76. 295004AA2.02 001/1/1/SRO/NEW/H/3/BLC/MAB

Unit 1 and 2 are operating at 100% power. Unit 3 is in Mode 5.

The supply breaker to 250V DC RMOV Bd 2A tripped open and cannot be reset. The crew transferred this board to its alternate supply in accordance with 0-OI-57D, DC Electrical System, Section 8.9, Transfer of Power Supplies to 250V Reactor MOV Bds.

Which ONE of the following completes both statements regarding the 250V DC RMOV Bd 2A being powered from its alternate supply?

The Division I and Division II DC logic for ECCS (ADS, HPCI, Core Spray, and LPCI) _______ being fed from the same battery board.

In accordance with Tech Spec Bases 3.8.7, Distribution Systems - Operating, the 2A 250V DC RMOV Board _____ operable.

A. are

remains

B. are NOT

remains

C✓ are

is NOT

D. are NOT

is NOT

Answer is C.

295004 AA2.02: Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF DC POWER: Extent of partial or complete loss of DC power SRO IR: 3.9 (CFR: 41.10 / 43.5/ 45/13)

Plausibility: 1st part of "B" and "D" (DC power supply is different between Div I and II) is plausible if the applicant knows that the 250V RMOV Bd alternate power supply is from Unit 3; however, BB3 is the normal power supply to 250V DC RMOV Bd 2B, which feeds the Div I ECCS logic on Unit 2. 2nd part of "A" and "B" is plausible because in Mode 5 the RMOV board is considered operable. (The stem includes one unit in Mode 5.)

SRO only: 10CFR55.43(b)(2): Facility operating limitations in the technical specifications and their bases. 0-OI-57D, P&L "L" has the answer to the second fill-in-the-blank item; however, operability determinations are typically SRO level knowledge. Alternatively, can test the SRO applicants' knowledge of whether the alternate battery remains operable even though it has been loaded with 250V DC RMOV Bd 2A. (will require applicants to use drawings).

Tech Spec Bases 3.8: The Unit 2 250 V DC RMOV boards 2A, 2B, and 2C have alternate power supplies from another 250 V Unit DC board. In Modes 1, 2, or 3, the boards are considered inoperable when powered from their alternate feeder breakers because a single failure of the power source could affect both divisions depending on the board alignment. However, if the Unit was in Mode 5, the board is still considered operable.

Lesson Plan OPL171.037

Obj 11: Given a hypothetical situation involving loss of a DC power supply, identify the appropriate corrective action in accordance with OI-57D.

Obj.12: Determine the 250V DC System components that have a Technical Specification Limiting Conditions for Operation (LCO) associated with it.

Obj. 13: Given an interrelated system, determine it's interrelationship including how a loss of that system would affect D.C. system

77. 295006G2.4.41 001/1/1/SRO/NEW/L/3/BLC/MAB

The unit was operating at 100% power when a failure of an automatic and manual scram occurred.

Alternate Rod Insertion (ARI) was unsuccessful and reactor power is currently 8%.

The Shift Manager has declared a Site Area Emergency.

Which ONE of the following identifies an additional threshold criteria listed in the Scram Failure column of EPIP-1, Emergency Classification Procedure Event Classification Matrix, that requires upgrading to a General Emergency declaration?

A.✓ Heat Capacity Temperature Limit Curve is exceeded.

B. SLC not injected to tank level at or below 43%.

C. Reactor water level intentionally lowered below TAF.

D. SLC not injected to tank level at or below 67%.

No references provided to applicants.

Answer is A.

295006 (SCRAM) G2.4.41 Knowledge of the emergency action level thresholds and classifications. SRO IR: 4.6 (CFR: 41.10 / 43.5 / 45.11)

Plausibility: "B" and "D" are plausible because these are key levels in the EOI-1 flowchart associated with the SLC cold and hot shutdown boron weight. "C" is plausible because it is a contingency action in C-5 and closely mirrors the 2nd condition in the Scram Failure column of EPIP-1 that also requires a General Emergency, i.e., level cannot be restored and maintained greater than -180".

SRO-only: 10CFR55.43(b)(5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations. The SRO knowledge associated with the E-plan classifications is SRO level knowledge.

EPIP-1, SCRAM FAILURE Column, General Emergency (1.2-G)
Failure of automatic scram, manual scram, and ARI. Reactor power is above 3%

AND

Either of the following conditions exists:

- Suppression Pool temp exceeds HCTL. Refer to Curve 1.2-G
- Reactor water level can NOT be restored and maintained at or above -180 inches.

SRO-only: 10CFR55.43(b)(5): Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.

OPL171.075
HLT Objective 2: Given information concerning different types of events, use EPIP-1, Emergency Classification Matrix to determine the correct classification.

78. 295038EA2.03 001/1/1/SRO/NEW/H/2/BLC/MAB

The Site Emergency Director (SED) is choosing between Protective Action Recommendation (PAR) #1 and PAR #2, while performing EPIP-5, General Emergency.

Which ONE of the following completes the following statement in accordance with Appendix H, Protective Action Recommendation Flowchart?

In order to determine the PAR, __________ are allowed to be used.

A. only the actual radiation levels at the site boundary (projected doses not allowed)

B. actual radiation levels and projected doses at the site boundary

C. only the actual radiation levels at 5 miles or further from the site (projected doses not allowed)

D✓ actual radiation levels and projected doses at 5 miles or further from the site

Answer is "D".

295038 (High Offsite Release Rate) EA2.03 Ability to determine and/or interpret the following as they apply to HIGH OFFSITE RELEASE RATE: Radiation Levels
(CFR 41.10 / 43.5 / 45/13) SRO IR: 4.3

Plausibility:
Choice "A" is plausible because the GE classification criteria utilizes site boundary doses. Not using projected doses during the PAR to the state is plausible because of the artificiality and/or uncertainty associated with computer model predictions.

Choice "B" is plausible because the GE classification criteria utilizes actual and predicted doses at the site boundary.

Choice "C" is plausible because of the artificiality and/or uncertainty associated with computer model predictions.

SRO-Only: 10CFR55.43 (b)(1) Conditions and limitations in the facility license and 55.43(b)(5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations. The SED is an SRO function. ROs do not make PARs.
References:
EPIP-5, General Emergency, Appendix H, PAR Flowchart

Lesson Plan OPL171.075
Objective #9: Given that a General Emergency has been declared, determine the appropriate Protective Action Recommendation when given necessary plant data.

79. 295021G2.4.30 001/1/1/SRO/NEW/H/3/BLC/MAB

Unit 2 was in Mode 4 with Loop 2 of RHR in Shutdown Cooling with the following parameters:

RPV pressure: 0 psig
RPV level: 74"
No Recirc Pumps are running
RHR B Hx outlet temperature: 135.6 °F
RHR B flow rate: 8500 gpm
RPV feedwater nozzle temperatures: 150 °F
RPV drain to RWCU temperature: 146 °F

Subsequently, the 2A RPS MG set tripped. Ten minutes ago, the control room dispatched personnel to transfer RPS to its alternate power supply. The following parameters currently exist:

RPV pressure 0 psig; RPV level 77"
RHR SD CLG FLOW LOW (9-3D, W11) alarming
RPV feedwater nozzle temperatures: 158 °F
RPV drain to RWCU temperature: 145 °F

Which ONE of the following identifies the earliest required NRC notification(s) in accordance with NPG-SPP-03.5, Regulatory Reporting Requirements?

[Reference provided]

A.✓ NRC Operations Center is NOT required to be notified within 1 hour
60 day written LER is required

B. NRC Operations Center is required to be notified within 1 hour
60 day written LER is NOT required

C. NRC Operations Center is required to be notified within 1 hour
60 day written LER is required

D. NRC Operations Center is NOT required to be notified within 1 hour
60 day written LER is NOT required

Answer is A

Provide applicants with 1) NPG-SPP-0.3.5 (entire procedure); 2) NUREG 1022 (entire procedure); 3) EPIP-1 only Section 1.5 (Loss of Decay Heat Removal) page 23 of 206.

