2
K/A # 239001 G.2.4.6 IR 4.7

Knowledge of EOP mitigation strategies related to Main and Reheat Steam.

Proposed Question:

A plant transient was initiated by a loss of Main Condenser Vacuum. Plant conditions have deteriorated resulting in the need to Emergency Depressurize the Reactor.

Attempts have been made to open SRVs but were unsuccessful.

EOP Enclosure 9, DEFEATING MSIV AND MSL DRAIN ISOLATION INTERLOCKS has been installed and the MSIV are reopened. Condenser vacuum is 5"Hg.

Which of the following should the CRS direct to ensure RPV pressure is maintained <46 psig?

A. Install EOP Enclosure 5, BYPASSING MSR STEAM SUPPLY ISOLATION INTERLOCK.

B. Utilize AOP-0035 STUCK OPEN SRV, to pull fuses for ADS SRVs.

C. Utilize OSP-0053, to fully jack open the Bypass Valves.

D. Install EOP Enclosure 24, DEFEATING RPV LOW LEVEL 1 MSIV AND MSL DRAIN ISOLATION INTERLOCKS to maintain the MSIVs open.

Proposed Answer: A.

Explanation:
A. Correct – This enclosure aids in depressurizing the RPV to the MSRs.
B. SRVs are energized to open. Pulling fuses would close them as opposed to opening them.
C. Bypass valves can not be jacked open with a low vacuum condition.
D. Enclosure 24 only bypasses Level 1 which is already bypassed by Enclosure 9.

Technical Reference(s): EOP-0001

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-HLO-516 Obj. 1

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 92 Rev 0

Examination Outline Cross-Reference: Level RO ☐ SRO ☑
Tier # 2 Group # 2
K/A # 259001 G.2.4.46 IR 4.2

Ability to verify that the alarms related to Reactor Feedwater are consistent with the plant conditions.

Proposed Question:

While operating at 100% power, the following annunciator was received:

- 1ST PT HEATER E1A HIGH LEVEL

Investigation determined that FWS-E1A 1st point heater 'A' level was >12" above normal water level. All other heater levels are normal.

Shortly thereafter, the following annunciator was received:

- FEEDWATER & POINT HEATERS EXTREME HIGH LVL.

Which of the following should the CRS direct?

A. Verify FWS-E1A shell side extraction steam is isolated and enter AOP-0007, LOSS OF FEEDWATER HEATING

B. Verify FWS-E1A tube side feedwater flow is isolated and enter AOP-0007, LOSS OF FEEDWATER HEATING

C. Verify FWS-E1A shell side extraction steam is isolated and enter AOP-0006, CONDENSATE AND FEEDWATER FAILURES

D. Verify FWS-E1A tube side feedwater flow is isolated and enter AOP-0006, CONDENSATE AND FEEDWATER FAILURES

Proposed Answer: A.

Explanation:
A. Extraction steam (shell side) isolates on an extreme high level which requires entry in to AOP-0007.
B. Tube side does not isolate.
C. The required procedure is AOP-0007.
D. Tube side does not isolate. The required procedure is AOP-0007.

Technical Reference(s): AOP-0007, ARP-PNL-870-53

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-HLO-0526 Obj. 8

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 93 Rev 0

Examination Outline Cross-Reference: Level RO ☐ SRO ☑
Tier # 2 Group # 2
K/A # 290003 A2.02 IR 3.4

Ability to (a) predict the impact of extreme environmental conditions on Control Room HVAC and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of that abnormal operation.

Proposed Question:

A high radiation condition has been detected by RMS-RE13A & B MAIN CONTROL ROOM LOCAL INTAKE A & B causing the monitors to go into high alarm.

(1) What is the effect on the Control Building HVAC system and (2) which procedure should the CRS direct?

A. (1) Both trains of control building charcoal filtration start. (2) Enter AOP-0060, LOSS OF CONTROL BUILDING VENTILATION to verify required isolations have occurred.

B. (1) Both divisions of control building chilled water trip. (2) Enter AOP-0060, LOSS OF CONTROL BUILDING VENTILATION to restore control building chilled water.

C. (1) Both trains of control building charcoal filtration start. (2) Enter AOP-0003, AUTOMATIC ISOLATIONS to verify required isolations have occurred.

D. (1) Both divisions of control building chilled water trip. (2) Enter AOP-0003, AUTOMATIC ISOLATIONS to restore control building chilled water.

Proposed Answer: C.

Explanation:
A. Both charcoal filter trains will start, but AOP-0060 does not provide guidance for this condition.
B. Although AOP-00060 provides guidance for when both divisions of chilled water trip, the high radiation condition detected by RMS-RE13A & B does not cause this loss of chilled water.
C. Correct. A high radiation condition will cause both division of charcoal filtration to start. AOP-0003 lists isolations which occur when RMS-RE13A & B sense a high radiation condition.
D. The high radiation condition does not cause the control building chilled water system to trip.

