EXAMINATION ANSWER KEY

As given NRC 05-01 test 1/12/06

1	ID: NRC-10006	Points: 1.00

Increasing Drywell temperature requires starting additional Drywell Coolers to prevent jeopardizing _____integrity in case of a LOCA.

A. Recirc Pump Seal

B. Reactor Vessel Flange

C. RPV Level Instrument

D. Primary Containment

Answer: D

Question 1 Details

Question Type:	Multiple Choice
Topic:	1 Drywell Coolers started for Containment Integrity
System ID:	10006
User ID:	NRC-10006
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	1
Point Value:	1.00
Cross Reference Number:	295012
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: Memory K/A: 295012 AK3.01 3.5/3.6 Reference: EPG B-7-25 Explanation: DEOP 200-1 is concerned with Primary Containment integrity. Instrument operability is affected not integrity. The vessel flange temperature would be a concern if containment temperature was lowered. Recirc pump seal integrity is a concern on a loss of seal cooling. Pedigree: Bank

Required reference: None

2 ID: NRC 12695 Points: 1.00

A concern during the performance of DEOP 100 is the occurrence of swell and shrink, due to ERV cycling, causing indicated RPV water level fluctuations. These level fluctuations can then complicate level control actions.

Which of the following is performed to minimize RPV shrink and swell?

A. Verify FWLCS in automatic

B. Inhibit ADS and initiate IC

C. Initiate IC and open ADSVs to lower RPV pressure to 945 psig

D. Maximize injection using Condensate/Feedwater or other preferred injection system

Answer: C

Question 2 Details

Question Type:	Multiple Choice
Topic:	2 High Rx Pressure effects on water level
System ID:	12695
User ID:	NRC 12695
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295025
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 295025 EK1.06 3.5/3.6 Reference: EPGs for DEOP 100 Comments: Per the EPGs Swell and shrink associated with ERV valve actuations cause RPV water level fluctuations that complicate level control actions. The EPGs use 935 psig, the Dresden PSTGs use 945 psig.

3 ID: NRC-10186 Points: 1.00

A special test is being performed, per an approved Special Procedure, to attempt to remove excess air from the Unit 2 Main Condenser Water Box. Operations, Maintenance and Engineering (Test Coordinator) personnel, all have functions to perform during this first-time evolution, which will reduce Circulating water flow through the Main Condenser.

What is the HIGHEST level of authority required to conduct the Special Test? (NOTE: positions are listed in order of increasing authority)

A. Test Director.

B. Unit Supervisor.

C. Maintenance Director.

D. Station Manager.

Answer: B

Question 3 Details

Question Type:	Multiple Choice
Topic:	3 Conduct of Operations
System ID:	10186
User ID:	NRC-10186
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	G.2.1.1
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: Memory K/A: G.2.1.1 3.7/3.8 Reference: HU-AA-1211 Comments: Procedure HU-AA-1211 states that the Unit Supervisor grants permission to conduct an evolution or test affecting plant operations that places the plant in degraded condition.

4 ID: NRC-10038 Points: 1.00

Given the following:

- **A reactor startup is in progress**
- **Conditions just prior to startup and current are listed below**

Prior to startup	Currently
SRM 21 at 9 cps	**SRM 21 at 85 cps**
SRM 22 at 11 cps	**SRM 22 at 100 cps**
SRM 23 at 8 cps	**SRM 23 at 90 cps**
SRM 24 at 10 cps	**SRM 24 at 95 cps**
Moderator temp 148F	**Moderator temp 149F**

The reactor is NOT critical.

The next sequence step is to move a control rod from notch 00 to notch 48.

Which of the following methods is the FASTEST method allowed by DGP3-4, Control Rod Movement, to perform the rod move?

A. **Single notch withdrawal from notch 00 to notch 48**

B. **Continuous rod withdrawal from notch 00 to notch 48**

C. **Single notch withdrawal from notch 00 to notch 18 and then continuous rod withdrawal to notch 48**

D. **Single notch withdrawal from notch 00 to notch 24 and then continuous rod withdrawal to notch 48**

Answer: **D**

Question 4 Details

Question Type:	Multiple Choice
Topic:	4 Ability to mainpulate console controls
System ID:	10038
User ID:	NRC-10038
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	3.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	G.2.2.2
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: G. 2.2.2 4.0/3.5 Reference: DGP 1-1, DGP 3-4 Comments: When in Startup, per DGP 3-4 the notch override switch can not be used between positions 4 and 24 after SRMs have experienced three doublings (8 times the initial count rate) until the Unit is in a steaming condition (one bypass valve partially OPEN or the Unit on-line). Pedigree: Bank

Required references: None

5 ID: NRC-10371 Points: 1.00

The 2-0301-25 valve, CRD SYS CHARGING HDR SV, is closed as part of an OOS.

While clearing this clearance order, the correct method of performing a position verification on this valve is to use...

A. **Peer check.**

B. Concurrent verification.

C. Alternate verification.

D. Independent verification.

Answer: B

Question 5 Details

Question Type:	Multiple Choice
Topic:	5 Tagging and Clearance Procedures
System ID:	10371
User ID:	NRC-10371
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	3.00
Time to Complete:	4
Point Value:	1.00
Cross Reference Number:	G.2.2.13
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: G.2.2.13 3.6/3.8 References: HU-AA-101, OP-AA-108-106 Comments: The examinee must first recognize that 2-301-25 is a normally throttled valve. Throttled valves are verified by the "concurrent verification" method per HU-AA-101. The valve must be closed to verify position. The valve is then returned to the original position while being observed by the individual performing a concurrent verification. Pedigree: New

6 **ID: NRC 9715** **Points: 1.00**

Chemistry has reported that high coolant activity exists on Unit 2 and a fuel element failure is suspected.

Which of the following actions is required per DGA 16 to prevent excessive personnel exposure if site assembly is required?

A. Isolating HPCI steam flow

B. Isolating Recirc Sample Lines

C. Isolating the Isolation Condenser

D. Isolating HPCI steam drains to the condenser

Answer: D

Question 6 Details

Question Type:	Multiple Choice
Topic:	6 DGA-16: Reduce expose during fuel damage
System ID:	9715
User ID:	NRC 9715
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	3.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	G.2.3.10
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: Memory Reference: ILTS026, DGA 16 K/A: Generic 2.3.10 2.9 / 3.3 Comments: Per DGA 16 Caution. Assembly area inside the RPA is near the feed pumps, which is against the condenser shield wall. Any flow of radioactive water to the condenser would increase dose rates in this area, so a is correct. IC drains do not go to the condenser, so b is incorrect. Isolating HPCI steam flow would block the leakage, but would render HPCI unavailable, so this action would not be appropriate. Recirc sample drains also do not go to the condenser. Pedigree: Modified

Required Reference: None

7 | **ID: NRC-9986** | **Points: 1.00**

Per the UFSAR why is it NOT permissible to run the Mechanical Vacuum Pump when the reactor mode switch is in the RUN position?

A. Because this would provide an untreated release pathway for non-condensibles to the Main Chimney.

B. Because it shares a suction path with the SJAE's which are required to be on when the mode switch is in RUN.

C. Because this would bypass the Low Condenser Vacuum scram with the mode switch in RUN.

D. Because of the potential of Hydrogen fires and/or explosions due to the gases being admitted to the main condenser.

Answer: A

Question 7 Details

Question Type:	Multiple Choice
Topic:	7 Mechanical Vacuum Pump - Don't Operate when in Run
System ID:	9986
User ID:	NRC-9986
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	G.2.3.11
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: Memory K/A: Generic 2.3.11 2.7/3.2 Reference: DAN 902-7 H-3 Turb Vacuum Lo Explanation: Not permissible in run due to bypassing the Off Gas System. Pedigree: Bank

8 **ID: NRC-9774** **Points: 1.00**

A small steam leak has developed in the Unit 2 Drywell and the following conditions exist:

- RPV level is +30" and steady
- Both loops of Torus Sprays are on
- Torus Cooling is on using both divisions
- 316A and 316B switches are in Manual Override
- Drywell pressure is +5 psig and trending down slowly

If Drywell pressure drops below 1 psig, THEN:

A. the LPCI system will continue to operate as stated above.

B. the Torus spray valves in both LPCI loops will auto close.

C. the Torus cooling valves in both LPCI loops will auto close.

D. the LPCI inboard injection valve (21A or B) on the "Non-Selected" LPCI loop will auto close.

Answer: ~~B~~ Answer was changed to A after review of Post-Exam Comments.

Question 8 Details

Question Type:	Multiple Choice
Topic:	8 DW Press Affect on LPCI valves
System ID:	9774
User ID:	NRC-9774
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	4.00
Time to Complete:	4
Point Value:	1.00
Cross Reference Number:	203000
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: 203000 K1.13 IR: 3.9 / 4.0 Reference: DRE203LN001 DOP 1500-3 Comments: As described in training material/LP. The Torus cooling and injection valves are unaffected by the drywell pressure dropping below 1 psig. The 316 switch enables the spray and test line vlvs to be opened with a LPCI initiation signal present. If DRYWELL pressure drops below 1#, the permissive to open the torus spray valves is lost AND if an initiation signal is still present the spray valve will close. Since level is listed as normal, the injection valves will not move. **REQUIRED REFERENCES: None.**

9 **ID: NRC-6921** **Points: 1.00**

Given the following:

- Unit 2 is Shutdown with Recirc system secured
- Reactor Water Level is 46 inches
- Reactor Water Temperature is 200 degrees F
- 2C Shutdown Cooling is lined up to the Fuel Pool Cooling system
- 2A + 2B Shutdown Cooling are running at full flow, lined up to the vessel
- 2B Shutdown Cooling pump trips on overcurrent

What are your concerns based on the present plant conditions?

A. Reactor vessel temperature stratification may occur and result in vessel heatup and pressurization.

B. Reactor Recirculation loop temperatures will lag vessel temperatures due to the long loop transit times associated with natural loop circulation.

C. Water level is close to the +48 inches limit, whereby maintaining at or below +48 inches ensures natural recirculation flow through the core.

D. The reactor vessel metal temperature will lag behind actual water temperature. This may cause vessel shell to flange differential temperature to exceed 140F.

Answer: A

Question 9 Details

Question Type:	Multiple Choice
Topic:	9 Shutdown Cooling vs Reactor Temp
System ID:	6921
User ID:	NRC-6921
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	205000
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: 205000 K3.03 3.8/3.9 Reference: DOP 1000-03 Comments: With no RR pumps running there is no loop circulation, natural or otherwise. The loop(s) that SDC is lined up to, still actively draw water across temperature elements, so there is no “lag”. RPV/L must be above +48, not below, to enhance natural circulation. The value of 140F is no longer a tech spec number, but a large temperature mismatch between the shell and flange is still a concern when flooding up. Pedigree: New

10 **ID: NRC-9420** **Points: 1.00**

The SRM “DRIVE IN” push button needs to be ___(1)____ in order to drive the SRM detectors in to the core, the SRM “DRIVE OUT” push button needs to be __(2)___ in order to drive the SRM detectors out of the core.

