

*QNUM 001
 *HNUM
 *ANUM
 *QCHANGED
 *ACHANGED
 *QDATE 2006/11/13
 *FAC 373
 *RTYP GE-BWR5
 *EXLEVEL B
 *EXMNR REESER
 *QVAL 1.00
 *SEC
 *SUBSORT
 *KA 295001A103
 *QUESTION

The reactor is operating at 100% power when an event occurred which resulted in the following indications:

	BEFORE	AFTER
Reactor Power:	100%	88%
Core Flow:	100.1 Mlbm/hr	88.5 Mlbm/hr
Loop A Driving Flow:	[39,055] gpm	[43,430] Mlbm/hr
Loop A Jetpump Flow:	50.2 Mlbm/hr	50.3 Mlbm/hr
Loop B Driving Flow:	[38,945] gpm	[39,335] Mlbm/hr
Loop B Jetpump Flow:	49.9 Mlbm/hr	38.2 Mlbm/hr

The Reactor Manual Control System will:

- prohibit control rod insertion.
- prohibit control rod withdrawal.
- permit normal control rod movement.
- will prohibit both control rod insertion and withdrawal.

*ANSWER

c.

*REFERENCE

044 Average Power Range Monitor System Lesson Plan

047 Reactor Manual Control System Lesson Plan

NEW

HIGHER

EXPLANATION

- Incorrect – insertion blocks are only generated by the Rod Worth Minimizer
- Incorrect – See 'a' above
- Correct – The output of all four flow channels should be approximately equal since the channel output is the sum of the flow in both loops. A control rod withdrawal block is generated only if one channel's output differs significantly (>10%) from the channel its compared with.
- Incorrect – Only if RDCS INOP is activated or if blocked by the Rod Worth Minimizer

*QNUM 002
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295003A202
*QUESTION

An event occurred that resulted in a Reactor SCRAM coincident with a Station Blackout condition. The Source Range Monitor Log Count Rate meters will:

- a. be unavailable
- b. indicate normally
- c. indicate lower than normal
- d. indicate higher than normal

*ANSWER

c.

*REFERENCE

041 Source Range Monitoring System lesson plan

NEW

HIGHER

EXPLANATION

- a. Incorrect – Electronic circuits are DC powered.
- b. Incorrect – Detectors will be withdrawn, cannot be inserted, and will be exposed to a lower neutron flux. Instruments will read lower than normal.
- c. correct – see 'b' above
- d. incorrect – see 'b' above

*QNUM 003
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295004 2.3.11
*QUESTION

The Off-Gas system is in operation with flow bypassing the charcoal adsorber trains (Charcoal Adsorber Train mode switch is in AUTO). Power is subsequently lost to 24/48 VDC Distribution Panel 1A. The Off-Gas system flow-path will:

- a. isolate.
- b. remain as is.
- c. realign with flow through both the charcoal adsorber trains and the bypass line.
- d. realign with flow through the charcoal adsorber trains and the bypass line isolated.

*ANSWER

b.

*REFERENCE

006 DC Distribution Lesson Plan

052 Process Radiation Monitoring System Lesson Plan

NEW

HIGHER

EXPLANATION

- a. Incorrect – Only one channel is INOP. Flow path isolation require both channels to be INOP (or in a Hi-Hi-Hi or Downscale condition).
- b. Correct – Only one channel will be INOP.
- c. Incorrect – Realign requires both channels to have a Hi condition. Additionally, realignment isolates the bypass line.
- d. Incorrect – One channel is INOP. Realignment requires a Hi condition in both channels.

*QNUM 004
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295005K306
*QUESTION

The plant is operating in a normal full power lineup when the Main Turbine trips due to high vibration. Select the statement below that best describes the response of the Non-Class 1E electrical distribution system.

- a. Busses 151, 152, 141X, and 142X will fast-transfer from the UAT to the SAT.
- b. Bus 151 will fast transfer from the UAT to the SAT and bus 141X will fast-transfer from the UAT to Class 1E bus 141Y via a bus-tie breaker. Busses 152 and 142X do not transfer.
- c. Busses 151 and 141X will fast transfer from the UAT to the SAT, and bus 142X will fast-transfer from the UAT to Class 1E bus 142Y via a bus-tie breaker. Bus 152 does not transfer.
- d. Busses 151 and 152 will fast transfer from the UAT to the SAT, bus 141X will fast-transfer from the UAT to Class 1E bus 141Y via a bus-tie breaker, and bus 142X will fast-transfer from the UAT to Class 1E bus 142Y via a bus-tie breaker.

*ANSWER

b.

*REFERENCE

005 AC Distribution Lesson Plan

NEW

MEMORY

EXPLANATION

- a. Incorrect – Bus 152 is normally aligned to the SAT, bus 141X transfers to bus 141Y, bus 142X is normally aligned to bus 142Y
- b. Correct – See ‘a’
- c. Incorrect – bus 141X transfers to bus 141Y, bus 142X is normally aligned to bus 142Y
- d. Incorrect – Bus 152 is normally aligned to the SAT, bus 142X is normally aligned to bus 142Y

*QNUM 005
 *HNUM
 *ANUM
 *QCHANGED
 *ACHANGED
 *QDATE 2006/11/13
 *FAC 373
 *RTYP GE-BWR5
 *EXLEVEL B
 *EXMNR REESER
 *QVAL 1.00
 *SEC
 *SUBSORT
 *KA 295006A105
 *QUESTION

A reactor scram occurred due to a secondary plant transient. All control rods fully inserted. Which of the following is representative of the Source Range Monitor readings that would be expected shortly after inserting the IRM and SRM detectors..

	Count Rate (cps)	Period (seconds)
a.	1000	∞
b.	1000	-100
c.	250	∞
d.	250	-100

*ANSWER

d.

*REFERENCE

NEW

HIGHER

EXPLANATION

- a. Incorrect – count rate is too high for a reactor shortly after scram
- b. Incorrect – count rate and period are too high for a reactor shortly after scram
- c. Incorrect – period is too high for a reactor shortly after scram
- d. correct

*QNUM 006
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295016K201
*QUESTION

Upon evacuation of the Main Control Room, the Remote Shutdown Panel provides the operator with the controls and instruments necessary to:

- a. mitigate a design basis accident.
- b. maintain the plant in a safe shutdown condition.
- c. shutdown the reactor and cooldown the plant to Mode 4.
- d. shutdown the reactor independent of the Reactor Protection System.

*ANSWER

b.

*REFERENCE

NEW

MEMORY

EXPLANATION

- a. Incorrect – The RSP does not have the controls needed for shutting down the reactor, isolating the containment, or providing full ECCS capability.
- b. Correct – Once the reactor is shutdown the RSP has the necessary controls for operating selected SRVs, the RCIC system, and the RHR system to maintain the plant in Mode 3 for an extended time period.
- c. Incorrect – The RSP does not have the controls needed for shutting down the reactor.
- d. Incorrect – The RSP does not have the controls needed for shutting down the reactor.

*QNUM 007
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295018K202
*QUESTION

The plant was operating at 93% reactor power when Reactor Building Closed Cooling Containment Supply Outboard Isolation Valve, 1WR029, was declared inoperable. The associated penetration will be isolated, per Technical Specifications, within 4 hours. Which of the following describes the impact on plant operation?

- a. No impact on plant operations. Full power operation may continue.
- b. Operation may continue, but at reduced power until the valve can be repaired.
- c. The Reactor Recirculation Pumps must be shutdown. The plant must be shutdown.
- d. The Reactor Recirculation Pumps may remain in operation, but the plant must be shutdown.

*ANSWER

c.

*REFERENCE

MODIFIED
HIGHER
EXPLANATION

- a. Incorrect – see ‘c’ below.
- b. Incorrect – Tech Specs only allow operation at reduced power (< 36% RTP) for up to 12 hours with no Recirc Pumps in operation.(see ‘a’ above)
- c. Correct – Both Recirc Pumps will have to be shutdown due to the loss of cooling (i.e., isolation of the penetration). Plant Off-Normal procedures require reactor shutdown if no RR pumps are operating. Tech Specs require shutdown to mode 3 within 12 hours if no recirc pumps in operation.
- d. Incorrect – Both Recirc Pumps will have to be shutdown due to the loss of cooling.

*QNUM 008
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295019K302
*QUESTION

Unit-1 and Unit-2 were at rated power with normal system lineups when the Unit-1 Station Air Compressor tripped. The following subsequently occurred:

- Instrument and Station Air header pressures were slowly lowering.
- The Unit-1 NSO started the Common Station Air Compressor from the control room.
- Instrument and Station Air header pressures were still lowering after the Common Station Air Compressor start.

Which one of the following could be the cause of the above conditions?

- a. Unit-2 Station Air Compressor is in surge.
- b. Unit-2 Station Air Compressor blowoff damper failed closed.
- c. Common Station Air Compressor is operating in Modulate Mode.
- d. Common Station Air Compressor discharge damper failed to open.

*ANSWER

a.

*REFERENCE

LOA-IA-1(2)01, Loss of Instrument/Service Air

120 Plant Air Systems (SA, IA) Lesson Plan

BANK

MEMORY

EXPLANATION

- a. Correct – If the compressors are started from the control room and not slowly brought on line a surge could occur which would prevent either compressor from developing air pressure due to the blowoff dampers opening.
- b. Incorrect – Damper failing closed would result in pressure staying the same or increasing (damper modulates open on load decreases to limit pressure increase)
- c. Incorrect – Normal operating mode for a running air compressor.
- d. Incorrect – Discharge valve is a normally opened manual valve.

*QNUM 009
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295021A101
*QUESTION

Which one of the following describe the Reactor Water Cleanup (RT) system flow path when the system is utilized for maximum decay heat removal?

- a. One cleanup pump with suction from the reactor vessel bottom head drain line, discharging through the tube side of both regenerative heat exchanger trains and both non-regenerative heat exchanger trains, bypassing the filter demineralizers, and returning through the shell side of both regenerative heat exchanger trains to the reactor vessel via the feedwater system return lines.
- b. Two cleanup pumps with suction from both of the Reactor Recirculation loops and the reactor vessel bottom head drain line, discharging through the tube side of both regenerative heat exchanger trains and both non-regenerative heat exchanger trains, bypassing the filter demineralizers, and returning through the shell side of both regenerative heat exchanger trains to the reactor vessel via the feedwater system return lines.
- c. One cleanup pump with suction from both of the Reactor Recirculation loops and the reactor vessel bottom head drain line, discharging through the tube side of one regenerative heat exchanger train and one non-regenerative heat exchanger train, through the filter demineralizers, and returning through the shell side of the other regenerative heat exchanger train to the reactor vessel via the feedwater system return lines.
- d. Two cleanup pumps with suction from both of the Reactor Recirculation loops, discharging through the tube side of one regenerative heat exchanger train and one non-regenerative heat exchanger train, through the filter demineralizers, and returning through the shell side of the other regenerative heat exchanger train to the reactor vessel via the feedwater system return lines.

*ANSWER

c.

*REFERENCE

027 Reactor Water Cleanup System Lesson Plan

LOP-RT-13, RWCU Lineup for Heat Removal

NEW

MEMORY

EXPLANATION

- a. Incorrect – see 'c'
- b. Incorrect – see 'c'

- c. Correct – Suction is from both RR loops and bottom head drain to maximize circulation. Shell flow is isolated on supply path and tube flow is isolated on return path to maximize heat removal. Each pump is 100% capacity; system is not designed for two pump operation.
- d. Incorrect – see 'c'

*QNUM 010
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295023A201
*QUESTION

During refueling operations, a fuel bundle was being transferred from the reactor well to the spent fuel pool when the following events occurred:

- A malfunction of the fuel hoist caused the bundle to drop within the transfer canal.
- Bubbles were observed coming up from the dropped bundle.
- Area radiation levels on the Refuel Floor and upper elevations of the Reactor Building are slowly increasing. Currently, there are NO radiation monitor alarms.

Select the statement that correctly describes actions expected to be performed by Main Control Room personnel.

- a. Immediately stop all refueling operations; evacuate unnecessary personnel from the Refuel Floor, Reactor, Auxiliary, and Turbine Buildings; and verify Reactor Building and Primary Containment ventilation system isolations.
- b. Immediately stop all refueling operations; evacuate unnecessary personnel from the Refuel Floor and Reactor Building; and isolate Reactor Building and Primary Containment ventilation systems as directed by the Unit Supervisor.
- c. Place the bundle in a safe condition; evacuate unnecessary personnel from the Refuel Floor and Reactor Building; and verify Reactor Building and Primary Containment ventilation system isolations.
- d. Place the bundle in a safe condition; evacuate unnecessary personnel from the Refuel Floor, and Reactor and Auxiliary Buildings; and isolate Reactor Building and Primary Containment ventilation systems as directed by the Unit Supervisor.

*ANSWER

b.

*REFERENCE

LOA-FH-001, Irradiated Fuel Assembly Damage
LOA-AR-1(2)01, Area Radiation Monitoring System Abnormal
051 Area Radiation Monitoring System Lesson Plan

MODIFIED

MEMORY

EXPLANATION

- a. Incorrect – Radiation levels do not warrant evacuation of Auxiliary or Turbine Buildings and isolation set-points have not been reached.

- b. Correct – expected actions per LOA-FH-001.
- c. Incorrect – Fuel hoist has malfunctioned and isolation set-points have not been reached.
- d. Incorrect – Fuel hoist has malfunctioned and radiation levels do not warrant evacuation of Auxiliary Building.

*QNUM 011
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295024 2.4.11
*QUESTION

An event caused a rapid increase in Primary Containment pressure resulting in a reactor scram. Primary Containment pressure is approximately 3 psig and increasing slowly.

Select the statement below that describes the required action(s).

- a. Initiate Suppression Chamber Sprays
- b. Initiate Suppression Chamber and Drywell Sprays
- c. Vent the containment using SBGT and initiate Suppression Chamber Sprays
- d. Vent the containment using SBGT, initiate Suppression Chamber Sprays, and initiate Drywell Sprays

*ANSWER

a.

*REFERENCE

LGA-003, Primary Containment Control

LGA-VQ-01, Containment Vent

503 Primary Containment Control (LGA-003) Lesson Plan

NEW

MEMORY

EXPLANATION

- a. Correct
- b. Incorrect – Drywell sprays are not started until Suppression Chamber pressure exceeds 12 psig.
- c. Incorrect – Primary Containment pressure has already exceeded 1.93 psig
- d. Incorrect – see 'b' and 'c'

*QNUM 012
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295025A206
*QUESTION

Given the following conditions:

- The plant has been operating at full power for an extended period of time.
- The Motor Driven Reactor Feed Pump is out of service.
- All other components/systems are operable.
- A Group 1 Isolation occurred due to a steam leak in the Turbine Building.

Which one of the following best describes the initial strategy for controlling reactor pressure?