295021 (Loss of Shutdown Cooling) G2.4.30: Knowledge of events related to system operation/status that must be reported to internal organizations or external agencies, such as the State, the NRC, or the transmission system operator. (CFR 41.10 / 43.5 / 45.11) SRO IR: 4.1

Plausibility: For 1st part, "B" and "C" are plausible if the applicant declares an Alert based on the loss of shutdown cooling. (Reactor moderator temp can't be maintained below 212 deg F). For the 2nd part, "B" and "D"are plausible if the applicant determines that the shutdown cooling isolation (as well as all the other isolations) were not a "valid" actuation signal (due to the MG set tripping vs. actual low water level, etc.)

SRO-only: 10CFR55.43(b)(5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.
NPG-SPP-03.5, Regulatory Reporting Requirements, Appendix A, Reporting of Events or Conditions Affecting Licensed Nuclear Power Plants

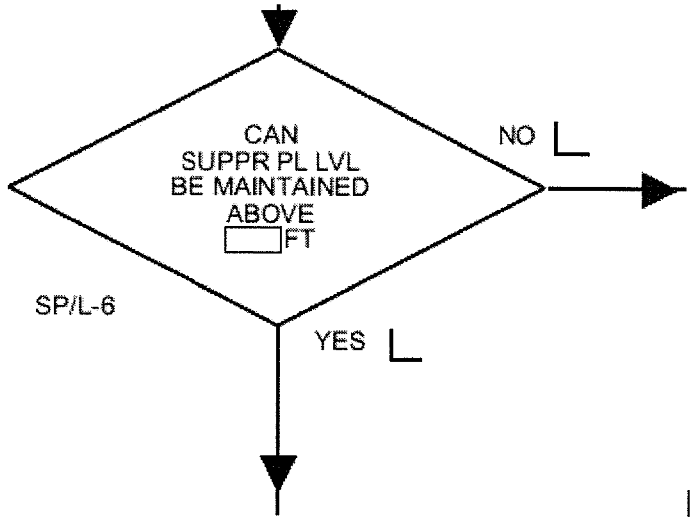
NUREG 1022, Event Reporting Guidelines 10CFR50.72 and 50.73, Section 3.2.6, System Actuation

Lesson Plan OPL171.092
Objective 3: Given a hypothetical event, determine if the event is reportable using SPP-3.5 and NUREG 1022.

Objective 4: Given a hypothetical event, determine if a one, four or eight hour report to the NRC is required using SPP-3.5 and NUREG 1022.

80. 295030G2.4.6 001/1/1/SRO/NEW/H/2/BLC/MAB

The Unit Supervisor (US) is implementing 3-EOI-2, Primary Containment Control, due to a lowering torus level following an earthquake. The US has reached the following step:



Which ONE of the following identifies the value of the water level listed in this decision step and the required procedure if the answer to this question is "NO?"

A. 11.5 ft
3-EOI-Appendix 18, Suppression Pool Water Inventory Removal and Makeup

B.✓ 11.5 ft
3-C-2, Emergency Depressurization

C. 12.75 ft
3-EOI-Appendix 18, Suppression Pool Water Inventory Removal and Makeup

D. 12.75 ft
3-C-2, Emergency Depressurization

Answer is B

295030 (Low Suppression Pool Level) G2.4.6 Knowledge of EOP mitigation strategies (CFR 41.10 / 43.5 / 45.13) SRO IR: 4.7

Plausibility: The 1st part of "C" and "D" is plausible because 12.75 ft is the torus level value (listed in the SP/L leg as as an override) at which HPCI must be secured. The 2nd part of "A" and "C" is plausible because this procedure is required to be implemented in the SP/L leg. The reason that "A" is incorrect is that the stem asks which procedure is required to be implemented if the answer to the question is "NO."

SRO-only: 10CFR55.43(b)(5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.

3-EOI-2, Primary Containment Control

Lesson Plan OPL171.203

Objective 7: Explain the concern relative to the following suppression pool/ containment water levels during performance of EOI-2:

a. 11.50 feet

b. 12.75 feet

c. 18 feet

d. 105 feet

81. 600000G2.4.41 001/1/1/SRO/NEW/L/2/BLC/MAB

Which ONE of the following choices completes both statements, as they relate to an emergency classification due to a fire on site, in accordance with EPIP-1, Emergency Classification Procedure Technical Basis?

If the confirmation of a fire cannot be positively ascertained within ______ , and symptoms indicative of a fire persist, then confirmation should be assumed.

The escalation from an Unusual Event to an Alert is based on the fire ______ .

A. 15 minutes
involving radiologically contaminated areas

B. 20 minutes
involving radiologically contaminated areas

C. 20 minutes
affecting the operability of plant safety systems

D✓ 15 minutes
affecting the operability of plant safety systems

Answer is D

No references provided to applicants.

600000 (Plant Fire On Site) G2.4.41 Knowledge of the emergency action level thresholds and classifications. (CFR: 41.10 / 43.5 / 45.11) SRO IR 4.6

Plausibility analysis: The 1st part of "B" and "C" are plausible because this time value is used in the EPIP-1 classification scheme (Alert declaration following control room evacuation and control not established at the Shutdown Control Panel 25-32). The 2nd part of "A" and "C" are plausible because of other emergency classifications involving radiological concerns.

SRO-only: 10CFR55.43(b)(1) Conditions and limitations in the facility license.

Lesson Plan OPL171.075
Objective 2: Given information concerning different types of events, use EPIP-1, Emergency Classification Matrix to determine the correct classification.

EPIP-1, Emergency Classification Procedure Technical Basis, 6.4-U1

82. 700000AA2.05 001/1/1/SRO/NEW/H/3/BLC/MAB

Unit 1, 2, and 3 are operating at 100% power.

4KV Common Board B was transferred to Start Bus 1B in accordance with 0-OI-57A, Section 8.23, Control Room Transfer of 4kV COM BD B Power Supplies.

The Trinity 2 (Trico) 500 KV line is out of service for maintenance.

The Transmission Operator subsequently informs the Unit Supervisor that the Athens 161 KV line is in an unanalyzed condition (Red) due to the total system load exceeding the maximum analyzed system load for the current transmission system conditions.

Which ONE of the following identifies the Unit 3 Tech Spec 3.8.1 actions that are required (if any) for the conditions listed above?

[REFERENCE PROVIDED]

A.✓ No required actions

✓ B. Perform SR-3.8.1.a.1 within 1 hour and restore the Athens 161KV line to operable status within 7 days.

C. Perform SR-3.8.1.a.1 within 1 hour and restore EITHER the Athens 161KV line OR the Trinity 2 (Trico) 500 KV line to operable within 24 hours.

D. Enter Tech Spec 3.0.3

Answer is A.

Provide applicants with Unit 3 Tech Spec 3.8.1 (no bases)

700000 (Generator Voltage and Electric Grid Disturbances) AA2.05: Ability to determine and/or interpret the following as they apply to GENERATOR VOLTAGE AND ELECTRIC GRID DISTURBANCES: Operational Status of Offsite Circuits.
(CFR: 41.5 and 43.5 / 45.5, 45.7, and 45.8) SRO IR: 3.8

Plausibility: "B" is plausible if the applicant doesn't understand that the LCO only REQUIRES 2 (of the 3) offsite circuits; therefore, the LCO is still met. "C" is plausible if the applicant assumes that only one offsite circuit remains operable. "D" is plausiblie if the applicant assumes that none of the action statements listed in the LCO apply to the condition as a result of degraded grid conditions.

SRO-only: 10CFR55.43(b)(2) Facility operating limitations in the technical specifications and their bases.