Technical Reference(s): AOP-0060, AOP-0003

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-STM-0402 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.5 Comments:

QUESTION 94 Rev 0

Examination Outline Cross-Reference:

Level		RO ☐	SRO ☑
Tier #	3	Group #	1
K/A #	G.2.1.20		IR 4.6

Ability to interpret and execute procedure steps.

Proposed Question:

A CRS has granted temporary approval of a Change Notice (CN) in accordance with RBNP-001, Development and Control of RBS Procedures.

The formal 50.59 screening form must be completed within?

A. 72 hours

B. 7 days

C. 10 days

D. 14 days

Proposed Answer: D.

Explanation:
A. See D.
B. See D.
C. See D.
D. Per RBNP-001, following temporary approval of a CN, the formal 50.59 screening must be completed within 14 days.

Technical Reference(s): RBNP-0001

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-HLO-202 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: 55.43b.5

Comments:

QUESTION 95 Rev 0

Examination Outline Cross-Reference:

Level		RO ☐	SRO ☑
Tier #	3	Group #	1
K/A #	G.2.1.34		IR 3.5

Knowledge of primary and secondary plant chemistry limits.

Proposed Question:

Refueling is in progress. Reactor Recirculation and Reactor Water Cleanup System are secured for system maintenance.

How is TR 3.4.13, Chemistry satisfied for reactor coolant conductivity during this portion of a refueling outage?

A. The conductivity of the reactor coolant is recorded continuously.

B. An in-line conductivity measurement is obtained every 4 hours.

C. An in-line conductivity measurement is obtained every 24 hours.

D. Not required to be met in this mode.

Proposed Answer: C.

Explanation:
A. With both Reactor Recirculation and RWCU secured, continuous monitoring is not available.
B. This would be required in Modes 1, 2, & 3.
C. Correct – Continuous monitoring is not available so an inline conductivity measurement must be obtained every 4 hours.
D. Required at all times.

Technical Reference(s): TR 3.4.13

Proposed references to be provided to applicants during examination: TR 3.4.13

Learning Objective: RLP-STM-0601 Obj. 9

Question Source: New

Question History: Last NRC Exam NA

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

10 CFR Part 55 Content: 55.43b.2

Comments:

QUESTION 96 Rev 0

Examination Outline Cross-Reference: Level RO ☐ SRO ☑
Tier # 3 Group # 2
K/A # G.2.2.18 IR 3.9

Knowledge of the process for managing maintenance activities during shutdown operations, such as risk assessments, work prioritization, etc.

Proposed Question:

Select the procedure below which is utilized to ensure sufficient defense in depth is maintained for key shutdown safety functions during shutdown activities.

A. OSP-0033, OPERATIONS WITH A POTENTIAL TO DRAIN THE REACTOR VESSEL/CAVITY

B. OSP-0037, SHUTDOWN OPERATIONS PROTECTION PLAN

C. OSP-0038, PROTECTIVE TAGGING GUIDELINES

D. OSP-0040, LCO TRACKING AND SAFETY FUNCTION DETERMINATION PROGRAM

Proposed Answer: B.

Explanation:
A. See B.
B. OSP-0037 provides guidance to Operations and Outage personnel to evaluate the availability of plant equipment required to meet the corporate nuclear safety philiosophy. This philosophy is used in outage scheduling to ensure the availability of plant systems beyond the requirements of Tech Specs in key shutdown safety areas is maintained. These areas are shutdown cooling, inventory control, AC power, fuel pool cooling, containment control, fuel building ventilation, reactivity control, & fire.
C. See B.
D. See B.

Technical Reference(s): OSP-0037

Proposed references to be provided to applicants during examination: NA

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: 55.43b.10

Comments:

QUESTION 97 Rev 0

Examination Outline Cross-Reference:

Level		RO ☐	SRO ☑
Tier #	3	Group #	2
K/A #	G.2.2.36		IR 4.2

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

Proposed Question:

The plant is operating at rated conditions. A tripped breaker has caused a loss of EJS-SWG2A, 480 VAC bus. The power source for GTS-FN1A is fed by EJS-SWG2A.

What are the Limiting Conditions for Operations ramifications due to the degraded power source?

A. Only enter LCO 3.8.9, DISTRIBUTION SYSTEMS-OPERATING for the support system as allowed by LCO 3.0.6.

B. Enter LCO 3.8.9, DISTRIBUTION SYSTEMS-OPERATING for the support system AND LCO 3.6.4.3, STANDBY GAS TREATMENT for the supported system because LCO 3.0.2. requires that upon discovery of the failure to meet an LCO the associated actions must be met.

C. Enter LCO 3.8.9, DISTRIBUTION SYSTEMS-OPERATING for the support system AND perform a safety function determination to ensure the standby gas treatment function is met as allowed by LCO 3.0.6.