Reactor pressure is:

- a. maintained automatically by the safety relief valves to minimize RPV inventory loss and maximize the supply pressure at the RCIC turbine inlet.
- b. stabilized below the lowest safety relief valve lift set-point, to minimize RPV level fluctuations caused by cycling of the safety relief valves.
- c. reduced, at a rate not to exceed the Tech Spec cooldown rate, to maximize injection to the RPV.
- d. rapidly reduced, irrespective of cooldown rate, to minimize long term heat addition to the suppression pool and maximize injection to the RPV.

*ANSWER

b.

*REFERENCE

LGA-001, RPV Control

501 RPV Control (LGA-001) Lesson Plan

BWR Owners Group Emergency Procedure and Severe Accident Guidelines

NEW

HIGHER

EXPLANATION

- a. Incorrect – repeated cycling of the SRVs is undesirable since it could lead to level control problems, increased potential for a stuck open SRV, and significant dynamic stresses to the RPV, SRV tailpipes, and support structures.
- b. Correct –
- c. Incorrect – if the only inventory loss is through the SRVs, HPCS and RCIC are capable of controlling level at rated pressure.
- d. Incorrect – the given conditions do not permit cooldown rate limits to be

exceeded.

*QNUM 013
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295026 2.4.3
*QUESTION

Unit 2 had been operating at full power for an extended period of time. All components/systems were operable prior to the following event:

- A Group 1 Isolation occurred due to a steam leak in the Turbine Building.
- Reactor power remained at 5-10% of rated due to failure of all control rods to insert.
- RHR A and B have been placed in suppression pool cooling.

Based on the above conditions, suppression pool temperature should be monitored using:

- a. SPDS
- b. 2TI-CM037, on the Remote Shutdown Panel 2C61-P001
- c. Bulk Average Temperature from either NUMAC 2UY-CM037 OR 2UY-CM038.
- d. an average of the divisional Average Suppression Pool Temperature readings from 2TR-CM037A AND 2TR-CM038A

*ANSWER

c.

*REFERENCE

LGA-003, Primary Containment Control

LOP-CM-03, Suppression Chamber Average Water Temperature Determination

NEW

HIGHER

EXPLANATION

- a. Incorrect – per LOP-CM-03, SPDS should not be used if conditions in the suppression pool are rapidly changing.
- b. Incorrect – would only be used if suppression pool level is low or if MCR indications were unavailable.
- c. Correct – per LOP-CM-03, para. D.2
- d. Incorrect – per LOP-CM-03, averaging is not required during LGA use.

*QNUM 014
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295028 G2.1.1
*QUESTION

You are the Unit-2 assist NSO. The plant has been operating at full power, under steady state conditions, for several weeks. Over the last several days, during performance of the shiftly surveillance, you have noticed an upward trend in drywell ambient air temperature.

As the Unit-2 assist NSO you should:

- a. Discuss your findings with the Unit Supervisor and proceed as directed.
- b. Direct the responsible non-licensed operator to adjust the chiller load controllers to increase cooling to the drywell.
- c. Direct the Unit Reactor Operator to reduce reactor power to 95% to reduce heat addition to the drywell.
- d. Discuss your findings with the responsible system engineer and proceed with their recommendations.

*ANSWER

a.

*REFERENCE

OP-AA-101-111, Roles and Responsibilities of On-Shift Personnel

NEW

MEMORY

EXPLANATION

- a. Correct – per OP-AA-101-111, unless there is a transient condition, the Reactor Operators are to perform activities under the direction of the Unit Supervisor.
- b. Incorrect – see ‘a’; additionally there is no procedural guidance for adjusting load controllers.
- c. Incorrect – unit RO does not have this authority
- d. Incorrect – see ‘a’

*QNUM 015
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295030K102
*QUESTION

Given the following initial conditions:

A Group 1 Isolation has occurred.
Reactor pressure is being maintained 800 to 1000 psig using RCIC and SRVs.
Reactor water level is being maintained between 185 in. and 215 in. with RCIC.
RCIC taking suction from the Suppression Pool.
Both loops of RHR are in Suppression Pool Cooling.
Suppression Pool Temperature is 110°F and increasing slowly.
Suppression Pool Level is -5 ft and decreasing slowly.

Which one of the following consequences, of decreasing Suppression Pool level, will occur first as Suppression Pool level drops?

- a. Damage to the RHR pumps due to inadequate Net Positive Suction Head.
- b. Damage to the RCIC pump due to air entrainment in the pump suction.
- c. Damage to the RCIC pump due to inadequate Net Positive Suction Head.
- d. Pressurization of the suppression chamber due to inadequate condensation of steam by the Suppression Pool.

*ANSWER

c.

*REFERENCE

503 Primary Containment Control (LGA-003) Lesson Plan

MEMORY

MODIFIED

EXPLANATION

- a. Incorrect – RHR NPSH/Vortex limit is -18 ft
- b. Incorrect – RCIC Vortex limit is -11.4 ft
- c. Correct – RCIC NPSH limit is -10.4 ft
- d. Incorrect – Adequate condensation cannot be ensured below -12 ft

*QNUM 016
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295031K101
*QUESTION

Given the following conditions:

- Control Rod Density is 20%.
- RCIC, SLC, and CRD are the only RPV injection systems in operation.
- Reactor Water Level indicates -200" on Fuel Zone and decreasing.
- All seven ADS valves are open.
- Reactor Pressure is 500 psig and decreasing.

Adequate core cooling . . .

- a. is being maintained because water level is above -210" on Fuel Zone.
- b. is not being maintained because water level is below 185" on Fuel Zone.
- c. is being maintained because reactor pressure is above 180 psig.
- d. is not being maintained because neither HPCS or LPCS is in operation.

*ANSWER

c.

*REFERENCE

510 Failure to Scram (LGA-010) Lesson Plan

NEW

HIGHER

EXPLANATION

- a. Incorrect – During an ATWS water level must be maintained above -150" WR except during blowdown. Additionally, spray cooling criteria (RPV level at or above the top of the jet pump risers AND a spray pump at rated conditions AND reactor pressure at or above 20 psig) do not apply during and ATWS.
- b. Incorrect – Reactor pressure is above the minimum steam cooling pressure for the ADS valves that are open.
- c. Correct – Reactor pressure is above the minimum steam cooling pressure for the ADS valves that are open.
- d. Incorrect – Spray cooling criteria do not apply during an ATWS.

*QNUM 017
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295031K201
*QUESTION

Select the statement below that completes the description of the basis behind the "RPV Level Instrument Criteria" (Table K) found in the emergency operating procedures (LGAs).

Elevated temperatures in the Drywell and/or Reactor Building causes the water density to decrease in the:

- a. horizontal runs of the instrument variable legs, causing indicated level to read lower than actual level.
- b. vertical runs of the instrument variable legs, causing indicated level to read lower than actual level.
- c. horizontal runs of the instrument reference legs, causing indicated level to read higher than actual level.
- d. vertical runs of the instrument reference legs, causing indicated level to read higher than actual level.

*ANSWER

d.

*REFERENCE

501 RPV Control (LGA-001) Lesson Plan

BWR Owners Group Emergency Procedure and Severe Accident Guidelines

NEW

HIGHER

EXPLANATION

- a. Incorrect – water density changes in the horizontal runs do not impact indication
- b. Incorrect – would only be true if variable leg vertical runs were longer than reference leg vertical runs.
- c. Incorrect – water density changes in the horizontal runs do not impact indication
- d. Correct – true because reference leg vertical runs are longer than the variable leg vertical runs.

*QNUM 018
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295037K105
*QUESTION

Given the following plant conditions:

- Drywell pressure rapidly increased to 2 psig.
- The Reactor scrammed from 90%.
- The RWM and full core display both indicate that many rods are not fully inserted.
- Reactor power is oscillating between 4 and 6 percent.
- The NSO has armed and depressed the scram pushbuttons.
- The MODE switch was taken to shutdown and ARI was initiated.
- The turbine is still on-line.
- Reactor water level is +39 inches.

A forced cooldown of the reactor plant can begin:

- a. immediately.
- b. after Hot Shutdown Boron Weight has been injected
- c. after Cold Shutdown Boron Weight has been injected.
- d. once reactor power is less than 3 percent.

*ANSWER

c.

*REFERENCE

LGA-010, Failure To Scram

510 Failure to Scram (LGA-010) Lesson Plan

NEW

HIGHER

EXPLANATION

- a. Incorrect – A forced cooldown must wait until the reactor is shutdown with no boron injected or until after Cold Shutdown Boron Weight has been injected. Conditions specified in the stem require boron injection.
- b. Incorrect – see ‘a’
- c. Correct – see ‘a’
- d. Incorrect – see ‘a’

*QNUM 019
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295038K211
*QUESTION

Which one, of the following set of CONCURRENT conditions, requires implementation of LGA-MS-03, Main Steam Isolation Valve Leakage Control.

- a. Reactor Building Area Temperature above Max Normal, Reactor Building Area High Radiation Alarm, Reactor Mode Switch In Shutdown, and the Main Condenser NOT being used as a heat sink during an ATWS.
- b. Reactor Building Area Temperature above Max Normal, Valid Main Steam Line High Radiation Alarm, Reactor Mode Switch In Shutdown, and Main Steam Lines NOT being used for Emergency Blowdown
- c. Reactor Building Area High Radiation Alarm, Valid Main Steam Line High Radiation Alarm, Reactor Mode Switch NOT In RUN, and the Main Condenser NOT being used as a heat sink during an ATWS.
- d. Offsite Release rate above the E-Plan "ALERT" Emergency Action Level threshold, Reactor Building Area High Radiation Alarm, Reactor Mode Switch NOT In RUN, and Main Steam Lines NOT being used for Emergency Blowdown

*ANSWER

b.

*REFERENCE

LGA-002, Secondary Containment Control

LGA-009, Radioactive Release Control

LGA-MS-03, Main Steam Isolation Valve Leakage Control and RPV Vent

NEW

MEMORY

EXPLANATION

- a. Incorrect – requires Valid MSL High Rad Alarm
- b. Correct
- c. Incorrect – Reactor Mode switch required to be in SHUTDOWN
- d. Incorrect – requires Valid MSL High Rad Alarm and Reactor Mode switch required to be in SHUTDOWN

*QNUM 020
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 600000K304
*QUESTION

An alarm is received on the Fire Detection Display indicating a fire in the RPS MG Set room.
You should . . .

- a. dispatch a Non-Licensed Operator to the area to determine if an actual fire exists.
- b. call out the Fire Brigade because the location contains safety related equipment.
- c. dispatch a Non-Licensed Operator to the area to verify that RPS MG Set room CO₂ system actuated.
- d. start a Diesel Driven Fire pump in anticipation of sprinkler system actuation.

*ANSWER

a.

*REFERENCE

LOA-FP-1(2)01, Unit 1(2) Fire Protection System Abnormal
125 Fire Protection Lesson Plan

NEW

MEMORY

EXPLANATION

- a. Correct – alarm could be due malfunctioning detector
- b. Incorrect – Fire Brigade not called out until after alarm is validated
- c. Incorrect – There is no room flooding system. Area protected by CO₂ hose reels.
- d. Incorrect – There is no sprinkler system in this area. Additionally, pumps start automatically on system demand (pressure decrease).

*QNUM 021
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295012A102
*QUESTION

Given the following plant conditions:

- All control rods are fully inserted.
- Reactor Water Level is 12" and increasing slowly using Feedwater system.
- Reactor Pressure is being maintained at 800 psig using the Turbine Bypass Valves.
- Reactor Recirculation Loop A is isolated.
- Drywell Pressure is 3 psig and decreasing slowly.
- Drywell Temperature peaked at 200°F and is decreasing slowly.

Select the statement below that correctly describes the action necessary to control Drywell Temperature.

- a. Startup the second Primary Containment Cooling Loop to supplement the operating Primary Containment Cooling Loop.
- b. Restore a Primary Containment Cooling loop to operation after resetting the containment isolation signal(s).
- c. Drywell Sprays must be initiated to cooldown and depressurize the Drywell
- d. Place both Primary Containment Cooling loops in operation after defeating the containment isolation signal(s).

*ANSWER

d.

*REFERENCE

096 Primary Containment Cooling System (VP) Lesson Plan

LGA-003, Primary Containment Control

LGA-VP-01, Primary Containment Temperature Reduction

NEW

HIGHER

EXPLANATION

- a. Incorrect – Primary Containment Cooling Water system isolated on High DW Pressure
- b. Incorrect – High Drywell Pressure condition still exists.
- c. Incorrect – Neither Drywell temperature nor pressure are high enough to require Drywell Sprays
- d. Correct – LGA-003 requires operation of all available Drywell Cooling. Isolation

signals may be bypassed since temperature did not exceed 212°F.

*QNUM 022
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295013A202
*QUESTION

Given the following:

- Suppression pool water level is normal.
- Suppression pool average temperature, as determined in accordance with LOP-CM-03, is 100°F and is increasing approximately 0.5°F per day due to leaking SRVs.
- No ECCS or RCIC pumps have been run within the last 10 days.

Suppression pool average temperature as indicated on 1TR-CM037A will read:

- a. the same as indicated on SPDS
- b. lower than indicated on the Remote Shutdown Panel
- c. higher than indicated on SPDS
- d. the same as indicated on the Remote Shutdown Panel

*ANSWER

c.

*REFERENCE

092 Containment Monitoring System Lesson Plan

LOP-CM-03, Suppression Chamber Average Water Temperature Determination

NEW

HIGHER

EXPLANATION

- a. Incorrect – There will be a temperature differential due to elevation difference between monitoring locations. SPDS detectors are lower in the pool.
- b. Incorrect – There will be a temperature differential due to elevation difference between monitoring locations. SPDS detectors are lower in the pool.
- c. Correct
- d. Incorrect – There will be a temperature differential due to elevation difference between monitoring locations. RSP instrument uses the same detectors as SPDS.

*QNUM 023
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295014 2.2.33
*QUESTION

Given the following conditions:

- A reactor startup is in progress.
- The reactor is critical.
- Reactor Power is at the POAH
- Reactor heat-up rate is approximately 30°F/hr.
- Reactor coolant temperature is 330°F
- All required systems/components are operable

If the most reactive control rod were to drop under these conditions, fuel damage:

- a. will occur but be limited by enforcement of the rod withdrawal sequence.
- b. will occur with exposures at the site boundary approaching 10 CFR 100 limits.
- c. will not occur due to enforcement of the rod withdrawal sequence.
- d. will not occur because the control rod velocity limiter limits the free fall velocity.

*ANSWER

a.

*REFERENCE

048 Rod Worth Minimizer Lesson Plan

024 Control Rod Drive Mechanical Lesson Plan

USAR Chapter 15

NEW

HIGHER

EXPLANATION

- a. Correct
- b. Incorrect – exposures are well below 10 CFR 100 limits.
- c. Incorrect – fuel damage is expected to occur
- d. Incorrect – fuel damage is expected to occur

*QNUM 024
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295020K105
*QUESTION

Given the following conditions:

- Unit 2 had been operating at full power for an extended period of time.
- All components/systems were operable and lined up for normal operation prior to the following event.

During a calibration of an RPV water level instrument, the instrument technicians inadvertently caused an isolation of the Outboard PCIS Valves associated with RPV Level 2 trip relays.

Drywell pressure will:

- a. decrease due to isolation of the Drywell Pneumatic System
- b. decrease due to isolation of the VQ Nitrogen Makeup System
- c. increase due to isolation of Reactor Building Closed Cooling Water to the Drywell
- d. increase due to isolation of Primary Containment Cooling Water to the Drywell

*ANSWER

d.

*REFERENCE

091 Primary Containment Isolation System Lesson Plan

NEW

HIGHER

EXPLANATION

- a. Incorrect – Isolates at RPV Level 1 and should not impact drywell pressure unless there are leaks in the system
- b. Incorrect – Expansion due to heatup should override any losses due to normal leakage.
- c. Incorrect – WR is a backup cooling system and would be isolated during normal operation.
- d. Correct – Loss of cooling should cause expansion of the Nitrogen and subsequent pressure increase.

*QNUM 025
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295022K207
*QUESTION

Given the following initial conditions:

- A reactor startup is in progress.
- The reactor is critical.
- Reactor Power is at the POAH
- Reactor heat-up rate is approximately 30°F/hr.
- Reactor coolant temperature is 330°F
- All required systems/components are operable

The running Control Rod Drive Pump tripped, and the standby pump cannot be started. A short time later, an "Accumulator Fault" was received on control rod 18-27, which is fully withdrawn. The operator dispatched to investigate, reports that:

- the pipe between the N2 bottle and the accumulator has ruptured
- accumulator pressure is 0 psig.

If the reactor SCRAM occurs, control rod 18-27:

- a. will not insert.
- b. will insert; the scram time will not be affected.
- c. will insert; the scram time will not meet Tech Spec requirements.
- d. will insert; the scram time will be slow but still meet Tech Spec requirements

*ANSWER

a.

*REFERENCE

024 Control Rod Drive Mechanical Lesson Plan

NEW

HIGHER

EXPLANATION

- a. Correct – without a CRD pump running reactor pressure (≈ 120 psig) is not high enough to insert the control rod unassisted. Insertion would require that a pressure of greater than 230 psig be applied to the under-piston area.
- b. Incorrect – see 'a'
- c. Incorrect – below 400 psig, the drive cannot be scrammed in a reasonable time by reactor pressure alone.

- d. Incorrect – below 400 psig, the drive cannot be scrammed in a reasonable time by reactor pressure alone.

*QNUM 026
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295029K301
*QUESTION

LGA-03, Primary Containment Control, requires Emergency Depressurization if Suppression Pool water level, as a function of RPV Pressure, cannot be restored and maintained below the Figure S curve.

Emergency Depressurization is implemented to prevent exceeding the:

- a. maximum containment pressure at which SRVs can be opened and will remain opened.
- b. code allowable stresses in the SRV tail pipe, tail pipe supports, quencher, or quencher supports.
- c. pressure capabilities of limiting primary containment components at the most limiting temperatures.
- d. primary containment water level at which pressure suppression capability sufficient to accommodate an RPV breach by core debris can be maintained.

*ANSWER

b.

*REFERENCE

007 LGA-003 Primary Containment Control Lesson Plan

NEW

MEMORY

EXPLANATION

- a. Incorrect – basis for Primary Containment Pressure limit which is less limiting.
- b. Correct –
- c. Incorrect – basis for Primary Containment Pressure limit which is less limiting.
- d. Incorrect – basis for Maximum Pressure Suppression Primary Containment Water Level which is less limiting.

*QNUM 027
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295032A104

*QUESTION

An area high temperature alarm is received for the RCIC Equipment Area followed by a report of smoke in the area. Which of the following fire suppression methods are available in this area?

- a. CO2 hose reels
- b. water hose reels
- c. deluge sprinkler system
- d. CO2 room flood system

*ANSWER

b.

*REFERENCE

125 Fire Protection Lesson Plan

NEW

MEMORY

EXPLANATION

- a. Incorrect – used in areas with a high level of electrical equipment
- b. Correct –
- c. Incorrect – used on ventilation system charcoal filters, station power transformers, and Main Turbine oil areas
- d. Incorrect – DG Rooms and Alterex only

*QNUM 028
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/08
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR C. ZOIA
*QVAL 1.00
*SEC
*SUBSORT
*KA 203000K203
*QUESTION

Given the following:

- The unit is in MODE 4
- Power was lost to Division 1 LPCS/RHR relay logic (1DC11E-CB1)
- No other abnormal conditions exists

Which one of the following RHR modes of operation is NOT available?

- a. Shutdown Cooling
- b. Suppression Pool Spray
- c. Suppression Pool Cooling
- d. Low Pressure Coolant Injection

*ANSWER

d.

*REFERENCE

LOA-DC-101, Unit 1 DC Power System Failure; 125 VDC DISTR PNL 111Y Loads/Tech Specs
NEW

MEMORY

EXPLANATION

- a. Incorrect - remains available (provided no isolation exists).
- b. Incorrect - remains available
- c. Incorrect - remains available
- d. Correct

*QNUM 029
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/07
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR C. ZOIA/REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 203000A403

*QUESTION

The LPCS SYS DISCH PRESS LO (C308) alarm is received. What is the normal pressure when the LPSC system is in standby and what other system/sub-system could also be impacted by the condition that caused the alarm.

- a. 0 psig (alarm is normally bypassed when LPCS pump not running);
ADS
- b. 50-55 psig;
RCIC
- c. 65-70 psig;
RHR A
- d. 90-100 psig;
HPCS

*ANSWER

c.

*REFERENCE

063 Low Pressure Core Spray System Lesson Plan

064 Residual Heat Removal System Lesson Plan

NEW

MEMORY

EXPLANATION

- a. Incorrect – see ‘c’
- b. Incorrect – see ‘c’
- c. Correct – The Division 1 Water Leg Pump, located in the LPCS/RCIC Corner Room, normally maintains the LPCS and RHR A loops pressurized to about 65-70 psig.
- d. Incorrect – see ‘c’

*QNUM 030
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/07
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR C. ZOIA
*QVAL 1.00
*SEC
*SUBSORT
*KA 205000K301
*QUESTION

Given the following conditions:

- Unit 1 is in MODE 3 following a prolonged full power run.
- RHR 'A' is operating in the Shutdown Cooling Mode.
- Reactor coolant temperature is approximately 250°F.
- The SAT feed breaker (1412) to bus 141Y tripped due to a degraded bus undervoltage condition.

If no operator action is taken, what plant response would be expected?

- a. Reactor Coolant System temperature and pressure will increase and, since bus 141Y is deenergized, RHR 'A' will not isolate leading to potential failure of the RHR 'A' system piping and subsequent loss of coolant which will be recovered by RHR B/C and HPCS.
- b. Reactor Coolant System temperature and pressure will increase until SRVs open to relieve the pressure and, even though bus 141Y is deenergized, RHR 'A' will be isolated by the Division 2 powered Shutdown Cooling isolation valves at approximately 140 psig.
- c. EDG '0' will start and re-energize bus 141Y, RHR 'A' will restart automatically in the Shutdown Cooling Mode, and Reactor Coolant System temperature and pressure may increase slightly but will begin to decrease once shutdown cooling is resumed.
- d. EDG '0' will start and re-energize bus 141Y, RHR 'A' will NOT restart automatically in the Shutdown Cooling Mode, Reactor Coolant System temperature and pressure will increase until SRVs open to relieve the pressure, but RHR 'A' will automatically isolate at approximately 140 psig.

*ANSWER

d.

*REFERENCE

064 Residual Heat Removal System Lesson Plan

005 AC Distribution Lesson Plan

NEW

HIGHER

EXPLANATION

- a. Incorrect – Bus 141Y will be re-energized by EDG 0

- b. Incorrect – Bus 141Y will be re-energized by EDG 0
- c. Incorrect – RHR will not automatically restart unless there is a LOCA signal.
- d. Correct

*QNUM 031
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR C. ZOIA
*QVAL 1.00
*SEC
*SUBSORT
*KA 205000 2.2.1
*QUESTION

While preparing for refueling operations, RHR Common Shutdown Cooling Line Temperature indication became inoperable. Given that good flow existed through the RHR Heat Exchanger prior to the instrument failure, which of the following provides the most accurate indication for controlling temperature?

- a. Service Water Differential Temperature.
- b. RHR Differential Temperature.
- c. RHR Heat Exchanger Outlet Temperature.
- d. RHR Heat Exchanger Inlet Temperature.

*ANSWER

d.

*REFERENCE

LOP-RH-07, Attachment D

NEW

HIGHER

EXPLANATION

- a. 10-30°F High
- b. 10-30°F High
- c. Low
- d. Very good indication - may indicate slightly lower

*QNUM 032
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR C. ZOIA
*QVAL 1.00
*SEC
*SUBSORT
*KA 209001K408
*QUESTION

Given the following plant information:

- Reactor steam dome pressure is 525 psig.
- One Drywell pressure sensor is reading 8 psig.
- One Drywell pressure sensor is reading 1.75 psig.
- One RPV level sensor is reading -140 inches.
- One RPV level sensor is reading -150 inches.

Which of the following describes the status of LPCS under these conditions?

- a. The LPCS pump is running and the injection valve (F005) is open.
- b. The LPCS pump is running and the injection valve (F005) is closed.
- c. The LPCS pump is NOT running and the injection valve (F005) is open.
- d. The LPCS pump is NOT running and the injection valve (F005) is closed.

*ANSWER

b.

*REFERENCE

System lesson plan 063, Low Pressure Core Spray (LPCS), Objective #14

NEW

HIGHER

EXPLANATION

- b. Correct: One-out-of-two taken twice logic starts the LPCS pump, but F005 does not automatically open until Reactor steam dome or LPCS line pressure decreases to below its permissive setpoint (ITS Allowable Values are from 490 to 522 psig) on 1 of 3 channels.

*QNUM 033
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/11
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR C. ZOIA/REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 209002K501
*QUESTION

While performing HPCS SYSTEM INSERVICE TEST, LOS-HP-Q1, contacts in the control switch for the full flow test valve (F023) stick, causing the full flow test valve to go to the full open position. The operator notes that indicated flow is approximately 7200 gpm, which is above the target flow rate of 6300 gpm.

The surveillance ...

- a. should be terminated, because the high flow could result in pump vortexing.
- b. should be terminated, because the high flow could result in pump cavitation.
- c. may continue, because the flow rate is within the normal pump design flow range.
- d. may continue, as long as the length of time that the pump operates above 6300 gpm is documented.

*ANSWER

b.

*REFERENCE

System lesson plan 061, High Pressure Core Spray (HPCS), Objective #14

NEW

HIGHER

EXPLANATION

- a. Incorrect – Vortexing is caused by low water level at the pump suction.
- b. Correct: The pump design flow at zero psid (runout) is 7175 gpm and could result in pump cavitation.
- c. Incorrect – This flow rate is outside the acceptable range.
- d. Incorrect – There is no allowance for running the pump beyond design conditions.

*QNUM 034
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/14
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR C. ZOIA/REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 211000K601
*QUESTION

The SBLC STORAGE TANK HI/LOW LEVEL alarm is received in the Main Control Room and you observe that indicated SBLC tank level is rapid decreasing.

Which one of the following is the most likely cause for this abnormal indication is ...

- a. an increase in bubbler air flow.
- b. an isolation of the bubbler air supply.
- c. boron precipitation on the level standpipe.
- d. failure of the level instrument piping heat tracing.

*ANSWER

b.

*REFERENCES

System lesson plan 028, Standby Liquid Control (SBLC), Objective #16; SBLC TANK LEVEL INDICATION MONTHLY SURVEILLANCE, LOS-SC-M2.

NEW

LOWER

EXPLANATION

- a. Incorrect – an increase in air flow would likely cause an increase in indicated level.
- b. Correct – loss of IA causes level indication to fail low.
- c. Incorrect – boron precipitation is expected due to cooling affects of the air, but would cause a gradual decrease.
- d. Incorrect – level indication uses an air bubbler and it is not heat traced.

*QNUM 035
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/14
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 212000A103
*QUESTION

Following a loss of input power to a RPS M/G set, an internal flywheel will maintain M/G set output voltage and frequency for _____ which _____ .

- a. at least 2 seconds (typically 10-30 seconds) permits automatic transfer of the associated RPS bus to the alternate power supply without a loss of power.
- b. at least 2 seconds (typically 10-30 seconds) maintains the associated RPS bus energized during momentary input power outages to the RPS M/G sets.
- c. approximately 10 seconds ensures the associated RPS bus remains energized long enough to complete automatics actuations (i.e., scrams and isolations).
- d. approximately 30 seconds permits manual transfer of the associated RPS bus to the alternate power supply without a loss of power.

*ANSWER

b.

*REFERENCES

System lesson plan 049, Reactor Protection System

LOP-RP-03(04), RPS Bus A(B) Transfer

NEW

MEMORY

EXPLANATION

- a. Incorrect – there is no automatic transfer
- b. Correct
- c. Incorrect – the affected actuation channels fail safe (i.e., trip) on a loss of power
- d. Incorrect – manual transfer of a RPS bus is a dead bus transfer

*QNUM 036
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/16
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR C. ZOIA/REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 215003A205
*QUESTION

Given the following conditions:

- Unit 1 Mode 2
- The reactor is critical at the point of adding heat
- The following instruments all fail down scale:
 - SRMs B, D, F, and H
 - IRMs B and D
 - Off-Gas Post Treatment Radiation Monitor B

Which one of the following correctly summarizes 1) the cause, 2) the expected plant response, and 3) required operator action following correction of the cause?

- a. Loss of Division 2 ESF 125 VDC
A half-SCRAM will occur and control rod motion will be prevented (blocked)
Reset the half-SCRAM; no additional action required to reset rod block
- b. Loss of Division 2 ESF 125 VDC
A full SCRAM will occur and control rod motion will be prevented (blocked)
Reset SCRAM; rod block will remain until Mode 2 is reentered.
- c. Loss of 24/48 VDC Bus 1B
A half-SCRAM will occur and control rod motion will be prevented (blocked)
Reset the half-SCRAM; no additional action required to reset rod block
- d. Loss of 24/48 VDC Bus 1B
A full SCRAM will occur and control rod motion will be prevented (blocked)
Reset SCRAM; rod block will remain until Mode 2 is reentered.

*ANSWER

c.

*REFERENCES

System Lesson Plan 042, Intermediate Range Monitoring (IRM) System

System Lesson Plan 006, DC Distribution

LOA-DC-101, Unit 1 DC Power System Failure;

LOA-NR-101, Neutron Monitoring Trouble..

NEW

HIGHER

EXPLANATION

- c. Correct: the referenced instruments are all powered from 24/48 VDC 1B Distr Pnl. A half-SCRAM and rod block will occur because of SRM/IRM INOP trips. Rod blocks reset automatically when power is restored.

*QNUM 037
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/16
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR C. ZOIA
*QVAL 1.00
*SEC
*SUBSORT
*KA 215004A302
*QUESTION

Given the following conditions:

- The Unit 1 Mode switch is in STARTUP.
- The reactor period is 86 seconds.
- SRMs are reading 50,000 cps
- All IRM channels are reading < 25

If reactivity is held constant, which of the following is expected within the next 2 minutes?

- a. SRM SHORT PERIOD alarms.
- b. UPSCALE TRIP alarms AND a rod block occurs.
- c. CHAN A SRM HI-HI alarms AND a scram occurs.
- d. SRM INOPERATIVE OR HI alarms AND a rod block occurs.

*ANSWER

d.

*REFERENCES

System lesson plan 041, Source Range Monitoring (SRM) System, Obj. #14;

NEW

HIGHER

EXPLANATION

- d. Correct: A rod block and SRM INOPERATIVE OR HI alarm occurs when SRMs reach 2E5 cps (with IRMs < range 8) in just under two minutes. CHAN A SRM HI-HI and UPSCALE TRIP occur at 5E5 cps, which takes about another minute. Finally, the SRM SHORT PERIOD alarms at 50 seconds.

*QNUM 038
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/09/01
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR C. ZOIA
*QVAL 1.00
*SEC
*SUBSORT
*KA 215005A406
*QUESTION

Given the following conditions:

- APRM Channel A is 51.0% from its Computer Point
- APRM Channel B is 51.5% from its Computer Point
- APRM Channel A is 50.6% from the OD-3 printout
- APRM Channel B is 51.4% from the OD-3 printout
- CTP is 49.3% from the OD-3 printout
- CTP is 50.1% from its Computer Point

Per LOS-NR-SR1, APRM Gain Adjustment, which of the following is appropriate?

- a. Adjust APRM Channel A ONLY
- b. Adjust APRM Channel B ONLY
- c. BOTH APRM Channels require adjustment
- d. NEITHER APRM Channel requires adjustment

*ANSWER

b.

*REFERENCES

Lesson plan 044, APRM System

LOS-NR-SR1, APRM Gain Adjustment

NEW

HIGHER

EXPLANATION

- b. Correct: APRM B requires adjustment because it reads greater than 2% from OD3 CTP as required by LOS-NR-SR1, APRM Gain Adjustment. CTP from the computer point is not used, except for APRM channel values.

*QNUM 039
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 217000 2.1.30
*QUESTION

The RCIC system was being operated from the Remote Shutdown panel when the “amber” low oil pressure light illuminated.

The RCIC turbine ...

- a. will trip automatically upon energization of the trip solenoid.
- b. governor valve will close due to loss of oil pressure to the governor.
- c. can be manually tripped using the Trip & Throttle Valve control switch at the Remote Shutdown panel.
- d. can be manually tripped using the manual trip latch mounted on the turbine overspeed trip device.

*ANSWER

d.

*REFERENCE

032 Reactor Core Isolation Cooling System Lesson Plan

054 Remote Shutdown System Lesson Plan

NEW

MEMORY

EXPLANATION

- a. Incorrect – all automatic trips, except for mechanical overspeed are bypassed when operating from the Remote Shutdown Panel
- b. Incorrect – governor valve will fail open on loss of oil pressure
- c. Incorrect – valve can be shut but not tripped
- d. Correct – only trip method available (see ‘a’ above)

*QNUM 040
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 218000A104
*QUESTION

Given the following:

- Suppression Chamber pressure is 30 psig and rising.
- RPV Blowdown has been initiated due to exceeding the Pressure Suppression Pressure curve.
- Drywell Pneumatic Bottle Bank header pressures both read approximately 130 psig.

To ensure that the RPV will depressurize and remain depressurized, venting must be established to maintain Drywell Pressure below _____ psig.

- a. 40
- b. 50
- c. 60
- d. 70

*ANSWER

a.

*REFERENCE

062 Automatic Depressurization System Lesson Plan

007 Primary Containment Control (LGA-003) Lesson Plan

MODIFIED

HIGHER

EXPLANATION

- a. Correct – An 88 psid must be maintained between pneumatic header pressure and drywell pressure ($130 - 88 = 42$ rounded down to 40)
- b. Incorrect – see 'a'
- c. Incorrect – see 'a'
- d. Incorrect – see 'a'

*QNUM 041
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/14
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR C. ZOIA
*QVAL 1.00
*SEC
*SUBSORT
*KA 223002K201
*QUESTION

Given the following conditions:

- Unit 1 is operating at 98% power.
- BOTH of the following power supplies are de-energized:
 - 1A RPS
 - Bus 111Y

Which of the following will close?

- a. Inboard WR isolation valve.
- b. Outboard RI isolation valve.
- c. Inboard MS isolation valves.
- d. Outboard VP isolation valves.

*ANSWER

d.

*REFERENCES

System lesson plan 091, Primary Containment Isolation System (PCIS), Objective #16;
LXRTEST Exam Bank question 091.000.16 (Used on the 95-1 NRC Exam)

BANK

HIGHER

EXPLANATION

- d. Correct: Loss of 1A RPS causes isolation of all outboard isolation valves in groups 2-7 and 10 except VP and WR. Loss of 111Y causes isolation of all outboard isolation valves in groups 2, 4-7 and 10. Therefore, Outboard VP isolation valves is the only correct answer.

*QNUM 042
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 239002K108

*QUESTION

The Drywell Pneumatic system “regulated” header supplies compressed gas to _____ safety relief valves. The system “un-regulated” header supplies compressed gas to _____ safety relief valves at _____ pressure.

- a. the 6 non-ADS designated
the 7 ADS designated
a higher
- b. all (ADS and non-ADS)
7 ADS designated
a higher
- c. all (ADS and non-ADS)
6 non-ADS designated
same
- d. the 6 non-ADS designated
the 7 ADS designated
same

*ANSWER

b.

*REFERENCE

070 Main Steam System Lesson Plan
097 Drywell Pneumatic (IN) System Lesson Plan
NEW

HIGHER

EXPLANATION

- a. Incorrect – see ‘b’
- b. Correct – the regulated header supplies gas to all 13 SRVs and the MSIVs; the unregulated header supplies gas, at a higher pressure, to only the 7 ADS valves.
- c. Incorrect – see ‘b’
- d. Incorrect – see ‘b’

*QNUM 043
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 239002K301
*QUESTION

What will be the impact on safety relief valve 1B21-F013U, if power is lost (e.g., blown fuse) to the "C" solenoid. (NOTE: LLS = Low-Low Set; Manual = P601 Control Switch)

The 'U' SRV will operate in the ...

- a. Safety mode only.
- b. Safety and ADS modes.
- c. Safety, ADS, and Relief/LLS modes.
- d. Safety, ADS, Relief/LLS, and Manual modes.

*ANSWER

c.

*REFERENCE

070 Main Steam System Lesson Plan

NEW

MEMORY

EXPLANATION

- a. Incorrect – See 'c'
- b. Incorrect – See 'c'
- c. Correct – all modes except manual control from P601 will still be available through the 'B' solenoid.
- d. Incorrect – See 'c'

*QNUM 044
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/15
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR C. ZOIA/REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 259002K201
*QUESTION

If a small electrical fire damages the TSC Uninterruptible Power Supply (including the static transfer switch), what will be the impact on the TDRFPs?

The TDRFPs will ...

- a. trip due to a loss of speed signal caused by the loss of power to the speed control systems.
- b. lock in at the last know speed command and can be manually reset following verification that the speed control system has power.
- c. continue to run normally since the speed control system has a backup power supply which is auctioneered with the TSC UPS supply.
- d. lock in at the last know speed command until power to the speed control system is manually transferred to the TSC UPS Alternate AC source.

*ANSWER

c.

*REFERENCES

System lesson plan 078, TDRFP Speed Control System, Objective #16 (p.16)

NEW

HIGHER

EXPLANATION

- a. Incorrect – power is not lost
- b. Incorrect – the lock in feature is related to a loss of speed demand signal from the Reactor Water Level Control System
- c. Correct – There is a backup power supply [MCC 1(2)36Y-3] to each speed control system that is auctioneered with the supply from the TSC UPS distribution panel.
- d. Incorrect – the lock in feature is related to a loss of speed demand signal from the Reactor Water Level Control System

*QNUM 045
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 261000K305
*QUESTION

Given the following:

- Unit 1 has experienced a DBA LOCA
- SBTG Inlet flow is 4000 CFM
- SBTG Outlet flow is 1000 CFM

Select the answer below that describes both: 1) a possible cause for the above SBTG flow indications; and 2) the potential consequence.

- a. 1) Blown loop seal on filter train drain line
2) Increased Primary Containment radiation levels
- b. 1) Filter train inspection door open
2) Increased Secondary Containment radiation levels
- c. 1) Filter train inlet flow control damper (1VG002) malfunction
2) Higher Primary to Secondary Containment differential pressure
- d. 1) Filter train outlet isolation damper (1VG003) NOT full open
2) Less negative Reactor Building to outside atmosphere differential pressure

*ANSWER

b.

*REFERENCE

095 Standby Gas Treatment System (VG) Lesson Plan

NEW

HIGHER

EXPLANATION

- a. Incorrect – drain line is not big enough to bypass 3000 CFM
- b. Correct – an open inspection/maintenance door would cause a decrease in outlet flow potential increase in reactor building radiation levels since flow would not be directed to the stack
- c. Incorrect – malfunctioning flow control damper would impact both flow rates
- d. Incorrect – mispositioned outlet damper would affect both flow rates

*QNUM 046
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 262001K401
*QUESTION

Which one of the following will cause a lockout of all breaker feeds to bus 142Y?

- a. Bus 142Y Overcurrent
- b. Bus 142Y Degraded Voltage
- c. SAT TR-142 Differential Overcurrent
- d. Emergency Diesel Generator Differential Overcurrent

*ANSWER

a.

*REFERENCE

005 AC Distribution Lesson Plan

NEW

MEMORY

EXPLANATION

- a. Correct
- b. Incorrect – sheds all off-site sources then closes in DG feed if available.
- c. Incorrect – trips transformer feed breakers and breaker 1422; breaker 1423 will close if DG is available
- d. Incorrect – trips breaker 1423; breaker 1422 or 1425 will close if available

*QNUM 047
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 262002K602

*QUESTION

The 250 VDC MCC 121Y feed to the Unit 1 Process Computer UPS tripped open. How does this affect the power source to the UPS Distribution Panel?

UPS Distribution Panel loads will receive power from ...

- a. UPS Inverter through the Static Transfer Switch
- b. UPS Inverter through the Manual Bypass Switch
- c. Alternate AC source through the Static Transfer Switch
- d. Alternate AC source through the Manual Bypass Switch

*ANSWER

a.

*REFERENCE

012 TSC/Security DG and UPS's Lesson Plan

MODIFIED

MEMORY

EXPLANATION

- a. Correct – This supply is auctioneered with the rectified battery feed. This is the normal supply path and is unaffected by the loss of the battery feed.
- b. Incorrect – Inverter output does not feed through the manual bypass switch
- c. Incorrect – The normal source is available.
- d. Incorrect – The normal source is available. Additionally, transfer to the alternate source is automatic via the STS if the UPS inverter fails.

*QNUM 048
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 263000K501
*QUESTION

Which one of the following explains why battery room exhaust fans are run continuously?

- a. Prevents the buildup of Hydrogen gas within the battery rooms.
- b. Ensures that battery capacity is not decreased by low temperatures.
- c. Ensures that an Oxygen deficient atmosphere does NOT develop within the battery rooms.
- d. Ensures that the environmental qualification of the battery is not invalidated by either high or low temperatures.

*ANSWER

a.

*REFERENCE

128 Plant Ventilation VD, VY, VX Lesson Plan

MODIFIED

MEMORY

EXPLANATION

- a. Correct – to prevent a flammable mixture buildup
- b. Incorrect – function of Switchgear Heat Removal System (VX)
- c. Incorrect – Hydrogen does not displace Oxygen
- d. Incorrect – function of Switchgear Heat Removal System (VX)

*QNUM 049
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 263000 2.4.26
*QUESTION

Which one of the following fire suppression methods would be available and preferred for use to extinguish an advanced fire in one of the ESF battery rooms?

- a. CO2 – Hose Reels
- b. Water – Hose Reels
- c. Halon – Room Flooding
- d. Portable Handheld Fire Extinguishers

*ANSWER

a.

*REFERENCE

125 Fire Protection Lesson Plan

NEW

HIGHER

EXPLANATION

- a. Correct – readily available and better for use around electrical equipment
- b. Incorrect – is available but not preferred because of chemical and electrical hazards
- c. Incorrect – not available
- d. Incorrect – available but not effective on larger fires

*QNUM 050
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 264000A103

*QUESTION

Given a DBA LOCA coincident with a loss of off-site power (LOP) the expected loading, in percent of the continuous KW rating, on the unit Emergency Diesel Generators is

- a. < 50%
- b. 50-90%
- c. 70-90%
- d. > 90%

*ANSWER

d.

*REFERENCE

USAR Chapter 8, Table 8.3-1

NEW

MEMORY

EXPLANATION

- a. Incorrect – see 'd'
- b. Incorrect – see 'd'
- c. Incorrect – see 'd'
- d. Correct – Per Table 8.3-1 the calculated accident loading is close to 99% of rated.

*QNUM 051
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 300000A201
*QUESTION

Given the following:

- The Plant Air system is lined up and operating with Station Air Compressors 0SA01C and 1SA01C in operation with all Station Air Dryers in service.
- The STATION AIR DRYER TROUBLE alarm on 2PM10J is received.
- Instrument and Service Air header pressures in both units are approximately 105 psig and decreasing slowly.
- AMP readings on both running air compressors are increasing slowly.
- No other alarms or abnormal trends have been observed.

Which one of the following actions is expected based on the above indications?

- a. SCRAM both Unit Reactors per LGP-3-2
- b. Verify proper operation of the Station Air Dryers
- c. Open the breakers for the Compressor Pre-lube Oil Pumps
- d. Verify automatic start of the standby Station Air Compressor (2SA01C)

*ANSWER

b.

*REFERENCE

LOA-IA-101(201), Loss of Instrument/Service Air

NEW

HIGHER

EXPLANATION

- a. Incorrect – only required if multiple control rods are drifting
- b. Correct – possible causes could be power failure or misaligned valve
- c. Incorrect – only required if no air compressors are running
- d. Incorrect – no auto start feature

*QNUM 052
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 400000K102
*QUESTION

Given the following:

- REACTOR BLDG CCW EXP TANK LEVEL HI/LO
- RBCCW Expansion Tank Level is 52"
- RBCCW RAD HI/LO
- RBCCW PRM reading 10,000 CPM

Which one of the following could cause the above symptoms?

- a. RBCCW Heat Exchanger tube leak
- b. Reactor Recirc Pump Motor Winding cooler leak
- c. Reactor Water Cleanup Non-Regenerative Heat Exchanger tube leak
- d. Drywell Penetration Coiling Coil leak

*ANSWER

c.

*REFERENCE

114 Reactor Building Closed Cooling Water System (WR) Lesson Plan

MODIFIED

HIGHER

EXPLANATION

- a. Incorrect – cause expansion tank level increase but not the high rad condition
- b. Incorrect – cause a decrease in expansion tank level
- c. Correct – reactor coolant leakage into the RBCCW system
- d. Incorrect – cause a decrease in expansion tank level

*QNUM 053
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 400000A301
*QUESTION

Given the following:

- Loss of all feedwater.
- Reactor pressure reached a maximum of 1030 PSIG and is now 900 PSIG slowly falling.
- Both Reactor Recirc pumps have tripped off.
- The Main Turbine Generator is still on-line.

How would you expect the RBCCW System to have responded?

- a. No change in RBCCW System operation.
- b. RBCCW is in operation, but flow to and from the drywell is automatically isolated.
- c. RBCCW is in operation, but flow to and from the RWCU heat exchangers is automatically isolated.
- d. RBCCW pumps trip on low suction pressure after flow to and from the Drywell is automatically isolated.

*ANSWER

b.

*REFERENCE

114 Reactor Building Closed Cooling Water System (WR) Lesson Plan

MODIFIED

HIGHER

EXPLANATION

- a. Incorrect – see 'b'
- b. Correct – Reactor water level must have dropped below Level 2 for both RR pumps to have tripped. Containment isolation valves close on Level 2 or High Drywell pressure. The RBCCW pump will continue to supply other loads, including RWCU.
- c. Incorrect – see 'b'
- d. Incorrect – see 'b'

*QNUM 054
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 214000K501
*QUESTION

A control rod drift is detected when an _____ numbered reed switch _____ while the control rod is moving _____ a command to move the control rod.

- a. odd
opens
with
- b. odd
closes
without
- c. even
opens
without
- d. even
closes
with

*ANSWER

b.

*REFERENCE

047 Reactor Manual Control System Lesson Plan

NEW

MEMORY

EXPLANATION

- a. Incorrect – see 'b'
- b. Correct – odd reed switch closing without a command to move the rod
- c. Incorrect – see 'b'
- d. Incorrect – see 'b'

*QNUM 055
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 215001K301
*QUESTION

Which one of the following is NOT a function provided by the Traversing Incore Probe system?

- a. Substitute data, to replace failed LPRM inputs to the APRMs.
- b. Calibration standard against which the LPRMs are calibrated.
- c. Substitute data, to replace failed LPRM inputs to the process computer.
- d. Used by process computer, between LPRM calibrations, to calculate gain adjustment factors for LPRM inputs.

*ANSWER

a.

*REFERENCE

046 Traversing In-Core Probe System Lesson Plan

NEW

MEMORY

EXPLANATION

- a. Correct – failed LPRM inputs are bypassed
- b. Incorrect – LPRMs are calibrated to match TIP measurements
- c. Incorrect – based on symmetrical locations can be used to replace failed inputs
- d. Incorrect – gain adjustment factors are used to adjust calculations for fuel depletion and other factors.

*QNUM 056
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 215002K403

*QUESTION

Which one of the following provides the 30% reactor power input that enables/disables the Rod Block Monitor?

- a. APRM
- b. Feedwater Flow
- c. Generator MWe
- d. Turbine First Stage Pressure

*ANSWER

a.

*REFERENCE

045 Rod Block Monitor System Lesson Plan

NEW

MEMORY

EXPLANATION

- a. Correct – RBM 'A' uses APRM 'C' and 'E'(alternate); RBM 'B' uses APRM 'D' and 'F'(alternate)
- b. Incorrect – used for RR pump start/shift permissives
- c. Incorrect – not used for reactor protection or control
- d. Incorrect – used by RPS for TSV/TCV SCRAM and EOC-RPT bypasses

*QNUM 057
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 216000K501
*QUESTION

1) How is the measurement of reactor vessel water level affected by a rapid depressurization of the reactor pressure vessel (e.g., an ADS actuation or Bypass Valves sticking open and not a LOCA) and 2) what design feature(s) are in place to compensate?

- a.
 - 1) water flashing to steam in the reference leg displaces water in the reference leg causing indicated level to read higher than actual.
 - 2) minimize vertical runs of reference leg piping within the drywell .
- b.
 - 1) decrease in reactor coolant temperature causes density of water in the variable leg to increase causing indicated level to read higher than normal.
 - 2) electronic density compensation.
- c.
 - 1) degassing in the reference leg displaces water in the condensing pot and reference leg causing indicated level to read higher than actual.
 - 2) continuous backfill of reference leg condensing pots.
- d.
 - 1) degassing in the variable leg displaces water in the variable leg causing indicated level to read lower than actual.
 - 2) variable leg orifice which limits pressure changes within the instrument piping.

*ANSWER

c.

*REFERENCE

040 Reactor Vessel Instrumentation Lesson Plan

NEW

HIGHER

EXPLANATION

- a. Incorrect – reference leg flashing results from high temperatures in the Drywell which is minimized by limiting the vertical and horizontal runs run of the instrument piping
- b. Incorrect – instrument piping within the drywell is at relatively constant temperature except during accident conditions and there is no electronic density compensation
- c. Correct – ensures condensing pots are maintained full
- d. Incorrect – water level in the RPV keeps the variable legs full and instrument line orifices limit leakage from the RPV should the instrument line rupture.

*QNUM 058
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 219000K608

*QUESTION

RHR 'B' is operating in the Suppression Pool Cooling mode following a Group 1 Isolation. Select the statement below that describes the impact on the RHR 'B' if the room cooling fan were to fail.

- a. RHR 'B' must be declared INOPERABLE immediately.
- b. An Operability Determination must be initiated when room temperature exceeds 104°F and be completed prior to room temperature exceeding 150°F.
- c. RHR 'B' must be declared INOPERABLE when room temperature exceeds 150°F.
- d. An Operability Determination must be performed when room temperature exceeds 150°F for more than 8 hours or by more than 30°F.

*ANSWER

d.

*REFERENCE

TRM 3.7.g, Area Temperature Monitoring

NEW

MEMORY

EXPLANATION

- a. Incorrect – see 'd'
- b. Incorrect – see 'd'; 104°F is the maximum expected temperature for normal plant operation (i.e., non accident conditions)
- c. Incorrect – see 'd'
- d. Correct – per TRM 3.7.g an analysis to evaluate operability must be completed within 24 hours if room temperature exceeds 150°F for more than 8 hours, or within 30 days if room temperature exceeds 180°F.

*QNUM 059
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 223001A102
*QUESTION

During normal at power operation, the Primary Containment pressure is maintained . . .

- a. automatically by a pressure controller that cycles the nitrogen makeup and vent valves as necessary to maintain pressure within the prescribed band.
- b. by manual operation of the nitrogen makeup valves when pressure is low and manual operation of the containment vent valves when pressure is high.
- c. manually by regulating the Primary Containment Chilled Water system temperature.
- d. with automatic nitrogen makeup when pressure is low and manual venting when pressure is to high.

*ANSWER

d.

*REFERENCE

093 Containment Vent and Purge System Lesson Plan

NEW

MEMORY

EXPLANATION

- a. Incorrect – venting is done manually
- b. Incorrect – makeup is automatic
- c. Incorrect – Chillwater is supplied to containment at a set value of approx. 46°F
- d. Correct – nitrogen makeup pressure controller is set to maintain pressure at 0.2 psig; if pressure gets too high it is reduced by venting through the purge system.

*QNUM 060
 *HNUM
 *ANUM
 *QCHANGED
 *ACHANGED
 *QDATE 2006/08/09
 *FAC LAS
 *RTYP GE-BWR5
 *EXLEVEL B
 *EXMNR REESER
 *QVAL 1.00
 *SEC
 *SUBSORT
 *KA 226001A201
 *QUESTION

A common mode failure has disabled all Division 1 ECCS Drywell Pressure circuits. Select the answer below that summarizes the ability of RHR 'A' to respond to a LOCA.

MODE:	LPCI	SUPPRESSION POOL COOLING	SUPPRESSION CHAMBER SPRAY	DRYWELL SPRAY
a.	Available	Available	Available	Available
b.	Available	Available	Unavailable	Unavailable
c.	Available	Unavailable	Available	Unavailable
d.	Unavailable	Unavailable	Unavailable	Unavailable

*ANSWER

b.

*REFERENCE

064 Residual Heat Removal System Lesson Plan

NEW

HIGHER

EXPLANATION

- Incorrect – Suppression Chamber Spray requires a high Drywell pressure signal to override the LPCI initiation interlock; Drywell Spray requires a high Drywell pressure signal to allow both spray valves to be open at same time.
- Correct – Suppression Chamber Spray requires a high Drywell pressure signal to override the LPCI initiation interlock; Drywell Spray requires a high Drywell pressure signal to allow both spray valves to be open at same time.
- Incorrect – LPCI would still initiate on Level 1 or Manual Initiation; Pool cooling valve can be opened if the injection valve is closed; Suppression Chamber Spray requires a high Drywell pressure signal to override the LPCI initiation interlock
- Incorrect – LPCI would still initiate on Level 1 or Manual Initiation; Pool cooling valve can be opened if the injection valve is closed

*QNUM 061
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 230000A301
*QUESTION

Given the following initial conditions for Unit 2:

- Reactor operating at 100% power with no inoperable equipment.
- RHR B operating in the Suppression Pool Cooling mode.

A small break LOCA occurs:

- All rods fully inserted.
- Drywell pressure is 5 psig.
- Reactor pressure is 600 psig increasing slowly.
- Reactor water level is -25 inches and increasing slowly.

Assuming that no operator action has taken place, what is the status of the RHR B?

- a. Operating in the Suppression Pool Cooling Mode.
- b. Realigned for LPCI and injecting into the RPV.
- c. Realigned for LPCI and operating at minimum flow.
- d. Operating in the Suppression Pool Cooling Mode and injecting into the RPV.

*ANSWER

c.

*REFERENCE

064 Residual Heat Removal System Lesson Plan

NEW

HIGHER

EXPLANATION

- a. Incorrect – see 'c'
- b. Incorrect – see 'c'
- c. Correct – full flow test valve shut but injection valve has not opened because of reactor pressure interlock
- d. Incorrect – see 'c'

*QNUM 062
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 233000A410
*QUESTION

Given the following:

- Unit-1 is in Mode 5.
- Fuel moves between the Spent Fuel Pool and the Reactor are in progress.
- A 100 gpm leak develops in the Refueling Bellows.

Which one of the following correctly completes the statement?

- (1) _____ level will lower and the operating Fuel Pool Cooling Pump will trip on low
(2) _____ .

- a. (1) Skimmer Surge Tank
(2) Suction Pressure
- b. (1) Skimmer Surge Tank
(2) Skimmer Surge Tank Level
- c. (1) Reactor Cavity Well and Fuel Storage Pool
(2) Reactor Cavity Well and/or Fuel Storage Pool Level
- d. (1) Skimmer Surge Tank, Reactor Cavity Well, and Fuel Storage Pool
(2) Suction Pressure

*ANSWER

a.

*REFERENCE

029 Fuel Pool Cooling and Cleanup System Lesson Plan

MODIFIED

HIGHER

EXPLANATION

- a. Correct – Leakage rate is significantly less than pump flow rate therefore surge tank level will drop but pool levels will remain relatively constant
- b. Incorrect – No trip on low surge tank level
- c. Incorrect – See ‘a’; no trip on low pool levels
- d. Incorrect – See ‘a’

*QNUM 063
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 241000 2.1.7

*QUESTION REPLACE THIS Q!

Unit 2 was operating at 100% RTP. You were assigned to the Unit as the Assist NSO. While observing operation of the main turbine control systems, you notice that the output of the selected EHC pressure regulator is rapidly failing high. Which one of the following correctly describes what you would see in response to these conditions? (Assume no operator action is taken.)

- a. TCVs open causing low reactor pressure and a reactor scram.
- b. TCVs open causing a main turbine overspeed trip and reactor scram.
- c. Reactor power and pressure lower, then recover and stabilize as the backup regulator takes control.
- d. Neutron flux rises causing a reactor scram as voids are swept out of the reactor core due to an increased steam flow.

*ANSWER

a.

*REFERENCE

LSD #26 pg. 44, EHC logic diagram.

MODIFIED

HIGHER

EXPLANATION

- a. correct
- b. Turbine speed will not increase, MW will increase.
- c. The backup regulator will not take control in this case.
- d. Neutron flux will decrease with the reduced reactor pressure.

*QNUM 064
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 245000K106
*QUESTION

Which one of the following is NOT cooled by the Unit 2 Turbine Building Closed Cooling Water system?

- a. Unit 2 EHC Fluid Coolers
- b. Unit 2 Motor Driven Reactor Feed Pump Lube Oil Cooler
- c. Unit 2 Turbine Driven Reactor Feed Pump Lube Oil Coolers
- d. Unit 2 Condensate/Condensate Booster Pump Lube Oil Coolers

*ANSWER

c.

*REFERENCE

WT-1, Turbine Building Closed Cooling Water System Horse Notes

NEW

FUNDAMENTAL

EXPLANATION

- a. Supplied by U2 TBCCW
- b. Supplied by U2 TBCCW
- c. Correct
- d. Supplied by U2 TBCCW

*QNUM 065
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 256000K302
*QUESTION

Unit 2 was operating at 100% RTP when a seam on the Unit 2 Main Turbine Condenser Hotwell split open. Hotwell level is now rapidly decreasing. Condenser vacuum is approaching atmospheric pressure. Assuming no operator actions, which of the following describes the impact this will have on the Control Rod Drive (CRD) System?

- a. This event will not impact the CRD system.
- b. The CRD pumps will trip on low suction pressure as the hotwell empties.
- c. The CRD pump discharge pressure will decrease as hotwell level decreases, but will recover when CRD pump suction source transfers to the CST.
- d. The CRD system flow will increase when the reactor scrams. The CRD pumps will trip on low suction pressure when the CST empties.

*ANSWER

d.

*REFERENCE

RD-1, CRD Hydraulic System Horse Notes

NEW

HIGHER

EXPLANATION

- a. CRD will be affected by this event because of the tie to the CST.
- b. Suction pressure to the CRD pumps is provided by the CST.
- c. Suction pressure to the CRD pumps is provided by the CST.
- d. Correct

*QNUM 066
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 2.1.1
*QUESTION

As required by the "Fitness for Duty Program," which ONE of the following is the MINIMUM time an operator must abstain from the consumption of alcohol prior to any SCHEDULED shift?

- a. 3 hours
- b. 5 hours
- c. 8 hours
- d. 12 hours

*ANSWER

b.

*REFERENCE

10 CFR 26

NEW

MEMORY

EXPLANATION

- a. Incorrect –
- b. Correct –
- c. Incorrect –
- d. Incorrect –

*QNUM 067
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 2.1.17
*QUESTION

Select the answer below that reflects the recommended verbalization of component 1FC88A when giving an order to manipulate the component.

- a. One F C Eighty Eight A
- b. One F C Zero Eight Eight A
- c. One F C Eighty Eight Alpha
- d. One F C Zero Eight Eight Alpha

*ANSWER

d.

*REFERENCE

HU-AA-101, Human Performance Tools and Verification Practices

NEW

MEMORY

EXPLANATION

- a. Incorrect – could be confused with 1FC88A, 1FC888, or 1FC88H
- b. Incorrect – could be confused with 1FC0888 or 1FC088H
- c. Incorrect – could be confused with 1FC88A
- d. Correct –

*QNUM 068
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 2.2.12
*QUESTION
A CHANNEL CHECK ...

- a. compares channel indication and status to the indications and/or status of independent instrument channels measuring the same parameter.
- b. compares the channel output to known values of the parameter that the channel monitors and adjustments are made, as necessary, so that the channel responds within the necessary range and accuracy.
- c. an in-place qualitative assessment of sensor behavior and normal calibration of the remaining adjustable devices in the channel.
- d. injects a simulated or actual signal into the channel as close to the sensor as practicable to verify operability of all devices in the channel required for channel operability.

*ANSWER

a.

*REFERENCE

Technical Specification Definitions

NEW

MEMORY

EXPLANATION

- a. Correct
- b. Incorrect – Channel Calibration
- c. Incorrect – Channel Calibration
- d. Incorrect – Channel Functional Test

*QNUM 069
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 2.2.13
*QUESTION

When hanging a Clearance on a remotely operated manual valve, the local valve actuator is NOT required to be tagged if ...

- a. the valve is located in a high radiation area.
- b. the valve position is indicated in the Main Control Room.
- c. the actual valve position is verified locally at the valve body.
- d. the remote operating mechanism is verified to be operational.

*ANSWER

d.

*REFERENCE

OP-MW-109-101, Clearance and Tagging

NEW

MEMORY

EXPLANATION

- a. Incorrect – See 'd'
- b. Incorrect – See 'd'
- c. Incorrect – See 'd'
- b. Correct – If a remotely operated manual valve is to be used as an isolation point, and there is doubt about its operability, then the valve actuator at the valve body shall be tagged out in addition to the remote operator

*QNUM 070
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 2.2.33
*QUESTION

Given the following conditions on Unit 1:

- The plant is shutting down for a mid-cycle outage.
- Reactor Power is 20%.
- The Unit Operator inserted the selected Control Rod past its Group Insert Limit.
- All other Control Rods are at their correct positions.

For these conditions, which of the following indications would result?

- a. Insert Error
- b. Withdraw Error
- c. Insert Error and Insert Block
- d. Withdraw Error and Withdraw Block

*ANSWER

d.

*REFERENCE

048, Rod Worth Minimizer Lesson Plan

BANK

MEMORY

EXPLANATION

- a. Correct – Between the LPSP and LPAP, only an Insert Error would be generated.
- b. Incorrect – See ‘a’
- c. Incorrect – See ‘a’
- d. Incorrect – See ‘a’

*QNUM 071
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 2.3.10
*QUESTION

This year you have accumulated 10 Rem Shallow Dose Equivalent, Whole Body.

What's the maximum additional external dose whole body skin exposure that you can receive before you exceed the Legal Federal Annual Limit?

- a. 5 Rem
- b. 25 Rem
- c. 40 Rem
- d. 50 Rem

*ANSWER

c.

*REFERENCE

RP-AA-203, Step 4.1.1

BANK

HIGHER

EXPLANATION

Distractor c. is correct. The annual limit is 50 rem therefore if you already have 10 rem then you can only receive 40 rem more. Distractors a., b., & d. are not correct.

*QNUM 072
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 2.3.11
*QUESTION

What is the concern with operating the Hydrogen Recombiner (HG) system with high drywell pressure (15.3 psig)?

- a. A release of drywell atmosphere to the reactor building could result.
- b. Pre-ignition of hydrogen may be produced by high operating pressure.
- c. The recombiner water separator downstream piping could be damaged.
- d. High pressure could cause damage to the recombiner blower assembly.

*ANSWER

a.

*REFERENCE

LOP-HG-02, Section E.

System Description 094, Section VIII.

BANK

FUNDAMENTAL

EXPLANATION

Distractor a. is correct. High drywell pressure could blow out the loop seal on the discharge line allowing the release of the drywell atmosphere to the reactor building. None of the other answers are correct.

*QNUM 073
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 2.4.20
*QUESTION

During a casualty, an NSO opens an SRV to control RPV pressure. The SRV is closed and manually opened again 15 seconds later.

Which one of the following describes the potential adverse consequences of this action?

- a. Suppression Pool wall damage due to cyclic dynamic loading.
- b. SRV tailpipe damage due to excessive water level in the tailpipe.
- c. ECCS pump damage due to the creation of a vortex in the suppression pool.
- d. SRV seat damage due to partial opening of the valve with limited air pressure.

*ANSWER

b.

*REFERENCE

LGA-001 Lesson Plan, Section IV.D.4.a).6), page 12

LOA-SRV-101 C.7

BANK

FUNDAMENTAL

EXPLANATION

b. is correct. Following the closure of an SRV, there is a certain amount of time required for the steam to condense in the tailpipe. The vacuum breaker in the tailpipe must open and the water level in the tailpipe must equalize with suppression pool level. Failure to allow the level to equalize could result in water hammer damage of the tailpipe.

*QNUM 074
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 2.4.46
*QUESTION

Which one of the following describes the expected plant condition (PC) AND associated (AA) automatic actions if the GEN COOLANT RUNBACK CKT alarm energized on panel 1PM02J?

- a. (PC) = Stator Inlet Flow 480 gpm;
(AA) = Turbine Runback to 23%
- b. (PC) = Stator Inlet Pressure 48 psig;
(AA) = Turbine Runback to 20%
- c. (PC) = Stator Outlet Temperature 80°C;
(AA) = Turbine Runback to 20%
- d. (PC) = Stator Water Conductivity >0.5µmho;
(AA) = Turbine Runback to 70%

*ANSWER

a.

*REFERENCE

LOA-GC-101, page 14

MODIFIED

HIGHER

EXPLANATION

a. is correct.

b. c. & d. The turbine will runback to 23% when Stator Inlet Flow is <500 gpm, or Stator Outlet temperature is >81°C, or Stator Inlet pressure is <46 psig.

*QNUM 075
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/08/09
*FAC LAS
*RTYP GE-BWR5
*EXLEVEL B
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 2.4.48
*QUESTION

You are the NSO on Unit 2. The plant was at 22% reactor power and being raised to Rated Thermal Power (RTP) after a refuel outage. It was determined that a RCIC test needed to be performed before continuing the power escalation. Load dispatch has requested that the power escalation continue as quickly as possible after the RCIC test. When the RCIC test was completed the following lineups existed:

- RHR A is lined up for suppression pool cooling.
- RHR B and LPCS are in their normal standby mode.
- HPCS is in its normal standby mode.
- All EDGs are in their normal standby mode.
- All other equipment is in its normal condition for the given plant conditions.

Before you were able to begin raising reactor power, annunciator "ADS INITIATION TIMER" energized; RPV power, pressure, level were at their normal values. Which of the following should have or will take place in response to this annunciator, and what actions should be taken?

- a. Nothing will occur under these plant conditions. Monitor plant parameters; investigate the cause of the alarm.
- b. Reactor scram from low RPV pressure. Monitor RPV parameters; stop the RHR A pump to prevent the scram.
- c. Non-preventable reactor scram from RPV low level 3. Monitor RPV level, maintain RPV level between RPV level 3 and 8 post-scram.
- d. Main turbine trip from RPV level 8 with accompanying reactor scram. Monitor RPV level, maintain RPV level between RPV level 3 and 8 post-scram.

*ANSWER

b.

*REFERENCE

NB-1, Automatic Depressurization System, Horse Notes

NEW

HIGHER

EXPLANATION

- a. Incorrect. ADS will initiate.
- b. Correct. Stopping the RHR pump will prevent ADS initiation.
- c. Incorrect. RPV level will increase as ADS initiates.

d. Incorrect. Reactor power is too low to cause a scram if the main turbine trips.

*QNUM 076
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295005A201
*QUESTION

The Main Turbine is coasting down following a trip from full power. As speed reduces below 1400 rpm, the unit assist Reactor Operator reports that turbine vibration has increased above 10 mils. You should direct the unit assist Reactor Operator to . . .

- a. continue to monitor vibration, as high vibrations are normal as the turbine coasts down and vibrations levels should decrease as speed approaches 800 rpm.
- b. lower Main Lube Oil temperature, to increase the oil viscosity, which will slow the turbine down faster.
- c. open the condenser vacuum breaker to slow the turbine down to zero speed as quickly as possible to prevent further damage.
- d. throttle open the condenser vacuum breaker, to reduce turbine speed more quickly, and when vibrations are less than 10 mils to close the condenser vacuum breaker.

*ANSWER

d.

*REFERENCE

LOA-TG-1(2)01, Unit 1(2) Turbine Generator

NEW

HIGHER

EXPLANATION

- a. Incorrect – vibrations in excess of 10 mils are abnormal and requires action to reduce turbine speed.
- b. Incorrect – lowering oil temperature is likely to increase vibration
- c. Incorrect – breaking vacuum imposes high stress on the later stage buckets, therefore opening of the vacuum breaker should be limited.
- d. Correct – as directed by LOA-TG-1(2)01. See ‘c’ above.

*QNUM 077
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295006 2.4.27
*QUESTION

You are the Unit Supervisor for Unit 1. The following alarms (flashing red) are indicated on the Unit 1 Fire Detection Display:

- CONTROL RM ELEV 768' FZ 1-5
- VC RET AIR MON

Select the statement below that best describes your expected actions.

- a. Ensure that the reactors in both units are shutdown, dispatch the Fire Brigade, notify plant personnel in both units of the fire location, and evacuate the Main Control Room.
- b. Direct Main Control Room personnel to don emergency breathing air apparatus, dispatch the Fire Brigade, and notify plant personnel in both units of the fire location.
- c. Ensure that the reactors in both units are shutdown, direct Main Control Room personnel to don emergency breathing air apparatus, direct the unit assist Reactor Operators to locate and extinguish the fire.
- d. Verify that the Main Control Room HVAC system has shutdown and isolated, dispatch the Fire Brigade, notify plant personnel in both units of the fire location.

*ANSWER

b.

*REFERENCE

117 Control Room HVAC Lesson Plan

125 Fire Protection Lesson Plan

LOA-FP-101, Unit 1 Fire Protection System Abnormal

LOA-RX-101, Unit 1 Control Room Evacuation Abnormal

NEW

HIGHER

EXPLANATION

- a. Detection systems should have detected the fire before it reaches a magnitude requiring evacuation.
- b. Since many combustion product hazards are not visible, it is prudent to don breathing apparatus
- c. Smoke detection alone is not reason enough to evacuate (and therefore shutdown the units).
- d. Ventilation system realigns automatically to filter smoke.

*QNUM 078
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295025A204
*QUESTION

Given the following conditions:

- The plant has been operating at full power for an extended period of time.
- All components/systems were operable and lined up for normal operation prior to the following event.

A rupture of the main condenser inlet water box results in a trip of all running Circulating Water pumps. Select the statement below that describes your procedure use.

- a. RPV Control to control RPV Level and Pressure.
Primary Containment Control to control Suppression Pool level and temperature.
- b. RPV Control to control RPV Level.
Secondary Containment Control to mitigate flooding caused by the condenser water box rupture.
- c. RPV Control to control RPV pressure.
Primary Containment Control to control Suppression Pool and Drywell temperatures.
- d. Primary Containment Control to control Suppression Pool level and temperature.
Secondary Containment Control to mitigate flooding caused by the condenser water box rupture.

*ANSWER

a.

*REFERENCE

NEW
HIGHER

EXPLANATION

- a. Correct – loss of vacuum will result in Group 1 isolation and subsequent pressure transient. SRV operation will cause pool temperature increase and the temperature increase coupled with the
- b. With the trip of the CW pumps, flooding of the secondary containment is not likely.
- c. Drywell temperature should not increase significantly
- d. With the trip of the CW pumps, flooding of the secondary containment is not likely.

*QNUM 079
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295026 2.4.14
*QUESTION

The plant was operating at 100% power when a LOCA occurred. Given the following plant conditions:

- All control rods are fully inserted.
- LPCS @ 5500 gpm and LPCI 'A' @ 7500 gpm are both injecting into the RPV.
- As long as both pumps are injecting into the RPV, RPV water level can be maintained above TAF.
- NO other injection sources are currently available.
- Suppression Pool temperature is 160°F and rising at a rate of approximately 10°F/hr.

Select the statement below that correctly describes the use of LPCI 'A' for Suppression Pool cooling.

- a. LPCI 'A' must be diverted to Suppression Pool Cooling to ensure that Suppression Pool temperature is maintained below the Heat Capacity Limit, since LPCS can maintain adequate core cooling through spray cooling alone.
- b. LPCI 'A' may be alternated between Suppression Pool Cooling and RPV injection as long as RPV water level is maintained above -210 inches FZ.
- c. LPCI 'A' must be diverted to Suppression Pool Cooling, irrespective of adequate core cooling, when neither Suppression Pool temperature nor Reactor pressure can be maintained below the Heat Capacity Limit (HCL)
- d. LPCI 'A' may be diverted to Suppression Pool Cooling if additional injection sources become available to be used with LPCS to maintain RPV water level above -185 inches FZ.

*ANSWER

d.

*REFERENCE

LGA-001, RPV Control

LGA-003, Primary Containment Control

501 RPV Control (LGA-001) Lesson Plan

MODIFIED

HIGHER

EXPLANATION

- a. Incorrect – LPCS flow rate is below the required flow (≥ 7000 gpm) needed to ensure adequate core cooling with spray flow.
- b. Incorrect – RPV level must be maintained above -185" FZ to ensure adequate core cooling with the conditions specified.
- c. Incorrect – LPCI 'A' can only be diverted if adequate core cooling can be maintained without it. Additionally, with the conditions specified the HCL is not being challenged and
- d. Correct –

*QNUM 080
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295028A204
*QUESTION

The plant was operating at 100% power when a main steam line break occurred. Given the following plant conditions:

- All control rods are fully inserted.
- Drywell Temperature is 250°F.
- Drywell Pressure is 25 psig.
- Suppression Pool Level is +3 ft.

Initiating Drywell Sprays will remove heat from the Drywell . . .

- a. through convective heat transfer, permitting a controlled reduction in Drywell temperature and pressure.
- b. through evaporative cooling, permitting a controlled reduction in Drywell temperature and pressure.
- c. through convective heat transfer, causing an uncontrollable reduction in Drywell temperature and pressure.
- d. through evaporative cooling, causing an uncontrollable reduction in Drywell temperature and pressure.

*ANSWER

a.

*REFERENCE

LGA-003, Primary Containment Control
503 Primary Containment Control (LGA-003) Lesson Plan
NEW

HIGHER

EXPLANATION

- a. Correct
- b. Incorrect – Drywell atmosphere is not superheated. Additionally spraying into a superheated atmosphere can result in rapid uncontrollable pressure reduction.
- c. Incorrect – Temperature and pressure reduction is controllable.
- d. Incorrect – Drywell atmosphere is not superheated.

*QNUM 081
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295030A204
*QUESTION

Given the following Unit-1 plant conditions:

- Plant was at full power.
- Leak from RHR suction.
- Suppression pool level dropped to - 8 feet before the leak was isolated.
- A large break coolant leak from a recirc loop has developed.
- Drywell and suppression pool sprays have not been initiated.

WHICH ONE of the following describes the approximate value of suppression chamber pressure as compared to drywell pressure based on the above conditions?

- a. 0 psi below Drywell pressure.
- b. 2 psi below Drywell pressure.
- c. 5 psi below Drywell pressure.
- d. 9 psi below Drywell pressure.

*ANSWER

b.

*REFERENCE

USAR Chapter 6

MODIFIED

HIGHER

EXPLANATION

- a. Incorrect – The d/p is a function of the downcomer submergence. 0 psi would correspond to 0' of submergence
- b. Correct – 2 psi corresponds to 4' of submergence (8 ft below normal level)
- c. Incorrect – 5 psi corresponds to 12' of submergence (normal level = 12' above bottom of downcomer)
- d. Incorrect – 9 psi corresponds to 20' of submergence (8 ft above normal level)

*QNUM 082
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295031 2.1.25
*QUESTION

Unit 1 was operating at 100% power when a LOCA occurred. Given the following plant conditions:

- All control rods are fully inserted.
- A leak from the Suppression Pool caused Suppression Pool level to drop to -14 ft. before being isolated.
- LPCS is injecting into the RPV@ 7500 gpm.
- RPV water level is -150" FZ and rising very slowly.
- RHR/LPCI 'A' was recently shifted to Drywell Sprays.
- NO other injection sources are currently available.
- RPV Pressure is 25 psig.
- Drywell Pressure is 25 psig.
- Drywell Temperature is 250°F.
- Suppression Chamber Pressure is 20 psig.
- Suppression Pool temperature is 205°F and rising very slowly.

Operating RHR/LPCI 'A' in the Drywell Spray mode will cause . . .

- a. LGA-001 Figure J limits to be exceeded and RHR/LPCI 'A' will have to be realigned to inject into the RPV.
- b. LGA-001 Figure NL limits to be exceeded and possible damage to the LPCS pump.
- c. LGA-001 Figure NR limits to be exceeded and possible damage to the RHR/LPCI 'A' pump.
- d. LGA-003 Figure D limits to be exceeded and Drywell Sprays will have to be secured at that point.

*ANSWER

c.

*REFERENCE

LGA-001, RPV Control

LGA-003, Primary Containment Control

NEW

HIGHER

EXPLANATION

- a. Incorrect – Drywell temperature, Drywell pressure and Reactor pressure

(following the Drwell pressure drop) will all drop as sprays are operated and the operating point should run approximately parallel to the Figure J curve.

- b. Incorrect – Suppression Pool temperature would have to exceed 210°F before Figure NL limits are exceeded.
- c. Correct – Drywell Sprays, coupled with operation of the Drywell/Suppression Chamber relief valve will eventually cause Figure NR limits to be exceeded.
- d. Incorrect – Figure D is a limit on starting Drywell Sprays, operation may continue until Drywell pressure approaches 0 psig.

*QNUM 083
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295015A204
*QUESTION

Given the following plant conditions on Unit 2:

- A unit startup is in progress in accordance with the Normal Unit Startup LGP.
- Conditions for entering Mode 1 have all been satisfied.

When repositioning the Reactor Mode Switch, the Reactor Operator inadvertently rotated the Reactor Mode Switch to Shutdown. The following conditions exist after the SCRAM:

- Five control rods, various positions and widely scattered throughout the core, have failed to insert beyond position 02.
- Reactor power is decreasing with a -80 second period and is currently indicating on Ranges 2 and 3 of the IRMs.
- Reactor water level is being maintained 20 inches and increasing slowly.
- Reactor pressure is 900 psig and decreasing slowly.

Which one of the following identifies the appropriate procedure(s) to be entered?

- a. LGP 3-2, Reactor Scram and LGA-NB-01, Alternate Rod Insertion
- b. LGA-001, RPV Control and LGP 3-2, Reactor Scram
- c. LGA-001, RPV Control, LGP 3-2, Reactor Scram, and LGA-NB-01, Alternate Rod Insertion
- d. LGA-010, Failure to Scram (entered from LGA-001) and LGA-NB-01, Alternate Rod Insertion

*ANSWER

a.

*REFERENCE

501 RPV Control (LGA-001) Lesson Plan
510 Failure to Scram (LGA-010) Lesson Plan
LGA-001, RPV Control
LGA-010, Failure to Scram
LGP 3-2, Reactor Scram
NEW
HIGHER
EXPLANATION

- a. Correct – There are no entry conditions for either LGA-001 or LGA-010.

- b. Incorrect – see 'a'
- c. Incorrect – see 'a'
- d. Incorrect – see 'a'

*QNUM 084
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295017 2.4.6

*QUESTION

LGA-009, Radioactivity Release Control has been entered due to an unisolable Main Steam System leak in the Turbine Building coupled with damaged fuel. The reactor is shutdown with all control rods fully inserted. Which of the following actions will most effectively minimize the radiation exposure to both onsite and offsite personnel?

- a. Initiate MSIV Leakage Control.
- b. Blowdown of the RPV using the ADS valves.
- c. Ensuring that the Turbine Building HVAC system is in operation.
- d. Rapid depressurization of the RPV using the Main Turbine Bypass Valves.

*ANSWER

b.

*REFERENCE

509 Radioactivity Release Control (LGA-009) Lesson Plan

NEW

HIGHER

EXPLANATION

- a. Incorrect – MSL isolation has failed or been ineffective at isolating the leak. Additionally, if lined up, may reduce leakage to TB atmosphere but redistributes activity to the main condenser, which may increase exposure to onsite personnel.
- b. Correct – reduces driving force of the leak and confines most of the activity to the primary containment (suppression pool).
- c. Incorrect – this may reduce exposure to onsite personnel but does nothing to minimize offsite release.
- d. Incorrect – may reduce leakage to TB atmosphere but redistributes activity to the main condenser, which may increase exposure to onsite personnel.

*QNUM 085
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 295035A201
*QUESTION

Given the following for Unit 1:

- The plant was operating at full power when a loss of feed occurred.
- All RPV Level 3 and Level 2 actuations and isolations functioned as designed except that the Standby Gas Treatment system failed to start.
- RCIC subsequently isolated due to a high RCIC room temperature; room temperature is trending downward.
- No other actuation or isolations signals currently exist.

Select the statement below that correctly describes action(s) required by LGA-002, Secondary Containment Control.

- a. Restart the Reactor Building Ventilation system.
- b. Close the MSIVs and start MSIV Leakage Control.
- c. Start the Primary Containment Purge system (aligned for Secondary Containment pressure control).
- d. Rapidly depressurize the RPV, using the Main Turbine Bypass Valves, in anticipation of RPV Emergency Depressurization.

*ANSWER

a.

*REFERENCE

LGA-002, Secondary Containment Control

502 Secondary Containment Control (LGA-002) Lesson Plan

NEW

HIGHER

EXPLANATION

- a. Correct – required to restore RB differential pressure to specification
- b. Incorrect – conditions requiring startup of MSIV leakage control do not exist
- c. Incorrect – conditions requiring startup of VQ do not exist (no high radiation)
- d. Incorrect – conditions, that may require Emergency Depressurization, do not exist

*QNUM 086
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 209001A202
*QUESTION

HPCS, LPCS, and all three RHR pumps started on Unit 2 High Drywell Pressure. The following conditions were observed:

- All control rods are fully inserted
- RPV Level is -20 in. WR and decreasing slowly
- RPV Press is 800 psig and decreasing slowly

The unit assist Reactor Operator reported that LPCS Pump Minimum Flow Valve (F011) is shut and that when he attempted to open the valve the position indicating lights extinguished. Given the current plant condition which of the following actions would be most appropriate?

- a. Declare LPCS Pump INOPERABLE. Shutdown LPCS Pump and pull it's control power fuses.
- b. Declare LPCS Pump OPERABLE; open the Test Return Valve to Suppression Pool (F012) to establish > 1240 gpm.
- c. Declare LPCS Pump INOPERABLE but available. Dispatch a plant operator to attempt to manually open the Minimum Flow Valve (F011).
- d. Declare LPCS Pump INOPERABLE, but available. Shutdown LPCS Pump until reactor pressure is low enough for the injection valve (F005) to open, then restart the pump.

*ANSWER

a.

*REFERENCE

063 Low Pressure Core Spray Lesson Plan

HIGHER

MODIFIED

EXPLANATION

- a. Correct – Pump should not be allowed to run at shutoff head for greater than 8 seconds. Based on the current conditions LPCS is not expected to be needed for adequate core cooling.
- b. Incorrect – Valve is interlocked closed on an LPCS initiation signal.
- c. Incorrect – Takes too long.
- d. Incorrect – Injection valve opens at ~500 psig which is still well above the pump shutoff head.

*QNUM 087
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 218000A204
*QUESTION

Given the following Unit 1 plant conditions:

- Bus 111Y is de-energized due to an electrical fault.
- All control rods are fully inserted.
- Conditions in the Drywell require RPV Blowdown.
- NO ADS valves opened when the ADS Manual Initiation pushbuttons were depressed.

Which of the following describes the action necessary to successfully complete the required RPV Blowdown from the MCR?

- a. Manually open the ADS safety relief valves using the pistol grip control switches.
- b. Manually open the ADS safety relief valves using the key-lock control switches.
- c. Manually open the NON-ADS safety relief valves using the pistol grip control switches.
- d. Manually open any combination (ADS and NON-ADS) of safety relief valves using the pistol grip and/or key-lock control switches.

*ANSWER

b.

*REFERENCE

062 Automatic Depressurization System Lesson Plan

070 Main Steam System Lesson Plan

NEW

HIGHER

EXPLANATION

- a. Incorrect – no control power with bus 111Y de-energized
- b. Correct – control power comes from 112Y
- c. Incorrect – no control power with bus 111Y de-energized
- d. Incorrect – there is only one successful combination (see 'b')

*QNUM 088
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 223002 2.2.2
*QUESTION

Given the following Unit 1 plant conditions:

- A reactor startup is in progress per the startup procedure.
- Power is 10-12% as read on the APRMs.
- The MSIV Low Vacuum Isolation Bypass Switches are in BYPASS.
- The main turbine is tripped.
- Main Condenser back-pressure is 5" Hg.

Which of the following conditions must be satisfied before placing the Reactor Mode Switch in RUN?

- a. Reactor power must be raised until all APRMs are reading above 12% but less than 15%.
- b. MSIV Low Vacuum Isolation Bypass Switches must be placed in NORMAL.
- c. The Main Turbine trip must be reset.
- d. Main Condenser back-pressure must be reduced below 3" Hg.

*ANSWER

b.

*REFERENCE

091 Primary Containment Isolation System Lesson Plan

Technical Specification LCOs 3.0.4 and 3.3.6.1

NEW

HIGHER

EXPLANATION

- a. Incorrect – LGP-1-1 does not allow power to be increased above 12% while in MODE 2
- b. Correct – mode change not permitted with isolation trip functions bypassed
- c. Incorrect – mode change is not dependent of Turbine valve status
- d. Incorrect – 3"Hg back-pressure is a procedural restraint for opening Turbine Bypass Valves.

*QNUM 089
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 264000A201
*QUESTION

The '0' Emergency Diesel Generator is operating, fully loaded, in parallel with the Unit 2 SAT in accordance with LOS-DG-M1. A lockout of the Unit 2 SAT occurs.

1) What is the status of the '0' Emergency Diesel Generator (EDG), AND 2) what, if any, operator action(s) (related to the EDG) are you required to ensure?

- a.
 - 1) The EDG will remain running as the only source connected to bus 241Y.
 - 2) The governor Speed Droop dial must be set to '0%', AND bus voltage and frequency returned to nominal values.
- b.
 - 1) The EDG will remain running, sharing bus 241Y loads with the Unit 2 UAT.
 - 2) No operator action is required.
- c.
 - 1) The EDG will remain running, unloaded, with bus 241Y being supplied by the Unit 2 UAT.
 - 2) The governor Speed Droop dial must be set to '100%', AND EDG output voltage and frequency returned to nominal values.
- d.
 - 1) The EDG will be shutdown(tripped) and bus 241Y will be de-energized.
 - 2) The governor Speed Droop dial must be set to '0%', reset and restart the EDG (after waiting approximately 3 minutes), and re-energize bus 241Y with the EDG.

*ANSWER

a.

*REFERENCE

011 EDG and Auxiliaries Lesson Plan
LOP-DG-02, Diesel Generator Startup and Operation
LOS-DG-M1, 0 Diesel Generator Operability Test

NEW

HIGHER

EXPLANATION

- a. Correct
- b. Incorrect – the UAT feed to bus 241Y will not close in with the EDG tied to bus
- c. Incorrect – the output breaker will remain closed; normal speed droop setting is 0
- d. Incorrect – EDG should not trip.

*QNUM 090
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 300000 2.4.8
*QUESTION

Given the following Unit 2 conditions:

- The station was initially operating at full power.
- 2SA01C is OOS for maintenance.
- A break occurred in an instrument air riser located in the Unit 1 Turbine Building.
- A manual scram was initiated, but approximately 30 control rods failed to insert completely; the reactor is currently sub-critical.
- Breaker 1425 failed to close automatically, resulting in de-energization of Bus 142X.
- 1SA01C tripped on overcurrent.
- RPV pressure is being maintained 900-1000 psig using SRVs.
- RCIC is injecting at rated flow; MDRFP is operating on Min Flow.
- RPV water level is -10" WR and decreasing slowly with each SRV cycle.
- The instrument air line break is located and isolated.

Which of the following summarizes the sequence of steps, specified by the station's Abnormal Operating Procedures, necessary to restore RPV level?

- a. Ensure air compressor pre-lube oil pump breakers are closed.
Start 1SA01C using backup seal air supply.
Restore RPV water level using the FRV or Low Flow FRV M/A station on P603.
- b. Ensure air compressor pre-lube oil pump breakers are closed.
Restore RPV water level by locally taking manual control of the FRV.
Restore plant air using external trailer mounted air compressor.
- c. Ensure air compressor pre-lube oil pump breakers are open.
Manually close tie breaker 1425 to re-energize bus 142X.
Start 0SA01C using backup seal air supply.
Restore RPV water level using the FRV or Low Flow FRV M/A station on P603.
- d. Ensure air compressor pre-lube oil pump breakers are open.
Manually close tie breaker 1425 to re-energize bus 142X.
Start 0SA01C using backup seal air supply.
Restore RPV water level by locally taking manual control of the Low Flow FRV.

*ANSWER

c.

*REFERENCE

LOA-IA-101, Loss of Instrument/Service Air

LOA-AP-101, Unit 1, AC Power System Abnormal

LOA-FW-101, Reactor Level/Feedwater Pump Control Trouble

NEW

HIGHER

EXPLANATION

- a. Incorrect – procedures require that the pre-lube pumps be shutdown if there is no seal air.
- b. Incorrect – procedures require that the pre-lube pumps be shutdown if there is no seal air, there are no procedures for locally taking manual control of the FRV, and LOA-IA-101(201) make no mention of using a trailer mounted compressor
- c. Correct
- d. Incorrect – there are no procedures for locally taking manual control of the Low Flow FRV

*QNUM 091
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 234000 2.2.26
*QUESTION

Given the following Unit 1 conditions:

- The plant is in Mode 5 with refueling operations in progress.
- Control rod 14-23 is to be withdrawn for replacement of the drive mechanism.
- Control rod 14-23 was notched out to position 02 to test the one-rod-out interlock in accordance with Attachment C of LOS-RD-SR4, Control Rod Operations in Mode 5.
- Control rod 10-27 was selected on the second of three attempts to select another control rod.

WHAT actions are required in accordance with Technical Specifications?

- a. Immediately suspend loading of irradiated fuel into the RPV; initiate action to restore Secondary Containment to operable.
- b. Immediately suspend in-vessel fuel movement with equipment associated with the inoperable interlock and insert all insertable control rods.
- c. Immediately suspend control rod withdrawal and initiate actions to fully insert all insertable control rods in cells containing one or more fuel assemblies.
- d. Immediately initiate action to insert all insertable control rods and place the mode switch in the SHUTDOWN position in 1 hour.

*ANSWER

c.

*REFERENCE

Technical Specification LCO 3.9.1

Technical Specification LCO 3.9.2

Technical Specification LCO 3.9.3

LOS-RD-SR4, Control Rod Operations in Mode 5

MODIFIED

HIGHER

EXPLANATION

- a. Incorrect – fuel assembly loading is not permitted under the stated conditions.
- b. Incorrect – in vessel fuel movement would not be permitted during the stated conditions.
- c. Correct – Required Action per LCO 3.9.2
- d. Incorrect – None of the refueling LCO action statements require repositioning of the reactor mode switch

*QNUM 092
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 239001A201
*QUESTION

Unit 2 had been operating at full power for several weeks when the output of the EHC Pressure Regulator failed high (instantaneously). Select the statement below that 1) describes the plant response to the failure, and 2) the operator actions, if any, that are required to terminate the pressure transient.

Assume all required immediate operator actions have been taken.

- a. Turbine Control Valves and Bypass Valves will start to open, then pressure control will shift to the backup pressure regulator and pressure will stabilize at a slightly lower pressure than before the transient. No operator actions are required to stabilize pressure.
- b. Turbine Control Valves and Turbine Bypass Valves will open fully; rapid depressurization will cause a Group 1 isolation on low steam line pressure and subsequent reactor scram. Reactor pressure will increase, following the MSIV closure. The operators must take manual control of SRV's to stabilize pressure below 1059 psig.
- c. Turbine Control Valves will open fully and Turbine Bypass Valves will open until limited by the Max Combined Flow Limiter; rapid depressurization will cause indicated RPV level to shrink, resulting in a L3 trip of the reactor. The pressure decrease will be terminated when the Main Turbine is tripped (SCRAM immediate action). The operators will use alternate means (SRVs, MSL drains, RCIC, TDRFPs, etc.) to control RPV pressure below 1059.
- d. Turbine Control Valves will open until limited by the Load Limiter and Turbine Bypass Valves will open until limited by the Max Combined Flow Limiter; rapid depressurization will cause indicated RPV level to swell, resulting in a L8 trip of the Main Turbine and TDRFPs. The pressure decrease is terminated by manual closure of the MSIVs and the operators will use alternate means (SRVs, MSL drains, RCIC, TDRFPs, etc.) to control RPV pressure below 1059.

*ANSWER

d.

*REFERENCE

USAR Chapter 15, section 15.1.3

LGA-001, RPV Control

LGP-3-2, Reactor Sram

LOA-EH-101(201), Unit 1(2) EHC Abnormal

NEW
HIGHER
EXPLANATION

- a. Incorrect – Shift to the backup regulator only occurs if regulator output fails low.
- b. Incorrect – Turbine Control Valves and Bypass Valve opening will be limited by the Load Limiter and Max Combined Flow Limiter
- c. Incorrect – Turbine Control Valves opening will be limited by the Load Limiter and indicated RPV level will swell with the depressurization. Turbine trip will close the Control Valves but not the Bypass Valves.
- d. Correct – following the turbine trip, the Bypass Valves will open fully and the only effective way of limiting the pressure decrease, with the Bypass Valves open, will be to shut the MSIVs.

*QNUM 093
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 259001A209
*QUESTION

Given the following Unit 2 conditions:

- Unit Startup is in progress, Reactor Power is approximately 45%.
- Reactor Recirculation Pumps are in fast speed.
- TDRFP A is feeding in AUTO.
- TDRFP B is operating on minimum flow with it's M/A station in MANUAL.
- As the Unit Supervisor you have directed the unit assist Reactor Operator to perform LOS-FW-SR1, Turbine Feedwater Pump Surveillance on TDRFP B.

During performance of the Low Pressure Stop Valve test, the valve continued stroke to the Closed position when the Test pushbutton was released. Which of the following describes the status of TDRFP B, and the direction you should give to the unit assist Reactor Operator?

- a. Coasting down toward 0 RPM;
Depress the TURB RESET pushbutton and verify that the Low Pressure Stop Valve reopens.
- b. Coasting down toward 138 RPM;
Shutdown TDRFP B in accordance with LOP-FW-05.
- c. Operating at the set speed;
Depress the TURB RESET pushbutton and verify that the Low Pressure Stop Valve reopens.
- d. Operating at the set speed;
Shutdown TDRFP B in accordance with LOP-FW-05.

*ANSWER

d.

*REFERENCE

077 Feedwater System Lesson Plan

078 TDRFP Speed Control System Lesson Plan

LOP-FW-05, Shutdown of Turbine Drive Reactor Feedwater Pump

LOS-FW-SR1, Turbine Feedwater Pump Surveillance

NEW

HIGHER

EXPLANATION

- a. Incorrect – Speed control system should cause the High Pressure control valve to open to maintain set speed.

- b. Incorrect – Speed control system should cause the High Pressure control valve to open to maintain set speed.
- c. Incorrect – Since the pump is not tripped, depressing the RESET pushbutton will have no effect. Since the control valves are open, differential pressure will prevent reopening of the valve. LOS-FW-SR1 states that the pump should not be operated if the pump/valves fail the surveillance.
- d. Correct

*QNUM 094
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 2.1.8
*QUESTION

Which of the following local operations must be performed by a Licensed Operator (RO or SRO)?

- a. Venting a control rod drive mechanism
- b. Individual control rod scrambling
- c. Control rod speed adjustments
- d. Transfer of Reactor Supervisory Indications to the Remote Shutdown Panel

*ANSWER

b.

*REFERENCE

OP-AA-103-102, Watchstanding Practices

NEW

MEMORY

EXPLANATION

- a. Incorrect – see 'b'
- b. Correct – Field activities indirectly affecting reactivity (steam generator blow down flow changes, feed water heater level changes, primary system chemical additions, etc.) may be performed by non-licensed operators under the cognizance of the Unit Reactor Operator. This does **not** include local control rod scrambling or recirc manipulations.
- c. Incorrect – see 'b'
- d. Incorrect – see 'b'

*QNUM 095
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 2.1.34
*QUESTION

A Unit 1 shutdown is in progress due to the following chemistry parameters which were reported approximately 6 hours ago. The plant was operating at 50% power prior to commencing the shutdown.

- Reactor pH 8.8
- Reactor Water conductivity 11 micromhos/cm
- Reactor Water chlorides 150 ppb

Six hours later with the plant having just entered Mode 2, Chemistry reports the following:

- Reactor pH 6.5
- Reactor Water conductivity 0.9 micromhos/cm
- Reactor Water chlorides 150 ppb

Which one of the following actions is appropriate for these plant conditions?
(TRM 3.4.b, RCS Chemistry in EXAM HANDOUTS)

- a. Restore RCS Chemistry to within limits within 24 hours.
- b. Restore RCS Chemistry to within limits within 48 hours.
- c. Restore RCS Chemistry to within limits within 72 hours.
- d. Be in Mode 3 in 12 hours and Mode 4 in 36 hours.

*ANSWER

b.

*REFERENCE

TRM 3.4.b, RCS Chemistry

MODIFIED

HIGHER

EXPLANATION

- a. Incorrect – not applicable to mode 1, 2 or 3
- b. Correct –
- c. Incorrect – not applicable to mode 1, 2 or 3
- d. Incorrect – not applicable until 48 time limit expires

*QNUM 096
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 2.2.9
*QUESTION

Which one of the following activities would require completion of a full 50.59 evaluation?

- a. The unit is in Mode 4 with Division 1 providing the required decay heat removal and ECCS. The HPCS Water Leg Pump is to be taken out of service, but in order to maintain HPCS available, a temporary modification will be installed to keep the HPCS system filled and pressurized.
- b. The unit is in Mode 4 with Division 1 providing the required decay heat removal and ECCS. HPCS 480 VAC MCC 143-1 is to be de-energized for cleaning. Temporary 480 VAC power, from a non-ESF source, will be supplied to the Division 3 125 VDC Battery Charger.
- c. A step is to be added to the monthly Diesel Generator operability tests to exercise the governor between the high and low speed stops of the governor prior to paralleling the Diesel Generator to it's associated ESF bus.
- d. An ESF bus over-current relay, which is obsolete and for which repair parts are no longer available, is being replaced by a new digital over-current device. The new device is functionally equivalent, and meets all seismic and environmental qualifications.

*ANSWER

c.

*REFERENCE

NEW
HIGHER
EXPLANATION

- a. Incorrect – HPCS is not required to be operable, therefore this would be considered a maintenance activity and would screen out.
- b. Incorrect – HPCS is not required to be operable, therefore this would be considered a maintenance activity and would screen out.
- c. Correct – Creates the potential that frequency could be outside the design limits for operability, requiring manual action to restore the frequency to within limits.
- d. Incorrect – As long as the design can be shown to be equivalent a full evaluation would not be required.

*QNUM 097
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 2.2.29
*QUESTION

Given the following Unit 2 conditions:

- CORE ALTERATIONS are in progress.
- The next fuel bundle move is designated for reactor cavity position 05-18.
- The fuel bundle is currently in reactor cavity position 47-44.
- The following SRM readings have been observed by the Unit Reactor Operator

SRM A	2 cps
SRM B	4 cps
SRM C	1 cps
SRM D	3 cps

A reactor core map is provided for reference.

As the Unit Supervisor, which one of the following actions regarding the next fuel bundle move should you perform, including the bases for this action?

- a. Suspend the fuel bundle move; it cannot be completed since an SRM in one of the affected core quadrants is inoperable.
- b. Suspend the fuel bundle move; it cannot be completed since the SRMs in the adjacent core quadrants are inoperable.
- c. Continue the fuel bundle move; it can be completed since the SRM in one of the adjacent core quadrants is OPERABLE.
- d. Continue the fuel bundle move; it can be completed since the SRMs in the affected core quadrants are OPERABLE.

*ANSWER

b.

*REFERENCE

Technical Specification LCO 3.3.1.2

MODIFIED

MEMORY

EXPLANATION

- a. Incorrect – Both of the SRMs in the affected quadrants are operable
- b. Correct –
- c. Incorrect – Both of the SRMs in the adjacent quadrants are inoperable

d. Incorrect – Both of the SRMs in the adjacent quadrants are inoperable

*QNUM 098
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 2.3.10
*QUESTION

A restoration lineup of the Reactor Water Cleanup System is being performed following local leak rate testing of the containment penetrations. The restoration requires Independent Verification (IV). One of the valves is difficult to access and is located in area where the measured dose rate is approximately 80 mrem/hr.

Which one of the following describes the requirements for independent verification under these conditions?

- a. Independent verification may be waived for ALARA concerns. Alternate verification techniques shall be considered.
- b. Independent verification may be waived for ALARA concerns, only if there is an alternate method available to verify valve position.
- c. Independent verification must be completed, but the operator must be accompanied by a Radiation Protection Technician.
- d. Independent verification must be completed, but the Radiation Protection Manager must authorize the planned exposure.

*ANSWER

a.

*REFERENCE

HU-AA-101, Human Performance Tools and Verification Practices

MODIFIED

HIGHER

EXPLANATION

- a. Correct
- b. Incorrect – Alternate verifications methods must be considered, but is not required.
- c. Incorrect – See ‘a’. Additionally if it is decided to perform the verification, an RP brief may be required, but an RP escort is not required.
- d. Incorrect – See ‘a’. You do NOT need RP authorization.

*QNUM 099
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 2.4.18
*QUESTION

Detail G, RPV Pressure, located in EOP LGA-010, Failure to Scram, lists the RPV pressure, dependent upon the number of SRVs open, at which RPV injection is reestablished following ATWS Blowdown.

The RPV pressures listed correspond to:

- a. the shutoff head of the lowest head emergency core cooling pump
- b. the shutoff head of the highest head emergency core cooling pump
- c. the lowest pressure at which steam flow through the core will keep fuel clad temperature below 1500°F
- d. the lowest pressure at which steam flow through the core will keep fuel clad temperature below 1800°F

*ANSWER

c.

*REFERENCE

504 RPV Blowdown (LGA-004) Lesson Plan

510 Failure to Scram (LGA-010) Lesson Plan

NEW

MEMORY

EXPLANATION

- a. Incorrect – the pump curve for the lowest head ECCS pump is used in conjunction with the Minimum Steam Cooling Pressure to determine the minimum number of SRVs needed for emergency depressurization.
- b. Incorrect – the HPCS pump is capable of injection over the full range of RPV operating pressures
- c. Correct
- d. Incorrect – 1800°F corresponds to the fuel clad temperature limit associated with steam flow produced at the Minimum Zero-Injection RPV Water Level

*QNUM 100
*HNUM
*ANUM
*QCHANGED
*ACHANGED
*QDATE 2006/11/13
*FAC 373
*RTYP GE-BWR5
*EXLEVEL S
*EXMNR REESER
*QVAL 1.00
*SEC
*SUBSORT
*KA 2.4.30
*QUESTION

Which one of the following events requires notification of the NRC Operations Center via the Event Notification System (ENS red phone)?

- a. A valid actuation that caused inboard and outboard MSIVs to close.
- b. An invalid actuation of HPCS while the pump and injection valve are OOS.
- c. An invalid actuation of the RWCU inboard isolation valve that trips the RWCU pump.
- d. A valid actuation of LPCS with injection into the vessel as part of a pre-planned test.

*ANSWER

a.

*REFERENCE

LS-AA-1400, Reportability Manual, Page 60, SAF 1.7

BANK

HIGHER

EXPLANATION

- a. is correct.
- b. actuations of systems removed from service are not reportable.
- c. actuations involving RWCU are not reportable
- d. actuations as part of a pre-planned test are not reportable