TRO-TO-SOP-30.128, Browns Ferry Nuclear Plant (BFN) Grid Operating Guide
Tech Spec 3.8.1, AC Sources - Operating
PIP-02-03a, Electrical Distribution System

Lesson Plan OPL171.036
Objective 13: Given plant and electrical system status determine the appropriate actions to be performed as stated in Technical Specifications, OI's, ARP, and AOI's.

83. 295009AA2.01 001/1/2/SRO/MODIFIED/H/2/BLC/MAB

Unit 3 was operating at 100% power when a loss of all feedwater occurred.

All control rods automatically inserted and reactor pressure is 900 psig and stable.

No source of high pressure feed water is available; however, low pressure pumps are running.

The Unit Supervisor is in EOI-1 assessing the following control room level/temperature INDICATIONS:

LI-3-53, 3-60, 3-206, 3-253, and 3-208A, B, C, D: downscale
LI-3-58A and 3-58B: .... -150 inches
LI-3-52 and LI-3-62A: .... -180 inches
LI-3-55: .... downscale

Elevation 621' 74-95F: .... 152 °F
Elevation 593' 74-95 C/D .... 90 °F
Elevation 565 ' 69-835A-D: .... 90 °F

Which ONE of the following identifies ACTUAL RPV Water Level and the required procedure?

[REFERENCE PROVIDED]

A. Actual RPV water level is above top of active fuel; Remain in EOI-1 RC/L

B✓ Actual RPV water level is above top of active fuel; Exit EOI-1 RC/L and enter C-1

C. Actual RPV water level is below top of active fuel; Remain in EOI-1 RC/L

D. Actual RPV water level is below top of active fuel; Exit EOI-1 RC/L and enter C-1

Answer is B

Provide applicants with Caution 1 and Level correction PIP at Panel 9-3

295009 (Low Reactor Water Level) AA2.01 Ability to determine and/or interpret the following as they apply to LOW REACTOR WATER LEVEL: Reactor Water Level (CFR: 41.10 / 43.5 / 45.13) SRO IR: 4.2

Plausibility analysis: The 1st part of "C" and "D" is plausible because the post-accident range instruments are indicating less than -162" (if applicant forgets to compensate the indications). The 2nd part of "A" is plausible if the applicant incorrectly determines actual RPV water level. The 2nd part of "C" is plausible if the applicant

SRO-only: 10CFR55.43(b)(5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.

Significantly modified from Operations Bank item OPL171.205 002 (Old TEGRS 10370)

3-EOI-1, Reactor Vessel Level Control
3-C-1, Alternate Level Control

Lesson Plan OPL171.003
Objective 19: Given a set of plant procedures and unit/plant conditions, correctly apply procedures related to Reactor Vessel Process Instrumentation.

84. 295014G2.2.38 001/1/2/SRO/NEW/H/3//MAB

Unit 3 is operating at 98% power.

During a control rod surveillance, the Unit Operator (UO) was required to single notch a control rod from position 14 to 16; however, the UO continuously withdrew the control rod until the following annunciators began alarming:

RBM HIGH/INOP (9-5, W24)
CONTROL ROD WITHDRAWAL BLOCK (9-5, W7)

The control rod's final position is 26 and the Unit Operator (UO) observes the following values on Powerplex:

MFLCPR	0.925
MAPRAT	0.754
MFDLRX	1.20
MFLPD	0.00

Which ONE of the following indicates:

1) whether all Tech Spec 3.2, Power Distribution Limits, Limiting Conditions for Operation (LCO) are met

and

2) the required classification for this event in accordance with NPG-SPP-10.4, Reactivity Management Program?

A. All Tech Spec 3.2 LCOs are met. (no required action statement)
Severe Reactivity Management Event (SL 1)

B. All Tech Spec 3.2 LCOs are NOT met.
Severe Reactivity Management Event (SL 1)

C. All Tech Spec 3.2 LCOs are met. (no required action statement)
Major Reactivity Management Event (SL 2)

D✓ All Tech Spec 3.2 LCOs are NOT met.
Major Reactivity Management Event (SL 2)

Answer: D

No reference provided to applicants.

295014 (Inadvertent Reactivity Addition) G2.2.38 Knowledge of conditions and limitations in the facility license. (CFR 41.7 / 41.10 / 45.13) SRO IR: 4.5

Plausibility: The 1st part of "A" and "C" are plausible if the applicant does not know that MFDLRX is the same as LHGR. The 2nd part of "A" and "B" are plausible because the severe classification examples (BWR) include rods (item 1-1) and Tech Specs (item 1-4)

SRO-only: 10CFR55.43(b)(1) Conditions and limitations in the facility license. Since the operating license requires procedures such as Conduct of Ops and/or Reactivity Management procedures, this meets item (b)(1). This question can also target item 10CFR55.43(b)(2) (Tech Specs) or 10CFR55.43(b)(5) (Procedure selection). The test item deals with the administrative functions associated with the reactivity event, which are SRO responsibilities in the plant.

3-AOI-85-7, Mispositioned Control Rod
Tech Specs 3.2.3, Linear Heat Generation Rate
NPG-SPP-10.4, Reactivity Management Program

Lesson Plan OPL171.087
Objective 8: When given situations correctly apply the following definitions:
a. ACTIONS
b. OPERABLE
c. CORE ALTERATIONS
d. LEAKAGE

Less Plan OPL171.074
Objective 2: Given specific plant conditions, determine the correct actions to take based on the appropriate AOI.

85. 295032EA2.02 001/1/2/SRO/NEW/H/3/BLC/MAB

Unit 2 is operating at 100% power.

A large unisolable steam leak has occurred in the RWCU Heat Exchanger Room and its maximum normal operating temperature has been exceeded.

Which ONE of the following identifies:

1) a Panel 9-5 Normal Range level instrument indication that is affected as the RWCU Heat Exchanger Room temperature approaches the maximum safe operating temperature

and

2) the procedure(s) required to be implemented before the room temperature exceeds the maximum safe operating temperature?

[REFERENCE PROVIDED]

A. LI-3-208B
GOI-100-12A

B. LI-3-208B
EOI-1

C. LI-3-53
GOI-100-12A

D✓ LI-3-53
EOI-1

Answer is D

Provide applicants with Caution 1 (including Curve 8 and Table 6); do NOT provide any EOI flowchart.

295032 (High Secondary Containment Temperature) EA2.02 Ability to determine and/or interpret the following as they apply to HIGH SECONDARY CONTAINMENT AREA TEMPERATURE: Equipment operability (CFR: 41.10 / 43.5 / 45.13) SRO IR: 3.5

Plausibility: The 1st part of "A" and "B" are plausible because this is a Panel 9-5 Normal Range level instrument; however, it is not affected by high RWCU room temperatures because there are no vertical instrument legs in this room. The 2nd part of "A" and "C" are plausible because this is the correct procedure if the high temperature condition was not caused by a primary system discharging into secondary containment.

SRO-only: 10CFR55.43(b)(5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.

EOI-3, Secondary Containment Control

Lesson Plan OPL171.003
Objective 9: Given a set of plant conditions, describe or identify the errors induced in the level instruments due to density effects, high drywell temperatures, recirculation pump operation, and non condensable gases in the reference legs. (SOER 82-02, Recommendation 7)

Lesson Plan OPL171.201
Objective 11: Given specified plant conditions relative to a Caution in the EOIs, determine the basis for the Caution.

86. 211000A2.08 001/2/1/SRO/NEW/H/2/BLC/MAB

An ATWS has occurred on Unit 1 and the Unit Supervisor (US) is implementing EOI-1, RC/Q, and the crew has initiated SLC in accordance with 1-EOI-Appendix-3A.

RPV level has been lowered in accordance with C-5, Level/Power Control.

The US has subsequently determined that emergency depressurization is required due to high Secondary Containment temperatures.

Which ONE of the following identifies 1) the targeted level in the SLC Tank, which is listed in the RC/Q leg, and 2) describes the procedural implementation of this emergency depressurization?