A. (1) continually held
(2) continually held

B. (1) continually held
(2) momentarily depressed

C. (1) momentarily depressed
(2) continually held

D. (1) momentarily depressed
(2) momentarily depressed

Answer: C

Question 10 Details

Question Type:	Multiple Choice
Topic:	10 Insert and Withdraw Pushbutton Operation
System ID:	9420
User ID:	NRC-9420
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	1
Point Value:	1.00
Cross Reference Number:	215004
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: Memory K/A: 215004 A4.04 3.2/3.2 Reference: LP DRE215LN004 and DOP 0700-02 Comments: The “drive in” push button is a ‘maintain’ contact and the “drive out” is a ‘momentary’ contact Pedigree: Bank

11 **ID: NRC-8764** **Points: 1.00**

Given the following:

- Unit is operating at rated power.
- The 'B' CRD Pump is out of service.
- HPCI is out of service

The following sequence of events occur:

- 01:16:00, Rx Scram due to feedwater malfunction.
- 01:16:30, 'A' CRD Pump trips on overcurrent.
- 01:17:00, Small Steam Line leak on 'A' Main Steam Line in the X Area.
- 01:17:00, Group 1 is **NOT** received due to logic system failures.
- 01:23:00, Reactor water level drops to and stays below –60 inches.
- 01:24:00, Reactor Pressure is 820 psig and trending down 5 psig per minute.

With no operator actions taken, the ADS Valves will _____ .

A. **NOT** open at all

B. Open 8.5 minutes after water level drops below low-low level setpoint

C. Open 120 seconds after water level drops below low-low level setpoint

D. Open 120 seconds after the first LPCI or Core Spray pump starts

Answer: B

Question 11 Details

Question Type:	Multiple Choice
Topic:	11 ADS: Auto initiation / -59 for 8.5 minutes
System ID:	8764
User ID:	NRC-8764
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	5.00
Time to Complete:	4
Point Value:	1.00
Cross Reference Number:	218000
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: 218000 K5.01 3.8/3.8 Reference: LP DRE218LN001 Comments: As described in training material/LP. For a leak outside containment, ADS will provide HPCI a chance to recover level by waiting 8.5 minutes. If level does NOT recover to above -59" within 8.5 minutes, then an automatic blowdown will occur, provided permissives for blowdown are met (i.e., not inhibited, pump running, etc.). Pedigree: Bank

12 **ID: NRC-9843** **Points: 1.00**

Unit 2 is operating at 912 Mwe when the following conditions develop near the FRVs:

- The nitrogen backup supply regulator is clogged with FME and can only maintain 15 psi.
- The instrument air header develops a large leak and quickly drops to 30 psi.

Based on these conditions, how does the FWLCS respond?

A. The "Backup air active" alarm remains reset, but all FRVs fail as is.

B. First, the "Backup air active" alarm actuates, then all of the FRVs fail as is.

C. First, the "Backup air active" alarm actuates, then the FRVs continue to operate in automatic for approximately 30 minutes.

D. First, the "Backup air active" alarm actuates, then the Main FRVs fail as is, but the Low Flow Reg Valve continues to operate in automatic.

Answer: B

Question 12 Details

Question Type:	Multiple Choice
Topic:	12 FWLC: Loss of Control Air to Reg Valves
System ID:	9843
User ID:	NRC-9843
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	4.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	259002
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: 259002 K6.01 3.2 / 3.2 Reference: DANs 902(3)-6 E-10, G-10, H-10 Explanation: Since the backup nitrogen supply will only pass 15 psi to the valve, it does not help. It never takes over. The 30 psi from the instrument air header going to the joucomatics overpowers the 15 psi from the nitrogen supply. The “Backup air active alarm” 902(3)-6 H-10 actuates when header pressure drops below 83 psi. The MFRVs lockup at 65 psi and the Low Flow Reg valve locks up at 45 psi. Pedigree: New

Student References: None

13 **ID: NRC-5954** **Points: 1.00**

Which one of the following describes the response of MCCs 28-7 and 29-7 if Bus 24-1 goes dead and remains dead?

A. Both MCCs remain de-energized.

B. Both MCCs remain energized, having never lost power.

C. Both MCCs re-energize after a time delay.

D. MCC 29-7 will de-energize and MCC 28-7 will remain energized.

Answer: C

Question 13 Details

Question Type:	Multiple Choice
Topic:	13 Aux Power: Bus 24-1 Goes Dead – Response of 28-7/29-7
System ID:	5954
User ID:	NRC-5954
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	4.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	262001
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: 262001 K4.06 3.6/3.9 Reference: LP DRE262LN001, DOA 6600-01, DOP 6700-3 Comments: As described in training material/LP and plant reference materials. MCC 28-7/29-7 have two auto-swap setups to ensure that valves required to reposition on a LPCI loop select have adequate voltage to operate. When power is lost to Bus 29 and Bus 29 was being powered from normal source: An AC contactor located on MCC 29-7 opens, and a 17 second timer begins counting. 17 seconds provides time for the EDG to start and close onto Bus 24-1, re energizing Bus 24-1, 29, and 29-7/28-7. IF MCC 29-7/28-7 gets re-energized by any source during the 17 second period, the AC contactor closes, the timer resets, and the MCC stays closed into Bus 29. 17 seconds later the feed breaker from Bus 29 trips open, and the 480V breaker on Bus 28 closes even if Bus 28 is dead. IF Bus 28 has power, THEN the AC contactor at MCC 28-7 closes. Pedigree: Bank

Required references: None

14 **ID: NRC-7242** **Points: 1.00**

Given the following:

- Unit 2 was operating at 75% power.
- A loss of 125 VDC Main Bus 2A-1 occurred.
- The Main Generator tripped.
- The Reactor was manually scrammed.
- The plant is stabilized.

The Turbine…

A. will have tripped automatically and TR-22 would automatically supply Busses 21 and 23.

B. must be tripped remotely and Busses 21 and 23 will have to be re-energized locally from their alternate feed.

C. must be tripped locally and ONLY Bus 21 can be re-energized from the Control Room from TR 22.

D. will have tripped automatically and ONLY Bus 21 would re-energize after fast transferring to TR 22.

Answer: B

Question 14 Details

Question Type:	Multiple Choice
Topic:	14 Loss of Major D.C. loads
System ID:	7242
User ID:	NRC-7242
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	263000
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: 263000 K2.01 3.1 3.4 Reference: DOA 6900-02 Comments: The following Turbine protective trips are directly powered via the 24 VDC internal Master Trip Bus and trip the Turbine. Master Trip pushbutton depressed 902-7. If the Turbine is operating at rated speed and 125 VDC is lost the Turbine will continue to operate. Loss of 125 VDC does not affect the controlling operation of the Turbine. The above 24 VDC Master Trip Bus fed trips are still operable. The breakers feeding Buses 21 and 23 will not operate without 125 VDC. Pedigree: Bank

Required references: None

15 | **ID: NRC-9332** | **Points: 1.00**

Given the following:

- Unit 2 is in MODE 5
- The RX MODE SWITCH is in REFUEL
- The Refueling Platform is over the Spent Fuel Pool
- All control rods are fully inserted
- A fuel bundle has been loaded on the Fuel Grapple and raised out of the fuel pool storage rack

Which one of the following activities will generate a Rod Block?

A. The Fuel Grapple is raised to the '"full up" position

B. A single Control Rod is selected, but NOT withdrawn

C. The Refueling Platform is moved over the reactor vessel

D. The Rx MODE SWITCH is placed in the STARTUP position

Answer: C

Question 15 Details

Question Type:	Multiple Choice
Topic:	15 Fuel Handling: Prevention of control rod movement
System ID:	9332
User ID:	NRC-9332
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	3.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	234000
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: 234000 K4.02 3.3/4.1 Reference: DAN 902-5 C-3 DOA 700-3 Comments: Per the DAN if the refueling bridge is over the core during refuel with the frame hoist loaded, fuel grapple extended or loaded, or trolly hoist loaded a Rod out block is generated. Pedigree: Bank

Required references: None

16 | **ID: NRC-6351** | **Points: 1.00**

A start up is in progress with the following conditions:

- Reactor Mode switch in 'Start Up'
- All IRMs on Range 10 reading 40 and steady
- Reactor pressure 750 psig and steady
- Condenser vacuum is 23 inches Hg and steady
- Turbine Chest and Shell Warming are in progress
- Steam tunnel temperature is 135^0F and steady

If the NSO places the Reactor Mode Switch to 'Run' under these conditions, a reactor scram occurs due to _____ .

A. MSIV closure

B. Condenser Low Vacuum

C. Turbine Stop Valves being closed

D. an IRM High-High with companion APRM downscale

Answer: A

Question 16 Details

Question Type:	Multiple Choice
Topic:	16 Main Steam: SCRAM due to Mode Switch
System ID:	6351
User ID:	NRC-6351
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	3.00
Time to Complete:	1
Point Value:	1.00
Cross Reference Number:	239001
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: 239001K4.01 3.8/3.8 Reference: DAN 902-5 D-4 Comments: As stated in training material/LP and station drawings. Per the DAN a Group 1 isolation initiation signal includes MSL low pressure, nominally less than 850 in Run Pedigree: Bank

Required references: None

17 **ID: NRC-8298** **Points: 1.00**

Given the following:

- Unit 2 is at 90% reactor power.
- 902-7 C-3, TURB STATOR COOLANT RUNBACK, annunciator in alarm.
- 902-7 C-10, STATOR CLG PANEL TROUBLE annunciator in alarm.
- ONLY 2A stator cooling pump is running.

What is the effect on the turbine generator?

A. Turbine runback to approx. 5000 stator amps within 2 minutes or turbine trips immediately.

B. Turbine runback to approx. 5000 stator amps within 2 minutes or turbine trips 1 minute later.

C. Turbine runback to approx. 7400 stator amps within 2 minutes or turbine trips immediately.

D. Turbine runback to approx. 7400 stator amps within 2 minutes or turbine trips 1 minute later.

Answer: D

Question 17 Details

Question Type:	Multiple Choice
Topic:	17 Cause of Stator Water runback
System ID:	8298
User ID:	NRC-8298
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	245000
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: 245000 K6.05 2.9/2.9 Reference: DAN 902(3)-7 C-3, Comments: Per the DAN automatic actions load runs back to 7380 in 2 minutes or turbine trip will occur in 3 minutes Pedigree: New

Required references: None

18 **ID: NRC-9738** **Points: 1.00**

Given the following:

- Unit 2 is at 65% of rated power
- 2A AND 2B Reactor Feedpumps are in service
- 2A, 2B, AND 2C Condensate pumps are in service
- No Condensate pump is selected for standby
- The 2C condensate pump trips
- Reactor Feedpump suction pressure drops to 110 psig

(1) Predict the response of the Feedwater system
(2) What operator actions must be taken?