D. Only enter LCO 3.0.6 and perform a safety function determination to ensure the standby gas treatment function is met.

Proposed Answer: C.

Explanation:
A. While it is true that LCO 3.8.9 is required, performance of a safety function determination is also required by 3.0.6.
B. Performance of the actions of LCO 3.6.4.3 is not required.
C.Correct- LCO 3.0.6 is an exception to LCO 3.0.2. When an LCO is not met solely due to a support system LCO not being met, performance of the required actions of the supported system LCO is not required provided a specific TS is provided for the support system and a safety function determination is performed to ensure the safety function of the supported system is still maintained.

Technical Reference(s): Technical Specifications 3.0.2; 3.0.6; 3.6.4.3, 3.8.9

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-HLO-416 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: 55.43b.2

Comments:

QUESTION 98 Rev 0

Examination Outline Cross-Reference:

Level		RO ☐	SRO ☑
Tier #	3	Group #	3
K/A #	G.2.3.4		IR 3.7

Knowledge of radiation exposure limits under normal or emergency conditions.

Proposed Question:

During an emergency the _____(1)_____ may authorize individuals to receive exposures in excess of the 10CFR20 limit up to ____(2)____ for action to save a life or to protect large populations.

A. (1) Operations Shift Manager; (2) 75 Rem without consent

B. (1) Emergency Director; (2) 25 Rem without consent

C. (1) Recovery Manager; (2) 25 Rem on a voluntary basis

D. (1) Radiation Protection Coordinator; (2) 75 Rem on a voluntary basis

Proposed Answer: B.

Explanation:
A. See B.
B. Correct – The emergency director may authorize exceeding 10CFR20 limits to 25Rem without consent to save a life or to protect large populations.
C. See B.
D. See B.

Technical Reference(s): EIP-2-012

Proposed references to be provided to applicants during examination: NA

Learning Objective: RCBT-EP-NEONCO Obj. 2, 3

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.4

Comments:

QUESTION 99 Rev 0

Examination Outline Cross-Reference: Level RO ☐ SRO ☑
Tier # 3 Group # 4
K/A # G.2.4.35 IR 4.0

Knowledge of local auxiliary operator tasks during an emergency and the resultant operational effects.

Proposed Question:

The plant has experienced a Station Blackout and is currently in the Alternate Level Control leg of EOP-0001, RPV Control.

Which of the following locally performed tasks should the CRS direct to provide an injection source to the reactor vessel?

A. EOP Enclosure 6, INJECTION INTO THE RPV WITH CONDENSATE TRANSFER

B. EOP Enclosure 7, INJECTION INTO THE RPV WITH FIRE SYSTEM

C. EOP Enclosure 9, INJECTION INTO THE RPV WITH SLC TEST TANK

D. EOP Enclosure 22, RPV INJECTION/CONTAINMENT FLOODING WITH SERVICE WATER

Proposed Answer: B.

Explanation:
A. Condensate transfer has no power source during a station blackout.
B. Correct – Diesel driven fire pumps can be aligned to inject into the RPV
C. SLC pumps have no power source during a station blackout.
D. Service water pumps have no power during a station blackout. Injection with fire water per Enclosure 7 does utilize some of the same piping, but all the guidance is contained in Enclosure 7.

Technical Reference(s): Enclosure 7

Proposed references to be provided to applicants during examination: NA

Learning Objective: RLP-HLO-516 Obj. 1

Question Source: New

Question History: Last NRC Exam NA

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

10 CFR Part 55 Content: 55.43b.5

Comments:

QUESTION 100 Rev 0

Examination Outline Cross-Reference:	Level		RO ☐	SRO ☑
	Tier #	3	Group #	4
	K/A #	G.2.4.50		IR 4.0

Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.

Proposed Question:

An annunciator has alarmed in the Main Control Room. The control room team has taken the actions described in the alarm response procedure and concluded that the alarm is not valid.

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

A. OSP-0015, PROBLEM ANNUNCIATOR RESOLUTION PROGRAM

B. AOP-0055, LOSS OF ANNUNCIATORS

C. EN-OP-115, CONDUCT OF OPERATIONS, Section 5.10, Annunciator Response

D. EN-DC-136, TEMPORARY MODIFICATIONS

Proposed Answer: A.

Explanation:
A. Correct-OSP-0015 provides guidance for resolution of issues involving problem annunciators.
B. AOP-0055 is written to address a condition causing a complete failure of ALL annunicators.
C. Section 5.10 of EN-OP-0115 describes the expectations regarding response to annunicators expected, not expected, valid or invalid. It does not describe the process for problem annunciator resolution.
D. Ultimately, OSP-0015 may refer the user to EN-DC-136 if the issue requires a setpoint change to clear the annunciator, but initially the user should work through OSP-0015 for resolution.

Technical Reference(s): OSP-0015

Proposed references to be provided to applicants during examination: NA

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: 55.43b.5

Comments: