Q# 1								
The scram time for control rod 22-43 is measured to be 90 seconds during single control rod scram timing. (1) Predict how this will effect the rod's response to a full reactor scram and, (2) select the action taken to mitigate the consequences of those affects.								
A. (1) The rod will fully insert, (2) recharge the accumulator per LOP-RD-20, "Control Rod Accumulator Recharging".								
B. (1) The rod will partially insert, (2) recharge the accumulator per LOP-RD-20, "Control Rod Accumulator Recharging".								
C. (1) The rod will fully insert, (2) fully insert the control rod and disarm it IAW LOP-RD-12, "Removal of a CRD HCU with Cooling Water On".								
D. (1) The rod will partially insert (2) fully insert the control rod and disarm it IAW LOP-RD-12, "Removal of a CRD HCU with Cooling Water On".								

Q# 2								
Reactor Recirculation Pump 2A is powered from __(1)__ when in FAST speed and __(2)__ when in SLOW speed.								
A. (1) Bus 241Y (2) Bus 251								
B. (1) Bus 251 (2) Bus 241Y								
C. (1) Bus 251 (2) Bus 251								
D. (1) Bus 241Y (2) Bus 241Y								

Q# 3								
Unit 1 is at 100% power when a spurious trip of the 1A RR pump occurs. INITIALLY, reactor water level will:								
A. decrease, due to a decrease in core voids.								
B. decrease, due to the RWLC system response on a trip of the RR pump.								
C. increase, due to an increase in core voids.								
D. increase, due to the RWLC system response on a trip of the RR pump.								

Q# 4								
Which of the following describes the direct response of the Reactor Water Cleanup (RT) system when the Standby Liquid Control (SC) system is initiated?								
A. The operating RT pumps trip when the SC pump starts.								
B. The Outboard Isolation [1(2)G33-F004] valve automatically closes.								
C. The Blowdown Flow Control [1(2)G33-F033] valve automatically closes.								
D. The operating filter demineralizers go into HOLD when the SC pump starts.								

Q# 5								
An ECCS condition occurred on Unit 1. Normal power is available, but the operator decided to load the DG and manually close it onto Bus 141Y. Later, an ECCS and Undervoltage condition occurs on Unit 2. What indication would you expect to see for the SAT feed to 141Y and the "0" DG?								
A. SAT feed to 141Y and "0" DG amps will remain constant.								
B. SAT feed to 141Y amps will increase; "0" DG amps will decrease then immediately increase.								
C. SAT feed to 141Y amps will increase and "0" DG amps will decrease.								
D. SAT feed to 141Y amps will increase; "0" DG amps will decrease and then increase after a 5 second time delay.								

Q# 6								
The Unit 1 NSO arms and depresses the Division 1 and Division 2 ECCS initiation pushbuttons. The LPCS pump does NOT start nor do any LPCS valves reposition as a result of his/her action. The lack of LPCS system component response could be attributed to a loss of …								
A. Bus 111X								
B. Bus 111Y								
C. Bus 112X								
D. Bus 112Y								

Q# 7								

Reactor startup is in progress.
The reactor is NOT critical.

SRM's read as follows:

Channel:	A	B	C	D
Counts Per Second:	$2x10^3$	$3x10^3$	$2x10^3$	$5x10^3$

Predict the effect of a loss of the SRM C High Voltage Power Supply, AND what would be the necessary operator action?

	EFFECT	NECESSARY OPERATOR ACTION
A.	Rod Block	Suspend startup until repairs are competed.
B.	Rod Block	Bypass the affected channel and continue startup.
C.	Half Scram	Bypass the affected channel and continue startup.
D.	Full Scram	Place the Reactor Mode Switch in Shutdown.

Q# 8								

The Standby Liquid Control (SBLC) system is in the following initial lineup:

- Test Tank Outlet Valve (1C41-F031) is full open
- Head Tank Outlet Valve (1C41-F014) is closed
- 1A Storage Tank Outlet Valve (1C41-F001A) is closed
- 1B Storage Tank Outlet Valve (1C41-F001B) is closed
- 1A SBLC Pump is OFF
- 1B SBLC Pump is OFF
- 1A Squib Valve (1C41-F004A) is closed
- 1B Squib Valve (1C41-F004B) is closed

If the 1A SBLC Pump keylock switch at 1H13-P603 were taken to SYS A, what would be the expected system status one (1) minute later?

A. The 1A SBLC system will remain in the current configuration.

B. The 1A SBLC pump will be injecting test tank water into the reactor.

C. The 1A SBLC pump will be injecting both test tank AND storage tank volumes into the reactor.

D. The 1A SBLC squib valve will fire and all other components will remain in their current configuration.

Q# 9								
Control Rod 38-13 is uncoupled. The over-travel reed switch on control rod 38-13's position probe is stuck open. Which of the following describes the expected indication on the Four-Rod Display if control rod 38-13 was withdrawn to position 48 and a coupling check then performed? The position readout for Control Rod 38-13 on the Four Rod Display will…								
A. be blank and an OVERTRAVEL alarm will be received.								
B. indicate a "48" and an OVERTRAVEL alarm will be received.								
C. be blank and an OVERTRAVEL alarm will NOT be received.								
D. indicate a "48" and an OVERTRAVEL alarm will NOT be received.								

Q# 10								
Unit 1 is at 100% power. The function switch for the “A” RBM is placed in “STANDBY”. What, if any, rod blocks will be applied?								
A. Insert Block only.								
B. Withdraw Block only.								
C. Insert and Withdraw Block.								
D. No rod blocks.								

Q# 11								
Which of the following features of the Source Range Monitoring (SRM) system extends the detector effective lifetime?								
A. The SRM detector can internal coating is enriched with U-234.								
B. The SRM detector internal gas pressure is much greater than that used in either the Intermediate Range or Local Power Range Detectors.								
C. The SRM detectors are physically larger than both the Intermediate Range and Local Power Range detectors.								
D. The SRM detectors can be retracted from the core when the flux levels are high.								

Q# 12								
Two sets of position indicating lights are provided on Panel 1H13-P601 for the RCIC Turbine Trip and Throttle Valve, one on the vertical section and one on the horizontal section of the panel. What condition is indicated if the lights on the vertical section indicate CLOSED and the indication on the horizontal section indicates OPEN? The Trip and Throttle Valve …								
A. is open with an initiation signal present.								
B. was manually closed from the control room.								
C. is closed due to a RCIC turbine trip.								
D. is in a normal standby lineup.								

Q# 13								
Which of the following correctly states four parameters that will cause an automatic PCIS isolation of the RCIC steam supply line (E51-F008)?								
A. High RCIC Steam Flow Rate, High Temperature in the RCIC pipe tunnel, High Differential Temperature in the RCIC Pipe Tunnel, Low RCIC Steam Flow Rate.								
B. High RCIC Steam Flow Rate, High Temperature in the RCIC equipment room, High Differential Temperature in the RCIC pipe tunnel, Low Steam Supply Pressure.								
C. High Drywell Pressure, High Temperature in the RCIC equipment room, High Differential Temperature in the RCIC equipment room, Low Steam Supply pressure								
D. High Drywell Pressure, High Temperature in the RCIC equipment room, High Differential Temperature in the RCIC pipe tunnel, High Pressure between the rupture discs on the RCIC turbine exhaust line.								

Q# 14								
Unit 2 is operating at rated conditions. "2A" RPS and DC bus 211Y are both lost simultaneously. Based on this loss, which of the following isolation valve(s) will close?								
A. Inboard VP isolation valves								
B. Inboard MS isolation valves								
C. Outboard RI isolation valves								
D. Outboard WR isolation valves								

Q# 15								
One of the suppression chamber to drywell vacuum breakers is found stuck open. If a reactor water level instrument reference leg ruptured in the drywell, what affect would the vacuum breaker failure have on the use of the drywell and suppression chamber sprays compared to the same event with functional suppression chamber to drywell vacuum breakers? With the suppression chamber to drywell vacuum breakers stuck open, _____ would have to be placed in service earlier in the transient.								
A. NEITHER the drywell sprays nor suppression chamber sprays								
B. ONLY the suppression chamber sprays								
C. ONLY the drywell sprays								
D. BOTH the drywell sprays and suppression chamber sprays								

Q# 16								

Unit 2 was operating at rated conditions when one of the Recirculation pump suction lines completely separated from the vessel at the same time that all off-site power was lost.