A. (1) One Reactor Feedpump trips immediately due to low suction pressure
(2) Manually inhibit the Standby RFP from starting by placing STBY SELECT switch in OFF.

B. (1) One Reactor Feedpump trips after 3 seconds
(2) Start the 2D condensate pump and ensure RFP suction pressure recovers to greater than 120 psig.

C. (1) One Reactor Feedpump trips immediately due to low suction pressure
(2) Start the 2D condensate pump and ensure RFP suction pressure recovers to greater than 120 psig, then restart a second RFP.

D. (1) One Reactor Feedpump trips after 3 seconds
(2) Manually inhibit the Standby RFP from starting by placing STBY SELECT switch in OFF, then start the 2D condensate pump and ensure RFP suction pressure recovers to greater than 120 psig.

Answer: B

Question 18 Details

Question Type:	Multiple Choice
Topic:	18 Reactor feed pump response to a loss of condensate pump
System ID:	9738
User ID:	NRC-9738
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	4.00
Time to Complete:	4
Point Value:	1.00
Cross Reference Number:	259001
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: 259001A2.03 3.6 / 3.6 Reference: DAN 902-6 G-6, 902-6 F-5, 902-6 F-7, DOP 3200-2 Comments: These condition lead to a sequential trip of a reactor feedpump after a time delay. Per the DANs the standby condensate/condensate booster pump should be started and if insufficient RFP suction pressure is available for the standby RFP to start, Then manually inhibit the Standby RFP from starting by placing the STBY SELECT switch in OFF. Pedigree: New

Required References: None

19 | **ID: NRC-12698** | **Points: 1.00**

When operating the High Pressure Coolant Injection System it is required to record the suppression pool temperature at 5 minute intervals.

From the statements below, select the reason for this requirement.

A. Ensure the vortex limits for the HPCI pump are NOT exceeded.

B. Ensure the NPSH limits for the HPCI pump are NOT exceeded.

C. Ensure sufficient suppression capability exists to NOT exceed design pressure in the Primary Containment during a LOCA.

D. Ensure local heating of the suppression pool at the turbine exhaust will NOT increase the turbine exhaust pressure and result in a turbine trip on high exhaust pressure.

Answer: C

Question 19 Details

Question Type:	Multiple Choice
Topic:	19 HPCI relationship with Torus Temp
System ID:	12698
User ID:	NRC-12698
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	206000
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 206000 K1.06 3.7/3.7 Reference: UFSAR Section 6.2 Comments: Temperatures should be taken every 5 minutes to ensure temperature stays below 105 degrees F in the Torus. This ensures that the Torus can absorb the energy of a LOCA without exceeding design pressure. Pedigree: Bank **Required references: None**

20 **ID: NRC-6019** **Points: 1.00**

Both Units are at rated conditions. During performance of DOS 1500-02 the following pump flow values were recorded:

Unit 2: 2A CCSW pump 3610 gpm

Unit 3: 3A CCSW pump 3590 gpm

Based on these indications Tech Spec LCO 3.7.1 is:

A. MET on BOTH Units

B. MET on Unit 2 ONLY

C. MET on Unit 3 ONLY

D. NOT met on EITHER Unit

Answer: C

Question 20 Details

Question Type:	Multiple Choice
Topic:	20 CCSW: Operability of Unit 2 & 3 Systems based on flow data
System ID:	6019
User ID:	NRC-6019
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	4.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	400000
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: Memory K/A: 400000 2.1.33 3.4/4.0 Reference: LP DRE277LN001, DOS 1500-02, TS 3.7.1 Comments: Unit 2 pumps must have flow greater than 3621 because they also supply cooling to the control room ventilation system. Pedigree: Bank LINK 10CFR55.41(b)(12) **Required references: None**

21 **ID: NRC-9355** **Points: 1.00**

Unit 2 is near the end of an operating cycle with a startup in progress.

Reactor coolant temperature has lowered 30ºF below the value that was used to calculate the Estimated Critical Position (ECP).

The Shift Manager has directed the ECP to be recalculated.

Who is REQUIRED to recalculate the ECP?

A. Unit Supervisor

B. Shift Technical Advisor

C. Nuclear Station Operator

D. Qualified Nuclear Engineer

Answer: D

Question 21 Details

Question Type:	Multiple Choice
Topic:	21 Rx Startup: Changes in ECP data parameters
System ID:	9355
User ID:	NRC-9355
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	LI
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: Memory K/A: G.2.2.34 2.8/3.2 Reference: ILTT033, OP-AA-300 Comments: As described in DGP 1-1 and LP Pedigree: Bank LINK 10CFR55.41(b)(10) **Required references: None**

22 **ID: NRC-10020** **Points: 1.00**

Given the following:

- A GSEP Site Emergency has been declared
- You have been dispatched to Protect Valuable Property
- Dose rate in the area you will be entering is 60 Rem/hr

What is the MAXIMUM time you can spend in the area performing your task without violating TEDE Radiation Exposure Limits?

A. 5 minutes

B. 10 minutes

C. 20 minutes

D. No limit for protecting valuable property

Answer: B

Question 22 Details

Question Type:	Multiple Choice
Topic:	22 Radiation exposure limits
System ID:	10020
User ID:	NRC-10020
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	G.2.3.4
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: G.2.3.4 2.5/3.1 Reference: RP-AA-203 Comments: Limit is 10 rem TEDE for protecting valuable property. Based on 60 REM in the area, the stay time would be 10 minutes. Pedigree: New LINK 10CFR55.41(b)(12) **Required references: None**

23 **ID: NRC-8023** **Points: 1.00**

Both units are at full power when a fire erupts in the Training Building. The following conditions are present:

- The 2/3 Diesel Fire Pump failed to start and can NOT be started manually
- The sprinkler system in the Training Building has initiated
- The Fire Brigade has responded and several fire hose teams have engaged the fire
- Fire Header pressure is 65 psig AND dropping slowly

Which ONE of the following would be successful in restoring Fire Header pressure?

A. Open MO 2/3-3906 SW supply, from the 923-1 Panel

B. Start the standby 2/3 Screen Refuse Pump from the 923-1 Panel

C. Take the skid mounted Diesel Fire Pump control switch to START locally

D. Open MO 1-4002-507, Unit 1 Screen Wash Supply valve from 901-2 panel

Answer: A

Question 23 Details

Question Type:	Multiple Choice
Topic:	23 FP Water: Analyze Conditions – How to Restore Header Pressure
System ID:	8023
User ID:	NRC-8023
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	3.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	286000
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: 286000 G.2.1.30 Reference: LP DRE286LN001and UFSAR P+ID M22 and M23 Comments: As described in training and reference material. There is no connection between the 2/3 Screen Refuse pumps and the fire main. Starting these pumps will have no effect. The skid mounted pump must be hooked up before it can be used and requires a couple of shifts to accomplish. It will not start by taking its control switch to start. The 507 valve is interlocked closed on low fire main header pressure. Opening the valve would only exacerbate the low fire header pressure condition. Opening the 3906 valve cross ties 2/3 Service Water with the Fire Main system and is used in times of high fire water demand and is the correct answer. Pedigree: Bank

REQUIRED REFERENCES: None.

24 **ID: NRC-9617** **Points: 1.00**

Given the following conditions:

- Unit 3 is Shutdown
- 3C SDC Pump is running lined up to Fuel Pool Cooling System
- 3A and 3B Shutdown Cooling (SDC) Pumps are running in Shutdown Cooling Mode

Then Bus 34 develops an overcurrent condition.

This causes a loss of:

A. 3A and 3B SDC pumps ONLY

B. 3A and 3C SDC pumps ONLY

C. 3B and 3C SDC pumps ONLY

D. 3A, 3B and 3C SDC pumps

Answer: C

Question 24 Details

Question Type:	Multiple Choice
Topic:	24 SDC: Loss of power to Bus 34-1
System ID:	9617
User ID:	NRC-9617
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	4.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	233000
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: Memory Reference: 205LN001 DOP 6500-18 DTS 6700-3 K/A: 233000 K2.02 2.8 / 2.9 Comments: Power supply to the 3B and 3C is 34-1. With overcurrent of Bus 34, the U3 D/G will auto start but the SDC pumps load shed on undervoltage and do not auto restart. Pedigree: Bank

Required Reference: None

25 **ID: NRC-12704** **Points: 1.00**

Given the following:

Unit 2 at rated power
2A and 2B recirc pumps at 80% speed
NSO notices MO 2-202-5A 2A Pp Disch Vlv going closed

What automatic actions can be expected FIRST for the 2A Recirc pump and when will they occur?

A. Trip when valve reaches 90% open

B. Trip when valve reaches 90% closed

C. Runback when valve reaches 90% open

D. Runback when valve reaches 90% closed

Answer: A

Question 25 Details

Question Type:	Multiple Choice
Topic:	25 Recirc pump trip due to discharge vlv position
System ID:	12704
User ID:	NRC-12704
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	202001
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 202001 A3.07 3.3/3.3 Reference: DOP 202-1 and 202LN001 Comments: During the startup of a recirc pp the trip for discharge valve is bypassed. When discharge valve reaches full open the trip goes back into the circuitry and will trip the pp when the limit switch sees valve 90% open. Pedigree: New

Required references: None

26 **ID: NRC-10276** **Points: 1.00**

Given the following:

- Unit 2 reactor power at 60%
- power ascension in progress
- step 9 rods RWM limits 12-24
- the last control rod in step 9 is at position “24” is to be taken OOS at position “00”

What is the correct action to be performed to continue power ascension?

A. disable the rod block function of the RWM, insert the rod per procedure, then enable the RWM rod blocks and continue with step 10.

B. select the desired control rod and enter the RWM rod out-of-service function for that control rod, insert the rod per procedure, then continue with step 10.

C. disable the rod block function of the RWM, insert the control rod to per procedure, then contact a QNE to load a new sequence into the RWM.

D. bypass the RWM, insert the rod per procedure, use the RWM rod out-of-service function to take the rod out of service, then contact a QNE to load a new sequence into the RWM.

Answer: B

Question 26 Details

Question Type:	Multiple Choice
Topic:	26 RWM operations
System ID:	10276
User ID:	NRC-10276
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	201006
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: 201006 A4.03 3.0/3.0 References: DOP 0400-02 Comments: The OOS function of the RWM allows a selected rod to be inserted to “00”. The next group of rods can then be selected without function errors. Pedigree: Modified

References required: None

27 **ID: NRC-10281** **Points: 1.00**

Given the following…

- A Unit 2 startup is in progress.
- The RWCU system is in operation.
- Reactor pressure is currently 300 psig.
- The air supply line to the RWCU pressure control valve, PCV 2-1217, has just ruptured.