Note: The title of C-2 is RPV Emergency Depressurization.

A. 43%
C-5 provides all the steps for emergency depressurization; C-2 is not required.

B.✓ 43%
C-2 is required to be implemented concurrently with the emergency depressurization guidance listed on C-5.

C. 67%
C-5 provides all the steps for emergency depressurization; C-2 is not required.

D. 67%
C-2 is required to be implemented concurrently with the emergency depressurization guidance listed on C-5.

Answer is B (Ensure no overlap w/ 295006 G2.4.41)

211000 SLC A2.08 Ability to (a) predict the impacts of the following on the STANDBY LIQUID CONTROL SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Failure to SCRAM (CFR: 41.5 / 45.6) SRO IR: 4.2

Plausibility: The 1st part of "C" and "D" are plausible because this is the hot shutdown boron weight and occurs before reaching 43%. Also, 67% is listed in the C-5 level/power control flowchart. The 2nd part of "A" and "C" are plausible because C-5 is normally the procedure used to control depressurization during ATWS conditions, which is different than emergency depressurizing during high Secondary Containment temperatures.

SRO-only: 10CFR55.43(b)(5) Assessment of plant conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.

1-EOI-1, Reactor Vessel Control Procedure

Lesson OPL171.202
Objective 15: Given appropriate plant information, utilize RC/P, RC/L, and RC/Q concurrently to determine appropriate operator actions.

87. 259002A2.06 001/2/1/SRO/NEW/H/2/BLC/MAB

Unit 1 is operating at 100% power.

A gross failure of the Reactor Feedwater Control system occurs and the following alarm is received:

RFWCS GROSS FAILURE 1-LA-46-5C (9-6C, W7)

The Unit Operator (US) reports that actual reactor water level is rising and that the Narrow Range level instruments are all unreliable.

Which ONE of the following describes:

1) the required actions, in accordance with the alarm response procedure,

and

2) the safety analysis for Feedwater and Main Turbine High Water Level Trip Instrumentation, in accordance with Tech Spec Bases B3.3.2.2 and the FSAR?

A. Depress the RFPT Speed Control Raise/Lower Switches to the Manual Governor Position and attempt to control reactor water level.

The indirectly-initiated reactor scram mitigates potential turbine damage.

B. Depress the AUTO/MANUAL pushbutton on RX WATER LVL CONT, 1-LIC-46-5, (Master Controller) and control RFPTs in AUTO with RAISE/LOWER pushbuttons.

The indirectly-initiated reactor scram mitigates potential turbine damage.

C✓ Depress the RFPT Speed Control Raise/Lower Switches to the Manual Governor Position and attempt to control reactor water level.

The indirectly-initiated reactor scram mitigates the reduction in MCPR.

D. Depress the AUTO/MANUAL pushbutton on RX WATER LVL CONT, 1-LIC-46-5, (Master Controller) and control RFPTs in AUTO with RAISE/LOWER pushbuttons.

The indirectly-initiated reactor scram mitigates the reduction in MCPR.

Answer is C

259002 Reactor Water Level, A2.06: Ability to (a) predict the impacts of the following on the REACTOR WATER LEVEL CONTROL SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Loss of controller signal output (CFR: 41.5 / 45.6) SRO IR: 3.4

Plausibility: The 1st part of "B" and "D" are plausible because other FW control malfunctions would require placing the Master Controller in AUTO. The 2nd part of "A" and "B" is plausible because this is the actual reason for the TURBINE TRIP that is initiated from the Level 8 trip instruments; however, it is NOT how the reactor scram mitigates the transient.

SRO-only: 10CFR55.43(b)(5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations. The 1st part of the question is RO knowledge; however, the 2nd part of the question tests the SRO applicants' knowledge of the bases for the Tech Spec 3.3.2.2 FW & MT Hi Water Level Trip Instrumentation.

1-ARP-9-6C, Window 7, RFWCS GROSS FAILURE
1-OI-3, Reactor Feedwater System
Tech Specs and Bases 3.3.2.2

The feedwater and main turbine high water level trip instrumentation is assumed to be capable of providing a turbine trip in the design basis transient analysis for a feedwater controller failure, maximum demand event (Ref. 1). The reactor vessel high water level trip indirectly initiates a reactor scram from the main turbine trip (above 30% RTP) and trips the feedwater pumps, thereby terminating the event. The reactor scram mitigates the reduction in MCPR.

FSAR Section 14.5.8.1 Feedwater Controller Failure Maximum Demand (FWCF)
An event which can cause directly an excess of coolant inventory is one in which makeup water flow is increased without changing other core parameters. The FWCF is the limiting event of the excess coolant inventory type. The FWCF to maximum demand is one of several potentially limiting events normally included in the cycle-specific reload licensing analyses to establish the MCPR operating limits.

88. 206000G2.1.7 001/2/1/SRO/MODIFIED/H/3/BLC/MAB

The following plant conditions exist on Unit 2:

Unit 2 has suffered a spurious Group 1 Isolation and 20 control rods failed to insert. HPCI is injecting to maintain RPV level.

Reactor Power is 1% and stable.
Reactor water level is 30 inches and steady.

The following alarm conditions currently exist:

SUPPR CHAMBER WATER LEVEL ABNORMAL (9-3B, W15).................... alarming
SUPPR POOL LEVEL HIGH (9-3F, W12) .... alarming
SUPPR POOL TEMP SINGLE ELEMENT HIGH OR FAILED (9-3B, W29)... alarming
SUPPR POOL AVERAGE TEMP HIGH (9-3E, W 12) .... alarming

Which ONE of the following identifies a concern and a required procedure for these plant conditions?

A. Operating HPCI and/or RCIC with suction from the suppression pool may exceed NPSH limits

   2-EOI-Appendix-16E, Bypassing HPCI High Suppression Pool Water Level Suction Transfer Interlock

B✓ Operating HPCI or RCIC Turbines with suction temperatures above 140 F may result in equipment damage

   2-EOI-Appendix-16E, Bypassing HPCI High Suppression Pool Water Level Suction Transfer Interlock

C. Operating HPCI and/or RCIC with suction from the suppression pool may exceed NPSH limits

   2-EOI-Appendix-4, Prevention of Injection

D. Operating HPCI or RCIC Turbines with suction temperatures above 140 F may result in equipment damage

   2-EOI-Appendix-4, Prevention of Injection

206000 (HPCI) G2.1.7: Ability to evaluate plant performance and make operational judgments based on operating characteristics, reactor behavior, and instrument interpretation. (CFR: 41.5 / 43.5 / 45.12 / 45.13) SRO IR: 4.7

Answer is B

Plausibility: The 1st part of "A" and "C" is plausible because this caution exists for RHR and Core Spray (but not for HPCI/RCIC). The 2nd part of "C" and "D" is plausible because this procedure is used to control level during an ATWS; however, in this case, lowering level is not allowed per C-5.

SRO-only: 10CFR55.43(b)(5): Assessment of plant conditions and selection of appropriate procedures during normal, abnormal, and emergency situations. The 1st part of the question is RO knowledge; however, the 2nd part is SRO knowledge.

Question was modified from Brunswick 2010 SRO Q#90

2-C-5, Level/Power Control Flowchart

SUPPR CHAMBER WATER LEVEL ABNORMAL (9-3B, W15)
SUPPR POOL LEVEL HIGH (9-3F, W12)
SUPPR POOL TEMP SINGLE ELEMENT HIGH OR FAILED (9-3B, W29)
SUPPR POOL AVERAGE TEMP HIGH (9-3E, W 12)

2-EOI-Appendix-5D, Injection System Lineup HPCI
2-EOI-Appendix-16E, Bypassing HPCI High Suppression Pool Water Level Suction Transfer Interlock

OPL171.201
Objective 11: Given specified plant conditions relative to a Caution in the EOIs, determine the basis for the Caution

89. 264000A2.03 001/2/1/SRO/NEW/H/3/BLC/MAB

All units are operating at 100% power.

The normal supply breaker to 4kV Shutdown Board "A" tripped open and the "A" EDG automatically tied to the board.

The alternate supply breaker to the 4kV SD Bd would not close, consequently, the diesel carried the board for a total of 6 hours, and it remained loaded at 500 kW for five of the six hours.

After temporary repairs to the shutdown board alternate supply breaker, the crew has parallelled the "A" EDG with the shutdown bus in preparation for shutting down the EDG. The normal supply breaker is still not available.

Which ONE of the following identifies 1) The Tech Spec required actions

and

2) an additional action required <u>before</u> shutting down the EDG.

[REFERENCE PROVIDED]

A. Enter the action statement for 4kV SD BD "A"; however, pursuant to LCO 3.0.6, no action statement entry is required for 480 V SD Bd 1A and 480 V RMOV Bd 1A.

   Perform 0-GOI-300-4, Switchyard Manual, Section 6.7.2, USST 1B Transformer Tap Changer (LTC) "Auto" Checks

B. Separate action statement entries are required for 4kV SD BD "A" and also for 480v SD Bd 1A and 480 V RMOV Bd 1A because they were all de-energized when the supply breaker tripped.

   Load the "A" EDG to greater than 1100 kW for at least 30 minutes prior to engine shutdown

C. Separate action statement entries are required for 4kV SD BD "A" and also for 480v SD Bd 1A and 480 V RMOV Bd 1A because they were all de-energized when the supply breaker tripped.

   Perform 0-GOI-300-4, Switchyard Manual, Section 6.7.2, USST 1B Transformer Tap Changer (LTC) "Auto" Checks.

D✓ Enter the action statement for 4kV SD BD "A"; however, pursuant to LCO 3.0.6, no action statement entry is required for 480 V SD Bd 1A and 480 V RMOV Bd 1A.

   Load the "A" EDG to greater than 1100 kW for at least 30 minutes prior to engine shutdown.

Answer is D (verify this answer with the licensee - may be 2 correct answers)

Provide applicants with Tech Spec 3.8.7, AC Sources - Operating, Unit 1 (no bases)

264000 EDGs, A2.03: Ability to (a) predict the impacts of the following on the EMERGENCY GENERATORS (DIESEL/JET); AND (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Operating unloaded, lightly loaded, and highly loaded (CFR: 41.5 / 45.6) SRO IR: 3.4

Plausibility: The 1st part of "B" and "C" is plausible because the 480v SD Bd 1A and 480v RMOV Bd 1A were briefly de-energized when the supply breaker to the 4KV SD Bd initially tripped. The NOTE in the required action column for Condition A states to enter the applicable conditions and required actions when the SD Bd results in no power source to a required 480V Board. However, in this question, these board were immediately energized by the EDG; therefore, they do have a power source. The 2nd part of "A" and "C" is plausible because the USST 1B feeds the 4kV SD BD "A" and the applicants may reason that verification of the tap changer is warranted because of the tripped supply breaker; however, any tap changer manipulations are NOT to be performed while the diesel is loaded.

SRO-only: 10CFR55.43(b)(2) and 55.43(b)(5): Facility operating limitations in the technical specifications and their bases; Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.

0-OI-82, Standby Diesel Generator System, P&L B:
Continuous operation of DGs at loads below 550 kW should be avoided to prevent oil and soot accumulation in exhaust system, air box, cylinders, and injection nozzles. If DG idle time exceeds 8 hours, or if diesel operates greater than 4 1/2 hours at full speed (900 rpm) at less than 550 kW, the diesel should be loaded greater than 1100 kW for at least 30 minutes prior to engine shutdown. This will allow the engine to clean out any oil accumulations from the exhaust manifolds.
LCO 3.8.1, AC Sources - Operating
LCO 3.8.7, Distribution Systems - Operating

Lesson Plan OPL171.038
Objective 14: Given a set of unit conditions, determine the appropriate actions to be performed as stated in BFN Tech Spec, OI, ARP, and EOI.
Lesson Plan OPL171.036
Objective 13: Given plant and electrical system status determine the appropriate actions to be performed as stated in Technical Specifications, OI's, ARP, and AOI's.

90. 400000G2.4.11 001/2/1/SRO/NEW/H/2/BLC/MAB

Unit 1 was operating at 100% when a partial loss of Reactor Building Closed Cooling Water (RBCCW) occurred due to a valve failure. Maintenance personnel are in the process of completing repairs to the valve.

The crew reduced power to 90% to control drywell average temperature, which is currently stable at 133 deg F. All available drywell cooling is in service. Drywell pressure is currently 0.8 psig and stable.

RBCCW PUMP SUCTION HDR TEMP (1-TIS-70-3 at Panel1-9-4) is 106 deg F (currently stable)

In accordance with 1-AOI-70-1, Loss of RBCCW, which ONE of the following identifies a required operator action based on the current conditions

and

the earliest required report to the NRC if the RBCCW suction temperature were to subsequently rise to 110 deg F and the crew manually scrammed the reactor?

[REFERENCE PROVIDED]

A.✓ Shutdown the Fuel Pool Cooling System

a 4 hour NRC notification would be required

B. Shutdown the Fuel Pool Cooling System

an 8 hour NRC notification would be required

C. Vent the Drywell

a 4 hour NRC notification would be required

D. Vent the Drywell

an 8 hour NRC notification would be required

Answer is A

400000 (CCW), G2.4.11: Knowledge of abnormal condition procedures.
(CFR: 41.10 / 43.5 / 45.13) SRO IR: 4.2

Provide applicants with NPG-SPP-03.5 (entire copy) and NUREG 1022 (entire copy)

Plausibility: The 1st part of "C" and "D" is plausible because venting the drywell could be a reasonable action in response to a loss of RBCCW; however, this action is specified by 1-AOI-64-1 in response to high drywell pressure (which is not high) and the stem specifically asks for the required actions from AOI-70-1. The 2nd part of "B" and "D" is plausible if the applicant thinks that the RPS actuation has to be automatic. However, NUREG 1022 states that the staff considers a manual actuation of a system in response to valid plant conditions as a reportable condition.

SRO-only: 10CFR55.43(b)(1) and 55.43(5) Conditions and limitations in the facility and Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.

1-AOI-70-1
1-AOI-64-1
NPG-SPP-03.5, Regulatory Reporting Requirements

Lesson Plan OPL171.074
Objective 2: Given specific plant conditions, determine the correct actions to take based on the appropriate AOI.

Lesson Plan 171.092
Objective 4: Given a hypothetical event, determine if a one, four or eight hour report to the NRC is required using SPP-3.5 and NUREG 1022.

91. 212000A2.05 001/2/2/SRO/NEW/H/2/BLC/MM

Unit 2 is at 100% power.

The Instrument Mechanics have been performing 2-SR-3.3.1.1.10, Reactor Protection System (RPS) High Reactor Pressure Instrument Channel Calibration, for each RPS channel.

After reviews of the completed surveillance packages, the Instrument Mechanics notified the Unit Supervisor that PIS-3-22AA and PIS-3-22D are inoperable.

Which ONE of the following identifies the minimum required action in accordance with Tech Spec 3.3.1.1, Reactor Protection System (RPS) Instrumentation?

[REFERENCE PROVIDED]

A. Place PIS-3-22AA and PIS-3-22D in the tripped condition within 12 hours using OI-99, Illustration 3.

B.✓ Place either PIS-3-22AA or PIS-3-22D in the tripped condition within 6 hours using OI-99, Illustration 3.

C. Do not place any channel in the tripped condition. Restore either PIS-3-22AA or PIS-3-22D to operable within 1 hour or be in Mode 3 within 12 hours.

D. Do not place any channel in the tripped condition. Be in Mode 3 within 12 hours.

Answer is B
Provide Tech Spec Section 3.3.1.1 (no bases) and 2-OI-99, Illustration 3 (only page 5 of 11)

212000 (RPS): A2.05 Ability to predict the impacts of the following on the REACTOR PROTECTION SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Nuclear Boiler Instrument System Failure
(CFR: 41.5 / 45.6) SRO IR: 3.7

Plausibility: "A" is plausible because TS 3.3.1.1 allows separate condition entry for each channel; therefore an applicant could decided that Condition A is required.

"C" is plausible because an applicant may incorrectly determine that these instruments are both associated with only the A(B) RPS trip system decide that the trip function has been lost for the A(B) trip system.

"D" is plausible because this Condition G is listed in Table 3.3.1.1-1 beside the Reactor Vessel Steam Dome Pressure -High function.

SRO-only: 10CFR55.43(b)(2): Facility operating limitations in the technical specifications and their bases.

Tech Spec 3.3.1.1, RPS Instrumentation

Lesson Plan OPL171.028
Objective 14: Evaluate RPS component status against the requirements in Technical Specifications to determine plant compliance.

92. 202001G2.2.44.001/2/2/SRO/NEW/H/2/BLC/MAB

Unit 1 is at 8% power with the Mode switch in the Startup/Hot Standby position.

The following alarm and pump seal pressure indications are received:

RECIRC PUMP 1A NO 1 SEAL LEAKAGE ABN (9-4A, W25)
No. 1 Seal Pressure: 500 psig
No. 2 Seal Pressure: 500 psig

In accordance with Tech Specs, which ONE of the following identifies:

1) whether the alarm/indications represent RCS pressure boundary leakage

and

2) whether Mode 1 can be entered if the 24 hour average TOTAL leakage stabilizes at 31 gpm?

A. The alarm/indications represent pressure boundary leakage

Mode 1 cannot be entered

B.✓ The alarm/indications do NOT represent pressure boundary leakage

Mode 1 cannot be entered

C. The alarm/indications represent pressure boundary leakage

Mode 1 can be entered

D. The alarm/indications do NOT represent pressure boundary leakage

Mode 1 can be entered

Answer is B

202001 Recirculation G2.2.44: 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.
(CFR: 41.5 / 43.5 / 45.12) SRO IR: 4.4

Plausibility: The first part of "A" and "C" are plausible because the Recirc Pump Seals do contain the reactor pressure and because the interpretation of what does/does not constitute pressure boundary leakage is located in the Tech Spec Bases. (However, the 1st part of the question is RO knowledge since the RO knows which systems are routed to the equipment drain sump - identified leakage). The 2nd part of "C" and "D" are plausible if the applicant does not interpret LCO 3.0.4, which is not provided as a reference.

SRO-only: 10CFR55.43(b)(2) Facility operating limitations in the technical specifications and their bases. The 2nd part of the question is SRO knowledge since it requires application of LCO 3.0.4 criteria. The 1st part is RO knowledge because an applicant can determine that the seal leakoff is routed to the equipment drain sump, which is identified leakage and because RO's are required to know the information "above-the-line."

1-ARP-9-4A, RECIRC PUMP 1A NO 1 SEAL LEAKAGE ABN

LCO 3.0.4 When an LCO is not met, entry into a MODE or other specified condition in the Applicability shall only be made:

a. When the associated ACTIONS to be entered permit continued operation in the MODE or other specified condition in the Applicability for an unlimited period of time;

Lesson Plan OPL171.007

Objective 8: Using a simplified drawing of the recirc pump seals, describe the various failure modes, including how each would be detected.

Objective 21: Given specified plant conditions and a copy of technical specifications, determine any Limiting Conditions for Operation (LCOs) relative to the recirculation system.

Lesson Plan OPL171.087

Objective 20: dentify the rules for entering the applicability of an LCO (LCO 3.0.4) and, given tech specs, identify examples of “otherwise specified”.

93. 214000A2.01 001/2/2/SRO/NEW/H/3/BLC/MAB

Unit 3 is in Mode 5.

The Unit Operator (UO) is performing 0-TI-20, CRD System Testing and Troubleshooting, concurrently with 3-SR-3.1.5(B), CRD Coupling Integrity Check After Refueling or Maintenance.

When the UO selected and withdrew control rod 42-55 to position 48, the green "full-in" light on the full core display remained lit but the 4-rod group display indicators responded normally as the rod traveled from position 00 to 48.

All other control rods are fully inserted.

Which ONE of the following:

1) predicts the RMCS/RPIS logic response if the UO selects a different control rod while control rod 42-55 is at position 48

and

2) identifies the allowable method(s) to disarm the control rod drive to comply with Tech Spec 3.9.4, Control Rod Position Indication, Action Statement A.2.2?

A.✓ The Rod Withdrawal Permissive light will illuminate if a different control rod is selected.

The control rod can be disarmed electrically.

B. The Rod Withdrawal Permissive light will NOT illuminate if a different control rod is selected.

The control rod can be disarmed electrically.

C. The Rod Withdrawal Permissive light will NOT illuminate if a different control rod is selected.

Electrically disarming the control rod is NOT allowed.

D. The Rod Withdrawal Permissive light will illuminate if a different control rod is selected.

Electrically disarming the control rod is NOT allowed.

Answer is A

Since the action statements in Tech Spec 3.9.4, Control Rod Position Indication, are RO knowledge (i.e., immediate action statements), then a reference is not required to be provided.

214000 RPIS A2.01 Ability to (a) predict the impacts of the following on the ROD POSITION INFORMATION SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Failed reed switches (CFR: 41.5 / 45.6) SRO IR: 3.3

Plausibility: The 1st part of "B" and "C" are plausible because there are two reed switches that reflect a fully inserted position (S52 and S00). If the applicant thinks that S00 provides input to the one-rod-out-interlock logic, then the Rod withdrawal permissive light would be extinguished due to 42-55 being withdrawn. The 2nd part of "C" and "D" are plausible since some of the action statements listed in Tech Spec 3.1.3, Control Rod Operability, only allow hydraulically disarming a control rod.

SRO-only: 10CFR55.43(b)(2) Facility operating limitations in the technical specifications and their bases. The 1st part of the question is RO knowledge; however, the 2nd part can only be answered by knowing the Tech Spec 3.9.4 Bases for Action Statement A.2.2.

OE 11074 (BFPER 00-4248) - Missed Control Rod LCO BFN Unit 3
Tech Spec 3.9.4, Control Rod Position Indication (and Bases)
Tech Spec 3.9.2, Refuel Position One-Rod-Out Interlock (and Bases)
3-OI-85, Section 8.28, Bypassing a Failed "Full-in" Position on RPIS Buffer Card

Lesson Plan OPL171.029
Objective 5: Describe the conditions that are required to light the Refuel Mode One Rod Permissive light.

Objective 8: Describe the RMCS/RPIS interrelationships with the following:Refueling equipment

Lesson PlanOPL171.053
Objective10: Given specific refueling conditions determine the actions required by fuel handling personnel or operators in the MCR using appropriate procedures (GOI, OI, ARP, AOI, TS, and TRM).

94. G2.1.5 001/3/2.1/SRO/NEW/L/2/BLC/MAB

Which ONE of the following choices completes both statements in accordance with Unit 1 Tech Spec 5.2.2, Unit Staff?

A non-licensed operator shall be assigned to each _________ and an additional non-licensed operator shall be assigned for each control room from which a reactor is operating in MODES 1, 2, or 3.

Shift crew composition may be less than the minimum requirement of 10 CFR 50.54(m)(2)(i) and Specifications 5.2.2.a and 5.2.2.f for a period of time not to exceed ______ in order to accommodate unexpected absence of on-duty shift crew members provided immediate action is taken to restore the shift crew composition to within the minimum requirements.

A.✓ reactor containing fuel
2 hours

B. reactor containing fuel
4 hours

C. reactor building and turbine building
2 hours

D. reactor building and turbine building
4 hours

Answer is A

G2.1.5 Ability to use procedures related to shift staffing, such as minimum crew complement, overtime limitations, etc.

Plausibility: The 1st part of "C" and "D" are plausible since this is a total of 9 AUOs, which is close to the OPDP-1 minimum requirement of 8 AUOs. The 2nd part of "B" and "D" is plausible/reasonable because 4 hours is one half of a normal eight hour shift.

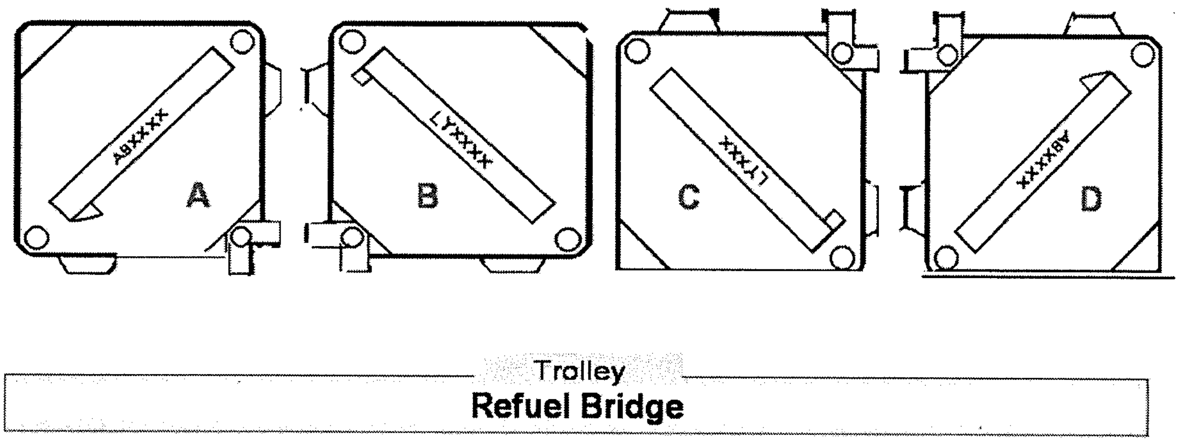
SRO-only: 10CFR55.43(b)(1) Conditions and limitations in the facility license. The SRO (Unit Supervisor) is responsible for ensuring Shift Staffing functions are met.

Tech Spec Section 5.2.2 Unit Staffing
OPDP-1, Conduct of Ops
OPL171.087 (Tech specs)
OPL171.071 (Conduct of Ops)

95. G2.1.41 001/3/2.1/SRO/BANK/L/2/BLC/MAB

The Fuel Assembly Transfer Form directs placing bundle FBA041 in U/1 SFSP location 15-C-09, Orientation SW.

Which ONE of the following identifies the required ORIENTATION?



A.✓
B.

C.

D.

Answer is A

G2.1.41: Knowledge of the Refueling Process

Plausiblity: Choices "B", "C", and "D" are all plausible if the applicant does not know which way is north and does not know that the channel fastner is the component which determines the orientation.

SRO-only: 10CFR55.43(b)(7): Fuel Handling facilities and procedures.

Lesson Plan OPL171.053

Objective 1: Describe the layout of the following Refuel Floor areas and equipment locations:

a. Reactor Cavities (all units)
b. Spent Fuel pools (all units)
c. Dryer Separator pits (all units)
d. U1/U2 Transfer Canal
e. New Fuel Inspection Stands
f. Fuel prep machines
g. Fuel pool components/racks
h. Rx cavity to SFSP gates

OPL171.060

Objective 1.c: Identify fuel that is not properly oriented in the core or SFSP.

96. G2.2.17 001/3/2.2/SRO/NEW/L/2/BLC/MAB

Which ONE of the following completes both statements in accordance with NPG-SPP-7.1, Online Work Management?

The Schedule freeze date is at _______. After this date, and based on the schedule being frozen, new work is treated as ______ and requires special authorization to be added to the schedule.

[REFERENCE PROVIDED]

A. T minus16 Weeks
Emergent Work

B. T minus 6 Weeks
a High Risk Activity

C✓ T minus 6 Weeks
Emergent Work

D. T minus16 Weeks
a High Risk Activity

Answer is C

Provide applicants with NPG-SPP-07.1 Page 34 of 169 (Appendix A Top Level Process Map), with the Schedule Freeze circled and the weeks "whited out" on all blocks except for T-0.

G2.2.17 Knowledge of the process for managing maintenance activities during power operations, such as risk assessments, work prioritization, and coordination with the transmission system operator
(CFR: 41.10 / 43.5 / 45.13) SRO IR: 3.8

Plausibility: The 1st part of "A" and "D" are plausible because at T-16 weeks, this is the scope freeze date. (not the schedule freeze date). The 2nd part of "A" and "C" are plausible because this is a defined activity in NPG-SPP-7.3, Work Activity Risk Management Process.

SRO-only: 10CFR55.43(b)(5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations. Operations involvement with respect to reviewing preliminary schedules in the Work Control Center is an SRO function.

NPG-SPP-7.1, Online Work Management
NPG-SPP-7.3, Work Activity Risk Management Process

Lesson Plan OPL171.239
Objective 3: Describe the roles and responsibilities of Operations Personnel associated with the Work Activity Risk Management Process.

Objective 5: Describe the basic process for determining work activity risk.

97. G2.2.25 001/3/2.2/SRO/NEW/L/2/BLC/MAB

Which ONE of the following identifies the bases for Tech Spec LCO 3.6.3.1, Containment Atmosphere Dilution (CAD) System, Action statement B.1 when two CAD subsystems are inoperable?

B. Two CAD subsystems inoperable	B.1	Verify by administrative means that the hydrogen control function is maintained.	1 hour AND Once per 12 hours thereafter
	AND		
	B.2	Restore one CAD subsystem to OPERABLE status.	7 days

A. The hydrogen control function is the Primary Containment Inerting System.

Reasonable time to allow the operator to replenish nitrogen from outside sources following a LOCA when access to the site may not be immediately available.

B. The hydrogen control function is the Hardened Wet Well Vent System.

Reasonable time to allow continued reactor operation because the hydrogen control function is maintained and because of the low probability of a LOCA generating hydrogen in amounts capable of exceeding the flammability limit.

C✓ The hydrogen control function is the Primary Containment Inerting System.

Reasonable time to allow continued reactor operation because the hydrogen control function is maintained and because of the low probability of a LOCA generating hydrogen in amounts capable of exceeding the flammability limit.

D. The hydrogen control function is the Hardened Wet Well Vent System.

Reasonable time to allow the operator to replenish nitrogen from outside sources following a LOCA when access to the site may not be immediately available.

Answer is C

G2.2.25 Knowledge of the bases in Technical Specifications for limiting conditions for operations and safety limits. (CFR: 41.5 / 41/7 / 43.2) SRO IR: 4.2

Plausibility: The 1st part of "B" and "D" are plausible because the HWW vent valve can be used to control hydrogen following a LOCA. The 2nd part of "A" and "D" is plausible because this is the bases for the DG Fuel Oil Supply.

SRO-only: 10CFR55.43(b)(2) : Facility operating limitations in the technical specifications and their bases. The "hydrogen control function" in Action Statement B.1 is not described anywhere other than the Tech Spec Bases.

Lesson Plan OPL171.032

Objective 9: Describe the interrelationships between the CAD System and the following:

a. Drywell Control Air System
b. Containment Inerting and Purge Systems

Objective 12: Identify the Technical Specifications associated with the Containment Inerting and Purge Systems and CAD.

98. G2.3.15 001/3/2.3/SRO/NEW/L/2/BLC/MAB

Which ONE of the following completes both statements as they pertain to the Wide Range Gaseous Effluent Radiation Monitoring System (WRGERMS)?

Consider each statement separately.

The WRGERMS (RM-90-306) is required to be operable in accordance with ______ .

IF the WRGERMS gaseous release rate indication is the reason for a Notice of Unusual Event (NOUE) classification, THEN in accordance with EPIP-1, Emergency Classification Procedure, ____________ .

A.✓ TRM 3.3.5, Surveillance Instrumentation

the gaseous release rate is required to be assessed by another method, provided the assessment can be accomplished within 1 hour, BEFORE the NOUE declaration.

B. ODCM Section 1/2.1.2 Radioactive Gaseous Effluent Monitoring Instrumentation

the NOUE is required to be declared immediately. No other assessment method is required to be performed before the declaration is made, even if completed within 1 hour.

C. ODCM Section 1/2.1.2 Radioactive Gaseous Effluent Monitoring Instrumentation

the gaseous release rate is required to be assessed by another method, provided the assessment can be accomplished within 1 hour, BEFORE making the NOUE classification.

D. TRM 3.3.5, Surveillance Instrumentation

the NOUE is required to be declared immediately. No other assessment method is required to be performed before the declaration is made, even if completed within 1 hour.

Answer is A

G2.3.15 Knowledge of radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instrments, personnel monitoring equipment, etc. (CFR: 41.12 / 43.4 / 45.9) SRO IR: 3.1

Plausibility: The 1st part of "C" and "D" are plausible because the Stack Rad Monitor (RM-90-147B & -148B) is listed in the ODCM ODCM Section 1/2.1.2. The WRGERMS is only required in TR 3.3.5, Surveillance Instrumentation. The 2nd part of "B" and "D" is plausible because the WRGERMS indication is valid.

SRO-only: 10CFR55.43(b)(4) Radiation hazards that may arise during normal and abnormal situations, including maintenance activities and various contamination conditions. Also 55.43(b)(1) Conditions and limitations in the facility license. The knowledge of EPIP requirements is an SRO responsibility.

Lesson Plan OPL171.224

Objective 3: Describe the use and application of BFN ODCM Section 1 / 2, Controls and Surveillance Requirements.

Objective 4: Given the BFN ODCM and plant conditions, determine if there is non-compliance with the BFN ODCM Controls and Surveillance requirements.

Lesson Plan OPL171.075
Objective 2: Given information concerning different types of events, use EPIP-1, Emergency Classification Matrix to determine the correct classification.

Lesson Plan OPL171.033
Objective 5: Given plant and Process Radiation Monitoring System status, determine the appropriate actions to be performed as stated in Technical Specifications, OIs, ARPs, and AOIs.

ODCM Section 1/2.1.2, Radioactive Gaseous Effluent Monitoring Instrumentation
TR 3.3.5, Surveillance Instrumentation

EPIP-1, Emergency Classification Procedure, Section II-4, Radioactivity Release

Prior to making this emergency classification based upon the gaseous release rate indication, assess the release by either of the following methods:

1. Actual field measurements exceed the limits
2. 0-SI-4.8.B.1.a.1 release fraction (OR Projected or actual dose assessments)

99. G2.4.5 001/3/2.4/SRO/NEW/L/2/BLC/MM

A unisolable main steam line break has occurred in the Unit 3 Turbine Building and entry to 0-EOI-4, Radioactivity Release Control, is required.

TURBINE BLDG AREA RADIATION HIGH (9-3A, W29) is alarming

Which ONE of the following identifies:

1) the required 0-EOI-4 flowchart implementation

and

2) the procedure required to be implemented <u>before</u> the offsite radioactivity release reaches the General Emergency classification value?

A. ONLY Unit 3 is required to enter and execute 0-EOI-4.

C-2, Emergency Depressurization

B.✓ Units 1, 2, and 3 are all required to independently enter and execute 0-EOI-4.

C-2, Emergency Depressurization

C. ONLY Unit 3 is required to enter and execute 0-EOI-4.

EDMG-06, Rapid Evacuation of the Protected Area (REPA)

D. Units 1, 2, and 3 are all required to independently enter and execute 0-EOI-4.

EDMG-06, Rapid Evacuation of the Protected Area (REPA)

Answer is B

G2.4.5 Knowledge of the organization of the operating procedures network for normal, abnormal, and emergency evolutions.
(CFR: 41.10 / 43.5 / 45.13) SRO IR: 4.3

Plausibility: The 1st part of "A" and "C" is plausible because the stem states that the steam line break is on Unit 3. The 2nd part of "C" and "D" is plausible because the stem of the question deals with a General Emergency radioactive release, which an applicant may think requires an evacuation of the protected area. However, the EDMGs are only implemented due to a large loss of ares in the station due to a fire or explosion.

SRO-only: 10CFR55.43(b)(5): Assessment of plant conditions and selection of appropriate procedures during normal, abnormal, and emergency situations. The SRO is responsible for entry and exit to this flowchart. The entry conditions are all SRO knowledge.

EOIPM 0-VIII-A, User's Guide for Emergency Operating Instructions
Section D. Entry and Use of Radioactivity Release Control 0-EOI-4

Unlike all other EOIs, EOI-4 is a unit 0 (common) EOI whose entry condition is the declaration of any Emergency Action Level (EAL) for Radiological Release (EPIP-1, Section II-4). Both unit 2 and unit 3 are required to independently enter and execute the applicable steps of EOI-4, even if the radiological event is believed to be associated with only one of the units. When a step contains a reference to systems discharging "OUTSIDE PRIMARY AND SECONDARY CONTAINMENT," this applies only to systems on the unit on which EOI-4 is being executed. For example, should unit 3 have a main steam line leak outside containment, the operators executing EOI-4 on unit 3 would evaluate that a primary system IS discharging. At the same time, the operators executing EOI-4 on unit 2 would evaluate that a primary system IS NOT discharging.

Lesson Plan OPL171.204
Objective 7: Given appropriate plant status, determine whether a reactor shutdown, reactor scram, or emergency depressurization is required.
Objective 9: Given a list of plant parameters, identify which would require entry into EOI-4.

Lesson Plan OPL171.201
Objective 9: Recognize the conditions required for exiting an EOI.

100. G2.4.38 001/3/2.4/SRO/NEW/L/2/BLC/MAB

Which ONE of the following choices completes both statements in accordance with the EPIPs?

If an emergency action level for a higher classification was exceeded, but the present situation indicates a lower classification, then the higher classification __________ declared.

If a person volunteers to receive a dose in excess of 25 rem in order to carry out lifesaving operations or to avoid extensive exposures to large populations, then the _________ signature is required on EPIP-15, Emergency Exposures, Appendix B, Acknowledgement and Authorization to Exeed Occupational Dose Limits.

A. should NOT be; Technical Support Center (TSC) Radiation Protection Manager's

B.✓ should NOT be; Site Emergency Director's (SED)

C. should still be; TSC Radiation Protection Manager's

D. should still be; SED's

Answer is B

G2.4.38: Ability to take actions called for in the facility emergency plan, including supporting or acting as emergency coordinator if required.
(CFR: 41.10 / 43.5 / 45.11) SRO IR: 4.4

Plausibility: The 1st part of "C" and "D" is plausible because the higher classification should still be REPORTED to the NRC, but not declared. The 2nd part of "A" and "C" is plausible because the Radiation Protection section is reponsible for briefing the volunteer on EPIP-15, Appendix A, EPA Emergency Exposure Risk Information.

SRO-only: 10CFR55.43 (B)(5): Assessment of plant conditions and selection of appropriate procedures during normal, abnormal, and emergency conditions. This question tests the applicants' knowledge of only emergency plan information that the SROs are required to perform.

EPIP-1, Emergency Classification
EPIP-15, Emergency Exposures

Lesson Plan OPL171.075
Objective 6: Given that an emergency action level for a higher classification was exceeded, but the present conditions indicate a lower classification, state what should be reported and/or declared.

Objective 15: Determine the circumstances under which excessive exposure limits may be approved.