The following conditions exist 60 seconds after the transient began:

- Drywell pressure is 18 psig and increasing at 0.5 psig/minute
- Suppression chamber pressure is 16 psig and increasing at 0.5 psig/minute
- Reactor pressure is 300 psig and decreasing at 100 psig/minute
- Reactor water level is –171 inches and decreasing at 10 inches/minute
- Only the Division 2 DG started.
- No operator action has yet been taken.

Regarding the "B" RHR suppression chamber spray valve, which of the following describes

(1) the expected status of the valve, AND
(2) the expected immediate operator actions regarding the valve?

The "B" RHR suppression chamber spray valve will be…

A. (1) OPEN.
(2) Operators will close the valve to increase vessel injection.

B. (1) OPEN.
(2) Operators will leave the valve open to control containment pressure.

C. (1) CLOSED.
(2) Operators will leave the valve closed to maximize vessel injection.

D. (1) CLOSED.
(2) Operators will open the valve to control containment pressure.

Q# 17								
A transient occurred that resulted in reactor pressure increasing to the Alternate Rod Insertion setpoint. Which of the following indicates the MINIMUM number of safety relief valves that would be expected to have opened for this transient?								
A. 7								
B. 9								
C. 11								
D. 13								

Q# 18								
SRV's discharge to the Suppression Pool at ___(1)___ elevation and ___(2)___ distances from the center of the Suppression Pool.								
A. (1) the same (2) the same								
B. (1) varying (2) various								
C. (1) varying (2) the same								
D. (1) the same (2) various								

Q# 19								
Which of the following would occur if generator hydrogen pressure decreases to 25 psig while operating the main generator fully loaded? Generator damage due to …								
A. lack of cooling ability.								
B. seal oil backup.								
C. lack of seal oil.								
D. hydrogen detonation.								

Q# 20								

The plant is operating normally at approximately 75% power.

- The 1A and 1B TDRFP's are both in 3-Element control
- The RWLC setpoint is at 36 inches.
- One of the MSL Flow inputs to RWLC instantaneously fails downscale.

Which of the following describes the expected response of reactor feedwater flow?

Reactor feedwater flow will….

A. remain constant.

B. initially increase and then decrease prior to an automatic scram.

C. initially decrease and then increase prior to an automatic main turbine trip.

D. decrease until the reactor automatically scrams due to low reactor water level.

Q# 21								

Unit 1 at 100% power.

- 1A and 1B TDRFP in 3-Element control.
- A trip of 135X-3 occurs.

Which of the following describe how Reactor Water Level Control will respond to the event?

A. All RWLC M/A Stations will transfer to manual.

B. TDRFP's will transfer to Demand Substitution, the Feed Reg. Valve and Low Flow Feed Reg. Valve fail closed.

C. The RWLC system annunciates a minor RWLC failure alarm and component status is unchanged.

D. Band C Narrow range transmitters will fail downscale, causing a level 8 trip.

Q# 22								
Unit 2 at 100% power LOR 2PM01J-A111, “UPS TROUBLE” alarm just received for the Process Computer UPS Computer Point R0256 “UPS 480V Norm Sply Volt Lo” received. The Unit 2 UPS is now fed from…								
A. 235X-3								
B. 135X-2								
C. 221Y								
D. 211Y								

Q# 23								
Unit 1 has just started a refueling outage (shutdown was 3.5 hours ago). Unit 2 is critical with a 65°F/hour heat-up rate established. Given this initial lineup, which one of the following combinations of failures would result in a loss of all Off-Site AC power to both units?								
A. Unit 1 SAT and Lines 0108 and 0101.								
B. Unit 1 SAT and Unit 2 SAT.								
C. Unit 1 Ring Bus and Lines 0102 and 0103.								
D. Unit-2 SAT and Lines 6102 and 0108.								

Q# 24								
Unit 1, Division 1, 125VDC Voltage is indicated on the ___(1)___ panel and indicates ___(2)___.								
A. (1) 1PM01J (2) battery output only.								
B. (1) 1PM01J (2) battery and battery charger output.								
C. (1) 1PM02J (2) battery output only.								
D. (1) 1PM02J (2) battery and battery charger output.								

Q# 25								

LOS-DG-M2, 1A/2A Diesel Generator Operability Test is in progress for the 1A Diesel Generator.

Current load is at 1300 KW with 180 KVARS.

Action should be taken to increase KVARS to ___(1)___ in order to _____(2)_____ .

A. (1) 790 out
(2) maintain ECCS pump operability requirements should a loss of the SAT occur.

B. (1) 790 out
(2) prevent the Diesel Generator from tripping on reverse power due to large load changes on the grid.

C. (1) 450 out
(2) maintain ECCS pump operability requirements should a loss of the SAT occur.

D. (1) 450 out
(2) prevent the Diesel Generator from tripping on reverse power due to large load changes on the grid.

Q# 26								

Given the following Unit 1 conditions:

- Drywell pressure at 2.0 psig.
- The SAT has tripped due to spurious deluge.
- One (1) minute later, the 1A DG Cooling Water Pump trips.

If no operator action is taken, which of the following explains the operation of the emergency core cooling equipment?

A. Division 1 ECCS pumps will trip immediately due to a loss of power.

B. Division 2 ECCS pumps will trip immediately due to a loss of power.

C. Division 1 ECCS pumps will run until diesel failure occurs.

D. Division 2 ECCS pumps will run until diesel failure occurs.

Q# 27								
2WE01T, Unit 2 Waste Collector Tank is Out of Service and isolated. 1WE01T, Unit 1 Waste Collector Tank inlet valve (1WE001) solenoid has failed closed. Input from which of the following will be affected by the above condition?								
A. Reactor Building Equipment Drain Sumps								
B. Reactor Building Floor Drain Sumps								
C. Fuel Pool Filter Demin Backwash								
D. Laundry Sample Tank								

Q# 28								
Which of the following individuals would have the greatest risk of exceeding their daily radiation exposure limit due to changing radiological conditions during the stated evolution? An operator standing by the …								
A. Spent Resin Tank (0WX03T) during a Unit 2 Reactor Water Clean-Up System Filter Demineralizer Backwash.								
B. Phase Separator Tank (2WX01TB) during a Unit 2 Reactor Water Clean-Up System Filter Demineralizer Backwash.								
C. Spent Resin Tank (0WX03T) during a Unit 2 Condensate Polisher Resin Transfer To URC Inlet Vessel.								
D. Phase Separator Tank (2WX01TB) during a Unit 2 Condensate Polisher Resin Transfer To URC Inlet Vessel.								

Q# 29								
Unit 1 is starting up. Steam Jet Air Ejector steam flow is 6500lbm/hr. 1N62-F300A/B Main Condenser Outlet Valves are open with their C/S in OPEN. What affect, if any, will placing the Control Switches for 1N62-F300A/B to AUTO have on Offgas system flow?								
A. No affect.								
B. Offgas flow will increase first, then return to its original value.								
C. Offgas flow will increase.								
D. Offgas flow will decrease.								

Q# 30								
Unit 1 is operating at 100% power. Unit 1 Reactor Building Ventilation (VR) system spuriously trips. Based on the above transient, (1) predict the concern of the VR Isolation on the secondary containment, AND (2) actions taken to mitigate the transient.								
A. (1) Temperature increase affecting equipment operability; (2) Start Standby Gas Treatment to maintain area temperatures.								
B. (1) Temperature increase affecting equipment operability; (2) Bypass high differential temperature isolation signals and restart VR.								
C. (1) Radiation levels increasing, affecting equipment operability; (2) Bypass high radiation isolation signals and restart VR.								
D. (1) Radiation levels increasing, affecting equipment operability; (2) Start Standby Gas Treatment to maintain area radiation levels.								

Q# 31								
What is the difference, if any, between how leakage into the reactor building corner room sumps will be processed during conditions in which the secondary containment has isolated as compared to normal operations?								
A. NO DIFFERENCE, the floor drain sump will continue to pump down to the Radwaste floor drain collector tank regardless of secondary containment status.								
B. The floor drain sump will isolate and need to be manually aligned to Radwaste floor drain collector tank using the RE/RF isolation bypass keylock switches at 1(2)PM16J.								
C. The floor drain sump CANNOT be pumped down while the secondary containment is isolated, resulting in the sumps overflowing into the other corner room sumps.								
D. The floor drain sump will be pumped to the reactor building equipment drain sump vice the Radwaste floor drain collector tank while the secondary containment is isolated.								

Q# 32								
The 0A Control Room Ventilation (VC) system is operating in purge mode to remove light smoke from an electrical fault in a desktop computer. Predict the response of the VC system if high radiation is detected in the outside air by detectors 1D18-K751A and 1D18-K751B?								
A. ONLY VC Minimum and Maximum Outside Air Dampers will receive a signal to close. The VC Charcoal Filter will remain in its current lineup.								
B. ONLY VC Minimum and Maximum Outside Air Dampers will receive a signal to close. The VC Charcoal Filter will realign.								
C. VC and VE Minimum and Maximum Outside Air Dampers will receive a signal to close. The VC Charcoal Filter will remain in its current lineup.								
D. VC and VE Minimum and Maximum Outside Air Dampers will receive a signal to close. The VC Charcoal Filter will realign.								

Q# 33								
The Control Room Ventilation System is aligned for normal operations (NOT in purge) and smoke is detected in the RETURN AIR supply duct. Which of the following describes the response of the VC System?								
A. The VC Charcoal Filter is automatically placed on line and the Minimum Outside Air Damper closes.								
B. The Emergency Make Up Train automatically comes on line and the Outside Air Supply isolates.								
C. The VC Charcoal Filter is automatically placed on line and the Minimum Outside Air Damper remains open.								
D. The Emergency Make Up Train automatically comes on line and the Minimum Outside Air Damper remains open.								

Q# 34								
Unit 1 is at rated power with a normal electrical lineup. If Bus 141Y voltage drops to 65% of its normal voltage . . .								
A. the UAT feed to 141Y will trip and the 0 DG will start and pick up the bus to restore voltage to essential equipment.								
B. the UAT feed to 141Y will trip and the SAT feed will automatically close to restore voltage to all loads on the bus.								
C. the SAT feed to 141Y will trip and the 0 DG will start and pick up the bus to restore voltage to essential equipment.								
D. the SAT feed to 141Y will trip and the UAT feed will automatically close to restore voltage to all loads on the bus.								

Q# 35								
Why are Inboard and Outboard Primary Containment Isolation Valves powered from separate sources? To ensure that a loss or failure of ___(1)___ power supply(s) will _____(2)_____ .								
A. (1) a single (2) NOT prevent an isolation from occurring.								
B. (1) both (2) NOT prevent an isolation from occurring.								
C. (1) a single (2) always result in an isolation.								
D. (1) both (2) always result in an isolation.								

Q# 36								

The following alarms are received in the control room:

- 125VDC Pnl 111X/Y Gnd Det
- 125VDC Div 1 Charger Trouble

The Shift Manager has given permission to commence ground isolation on Bus 111Y per the appropriate procedure.

Which of the following indicates the system affected and the expected response of that system to opening individual circuit breakers during the course of ground isolation?

A. The "B" Narrow Range Indicator will fail downscale.

B. The 1A TDRFP will NOT respond to speed demand signals.

C. MDRFP will trip due to Level 8 trip.

D. RCIC will NOT automatically initiate as designed.

Q# 37								

Reactor power is at 60%, with a decreasing Relayed Emergency Trip Supply (RETS) pressure.

Which of the following describes the HIGHEST RETS pressure that will cause Reactor Recirculation (RR) pump speed to change and the expected final RR pump speed?

	RETS Pressure	RR Pumps
A.	450 psig	OFF
B.	450 psig	SLOW
C.	550 psig	OFF
D.	550 psig	SLOW

Q# 38								
Unit 2 is at rated conditions. The 2A Moisture Separator Reheater Drain Tank level controls fail causing level to increase to the bottom of the 2A Moisture Separator Reheater Shell. Which of the following describes the INITIAL response of reactor pressure and level to a Main Turbine Generator Trip from rated conditions? Reactor Pressure will ___(1)___ and INDICATED Reactor Water Level will ____(2)____.								
A. (1) increase (2) increase								
B. (1) increase (2) decrease								
C. (1) decrease (2) increase								
D. (1) decrease (2) decrease								

Q# 39								

A reactor startup is in progress with reactor power at 13%.

An electrical malfunction causes all turbine control valves to open fully.

The reactor automatically scrammed.

Without operator action, which of the following describes the methods of decay heat removal AVAILABLE immediately after the scram?

1. Main Turbine Bypass Valves
2. Outboard Main Steam Line Drains
3. Safety Relief Valves
4. Reactor Water Cleanup

A. 1, 2, 3 and 4

B. 1, 2 and 3 only

C. 2, 3 and 4 only

D. 3 and 4 only

Q# 40								

Unit 1 is cooling down for a refueling outage with the following conditions present:

- Reactor Pressure is 100 psig
- 1A RHR in Shutdown Cooling
- EHC pressure set is at 150 psig
- MSIV's are open
- Reactor scram has been reset

- All running RHR Service Water Pumps trip

With no operator action, which of the following events will be expected to occur NEXT?

A. 1A RHR pump trip

B. Turbine BPV's open

C. MSIV's isolate

D. Reactor Scram

Q# 41								

RCIC flow is in automatic, injecting at rated flow.
SRV's are being cycled to maintain reactor pressure.

Which of the following describes the RCIC system FINAL parameters as reactor pressure rises from 800 to 1000 psig.

	Turbine Speed	Pump Flow	Pump Discharge Pressure
A.	Lower	Remain the Same	Higher
B.	Remain the Same	Lower	Lower
C.	Higher	Higher	Remain the Same
D.	Higher	Remain the Same	Higher

Q# 42								
The MDRFP will trip at Level 8 to prevent damaging the …. 1. Safety Relief Valves 2. Main Turbine 3. Reactor Vessel Steam Separator 4. RCIC Turbine								
A. 1, 2, 3 and 4.								
B. 1, 2 and 3 only.								
C. 2 and 4 only.								
D. 1 and 2 only.								

Q# 43								
HPCS automatically starts and injects to the vessel. Annunciators for Reactor Vessel Level 8 are received on 1H13-P601. Which of the following statements is true?								
A. HPCS injection valve will close and the Full Flow Test valve will open.								
B. HPCS injection valve will close and the HPCS pump breaker will trip.								
C. HPCS will continue to inject due to the High Drywell signal.								
D. HPCS pump will continue to run and the Minimum Flow valve will open.								

Q# 44								
A LOCA is in progress on Unit 2. Drywell pressure is 13 psig and increasing at 0.1psig/min. Which of the following would indicate proper operation of Primary Containment? A Suppression Chamber Pressure of …								
A. 0 - 1 psig.								
B. 4 - 5 psig.								
C. 8 - 9 psig.								
D. 12 - 13 psig.								

Q# 45								

Unit 2 is at full power

- Suppression Pool (SP) Cooling is in operation
- Average pool temperature is increasing
- RCIC testing is in progress

If SP temperature continues to rise, the unit is required to immediately stop RCIC testing if SP temperature exceeds __(1)__ degrees F, or immediately place the reactor mode switch in SHUTDOWN if SP temperature exceeds __(2)__ degrees F.

A. (1) 105
(2) 110

B. (1) 110
(2) 120

C. (1) 105
(2) 120

D. (1) 100
(2) 110

Q# 46								

Unit 1 is at 100% power.
Extraction Steam to the 16A HP Heater has just been lost.
LOA-HD-101, "Heater Drain System Trouble" has been entered.

APRM AGAF's:

A: 0.972 B : 0.974 C : 1.030
D: 1.040 E : 0.974 F: 1.024

Core power should be determined via:

A. Power-to-Flow Map.

B. APRM's.

C. OD3.

D. RBM.

Q# 47								

A reactor [illegible] indications for the scram group lights:

OFF	OFF	OFF	OFF

Which of the following indicates the MINIMUM actions required to de-energize the remaining RPS scram group lights?

Depress the _____ scram pushbutton(s).

A. A1 OR A2

B. A1 AND A2

C. B1 OR B2

D. B1 AND B2

Q# 48								
During performance of LGA-NB-01, Alternate Rod Insert, Single Rod Insertion, the operator is directed to place the MODE SELECT switch in BYP for the Rod Worth Minimizer. The above action bypasses …								
A. rod insert blocks to allow inward rod motion.								
B. the settle function to speed the rate of rod insertion.								
C. the single notch function to speed the rate of rod insertion.								
D. nuclear Instrumentation rod blocks to allow all rod motion.								

Q# 49								
A fire in the Control Room has forced evacuation and control has been transferred to the Remote Shutdown panel. Which of the following would indicate a loss of 121Y?								
A. No position indication for "K" SRV.								
B. "B" RHR flow indication downscale.								
C. RCIC turbine trip and throttle valve indication.								
D. RHR Service Water flow indication downscale.								

Q# 50								

Unit 1 is at 100% power.

Off-Gas Charcoal Adsorber Train Mode Switch in AUTO with the following lineup:

- 1N62-F043, Off Gas Charcoal Adsorber Bypass Valve is open.
- 1N62-F042, Off Gas Charcoal Adsorber Inlet Valve is closed.
- 1N62-F057 Off Gas System Discharge to Stack is open
- 1N62-F085A/B Holdup Line Drain Valve are open

What is the expected response of the Off Gas System to a valid Hi-Hi Post Treatment radiation condition?

A. No Off Gas Valves will auto position until a Hi-Hi-HI Rad signal is reached.

B. 1N62-F043 will close and 1N62-F042 will open.

C. 1N62-F043 will close; 1N62-F042 will open and 1N62-F057 will close.

D. 1N62-F043 will close; 1N62-F042 will open, 1N62-F057 will close and 1N62-F085A/B will close.

Q# 51								
LGA-009, Radioactivity Release Control, requires a Reactor Scram before the offsite release rate reaches a specific Emergency Plan level. Initiation of a scram will…								
A. prevent fuel damage in the reactor.								
B. allow low-pressure systems to inject into the core.								
C. reduce the energy levels in the reactor pressure vessel.								
D. allow reactor water level to be raised above the main steam line penetrations.								

Q# 52								
111Y has been lost. How will this affect Unit 1 Drywell temperature? Drywell temperature will ___(1)___ due to _____(2)_____.								
A. (1) increase (2) outboard isolation valves closing.								
B. (1) increase (2) inboard isolation valves closing.								
C. (1) remain the same (2) outboard isolation valves failing “as is”.								
D. (1) remain the same (2) inboard isolation valves failing “as is”.								

Q# 53								

Unit 2 is in REFUEL with fuel movements in progress.

- While moving a fuel bundle from the reactor to the fuel pool, the bundle was dropped in the fuel pool.
- Several Refuel Floor ARM's were received along with an isolation of VR.
- Unnecessary personnel were evacuated from the refuel floor and reactor building.

Given the above conditions, what is the expected response of the Fuel Pool Cooling System?

A. No automatic actions.

B. Automatically isolates the Fuel Pool Cooling Demineralizer.

C. Automatically trips Fuel Pool Cooling Pumps and isolates system.

D. Automatically places the second Fuel Pool Cooling Filter Demineralizer in line.

Q# 54								

Unit 1 has experienced a transient.

Suppression Pool Level is –15 feet.

Which of the following conditions could be expected to cause LPCS system damage?

	Suppression Chamber Pressure (psig)	Suppression Pool Temperature (°F)
A.	0	210
B.	5	215
C.	10	230
D.	15	245

Q# 55								
Suppression Pool level: –6 feet Suppression Chamber pressure: 15 psig Which of the following is the HIGHEST Suppression Pool temperature that Suppression Chamber Sprays can be started without concerns of pump damage?								
A. 235°F								
B. 240°F								
C. 245°F								
D. 250°F								

Q# 56								
Unit 1 Primary Containment Chillers A & C are off. Unit 1 Primary Containment Chiller "B" trips. Which below describes … (1) the status of containment cooling, AND (2) the expected IMMEDIATE (within one minute) effect on Unit 1 Drywell pressure?								
A. (1) All cooling is lost (2) Drywell pressure will rise.								
B. (1) All cooling is lost (2) Drywell pressure will remain constant.								
C. (1) Limited cooling is still maintained (2) Drywell pressure will rise.								
D. (1) Limited cooling is still maintained (2) Drywell pressure will remain constant.								

Q# 57								

Unit 2 RCIC is in a normal standby lineup.

Leaking valves cause Suppression Pool Level to increase such that High Suppression Pool Water Level alarms are received on the 2H13-P601 panel.

Which one of the following describes the response of the RCIC system to this condition?

A. RCIC Suction from the Suppression Pool, 2E51-F031, will open and then RCIC Suction from the CY Tank, 2E51-F010, will close.

B. RCIC Suction from the CY Tank, 2E51-F010, will close and then RCIC Suction from the Suppression Pool, 2E51-F031, will open.

C. RCIC suctions will remain in standby configuration until a low CY Tank level condition occurs at which time they will transfer with 2E51-F031, RCIC Suction from the Suppression Pool, opening and then 2E51-F010, Suction from the CY Tank, closing.

D. RCIC suctions will remain in standby configuration until a low CY Tank level condition occurs at which time they will transfer with 2E51-F010, Suction from the CY Tank, closing and then 2E51-F031, RCIC Suction from the Suppression Pool, opening.

Q# 58								

Under which of the following Suppression Pool water level conditions could HPCS be operated within its vortex limits?

	Suppression Pool Level	Suppression Pool Temperature	Suppression Chamber Pressure
A.	–16 ft	230°F	5 psig
B.	–16 ft	235°F	10 psig
C.	–12 ft	250°F	15 psig
D.	–12 ft	255°F	20 psig

Q# 59								
Drywell Temperature 310°F. Reactor Building Ventilation has isolated. Area Coolers are NOT able to maintain Reactor Building Temperatures. Reactor Building Temperature 180°F. Reactor Vessel Pressure 90 psig. Cooldown Rate has NOT exceeded 100°F/hour. Which of the following is a usable, on-scale level reading?								
A. Shutdown Range level indication reading +80 inches.								
B. Upset Range level indication +2 inches.								
C. Narrow Range level indication reading +3 inches.								
D. Fuel Zone level indication reading –310 inches.								

Q# 60								
Unit 1 at 100% power. Alarm 1H13-P601-D507, "RCIC PIPE RTE EQUIP AREA TEMP HI" received. Actions should be taken to ____(1)____ the RCIC pipe route area in order to maintain ____(2)____.								
A. (1) isolate any discharges into, (2) RCIC operability.								
B. (1) isolate any discharges into, (2) equipment and access to areas needed for safe S/D.								
C. (1) monitor temperatures until Max Safe Level is reached, (2) RCIC operability.								
D. (1) monitor temperatures until Max Safe Level is reached, (2) equipment and access to areas needed for safe S/D.								

Q# 61								

Unit 1 has experienced a LOCA.

- LGA-004 has been performed based on the Pressure Suppression Pressure limit being exceeded.
- Containment Pressure is at 52 psig and increasing.
- LGA-VQ-02, Emergency Containment Vent has been directed.

Actions during the performance of this procedure should include …

A. shutdown of the Control Room Ventilation System.

B. shutdown of the Control Room Emergency Makeup train.

C. evacuation of the Reactor Building, Auxiliary Building, and Turbine Building in Unit 1 ONLY.

D. evacuation of the Reactor Building, Auxiliary Building, and Turbine Building in Unit 1 AND Unit 2.

Q# 62								

Unit 1 was operating at 100% power when both RR pumps spuriously tripped.

- Reactor Scram pushbuttons for both divisions have been armed and depressed.
- Mode Switch has been taken to SHUTDOWN.
- APRM Downscale lights are extinguished.
- RPS lights illuminated.
- Rods did NOT move.

The NEXT actions to be taken should be:

A. Initiate Alternate Rod Insertion.

B. Remove Scram solenoid fuses.

C. Maintain Reactor water level between +11.0 inches to +59.5 inches.

D. Maintain Reactor water level between –150 inches and +59.5 inches.

Q# 63								

An ATWS has occurred.

- Only one quarter of the control rods are inserted.
- RPV water level is being maintained between -120 and -80 inches.
- Reactor pressure is being maintained between 900 and 1000 psig.
- Hot Shutdown Boron Weight has just been injected.

Under which condition below would you expect the reactor to go critical again?

A. Cooldown of the reactor.

B. Placing RCIC in service to maintain vessel level.

C. Placing RWCU in service to stabilize reactor pressure.

D. Decay of xenon over the next several hours.

Q# 64								
Which of the following would have the greatest impact on Instrument Air system operation? A station air compressor's …								
A. lube oil temperature sensor failing low.								
B. discharge air temperature sensor failing low.								
C. air inlet differential pressure sensor failing high.								
D. cooling water pressure sensor failing high.								

Q# 65								
A fire in the 1B Diesel Generator room has resulted in an automatic initiation of the CO2 Flooding System. The CO2 system has NOT been reset, and the fire re-flashes. Which of the following describes the actions and/or conditions required to re-actuate the system? The CO2 system activation….								
A. will occur automatically once the detectors reach their setpoint for initiation again.								
B. can be performed via the Local Initiation Pushbutton in the Diesel Generator corridor.								
C. will only occur if the detectors are reset AND temperatures reach initiation setpoint.								
D. can only be performed manually, via the local manual lever from the control panel in the Diesel Generator Corridor, AND will automatically terminate after 15 seconds.								

Q# 66								
Unit 1 in MODE 2, withdrawing control rods. • All IRM's on range 2. • All SRM's are declared INOPERABLE. Per Technical Specifications, operator action should include …								
A. Suspend control rod withdrawal.								
B. Fully insert all control rods.								
C. Place the Mode Switch in SHUTDOWN.								
D. Continue rod withdrawals as IRM operability is met.								

Q# 67								
Which of the following tasks are responsibilities of a Reactor Operator per OP-AA-103-104, Reactivity Management Controls? 1. Coordinate the conduct of refueling activities and monitor nuclear instrumentation during refueling activities that could affect the reactivity of the core. 2. Verify critical steps of Emergency Operating Procedure Flowcharts during transients and accident conditions. 3. Ensure activities in the Control Room and plant are conducted in a professional manner, in accordance with approved procedures.								
A. 1 and 2 ONLY								
B. 2 and 3 ONLY								
C. 1 and 3 ONLY								
D. 1, 2 and 3								

Q# 68								
Post maintenance testing of the RCIC system is required to be performed per LOS-RI-Q3, Reactor Core Isolation Cooling (RCIC) System Pump Operability and Valve Inservice Tests in Conditions 1, 2, and 3. Which of the following is required to be performed concurrent with the RCIC run?								
A. Chemistry analysis on the Suppression Pool water.								
B. Suppression Pool Temperature Monitoring Checks.								
C. RCIC Monthly Valve Operability on the RCIC Exhaust Rupture Diaphragm.								
D. Remote Shutdown Panel Post Accident Instrumentation Operability Checks.								

Q# 69								
A Reactivity Maneuver (ReMa) Form is required for which of the following activities?								
A. Withdrawing control rods for a reactor startup.								
B. Inserting flow control line rods to clear APRM Hi alarms.								
C. Opening RR Flow Control Valves to compensate for xenon buildup.								
D. Closing RR Flow Control Valves to compensate for a heater drain transient.								

Q# 70								
Which of the following is the lowest level of authority authorized to waive Independent Verification of a valve position due to ALARA concerns?								
A. Radiation Protection Shift Supervisor								
B. Reactor Operator								
C. Shift Manager								
D. Plant Manager								

Q# 71								
Which of the following must be in service prior to performing a containment purge when the unit is at power?								
A. ONLY the MCR Emergency Makeup Train								
B. MCR AND AEER Emergency Makeup Trains								
C. ONLY the MCR Recirculation Charcoal Filter Unit								
D. MCR AND AEER Recirculation Charcoal Filter Units								

Q# 72								
During a casualty, an NSO opens an SRV to control pressure. The SRV is closed and manually opened 15 seconds later. Which of the following describes the potential adverse consequences of this action?								
A. SRV tailpipe damage due to excessive water level in the tailpipe.								
B. Suppression pool wall damage to the due to cyclic dynamic loading.								
C. SRV seat damage due to partial opening of the valve with limited air pressure.								
D. ECCS pump damage due to the creation of a vortex in the suppression pool.								

Q# 73								
The Unit Supervisor has directed performance of LGA-NB-01, “Venting CRD Withdrawal Line”. In order to perform this task , the non-licensed operator will need a tygon hose, CRD vent valve wrenches , a crescent wrench and straps. Tools and equipment required to perform this task are located in the...								
A. Control Room LGA File Cabinet.								
B. Reactor Building Supply Cabinet, 761’ Reactor Building.								
C. LGA Support Cabinet, 768’ Turbine Building.								
D. Main LGA Support Locker outside Unit 2 Aux. Electric Equip. room, 731’ Aux. Building.								

Q# 74								

LGA-003, Primary Containment Control is in progress.

- Suppression Chamber and Drywell Sprays are both on.
- Drywell Pressure is 0.5 psig and decreasing at 0.25 psig/min.
- Suppression Chamber pressure is 0.9 psig and decreasing at 0.25 psig/min.

Which of the following describes the actions that should be taken NEXT, AND the reason for that action?

A. Secure Drywell Sprays to prevent exceeding drywell floor limit.

B. Secure Drywell Sprays to prevent raising oxygen levels in the Drywell.

C. Secure Suppression Chamber Sprays to prevent exceeding drywell floor limit.

D. Secure Suppression Chamber Sprays to prevent raising oxygen levels in the Drywell.

Q# 75								

Unit 2 is shutdown with the following conditions:

- A large LOCA has occurred.
- Containment pressure quickly exceeded the Pressure Suppression Pressure Limit.

Which of the following describes the sequence of steps to be attempted to mitigate the containment pressure increase?

A. Align RHR for Drywell Spray;
Align RHR for Suppression Chamber Spray;
Initiate ADS;
Align VQ for venting the Drywell.

B. Align VQ for venting the Drywell;
Align RHR for Suppression Chamber Spray;
Align RHR for Drywell Spray;
Initiate ADS.

C. Align RHR for Suppression Chamber Spray;
Align RHR for Drywell Spray;
Initiate ADS;
Align VQ for venting the Drywell.

D. Align VQ for venting the Drywell;
Align RHR for Drywell Spray;
Align RHR for Suppression Chamber Spray;
Initiate ADS.

Q# 76								
Unit 1 is operating at 80% power with the "A" Recirculation loop HPU's locked up. Which of the following describes: (1) the response of the Recirculation system if a Flow Control Runback signal was received, AND (2) the potential consequences?								
A. (1) Only the "B" Flow Control Valve would partially close, reducing core flow. (2) Increased chance of cyclic fatigue at the jet pump riser brace welds.								
B. (1) Only the "B" Flow Control Valve would partially close, reducing core flow. (2) Increased chance of cavitation erosion to the Flow Control Valve seating surface.								
C. (1) Neither Flow Control valve would reposition, core flow would remain constant. (2) Increased chance of reactor scram during level transients.								
D. (1) Neither Flow Control valve would reposition, core flow would remain constant. (2) Increased chance of Recirculation pump trip during level transients.								

Q# 77								

Unit 1 in Cold Shutdown.

- "B" RHR in Shutdown Cooling with a suction temperature of 190°F.
- "A" RHR pump is OOS.
- Reactor Water level is 145 inches.
- 1A RR pump is in slow speed
- 1B RR Pump is OOS.

Which of the following describes the initial response of the Reactor Recirculation pump suction temperatures if the "B" RHR pump tripped?

	1A RR Pump Suction Temperature	1B RR Pump Suction Temperature
A.	Increase	Remain Relatively Stable
B.	Increase	Increase
C.	Remain Relatively Stable	Increase
D.	Remain Relatively Stable	Remain Relatively Stable

Q# 78								
A loss of MCC 243-1 will prevent operation of which of the following components?								
A. Unit 2 High Pressure Core Spray Injection Valve.								
B. Unit 2 Low Pressure Core Spray Injection Valve.								
C. Unit 2 Reactor Core Isolation Cooling Injection Valve.								
D. Unit 2 “C” Residual Heat Removal Injection Valve.								

Q# 79								
HPCS is running in Full Flow Test lineup IAW LOS-HP-Q1, "HPCS SYSTEM INSERVICE TEST." • HPCS Flow cycling between 1000 and 6000 gpm. • HPCS Motor current is cycling between 200 and 340 amps. Which of the following would cause these conditions?								
A. Cycling Min Flow Valve								
B. Damaged Thrust Bearing								
C. Low Cycled Condensate Tank Level								
D. Clogged Suppression Pool Suction Strainer								

Q# 80								
Unit 1 is operating at 75% power. • LOR 1H13-P603-B106, “CHAN A1/B1 TCV FAST CLOSURE” is received. • All Scram Group Solenoid Lights are illuminated. • The # 1 Turbine Control Valve is observed closed. • Reactor power, pressure and level remain steady. What actions, if any should be taken?								
A. No actions required.								
B. Manually insert a scram on “A” RPS subchannel.								
C. Manually insert a scram on “B” RPS subchannel.								
D. Insert a manual full scram.								

Q# 81								

Unit 2 is at 80% power.

What affect, if any, would placing the SDV Bypass Switch in the BYPASS position have on the associated scrams and rod blocks?

	SCRAM	ROD BLOCK
A.	Bypassed	NOT Affected
B.	Bypassed	Bypassed
C.	NOT Affected	NOT Affected
D.	NOT Affected	Bypassed

Q# 82								

Unit 2 is at 100% power.

The equalizing valve for the Reactor Low Water Level 1 ECCS Initiation Instrument Channel C transmitter, 2B21-N407C is OPENED.

Which of the following describes

(1) the impact this would have on the level indicator fed from this instrument, AND

(2) the action that would be required if an actual Level 1 condition were to occur?

(Restrict your answer to the impact on the Reactor Low Water Level 1 ECCS Initiation Instrument Channel C transmitter, 2B21-N407C ONLY.)

A. (1) Indicated level would be HIGHER than actual.
(2) LPCS would have to be manually initiated.

B. (1) Indicated level would be LOWER than actual.
(2) LPCS would inject when required.

C. (1) Indicated level would be HIGHER than actual.
(2) LPCS would inject when required.

D. (1) Indicated level would be LOWER than actual.
(2) LPCS would have to be manually initiated.

Q# 83								
A loss of DC Bus 112X will result in a loss of indication on…								
A. Division 1 Wide Range Level.								
B. Division 2 Wide Range Level.								
C. “B” Narrow Range Level.								
D. “C” Narrow Range Level.								

Q# 84								

Unit 2 Suppression Pool temperature and Suppress Chamber air temperature are both 105°F following a transient.

Suppression pool water level is 16 inches BELOW normal.

Which of the following describes the expected response of Suppress Chamber air temperature if 2A RHR is placed in Suppression Pool Cooling mode?

Suppression Chamber air temperature would decrease __(1)__ Suppression Pool temperature and could be monitored on temperature indicators on the __(2)__ panel.

A. (1) BEFORE
(2) 2H13-P601

B. (1) BEFORE
(2) 2PM13J

C. (1) AFTER
(2) 2H13-P601

D. (1) AFTER
(2) 2PM13J

Q# 85								
The primary containment CAM Local Sample Panel 1PL75J (3-Point CAM) shares its Drywell and Suppression Chamber sample taps with the…								
A. 1A Post LOCA Monitor								
B. 1B Post LOCA Monitor								
C. 1A Oxygen Monitor								
D. 1B Oxygen Monitor								

Q# 86								

Unit 1 is operating at power when the PCIS Group 1 K7A relay fails open, de-energizing the K51 Relay which de-energizes solenoid 3 for the Inboard MSIV's and de-energizes solenoid 2 for the outboard MSIV's.

Which of the following is the expected response of the MSIV's to this failure?

	INBOARD	OUTBOARD
A.	Remain Open	Remain Open
B.	Close	Close
C.	Close	Remain Open
D.	Open	Close

Q# 87								

Unit 2 has scrammed.

- The MSIV's and SRV's are closed.
- Reactor pressure is 1080 psig.
- Reactor water level is -3 inches.

Which of the following actions should the reactor operator take FIRST?

A. Start RCIC in the pressure control mode.

B. ARM and DEPRESS the ADS pushbuttons.

C. Press the Bypass Jack INCREASE pushbutton.

D. Place the control switches for SRVs ‘S’ and ‘U’ in OPEN.

Q# 88								
Which of the following indications provide for MAXIMUM heatup during shell warming? __(1)__ Turbine Stop Valve position meter is indicating __(2)__ .								
A. (1) #1 (2) 10%								
B. (1) #1 (2) 100%								
C. (1) #2 (2) 10%								
D. (1) #2 (2) 100%								

Q# 89								
During a power ATWS and after Hot Shutdown Boron has been injected, LGA-010 directs the operator to raise RPV level above +11 inches, then to hold level between +11 and +59.5 inches. The reason for raising level here is to…								
A. clear the Level 3 shutdown cooling isolation signals.								
B. clear the Level 3 scram signals, so the scram can be reset.								
C. increase natural circulation to improve boron mixing.								
D. ensure accurate nuclear instrumentation response.								

Q# 90								
Following a Loss of Coolant Accident, the Standby Gas Treatment (SBGT) System has been in service for several hours venting the drywell, in accordance with LGA-VQ-01, Containment Vent. SBGT WRGM indicates elevated release rates. Which of the following could explain the elevated release?								
A. Charcoal Adsorber access door NOT fully closed.								
B. Pre-Filter differential pressure increase of 2.0 inches water.								
C. Moisture Separator differential pressure increase of 1.0 inches water.								
D. Electric Heater Temperature Controller failure below the controller setpoint.								

Q# 91								
Which of the following conditions automatically starts the Unit 1 Standby Gas Treatment (SBGT) Train?								
A. Unit 1 Reactor Water Level of –25 inches.								
B. Actuating the Unit 2 manual initiation for SBGT.								
C. Reactor Building differential pressure less than –0.25 inches water.								
D. Failure of the Unit 1 Reactor Building Vent Isolation damper 1VR04Y to the closed position.								

Q# 92								
During a loss of feedwater heating transient MFLCPR exceeds a value of 1.003. The number of fuel clad failures will …								
A. Increase significantly and reactor power must be reduced within the next 2 hours.								
B. Increase significantly and all control rods must be inserted within the next 4 hours.								
C. Remain relatively stable and reactor power must be reduced within the next 2 hours.								
D. Remain relatively stable and all control rods must be inserted within the next 4 hours.								

Q# 93								
Due to an error in performing surveillance, an MSIV isolation has occurred while operating at full power for an extended period of time. If no operator action is taken, which of the following indicates the expected range of reactor pressure 30 minutes after the MSIV's have closed.								
A. 768 to 854 psig								
B. 896 to 1006 psig								
C. 926 to 1046 psig								
D. 976 to 1076 psig								

Q# 94								

Unit 1 is operating with "A" RHR is in Shutdown Cooling.

- Suppression Pool Level is at +2 inches and being lowered per LOP-RH-16, "Raising and Lowering of Suppression Pool Level".
- The 1E12-F064A, A RHR Pump Min. Flow, fails open.
- Reactor Vessel level lowers to +10 inches.
- Suppression Pool Level increases to +3.5 inches.

Given the above transient…

(1) what is the status of "A" RHR system, AND
(2) what LGA's, if any, are you in?

A. 1) Running on min. flow
2) None

B. 1) Running on min. flow
2) LGA-001 RPV CONTROL and LGA-003 PRIMARY CONTAINMENT CONTROL.

C. 1) Isolated
2) None.

D. 1) Isolated
2) LGA-001 RPV CONTROL and LGA-003 PRIMARY CONTAINMENT CONTROL.

Q# 95								
Unit 1 is in Cold Shutdown when an inadvertent Division 1 High Drywell pressure signal is received. Which of the following describes the operation of the LPCS Injection Valve under these conditions?								
A. Will NOT open unless RPV water level is less than –129 inches.								
B. Automatically opens and CANNOT be remotely closed until the initiation signal is cleared.								
C. Automatically opens; will close and remain closed when the control switch is placed in the closed position and released.								
D. Automatically opens; will close when the control switch is placed in the closed position but will reopen after it has reached the full closed position.								

Q# 96								
Which of the following would be exceeding the design limit for the primary containment?								
A. Drywell Temperature of 285°F.								
B. Suppression Chamber Temperature of 285°F.								
C. Drywell Pressure of 42 psig.								
D. Suppression Chamber Pressure of 42 psig.								

Q# 97								
Unit 1 at rated conditions. • 1H13 P601-F404 “LD MSL PIPE TUNNEL AMB TEMP HI” in alarm. • MSL Pipe Tunnel Temperatures verified at 160°F and steady. • MSL Pipe Tunnel Diff. Temperatures at 22°F and steady. Based on the above conditions, actions required include performance of …								
A. LOA-MS-101, “Main Steam System Abnormal” and LGP 3-2 “Reactor Scram”.								
B. LOA-MS-101, “Main Steam System Abnormal” and LGA-002 “Secondary Cont. Control”.								
C. LOA-VR-101, “Unit 1 Recovery from a Group 4 Isolation or Spurious Trip of Reactor Building Vent” and LGP 3-2 “Reactor Scram”.								
D. LOA-VR-101, “Unit 1 Recovery from a Group 4 Isolation or Spurious Trip of Reactor Building Vent” and LGA-002 “Secondary Cont. Control”.								

Q# 98								
Unit 1 is shutdown. Average Reactor Coolant temperature is currently 229°F, with a steady cooldown rate of 10°F/Hr. Which of the following indicates the earliest that the unit will be in MODE 4?								
A. 90 minutes								
B. 120 minutes								
C. 150 minutes								
D. 180 minutes								

Q# 99								

Which of the following combinations of reactor power and pressure indicate violation of a Safety Limit?

	Reactor Power	Reactor Pressure
A.	22%	735 psig
B.	28%	820 psig
C.	26%	750 psig
D.	20%	740 psig

Q# 100								
Which of the following is a responsibility of the Reactor Operator during core alterations?								
A. Maintain the official copy of the Nuclear Component Transfer List.								
B. Observe Source Range Monitors for rising counts.								
C. Perform verification of in-core coordinates.								
D. Observe and directly supervise Core Alterations.								

Q# 101								

Given the following conditions:

- Unit 1 has just experienced a scram due to high drywell pressure
- Several control rods remain at their original positions
- Reactor power is 48%
- ADS has been inhibited and ECCS has been prevented
- ARI has initiated

What is …

(1) the next procedure step required, AND
(2) the bases for the action.

A. (1) Runback recirculation flow to minimum per LGA-010,
(2) to minimize swell caused by the reduction in power, thereby maintaining the main turbine as a heat sink.

B. (1) Runback recirculation flow to minimum per LGA-010,
(2) to rapidly reduce reactor power below 3%, thereby eliminating the need to trip the reactor recirculation pumps.

C. (1) Trip the Reactor Recirculation Pumps per LGA-010,
(2) to minimize the circulation of boron through the reactor, allowing it to concentrate in the fuel zone.

D. (1) Trip the Reactor Recirculation Pumps per LGA-010,
(2) to rapidly reduce reactor power to within the capacity of the turbine bypass valves.

Q# 102								

Unit 2 is in MODE 4. Average Reactor Coolant temperature is 110°F.

- 2A RHR loop is in the Shutdown Cooling (SDC) Mode of operation.
- 2E12-F004A, RHR Pump Suppression Pool Suction Valve, was vented with Average Reactor Coolant temperature at 120°F.
- Suppression Pool Temperature is 80°F.
- 242Y is deenergized for planned maintenance.

What is the affect, if any, of this evolution on the LPCI mode of operation for the 2A RHR system?

The LPCI mode of 2A RHR system is…

A. OPERABLE, provided the system is maintained capable of being realigned when required.

B. NOT affected, since it is NOT required to be operable with the current plant conditions.

C. INOPERABLE, since the minimum flow valve is deenergized closed for SDC Operations.

D. INOPERABLE, since the Suppression Pool Suction Valve CANNOT be opened due to the potential of thermal binding.

Q# 103								

Unit 2 is operating at 100% power.

- HPCS inadvertently initiated and injected due to a contractor striking an instrument with a toolbox.
- HPCS secured per LOP-HP-04, Shutdown of High Pressure Core Spray System After An Automatic Initiation.

This situation is…

A. NOT reportable.

B. Reportable per SAF 1.4.

C. Reportable per SAF 1.5.

D. Reportable per SAF 1.7.

Q# 104								

Unit 1 is in Mode 5.

- Core offload is to begin in 1 hour.
- All control rods are verified by visual examination to be fully inserted.
- The RPIS connector cable for rod 22-43 is inadvertently disconnected.

Which of the following describes the impact and basis of the disconnected cable on the planned core unload?

Core offload ...

A. CAN continue as planned because adequate SDM is still maintained.

B. CANNOT be started because adequate SDM CANNOT be verified.

C. CANNOT be started because refueling interlocks would have to be declared INOPERABLE.

D. CANNOT be started because Rod Worth Minimizer interlocks would have to be declared INOPERABLE.

Q# 105								
Unit 1 is Refuel. Spent fuel movements within the Unit 1 Spent fuel pool are in progress. Which of the following is the minimum water level that would meet the requirements to perform this evolution? _____ above the spent fuel seated in the fuel pool.								
A. 20 feet								
B. 21 feet								
C. 22 feet								
D. 23 feet								

Q# 106								

Unit 1 has experienced a LOCA condition.

- Normal Injections systems are all running
- Reactor Vessel level is at –100 inches and dropping at 1inch per minute.
- Reactor Vessel pressure is at 50 psig.
- Fire Protection has been directed as an Alternate Injection System.
- Concurrently, there is a fire in the 1A DG Day Tank Room and the Fire Protection system has actuated.
- All Fire Protection Pumps are running.
- Fire protection hoses have been connected to the 1A and 1B TDRFP suction lines.

As the US, direction at this point should be to…

A. Secure the FP supply to both TDRFP's, the FP system should be used for firefighting only.

B. Secure the FP supply to one of the TDRFP's in order to provide sufficient fire fighting capability.

C. Allow the FP supply to the TDRFP's to continue, the capacity is within requirements to feed the vessel and provide Fire Protection supply.

D. Allow the FP supply to the TDRFP's to continue, vessel level should be maintained regardless of Fire Protection requirements.

Q# 107								

An ATWS has occurred.

- Reactor Power is 20% and oscillating.
- SBLC is injecting.
- Turbine Bypass Valves are maintaining RPV pressure.
- Reactor level is +18 inches.

Which of the following is the required level band and why?

A. –150 inches to –60 inches, to decrease the Natural Circulation driving head and core flow.

B. –150 inches to –60 inches, to concentrate the boron, thus lowering the reactor power level.

C. –150 inches to +59.5 inches, to allow reactor pressure to decrease, which will add negative reactivity due to reduced moderator density.

D. –150 inches to +59.5 inches, to allow level control to be returned to automatic, thereby providing flexibility to perform other LGA actions.

Q# 108								

During a Unit 1 startup, with the reactor at 12% power, the A RR pump tripped.

Actions were completed in accordance with the Abnormal Operating Procedure and a single loop plant power ascension continued.

Repairs were performed on the 1A Reactor Recirc pump, with the following timeline:

- THERMAL POWER exceeded 25% RTP at 1200 on April 24.
- The idle recirculation loop was placed in service and loop flows were matched at 1400 on April 24.

Which of the following describes the **LATEST** time allowed by TS to perform SR 3.4.3.1 on the idle loop jet pumps?

SR 3.4.3.1 must be performed on the IDLE LOOP jet pumps by _____ .

A. 1800 on April 24

B. 1200 on April 25

C. 1400 on April 25

D. 1800 on April 25

Q# 109								

Unit 1 has suffered a transient, which has resulted in RCIC tripping on low steam pressure.

- Drywell temperature is currently 310°F and steady.
- Suppression Pool Level is +4.0 inches.
- 1A CRD Pump is running and the scram has not been reset.
- Vessel level dropped to –135 inches and increasing 1 inch/min. on the wide range level instruments.

Based on the above information, reactor vessel level instruments are __(1)__ and __(2)__ should be performed.

A. (1) NOT valid
(2) LGA-001, RPV Control

B. (1) NOT valid
(2) LGA-005, RPV Flooding

C. (1) valid
(2) LGA-001, RPV Control

D. (1) valid
(2) LGA-005, RPV Flooding

Q# 110								

Given the following conditions:

- Reactor pressure is 800 psig and stable
- Reactor water level is 12 inches and stable
- Drywell temperature is 300°F and increasing
- Drywell pressure is 3 psig and increasing
- Suppression pool temperature is 190°F and stable
- Suppression pool level is +1.0 inch
- 3 control rods at position 08
- RR Pumps are tripped
- RHR A and B running in suppression pool cooling

Which of the following actions should be directed next to control containment parameters?

A. Open turbine bypass valves, OK to exceed 100F/hr.

B. Blowdown per LGA-006, ATWS Blowdown.

C. Perform LGA-VP-01, Primary Containment Temperature Reduction.

D. Start Drywell Sprays.

Q# 111								

The Main Control Room has been abandoned.

- Rx Pressure is 900 psig
- Suppression pool temperature is reported to be 122°F

(1) Where would this temperature be obtained, AND
(2) what is the concern with this temperature per Technical Specification Bases?

A. (1) local temperature indication
(2) unstable steam condensation during a blowdown

B. (1) Remote Shutdown Panel
(2) unstable steam condensation during a blowdown

C. (1) local temperature indication
(2) exceeding primary containment temperature and pressure limits

D. (1) Remote Shutdown Panel
(2) exceeding primary containment temperature and pressure limits

Q# 112								

Unit 1 is performing a core reload.

- The core reload is 50% complete.
- The 1B loop of RHR is inoperable and unavailable.
- The 1A RHR pump is in operation.

The inboard and outboard Shutdown Cooling isolation valves have inadvertently isolated and will NOT open.

Which of the following describes if fuel loading into the reactor core can be continued?

A. Yes. For up to 24 hours provided that reactor vessel water level remains at the current water level.

B. Yes. For up to one hour. Beyond one hour, fuel loading is permitted if another mechanism of decay heat removal is available.

C. No. One RHR shutdown cooling subsystem is required to be in operation when moving fuel.

D. No. Since no mechanism for decay heat removal is available, fuel loading must be suspended immediately.

Q# 113								

Unit 1 has scrammed and the following conditions are present:

- 5 control rods remain at notch position 24
- All APRM's are downscale
- The reactor mode switch has been placed in shutdown
- During the scram, reactor water level dropped to 18 inches and then recovered
- All Unit 1 ECCS pumps have automatically started
- RCIC is in standby

The Unit Supervisor should direct the NSOs to perform actions IAW …

A. LGP-3-2, Reactor Scram ONLY.

B. LGP-3-2, Reactor Scram, and LGA-NB-01, Alternate Rod Insertion.

C. LGA-001, RPV Control, and LGA-003, Primary Containment Control.

D. LGA-003, Primary Containment Control, and LGA-010, Failure to Scram.

Q# 114								
An ATWS is in progress following a condenser boot rupture • APRM downscales lights are NOT lit • Suppression pool temperature is 118°F • Lo-Lo Set is controlling reactor pressure • Reactor pressure is 1020 psig If the above parameters remain constant, what is the HIGHEST reactor water level that may be maintained?								
A. +59.5 inches								
B. –60 inches								
C. –120 inches								
D. –150 inches								

Q# 115								

The unit has suffered a casualty.

- Both loops of RHR are unavailable.
- Suppression Pool temperature is 190°F.
- MSIVs are closed.

Which of the following sets of conditions would require a reactor blowdown?

	Reactor Pressure	Suppression Pool Level
A.	400 psig	-11 feet
B.	400 psig	+13 feet
C.	900 psig	-11 inches
D.	900 psig	+14 feet

Q# 116								
Which of the following events would require notification to State and Local authorities and an ENS notification?								
A. Loss of Drywell cooling and Drywell temperature at 320°F.								
B. 125VDC bus 111Y at 104 volts for 30 minutes.								
C. Unisolable steam leak in the RCIC room with radiation levels at 2 X 10^4 mr/hr.								
D. Unisolable water leak from the spent fuel water level at 841'11".								

Q# 117								
Which of the following describes an event the Limiting Condition for Operation for the Main Condenser Offgas system is based upon?								
A. Rod Drop Accident								
B. Holdup Line Rupture								
C. Main Steam Line Rupture								
D. Rod Withdrawal Accident								

Q# 118								
Technical Specifications require primary containment oxygen concentration to below 4 %/volume while the unit is operating in MODE 1. The bases for this limit is to…								
A. prevent the possibility of a combustible mixture of Hydrogen and Oxygen within the primary containment.								
B. eliminate the possibility of a zirconium metal water reaction rate following a DBA LOCA.								
C. prevent fires in the primary containment, due to the inability to combat a fire while the unit is in MODE 1.								
D. eliminate the requirement for both Hydrogen recombiners to be operable while the unit is in MODE 1.								

Q# 119								
You have been performing the duties of the Field Supervisor for the first 4 hours of the shift. A casualty occurs, and you have been directed to relieve the Unit Supervisor on the affected unit. Which of the following are required to be performed prior to assuming command and control of the main control room during the casualty situation? 1. Review appropriate abnormal conditions and initiating events. 2. Review the current status of the EOP flowcharts. 3. Receive permission from the Shift Manager.								
A. 1 and 2 ONLY								
B. 1 and 3 ONLY								
C. 2 and 3 ONLY								
D. 1, 2, and 3								

Q# 120								
A LOCA has occurred, with no injection sources available. RPV Level is below the top of active fuel. While reviewing electrical prints, it is determined that temporary wiring could be run to an ECCS pump in order to make it available for use. Which of the following is required, at a MINIMUM, to permit this evolution?								
A. Approval from One (1) Licensed SRO.								
B. Approval from Two (1) Licensed SRO's								
C. A 50.59 Safety Evaluation has been completed.								
D. Approval from the NRC.								

Q# 121								
Unit 2 is in Mode 3. A new system engineer has requested that the Unit 1 HPCS pump be started with the full flow test valve throttled to 75% open to determine starting current. The evolution is NOT described in current procedures, nor the Safety Analysis Report. The Shift Manager may …								
A. NOT approve the test until a written safety evaluation has been performed and approved.								
B. approve the evolution without restrictions.								
C. ONLY approve the test if another SRO with an engineering degree agrees.								
D. NOT approve the test under any conditions.								

Q# 122								
In order to move fuel within the RPV, the fuel handling SRO must be …								
A. within phone contact.								
B. on the refuel bridge.								
C. at the refuel floor managers desk.								
D. within 10 minutes of the refuel floor.								

Q# 123								
LOP-WF-20, Radwaste Discharge Tank Discharge to the Lake Blowdown Line, requires the _____ to sign for FINAL AUTHORIZATION of the Radwaste Discharge.								
A. Plant Manager								
B. Shift Manager								
C. Chemistry Manager								
D. NPDES Coordinator								

Q# 124								
What is the relationship between the Station Emergency Director and the performance of an emergency containment vent per LGA-VQ-02, Emergency Containment Vent? The Station Emergency Director…								
A. must be informed prior to venting the containment								
B. must direct the venting of the primary containment.								
C. must approve the release permit for the emergency venting.								
D. has NO responsibilities related to the emergency venting.								

Q# 125								
A fire has occurred at the Unit 1 Hydrogen seal oil skid. The fire alarm has been initiated and an announcement made to assemble the Fire Brigade. At the minimum, ___(1)____ members of the fire brigade should respond. Equipment should be obtained from the Fire Brigade Equipment Cage on ___(2)_____.								
A. (1) 5 (2) 735 foot elevation of the Turbine Building near the F-15 line.								
B. (1) 5 (2) 710 foot elevation of the Turbine Building near the V-15 line.								
C. (1) 7 (2) 735 foot elevation of the Turbine Building near the F-15 line.								
D. (1) 7 (2) 710 foot elevation of the Turbine Building near the V-15 line.								