Based on these conditions the NSO will be required to verify that the RWCU system …

A. recirculation pump trips on low suction pressure.

B. isolates on high pressure downstream of the PCV.

C. PCV locks up when the control air pressure is lost.

D. isolates on high temperature out of the non-regen HX.

Answer: A

Question 27 Details

Question Type:	Multiple Choice
Topic:	27 RWCU response to loss of instrument air
System ID:	10281
User ID:	NRC-10281
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	204000
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: 204000K1.05 2.7/2.7 Reference: DOA 4700-01, DOP 1200-01, LP204LN001, DOA 4700-01, DAN 902-4 A-10 Comments: Loss of IA to PCV causes valve to fail closed (does not lock up). With PCV failed closed, the pressure downstream of the valve will go down thereby causing low suction pressure trip of the RWCU recirc pump. With the PCV failed closed and no flow through the system, the outlet temperature of the NRHX will be stagnant or go down. Pedigree New

Required references: None

28 | **ID: NRC-8589** | **Points: 1.00**

Given the following:

- The NSO is currently single notching rod H-08 from notch 24 to notch 22.
- During the rod move, the RPIS SYS INOP annunciator is received.

What effect (if any) does this have on the RMCS for H-08?

A. NO effect.

B. The rod will continue driving to 00.

C. The rod will be immediately de-selected.

D. The rod will finish its current cycle and then be de-selected.

Answer: D

Question 28 Details

Question Type:	Multiple Choice
Topic:	28 RPIS System INOP – Impact on RMCS
System ID:	8589
User ID:	NRC-8589
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	3.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	214000
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: Memory K/A: 214000 K3.03 3.1/3.2 Reference: LP 201LN002 and DAN 902(3)-5 G-3 Comments: This will cause a Rod Select block. The RMCS sequence timer will complete the single notch movement then de-select the rod. Pedigree: Bank

Required reference: None

29 **ID: NRC 12705** **Points: 1.00**

Given the following:

- 0200:16 Unit 2 is at rated conditions.
- 0210:00 Drywell pressure is 6 psi. Rx water level maintained by HPCI.
- 0211:00 Torus sprays are initiated. Torus cooling has NOT been initiated.
- 0216:00 TR 22 trips.
- 0216:08 2/3 Diesel Generator re-energizes its associated busses.
- 0216:30 U2 Diesel Generator re-energizes its associated busses.
- 0217:00 U2 NSO verifies torus spray.

Which of the following is the EARLIEST that torus spray flow will be restarted?

A. 0216:10

B. 0216:25

C. 0216:35

D. 0217:10

Answer: A

Question 29 Details

Question Type:	Multiple Choice
Topic:	29 Tours Sprays and EDG loading
System ID:	12705
User ID:	NRC 12705
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	230000
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 230000 A1.09 3.3/3.5 Reference: UFSAR Comments: When drywell pressure went above 2#s the 2 and 2/3 DG auto started. The torus sprays were initiated. When the LOOP occurred all 4 LPCI pps tripped. The diesel generators close onto 23-1 and 24-1. When the undervoltage relays reset, the first 2 LPCI pps restart, 5 seconds later the second set of LPCI pps restart. The torus spray vlvs never closed, therefore torus sprays will be at full flow. Pedigree: New

Required references: None

30 **ID: NRC-6479** **Points: 1.00**

Which of the following best describes TBCCW system response to a one (1) gpm TBCCW **RETURN HEADER** leak concurrent with a loss of Instrument Air, and what action, if any, must be taken?

A. the expansion tank level control system should maintain tank inventory, no action required

B. the TBCCW pumps will trip automatically from an expansion tank low level signal, send NLO to manually open LCV

C. the expansion tank will overflow, send NLO to throttle LCV isolation valve

D. the expansion tank will empty and the TBCCW pumps will eventually cavitate due to loss of NPSH, send NLO to open LCV bypass valve

Answer: D

Question 30 Details

Question Type:	Multiple Choice
Topic:	30 TBCCW: System leak with loss of Inst Air
System ID:	6479
User ID:	NRC-6479
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	3.00
Time to Complete:	1
Point Value:	1.00
Cross Reference Number:	400000
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: 400000 A2.02 2.8/3.0 Reference: LP DRE274LN001 DAN 923-1 F-2, P+ID M-21 Comments: As stated in training material/LP and DAN. As level decreases in the system, no make-up is available since a loss of Instrument Air does not allow the make-up valve to open. Pedigree: Bank

References required: None

31 **ID: NRC-12706** **Points: 1.00**

Given the following:

- U2 operating at rated power
- large rupture occurred in the TBCCW piping
- instantaneous loss of the TBCCW system

Which of the following sensing points provides the FIRST signal to trip the Inst Air Compressors?

A. Hi Lube Oil Temperature

B. Low Cooling Water Pressure

C. Hi LP Outlet Air Temperature

D. Hi Cooling Water Temperature

Answer: C

Question 31 Details

Question Type:	Multiple Choice
Topic:	31 Instrument Air interlocks and TBCCW loss
System ID:	12706
User ID:	NRC-12706
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	300000
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 300000 K4.03 2.8/2.8 Reference: DAN 923-1 B-5 Inst Air Comp Trip, and LP 278LN001, Comments: Per the DAN the trips are, lube oil temp, lube oil pressure, and 3 separate air temps. Therefore both cooling water temp and pressure are not trips. The lesson plan states that on a loss of TBCCW the compressors would trip on high air temp. Pedigree: Modified

Required references: None

32 **ID: NRC-12707** **Points: 1.00**

Given the following:

- The Unit 2 Diesel Generator is being operated in parallel with the grid
- The Diesel Generator was started LOCALLY

Which one of the following describes the response of the Unit 2 Diesel Generator if a valid LOCA signal occurs?

The Unit 2 Diesel Generator output breaker will _____.

A. trip and the diesel generator trips normally bypassed by a LOCA signal will be bypassed

B. trip and the diesel generator trips normally bypassed by a LOCA signal will NOT be bypassed

C. NOT trip and the diesel generator trips normally bypassed by a LOCA signal will be bypassed

D. NOT trip and the diesel generator trips normally bypassed by a LOCA signal will NOT be bypassed

Answer: C

Question 32 Details

Question Type:	Multiple Choice
Topic:	32 DG local operations and interlocks
System ID:	12707
User ID:	NRC-12707
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	264000
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 264000 K4.07 Reference: DOS 6600-01, 12E-2350A+B Comments: With a local start of the DG and the diesel loaded, an undervoltage condition will not trip the output circuit breaker. Trips normally bypassed by a LOCA are not bypassed. Pedigree: Bank

Required references: None

33 **ID: NRC-12708** **Points: 1.00**

Given the following:

- U2 LPCI system is auto initiated
- 'A' Loop is chosen for injection
- Initiation signal has cleared
- Unit Supervisor orders you to shutdown and reset LPCI system
- The pumps and valves have been aligned as required

What actions must be taken to completely reset the system logic per DOP 1500-1?

A. depress 'A' and 'B' loop select logic resets ONLY

B. depress 'A' loop select logic resets AND 'A' 20 and 38 valve initiation logic resets ONLY

C. depress 'A' and 'B' loop select logic resets AND 'A' 20 and 38 valve initiation logic resets ONLY

D. depress 'A' and 'B' loop select logic resets AND 'A' and 'B' 20 and 38 valve initiation logic resets ONLY

Answer: D

Question 33 Details

Question Type:	Multiple Choice
Topic:	33 LPCI system reset after initiation
System ID:	12708
User ID:	NRC-12708
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	203000
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 203000 A4.06 3.9/3.9 Reference: DOP 1500-01 Comments: To completely reset the LPCI system after an auto initiation, all 4 of the reset pushbuttons must be depressed. Pedigree: New

Required references: None

34 **ID: NRC-12709** **Points: 1.00**

Which of the following verifies Standby Liquid Control Injection flow into the reactor?

1. SBLC Squib A and B continuity lights LIT
2. SBLC Flow light LIT
3. SBLC Pumps A AND B START
4. SBLC Pump Discharge Pressure slightly ABOVE Reactor Pressure

A. 2,3, and 4 ONLY

B. 1,2, and 3 ONLY

C. 1,3, and 4 ONLY

D. 1,2, and 4 ONLY

Answer: A

Question 34 Details

Question Type:	Multiple Choice
Topic:	34 SBLC flow indication
System ID:	12709
User ID:	NRC-12709
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	21100
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 211000 A1.06 3.8/3.9 Reference: DOP 1100-2 Comments: The squib valve continuity lights would be out if the valves were actuated. All of the other selections are correct. Pedigree: Bank

Required references: None

35 **ID: NRC-9596** **Points: 1.00**

Given the following conditions:

- Unit 2 is in a refuel outage with core loading in progress.
- IRM 17 is currently bypassed.
- IRM 18 High Voltage power supply fails low.

What is the expected result when the power supply fails?

A. No actuation

B. Rod Block ONLY

C. Channel B half-scram ONLY

D. Rod Block and channel B half-scram

Answer: D

Question 35 Details

Question Type:	Multiple Choice
Topic:	35 IRM: Rod Block logic
System ID:	9596
User ID:	NRC-9596
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	4.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	215003
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: 215003 K3.02 3.6 / 3.6 Reference: LP DRE215LN003, DAN 902-5 C-15 Explanation: IRM INOP trip generated from low high voltage. Only bypassed when mode switch is in run. Generates a rod block and a half-scram signal. Pedigree: Bank

Required Reference: None

36 **ID: NRC-12715** **Points: 1.00**

Given the following:

- An ATWS is in progress
- Reactor power is 22%
- Reactor water level is 10 inches
- Reactor pressure is 960 psig

Which of the following will be most severely challenged and is of primary importance should a full MSIV closure occur?

A. Fuel integrity

B. RPV integrity

C. Primary containment integrity

D. Secondary containment integrity

Answer: C

Question 36 Details

Question Type:	Multiple Choice
Topic:	36 Knowledge of EOP strategies
System ID:	12715
User ID:	NRC-12715
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	G. 2.4.6
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: G.2.4.6 3.1/4.0 Reference: EPG C5-2 Comments: Per the discussion section, If the main steam lines were allowed to close the energy addition th the containment would likely increase and the Heat Capacity Temp Limit could be reached in a relatively short time. Pedigree: Bank

Required references: None

37 | **ID: NRC-5342** | **Points: 1.00**

Which one of the following identifies the order (1) and method (2) for inserting control rods while executing DEOP 500-5, Alternate Control Rod Insertion?

A. (1) Intermediate Rods first; Deep Rods second; Shallow Rods last
(2) ROD OUT NOTCH OVERRIDE switch.

B. (1) Intermediate Rods first; Shallow Rods second; Deep Rods last
(2) ROD OUT NOTCH OVERRIDE switch.

C. (1) Intermediate Rods first; Center Rods second; Periphery Rods last
(2) ROD MOVEMENT CONTROL switch.

D. (1) Center Rods first; Intermediate Rods second; Periphery Rods last
(2) ROD MOVEMENT CONTROL switch.

Answer: A

Question 37 Details

Question Type:	Multiple Choice
Topic:	37 Rod Worth based on height – Deep/Shallow/Int
System ID:	5342
User ID:	NRC-5342
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	3.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	295015
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: Memory K/A: 295015 AK2.02 3.6/3.7 Reference: DEOP 500-5, Alternate Rod Insertion Comments: DEOP states that when inserting control rods attempt to prioritize insertions by rod worth, intermediate, deep, shallow. The procedure gives the operator the option of using EMERG ROD IN or ROD MOVEMENT CONTROL switch. Pedigree: Bank

Required references: None

38 **ID: NRC-12716** **Points: 1.00**

Given the following:

- A severe reactor pressure regulator malfunctions occurs.
- You depress the manual scram pushbuttons place the mode switch in shutdown, and initiate ARI.
- The Scram Solenoids Groups lights are lit.
- The Scram Lights on the full core display are extinguished.
- NO CRD System alarms have come in.

You have only one operator available outside the Main Control Room and have a choice between having this operator vent the scram air header or vent CRD overpiston areas.

In accordance with DEOP 500-5 ALTERNATE ROD INSERTION, you would have the operator vent …

A. the scram air header since the plant conditions indicate an electrical ATWS.

B. the scram air header since the plant conditions indicate a hydraulic ATWS.

C. the overpiston area of CRDs since the plant conditions indicate a hydraulic ATWS.

D. the overpiston area of CRDs since the plant conditions indicate an electrical ATWS.

Answer: A

Question 38 Details

Question Type:	Multiple Choice
Topic:	38 Prioritizing emergency procedure implementation
System ID:	12716
User ID:	NRC-12716
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	G. 2.4.23
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: G. 2.4.23 2.8/3.8 Reference: DAN 902-5 A-1, and DEOP 500-05 Comments: Since the plant conditions and annunciators indicate and electrical ATWS, the correct answer is to have the In-plant operator vent the scram air header Pedigree: Bank

Required reference: None

39 **ID: NRC-12717** **Points: 1.00**

Given the following:

- Unit 2 reactor startup in progress
- NSO withdraws control rod G-7 from notch 32 to notch 34
- Reactor period changes from 100 seconds to a stable 19 seconds

Which of the following identifies the NEXT required action to be taken?

A. DO NOT move any additional rods until a Core Monitor is run.

B. Re-insert control rods as necessary to achieve sub-criticality.

C. Verify IRM/SRM overlap.

D. Re-insert control rod G-7 to obtain a stable period indication of greater than 60 seconds.

Answer: D

Question 39 Details

Question Type:	Multiple Choice
Topic:	39 SRM response generic
System ID:	12717
User ID:	NRC-12717
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	G.2.1.7
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: G.2.1.7 3.7/4.4 Reference: DGP 1-1, DAN 902-5 E-4 Comments: Per DGP 1-1 the range for reactor period is 60-330 seconds. The DAN states that rods should be inserted until period is more than 60 seconds. Pedigree: Bank

Required references: None

40 **ID: NRC-12718** **Points: 1.00**

Given the following:

- Unit 2 at rated power
- 2A CORE SPRAY HDR DP HI annunciates
- Core Spray leak detection indication reads -5 inches water

A short time later a Main Steam Line break occurs. Inventory loss is occurring at a rate of 3000 gpm.

If 2A Core Spray was used to ensure Adequate Core Cooling, it would be …

A. effective for spray cooling ONLY.

B. effective for core submergence ONLY.

C. effective for both submergence and spray cooling.

D. ineffective for both core submergence and spray cooling.

Answer: B

Question 40 Details

Question Type:	Multiple Choice
Topic:	40 Core Spray heat removal mechanism
System ID:	12718
User ID:	NRC-12718
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	209001
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 209001 K5.04 2.8/2.9 References: DAN 902-3 E-5, DEOP 10-00 Comments: Since the leak rate of 3000 gpm is less than what can be injected with the 'A' Core Spray pp, submergence would be maintained. Spray Cooling cannot be assured due to the uncertainty of the leak size. The DP alarm indicates a break in the line between the vessel wall and the core shroud. The water would enter the downcomer area instead of the sprays. Pedigree: Bank

Required references: None

41 **ID: NRC-12719** **Points: 1.00**

Given the following:

- A transient occurs on Unit 2
- DW pressure is 3 psig and rising
- DW radiation is 50R and rising
- Chemistry is requested to pull containment air samples from HRSS to help determine the source of the leakage

What control room actions are required prior to opening the sample and return valves?

A. Bypass isolation signal on 902-5 panel placing ISOL SIGNAL SAMPLING BYPASS switch to AIR
Observe annunciator 902-3 A-15 PRI CNMT VENT/SAMPLE ISOL BYPASS alarms

B. Bypass isolation signal on 902-3 panel placing ISOL SIGNAL SAMPLING BYPASS switch to MANUAL BYPASS
Observe annunciator 902-3 A-15 PRI CNMT VENT/SAMPLE ISOL BYPASS alarms

C. Bypass isolation signal on 902-5 panel placing ISOL SIGNAL SAMPLING BYPASS switch to AIR
Observe annunciator 902-3 A-15 PRI CNMT VENT/SAMPLE ISOL BYPASS is reset

D. Bypass isolation signal on 902-5 panel placing ISOL SIGNAL SAMPLING BYPASS switch to MANUAL BYPASS
Observe annunciator 902-3 A-15 PRI CNMT VENT/SAMPLE ISOL BYPASS is reset

Answer: A

Question 41 Details

Question Type:	Multiple Choice
Topic:	41 Drywell leakage detection with DW Hi Press
System ID:	12719
User ID:	NRC-12719
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295010
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 295010 AA1.06 3.3/3.5 Reference: DOP 1600-15 Comments: With a group 2 present due to DW pressure greater than 2 psig, the NSO must bypass the isolation signal to reopen the air sampling valves for the sample to be taken. The sample bypass switch is on the 902-5 panel and all of the sample valves are on the 902-3 panel as well as the sample isolation bypass annunciator. Pedigree: New

Required references: None

42 **ID: NRC-12720** **Points: 1.00**

Given the following:

- Unit 2 is at rated power
- 2B ERV becomes stuck open (100%) causing Torus temperature to increase
- Actions taken to close the ERV are unsuccessful
- BOTH A and B Loops of LPCI placed in Torus Cooling Mode prior to 95 degrees torus temperature

What is the effect on Torus temperature?

Torus temperature …

A. decreases very slowly.

B. levels off at approximately 95 degrees.

C. continues to increase to 100 degrees and then remains steady.

D. continues to increase to greater than 100 degrees.

Answer: D

Question 42 Details

Question Type:	Multiple Choice
Topic:	42 Hi Torus temp and Torus cooling
System ID:	12720
User ID:	NRC-12720
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295013
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 295013 AK2.01 3.6/3.7 Reference: DGP 2-3, UFSAR Table 6.2.3b Comments: The heat input from the struck open relief valve exceeds the capacity of Torus Cooling. The input from a stuck open ERV at rated pressure and temperature would be 600,000,000 BTUs/hr. The LPCI Hx can only remove 71,000,00 BTUs/hr. Pedigree: Bank

References required: None

43 **ID: NRC-9697** **Points: 1.00**

Given the following:

- Both U2 and U3 at rated conditions
- An instrument air leak in the Unit 2 Instrument Air system has required the operating team to cross-connect Unit 2 and Unit 3 Instrument Air systems.
- A search for the air leak is in progress.

Instrument air pressure is at 78 psig and trending down slowly on both Units.

What action is required to be taken NEXT?

A. Close the Instrument Air cross-tie valves.

B. When Instrument Air reaches 55 psig, scram both units.

C. Cross-tie the Instrument Air system with the Radwaste Sparging Air Compressor.

D. Obtain Unit Supervisors permission and cross-tie the Unit 1 and Unit 2 Instrument Air systems.

Answer: A

Question 43 Details

Question Type:	Multiple Choice
Topic:	43 Loss of instrument air, with backup air system
System ID:	9697
User ID:	NRC-9697
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	3.00
Time to Complete:	4
Point Value:	1.00
Cross Reference Number:	295019
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: 295019 AA1.02 3.3/3.1 Reference: ILTS021, DOA 4700-01 Comments: This knowledge can be gained from the training material/LP and Station drawings. DOA 4700-01. Per the procedure if the units IA systems are cross-tied, close the cross-tie valves to prevent scramming both units. Pedigree: Bank

Required Reference: None

44 **ID: NRC-12721** **Points: 1.00**

Given the following:

- A fire in the U2 Diesel Generator room has resulted in an automatic initiation of the CO2 Flooding System
- The CO2 system has NOT been reset, and the fire reflashes

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 setpoints for initiation again

B. can be performed via the Local Manual Electric Pushbutton Stations in the Diesel Generator corridor but CO2 injection will be delayed for 60 seconds

C. will ONLY occur if the detectors are reset on the 2253-52 CO2 reset panel AND temperatures reach initiation setpoint again

D. can ONLY be performed manually, via the Local Manual Electric Pushbutton Stations in the Diesel Generator Corridor, AND the injection timer is bypassed

Answer: B

Question 44 Details

Question Type:	Multiple Choice
Topic:	44 Fire protection local panels
System ID:	12721
User ID:	NRC-12721
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	600000
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 600000 AA1.09 2.5/2.7 Reference: LP286LN002 Comments: Per the above documents CO2 will not automatically inject again until the injection logic is reset at the control panel 2223-53 next to the CO2 storage tank. If the heat detectors fail to initiate the system automatically the local pushbuttons can be depressed to initiate the system manually. Pedigree: Bank

Required reference: None

45 **ID: NRC 12722** **Points: 1.00**

Given the following:

- Unit 2 was at rated power
- Electrical malfunction causes a loss of D.C. Buses 2A-1 and 2B-1

What is the status of RPS on Unit 2 and why?

A. Half scram signal ONLY due to loss of DIV 1 ATS

B. Half scram signal ONLY due to loss of DIV 1 AND DIV 2 ATS

C. Full scram signal due to loss of DIV 1 ATS ONLY

D. Full scram signal due to loss of DIV 1 AND DIV 2 ATS

Answer: D

Question 45 Details

Question Type:	Multiple Choice
Topic:	45 Reactor scram and loss of DC power
System ID:	12722
User ID:	NRC 12722
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295004
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 295004 AK3.03 3.1/3.3.5 Reference: DAN 902-4 H-20, DAN 902-4 G-20 Comments: The loss of 2A-1 and 2B-1 will make up the RPS logic for a full scram due to a Loss of both DIV 1 and DIV 2 ATS for both reactor water level lo lo and reactor pressure hi. Pedigree: New

Required reference: None

46 **ID: NRC-12723** **Points: 1.00**

Given the following:

- Unit 2 was operation at rated power
- 2A 125 VDC battery charger is OOS for maintenance
- A LOOP occurs on Unit 2
- The 2 125 VDC battery charger was damaged during the transient

A DC load shed was completed 30 minutes after the LOOP.

What is the MAXIMUM time the battery is expected to maintain essential loads of 62 amps?

A. 1 hours

B. 2 hours

C. 4 hour

D. 8 hours

Answer: C

Question 46 Details

Question Type:	Multiple Choice
Topic:	46 Loss of AC pwr effect on batteries
System ID:	12723
User ID:	NRC-12723
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295003
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 295003 AK1.01 2.7/2.9 Reference: DGA 13 Comments: With a LOOP and a loss of 125 VDC battery chargers the immediate operator actions of DGA 13 load shedding must be complete within 30 minutes to ensure batteries supply load of 62 amps for four hours. Pedigree: New

Required references: None

47 **ID: NRC-12724** **Points: 1.00**

Given the following:

- Unit 2 is operating at rated power
- Both Recirc pumps slowly run back to minimum speed
- No operator action is taken

What is the difference between ACTUAL and INDICATED Fuel Zone Reactor Water Level prior to the power reduction AND what is the expected change in the difference during the power reduction?

Prior to the power reduction, actual level is __(1)__ than indicated level AND the difference will get
__(2)__ during the power reduction.

A. (1) lower
(2) larger

B. (1) higher
(2) larger

C. (1) higher
(2) smaller

D. (1) lower
(2) smaller

Answer: D

Question 47 Details

Question Type:	Multiple Choice
Topic:	47 Partial or complete forced core flow NBI
System ID:	12724
User ID:	NRC-12724
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295001
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 295001 AA1.07 3.1/3.2 Reference: LP DRE216LN001 NBI Comments: Fuel Zone indications are affected by anything that causes flow through the monitored jet pump. Therefore recirc pump flow causes the FZ instrument to be inaccurate in the non- conservative direction (i.e. read higher than actual). Pedigree: Bank

Required references: None

48 **ID: NRC-12725** **Points: 1.00**

Which of the following describes the INITIAL response of reactor water level to a Main Turbine Generator Trip from 40% reactor power AND the reason for that response?

INDICATED Reactor Water Level will …

A. decrease, due to void collapsing

B. increase, due to void collapsing

C. increase, due to steam flow decrease

D. decrease, due to steam flow decrease

Answer: A

Question 48 Details

Question Type:	Multiple Choice
Topic:	48 Turbine Generator effects on reactor level
System ID:	12725
User ID:	NRC-12725
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295005
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 295005 AK1.03 3.5/3.7 Reference: LP 245LN001 Comments: The indicated Reactor water level on a turbine trip will decrease due to voids collapsing due to heat flux reduction due to the SCRAM. The steam flow change at this power would not have an effect on pressure due to the turbine bypass valve operation. Pedigree: Bank

Required references: None

49 **ID: NRC- 10261** **Points: 1.00**

The status of both Units is as follows:

- Both Units were at rated power.
- Instrument air piping has ruptured in the Unit 2 Reactor Building.
- Unit 3 Instrument Air pressure is normal.
- Unit 3 operator reports RWCU demineralizer inlet temperature increasing.

Which of the following actions are required next?

A. Lower the Unit 3 TCV setpoints

B. Commence a rapid shutdown on Unit 3

C. Secure/isolate service water loads on Unit 2

D. Cross-tie Unit 3 instrument air with Unit 2 instrument air

Answer: C

Question 49 Details

Question Type:	Multiple Choice
Topic:	49 INST air responsibilities
System ID:	10261
User ID:	NRC- 10261
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295019
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: 295019 G2.1.2 3.0/4.0 References: DOA 4700-01 Comments:DOA 4700-01 states that if equipment temperature on the Unit with normal IA pressure is rising then throttle or isolate service water loads in the Unit with failed IA system. Pedigree: New

Required references: None

50	ID: NRC-12726	Points: 1.00

Given the following:

- A LOCA has occurred on Unit 2
- Reactor pressure is 470 psig and lowering slowly
- Indicated Wide Range reactor water level is -10 inches
- Drywell pressure is 5.5 psig and rising slowly
- Drywell temperature is 310 degrees F on all points and steady

What is the status of Wide Range Reactor Level Instrumentation?

Wide Range Reactor Level Instrumentation is …

A. NOT accurate and CANNOT be used for trending.

B. accurate AND can be used for trending. Actual Reactor water level is -10 inches.

C. NOT accurate BUT can be used for trending. Actual Reactor water level is lower than -10 inches.

D. NOT accurate BUT can be used for trending. Actual Reactor level is higher than -10 inches.

Answer: A

Question 50 Details

Question Type:	Multiple Choice
Topic:	50 High DW temp vs Rx water level
System ID:	12726
User ID:	NRC-12726
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295028
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 295028 EK1.01 3.5/3.7 Reference: DEOP table 'A', EPG B-5-3 Comments: Per the EPGs changes in instrument run temperatures can produce on-scale readings on some instruments even when the actual level is below their variable leg taps. Since DP is not affected by level changes below the variable leg tap, the indicated level would then no longer reflect changes in actual level. Not only would the indicated level be inaccurate in this situation, but the instrument could not even be used to determine the level trend. Pedigree: Modified

Required references: DEOP 100 Tables and Graphs

51 **ID: NRC-12727** **Points: 1.00**

What is the LOWEST Torus water level at which steam would be expected to condense due to submergence during a Main Steam Line rupture in the primary containment?

A. 8 feet

B. 10 feet

C. 12 feet

D. 14 feet

Answer: C

Question 51 Details

Question Type:	Multiple Choice
Topic:	51 Low Torus level downcomer submergence
System ID:	12727
User ID:	NRC-12727
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295030
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 295030 EK2.07 Reference: RPV & Containment DEOP/SAMG action level assessment Comments: Per the drawing the downcomers are located at Torus level of 11 feet. Any additional reduction of Torus level would result in little or no steam condensation i.e. a surface condenser. This would cause to Torus to pressurize, placing containment in jeopardy. Pedigree: New

Required references: None

52 **ID: NRC-12728** **Points: 1.00**

Given the following:

- Mode Switch is in Shutdown
- Reactor Power is 20%
- Drywell Pressure is 5 psig
- SBLC System 1 is injecting
- Torus water temperature is 115 and increasing

Per the EPGs, what is the bases for operators lowering water level during the above event?

A. to reduce forced circulation and limit the onset of severe power/flow instabilities

B. to concentrate boron in the core and limit the peak power level to below the fuel thermal limits

C. to uncover the feedwater sparger to reduce subcooling and limit the onset of severe power/flow instabilities

D. to uncover the fuel to reduce natural circulation and limit the peak power level to below the fuel thermal limits

Answer: C

Question 52 Details

Question Type:	Multiple Choice
Topic:	52 Rx water level vs reactor power
System ID:	12728
User ID:	NRC-12728
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295031
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 295031 EA2.02 4.0/4.2 Reference: BWR EPGs section 14 page 14 Comments: During an ATWS with Torus temp greater than 100 degrees F and Drywell pressure greater than 2 psig, level should be lowered to the Top of Active Fuel (-143 inches) or power decreases to less than 6%. The lowering of level is to increase core void fraction to lower power. Pedigree: Bank

Required references: None

53 **ID: NRC-12729** **Points: 1.00**

What is the bases for performing an Emergency Depressurization during execution of DEOP 300-2 Radioactivity Release Control?

Performing an Emergency Depressurization ensures the …

A. availability of equipment in the turbine building that may be necessary to mitigate the event is not challenged.

B. energy level of the radiation and the atmospheric dispersion factors fall within the bounds of the accident analysis.

C. isotopic mixture of radioactive materials deposited off-site will be within the bounds of the accident analysis.

D. lowest possible driving head and flow of primary systems that are unisolated and discharging outside of containment.

Answer: D

Question 53 Details

Question Type:	Multiple Choice
Topic:	53 High Off-Site Release Rate vs ED
System ID:	12729
User ID:	NRC-12729
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295038
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 295038 EK3.04 3.6/3.9 Reference: EPG B-9-6 Comments: Per the EPGs, RPV depressurization places the primary system in the lowest possible energy state and reduces the driving head and flow of primary systems that are unisolated and discharging outside of containment. Pedigree: Bank

Required references: None

54 **ID: NRC-12730** **Points: 1.00**

Given the following:

- A transient occurs on Unit 2.
- The Unit Supervisor has ordered you to initiate Iso Condenser for pressure control.
- You observe the following trend for Iso Condenser (IC) parameters.

0000 IC Vent rad 1 mr
IC Shell side level 8 feet

0015 IC Vent rad 1.8 mr
IC Shell side level 10 feet

0030 IC Vent rad 2.6 mr
IC Shell side level 12 feet

D IC Vent rad 3.4 mr
IC Shell side level Off-scale high

What is the EARLIEST time the Iso Condenser MUST be isolated, and due to what condition?

A. 0030, due to shell side level

B. 0030, due to IC Vent rad

C. 0045, due to IC Vent rad

D. 0045, due to shell side level

Answer: A

Question 54 Details

Question Type:	Multiple Choice
Topic:	54 Iso Condenser valve manipulations and effects.
System ID:	12730
User ID:	NRC-12730
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	207000
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 207000 A1.09 3.7/3.7 Reference: DOA 1300-1 Comments: DOA requires that the Isolation Condenser be isolated if shell side level reaches 12 feet or IC Vent rad exceeds 3 mr. The conditions given require action to be taken for shell side level at 0030. Rad level actions would not be required until 0045 with the current trend. Pedigree: New

Required reference: None

55 **Points: 1.00**

Given the following:

- 'A' SBGT system is in PRI
- 'B' SBGT system is in STBY
- A transient occurs on Unit 2
- Drywell pressure is 3 psig and rising
- The 2/3A SBGT Fan indication is RED with 4100 scfm system flow
- The 2/3A SBGT Heater indication is GREEN

What is the expected status of SBGT system forty seconds later?

A. 2/3 'A' SBGT system OFF, 2/3 'B' SBGT system OFF

B. 2/3 'A' SBGT system OFF, 2/3 'B' SBGT system RUNNING

C. 2/3 'A' SBGT system RUNNING, 2/3 'B' SBGT system RUNNING

D. 2/3 'A' SBGT system RUNNING, 2/3 'B' SBGT system OFF

Answer: B

Question 55 Details

Question Type:	Multiple Choice
Topic:	55 SBGT system response to temperature
System ID:	12731
User ID:	
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 261000 A3.04 3.0/3.1 Reference: DAN 923-5 A-6 12E-2400C sh1+2 Comments: With a valid initiation signal and the switches in the above configuration, the A train will trip after a time delay for the heater not running and the B train will auto start. Pedigree: New

Required references: None

56 | **ID: NRC-12732** | **Points: 1.00**

Given the following:

- Unit 2 is at 95% power on the APRMs
- MCC 28-2 is lost due to an overcurrent condition

What is the status of the Unit 2 APRMs?

A. APRM channels 1,2,3 reading 95%, channels 4,5,6 lose power due to loss of RPS BUS B

B. APRM channels 1,2,3 reading 95%, channels 4,5,6 lose power due to loss of RPS MG Set B

C. APRM channels 4,5,6 reading 95%, channels 1,2,3 lose power due to loss of RPS BUS B

D. APRM channels 4,5,6 reading 95%, channels 1,2,3 lose power due to loss of RPS MG Set B

Answer: A

Question 56 Details

Question Type:	Multiple Choice
Topic:	56 APRM power supplies
System ID:	12732
User ID:	NRC-12732
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 2105005 K2.02 2.6/2.8 Reference:LP DRE215LN005, DOP 0500-03 Comments: A loss of MCC 28-2 would cause a loss of RPS MG set A . This would de-energize RPS BUS B. RPS BUS B is the power supply to APRM channels 4,5, and 6. Pedigree: New

Required references: None

57 **ID: NRC-12733** **Points: 1.00**

Given the following:

- Unit 2 is at rated power
- The following annunciators are illuminated:
- 902-4 A-10 DIV 1 TORUS WTR BULK TEMP HI
- 902-4 C-18 DIV 2 TORUS WTR BULK TEMP HI
- 902-3 C-13 2B ELECTROMATIC RELIEF VLV OPEN
- Torus Bulk temp reads 95 degree F and is rising

What IMMEDIATE actions must be performed to mitigate Torus heatup?

A. Initiate Torus cooling and verify torus temperature stabilizes

B. Cycle ADS INHIBIT switch from NORMAL to INHIBIT to NORMAL and verify reactor pressure stable

C. Place 2B relief valve control switch in OFF and verify feedwater control system has stabilized reactor level

D. Cycle 2B relief valve control switch from OFF to MANUAL and back to OFF and verify turbine control system maintains reactor power stable.

Answer: C

Question 57 Details

Question Type:	Multiple Choice
Topic:	57 Suppression pool high temp immediate actions
System ID:	12733
User ID:	NRC-12733
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295026
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 295026 G2.4.49 4.0/4.0 Reference: DOA 250-1, DANs 902-4 A-10 and C-18, DAN 902-3 C-13 Comments: With torus temp rising and indication of 2B ERV open, entry into DOA 250-1 is required. Immediate actions taken without reference are to place relief vlv control switch in OFF and verify feedwater control system has stabilized reactor level. Pedigree: New

Required references: None

58 | **ID: NRC-12734** | **Points: 1.00**

Given the following:

- Unit 2 is at rated power
- A LOCA occurs causing the following trend for DW pressure
- 0010 Annunciator 902-5 G-5 DRYWELL PRESS HI is received
- 0015 Annunciator 902-3 A-13 DRYWELL PRESS HI is received
- 0020 Drywell pressure is 1.9 psig
- 0025 Drywell pressure is 2.1 psig

What is the EARLIEST time that that the HPCI system would receive an auto initiation signal?

A. 0010

B. 0015

C. 0020

D. 0025

Answer: B

Question 58 Details

Question Type:	Multiple Choice
Topic:	58 High drywll pressure effect on HPCI
System ID:	12734
User ID:	NRC-12734
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295024
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 295024 EK2.01 3.9/4.0 Reference: DAN 902-5 G-5, DAN 902-3 A-13, LP DRE206LN001 Comments: Per lesson plan the HPCI initiation signal for high DW pressure comes off of PS2-1632. This is the same pressure switch that activates annunciator 902-3 A-13. This setpoint is 1.7 psig and provides an auto initiation of the HPCI system Pedigree: New

Required references: None

59 | **ID: NRC-12758** | **Points: 1.00**

Given the following:

- Unit 2 is in Mode 5
- The reactor building crane is being used to move equipment
- The refueling bridge is being used to move fuel
- An accident causes radiation levels to reach 40 mr on the refuel floor

What are the consequences of the radiation level?

A. Containment Purge Fans trip

B. The Reactor Building Ventilation system will isolate

C. The refueling bridge cane will be prevented from raising fuel

D. The reactor building overhead crane hoist raise function is inhibited

Answer: D

Question 59 Details

Question Type:	Multiple Choice
Topic:	59 PRM: Rx Bldg Crane Interlock form Crane PRM
System ID:	12758
User ID:	NRC-12758
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295023
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 295023 AK2.03 3.4/3.6 Reference: LP 272LN002 Comments: As described in training and reference material. Containment Purge Fan trip and Reactor Building Vent actions occur at nominal setpoint of 45mRem/hr per DAN 923-5 A-1. Pedigree: Bank Required references: None

60 | **ID: NRC-12736** | **Points: 1.00**

Given the following:

- Unit 2 is at rated power
- You are the Unit 2 NSO
- The Shift Manager has directed a Control Room Evacuation

You MUST complete which of the actions listed below prior to leaving?

A. Place MSIV switches in CLOSE

B. Direct Security to lock down the control room

C. Place the Mode switch in any position other than RUN

D. Make Public Address announcement for all shift personnel to proceed to Safe Shutdown Staging Area

Answer: A

Question 60 Details

Question Type:	Multiple Choice
Topic:	60 Control Room Abandonment
System ID:	12736
User ID:	NRC-12736
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295016
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 295016 2.4.49 4.0/4.0 Reference: DSSP 0100-CR Comments: DSSP step G1 lists actions that may be taken without procedural guidance if directed by Shift Manager or Unit Supervisor. Closing the inboard and outboard MSIVs is one of the actions. Pedigree: Bank

Required references: None

61	ID: 295021	Points: 1.00

Given the following:

- Unit 2 is in MODE 3 with reactor water temperature of 290 degrees F
- 2A and 2B SDC trains are aligned to the vessel
- 2C is aligned to Fuel Pool Cooling
- 2A RWCU pump is in service
- 2B Recirc pump is running at minimum speed

An overcurrent condition occurs on BUS 24-1

What action MUST be taken to maintain reactor water temperature?

A. Open turbine bypass valves to maintain current reactor pressure

B. Secure CRD cooling water flow to limit vessel temperature stratification

C. Start the RWCU system using the RWCU Aux pump and maximize system flow

D. Start the RWCU system using the RWCU Aux pump to provide a blowdown path to radwaste

Answer: C

Question 61 Details

Question Type:	Multiple Choice
Topic:	61 Loss of Shutdown cooling and operation of RWCU system
System ID:	12737
User ID:	295021
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 295021 AA1.01 3.4/3.4 Reference: DOA 1000-01 Residual heat removal,DTS 6700-2 Comments: Per the procedure each train of SDC removes the equivalent of 8 MWth, the RWCU system removes approx 10 MWth. With the loss of 1 train of SDC cooling, RWCU would provide sufficient cooling to replace the lost cooling. Pedigree: New

Required references: None

62 **ID: NRC-12740** **Points: 1.00**

The following statement exists in DEOP 300-2 Radioactivity Release Control:

If Off-Site release rate is above GSEP 'Alert' level Operate Turbine Building Ventilation.

Which of the following is the bases for keeping the Turbine Building Ventilation System in operation while executing DEOP 300-2 RADIOACTIVITY RELEASE CONTROL?

Having Turbine Building Ventilation in service…

A. prevents a reactor scram due to high temperature in the MSL tunnel.

B. maintains Turbine Building pressure above Reactor Building Pressure.

C. prevents having an unmonitored ground release from the Turbine Building.

D. maintains continuous monitoring for gaseous release within the Turbine Building.

Answer: C

Question 62 Details

Question Type:	Multiple Choice
Topic:	62 Off-Site release protection of general public
System ID:	12740
User ID:	NRC-12740
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295017
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 295017 AK1.02 3.8/4.3 Reference: DEOP 300-2 Bases pg 9-4 Comments: Per the EPG/SAGs personnel access to the turbine building, aux building or other building outside the secondary containment boundary may be essential for responding to emergencies or transients which may degrade into emergencies. These building are not always airtight structures, and radioactivity release inside the building would eventually lead to an unmonitored ground level release. Operation HVAC preserves building accessibility and discharges radioactivity through an elevated, monitored release point. Pedigree: Bank

Required references: None

63 **ID: NRC-12741** **Points: 1.00**

Unit 2 was operating at rated power when the output from Instrument Bus power was lost.

The Unit NSO placed the 2B Electromatic Relief Valve (ERV) control switch to the MANUAL position.

The 2B ERV will…

A. remain closed.

B. open and its position could be confirmed by acoustic monitoring ONLY.

C. open and its position could be confirmed by tailpipe temperature ONLY.

D. open and its position could be confirmed by BOTH tailpipe temperature AND acoustic monitoring.

Answer: B

Question 63 Details

Question Type:	Multiple Choice
Topic:	63 SRV/ERV loss of AC power
System ID:	12741
User ID:	NRC-12741
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	239002 K6.03
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 239002 K6.03 2.7/2.9 Reference: LP 239LN001 and DOA 6800-1 Comments: Valve control power is 125 volt DC. Tailpipe temperature monitoring is powered by Instrument Bus AC power. Acoustic monitoring is powered by ESS AC power. Pedigree: Bank

Required references: None

64 **ID: NRC-12742** **Points: 1.00**

Given the following:

- An extended Refueling and Maintenance Outage is in progress
- All four of the RPS Shorting Links are removed form the 902-15 and -17 Panels

Then SRM 21 spikes to a full scale indication

What response is expected from the RPS system under these conditions?

A. No RPS actuation

B. 1/2 scram on RPS channel A ONLY

C. 1/2 scram on RPS channel B ONLY

D. Full scram regardless of any other neutron monitoring device

Answer: D

Question 64 Details

Question Type:	Multiple Choice
Topic:	64 SRM and RPS status
System ID:	12742
User ID:	NRC-12742
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	215004
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 215004 A3.03 3.6/3.5 Reference: LP DRE212LN001 Comments: With shorting links removed, logic is one out of eighteen taken once (i.e., an RPS trip from any neutron monitoring instrument-SRM,IRM, or APRM-Results in a full scram). Pedigree: Bank

Required references: None

65 **ID: NRC-12743** **Points: 1.00**

Given the following:

- Unit 2 is in Mode 1.

The NSO must notify the Unit Supervisor to refer to Tech Spec 3.3.6.1 Primary containment Isolation Instrumentation and take the required action, if which of the following instruments is found to be inoperable?

A. Drywell Pressure – High

B. Torus Water Level – High

C. Drywell Temperature – High

D. Reactor Vessel Steam Dome Pressure – High

Answer: A

Question 65 Details

Question Type:	Multiple Choice
Topic:	65 PCIS and containment instrumentation
System ID:	12743
User ID:	NRC-12743
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	223002
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 223002 K6.05 3.0/3.3 Reference: T.S. 3.3.6.1 Comments: Drywell Pressure – high is the only one of the listed instruments applicable to T.S. 3.3.6.1 Pedigree: Bank

Required references: None

66 **ID: NRC-12744** **Points: 1.00**

Given the following:

- Unit 2 is at rated power
- A primary system leak occurs that cannot be isolated
- RWCU Demin Room exceeds Max Safe Temperature and Rad Levels
- RWCU Pump and Heat Exchanger area exceeds Max Safe Temperature

What is the Bases for the DEOP strategy to Emergency Depressurize using ADS valves?

A. To stop the reactor water inventory loss through the leak

B. To place the primary system in its lowest possible energy state and reject the heat to the Torus

C. To prevent floor drain sump water level or an area water level from exceeding its max normal operating level

D. To prevent the energy the RPV may be discharging to the secondary containment from increasing.

Answer: B

Question 66 Details

Question Type:	Multiple Choice
Topic:	66 ADS symptom based DEOP strategies
System ID:	12744
User ID:	NRC-12744
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	218000
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 218000 G2.4.6 Reference: EPG/SAG Appendix B chapter 8 page 14 Comments: Per the DEOP bases, the strategy for performing an emergency depressurization when a primary system is leaking into secondary containment, is to place the RPV in its lowest possible energy state. This is done by opening all 5 ADS valves to reject the heat to the suppression pool in preference to outside the containment. Pedigree: New

Required references: None

67 | **ID: NRC-10498** | **Points: 1.00**

Given the following on Unit 2:

The HVO notifies the Control Room of the following conditions observed on RPS BUS ‘B’

- Frequency 59.4 Hz and dropping 0.2 Hz/min.
- Voltage 122 volts and rising 2.5 volt/min.

Which of the following will occur FIRST if the trends continue?

A. The EPA relays will trip due to Overvoltage.

B. The EPA relays will trip due to Underfrequency.

C. The output circuit breaker will trip due to Overvoltage.

D. The output circuit breaker will trip due to Underfrequency

Answer: A

Question 67 Details

Question Type:	Multiple Choice
Topic:	67 RPS BUS: MG Set EPA Overvoltage Trip
System ID:	10498
User ID:	NRC-10498
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	3.00
Time to Complete:	4
Point Value:	1.00
Cross Reference Number:	212000
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: 212000 A1.01 2.8/2.9 References: LP 262LN005; DOP 0500-03 Comments: The EPA would trip at an underfrequency range of 55.8 to 56.6 Hertz. Overvoltage trips the EPA breaker at a range of 127.6 to 121.3 volts. The “B” RPS bus is fed from “A” RPS MG set. Pedigree: Bank

Required references: None

68	ID: NRC-9561	Points: 1.00

Given the following set of conditions:

- Unit 2 is operating at 83% power per BPO direction.
- The Unit 2 ESS UPS Inverter output spikes to 128 volts AC and stabilizes.

What (if any) will be the power supply to the ESS Bus and what procedural actions are required to mitigate the consequences?

A. Bus 25, via a voltage regulator, through the Static Switch, perform Operator Actions of DAN 902-8 F-8 ESS UPS TROUBLE.

B. Bus 29, via a voltage regulator, through the Static Switch, perform Operator Actions of DAN 902-8 F-8 ESS UPS TROUBLE.

C. MCC 28-2, via a power seeking ABT, perform Operator Actions of DAN 902-8 F-8 ESS UPS TROUBLE.

D. The ESS Bus will be de-energized, perform Immediate Operator Actions of DOA 6800-1 Loss of Power to Essential Service System Bus.

Answer: A

Question 68 Details

Question Type:	Multiple Choice
Topic:	68 Effects upon a loss of ESS UPS Inverter
System ID:	9561
User ID:	NRC-9561
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	4.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	262002
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: 262002 A2.02 2.5/2.7 Reference: LP DRE262LN005, DAN 902-8 F-8, DOP 6800-01, DES 8100-1 Comments: A knowledge of the training material and the ESS Electrical Prints 12E-2325 sh 1-3, ESS Bus layout is needed to answer this question. As the voltage of the inverter increases to >126 volts AC, alarm 902-3-F-8 ESS UPS TROUBLE annunciates, the static switch transfers to the voltage regulator from Bus 25, which has an output of ~120 volts AC, and now powers the ESS Bus. Pedigree: Bank

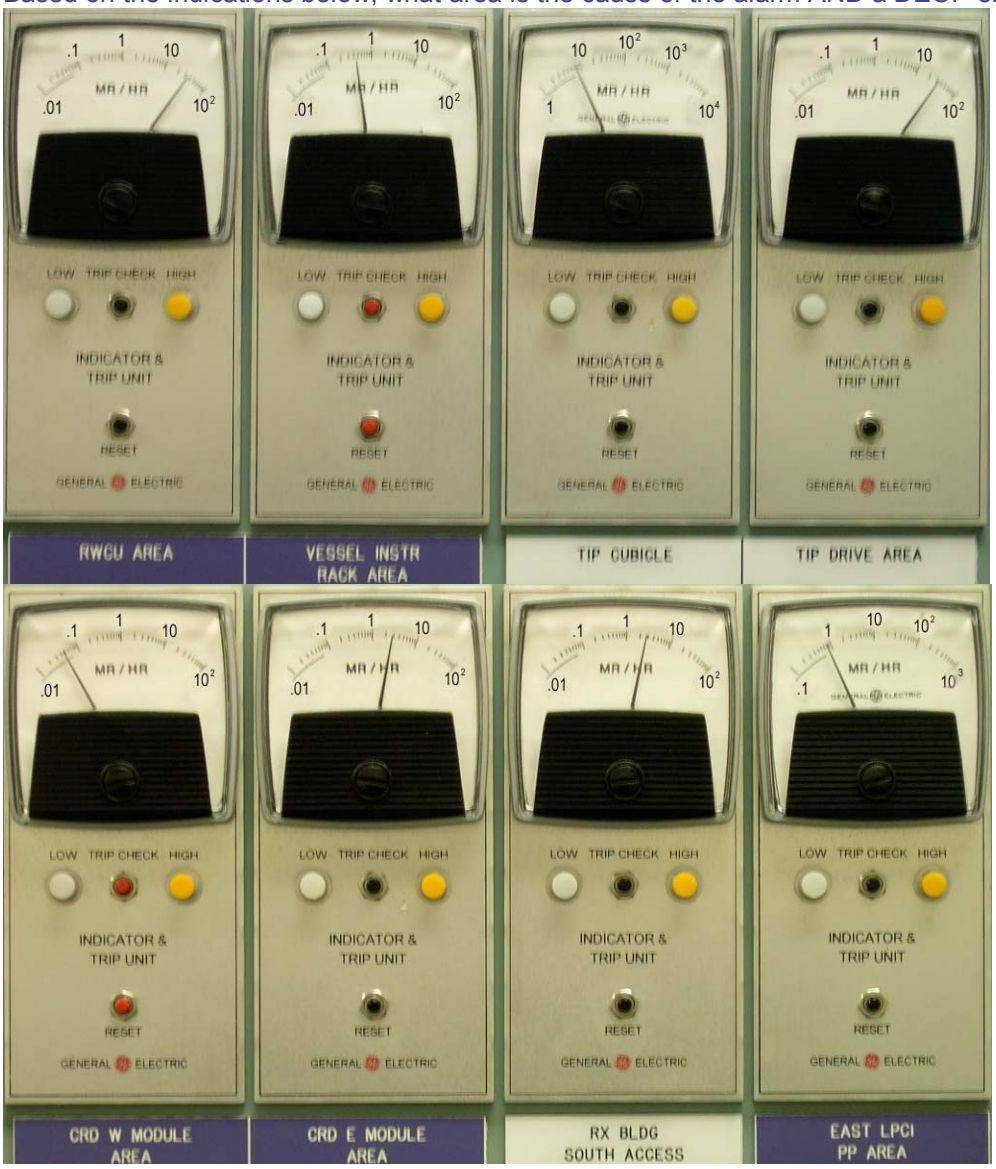
Required Reference: None

69 **ID: NRC-12746** **Points: 1.00**

Given the following:

- Unit 2 is at rated power
- Annunciator 902-A-1 RX BLDG RAD HI is lit

Based on the indications below, what area is the cause of the alarm AND a DEOP entry?



A. RWCU Area

B. EAST LPCI Pp Area

C. CRD E Module Area

D. TIP Drive Area

Answer: A

Question 69 Details

Question Type:	Multiple Choice
Topic:	69 Secondary Containment Radiation
System ID:	12746
User ID:	NRC-12746
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295033
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 295033 EA2.01 3.8/3.9 Reference: DAN 902-3 A-1, and alarm setpoints on 902-11 panel Comments: Per the setpoints on 902-11 panel, the RWCU Area alarm comes in at 25 MR and is a DEOP entry at 30MR, the reading in the attached picture shows RWCU Area at 40MR. All other areas are below alarm setpoints and DEOP entry conditions. Pedigree: New

Required references: None

70 **ID: NRC-12747** **Points: 1.00**

Which of the following describes the function/purpose of the Auxiliary Power System for Dresden Station as stated in the FSAR?

A. To supply electrical power to plant equipment under all conditions.

B. To supply power to essential AC loads for which even a momentary interruption of power could cause harmful effects to the plant.

C. To supply regulated, reliable electrical power to protective systems and equipment to ensure reliable reactor shutdown control.

D. To supply power to loads required for safe shutdown on one unit and operations required to limit the consequences of a DBA on the other unit.

Answer: A

Question 70 Details

Question Type:	Multiple Choice
Topic:	70 AC electrical distribution, the purpose of
System ID:	12747
User ID:	NRC-12747
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 262001 G2.1.27 2.8/2.9 Reference: LP 262LN001, LP 262LN005, LP 263LN000, and the FSAR Comments: The correct answer is to supply electrical power to plant equipment under all conditions. This comes out of the LP 262LN001. The other distracters listed come out of the lesson plans and are the purpose of RPS, ESS, and DC power. Pedigree: New

Required references: None

71	ID: NRC-12748	Points: 1.00

Given the following:

- The disc inside 2-3713 B-500 (2A RECIRC PMP OUTER SEAL CLR RBCCW INLET VLV) separates from the stem stopping flow through the valve.
- Annunciator 902-4 G-3 2A RECIRC PP SEAL CLG WTR FLOW LO alarms.
- All other RBCCW parameters are normal.

If no operator actions are taken the …

A. 2A Recirc pump seals and bearing could be damaged within one minute.

B. TCVs on the RBCCW system will open to lower the RBCCW temperature.

C. 2A Recirc pump seals will operate normally as long as CRD flow is maintained,

D. RWCU system could isolate since cooling is lost to the non-regenerative heat exchanger.

Answer: A

Question 71 Details

Question Type:	Multiple Choice
Topic:	71 Partial or complete loss of CCW system flow
System ID:	12748
User ID:	NRC-12748
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295018
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 295018 AA2.04 2.9/2.9 Reference: DOA 3700-1, DAN 902-4 G-3, P+ID M-20 Comments: The conditions in the stem indicate a loss of RBCCW to the Recirc pump seals. All other RBCCW parameters are stable. Per the DOA if cooling flow is lost and cannot be restored within one minute the operator must trip the recirc pumps. In the discussion section of the DOA it is stated that loss of cooling flow resulting from failures in the RBCCW system will cause damage to plant equipment. If RBCCW flow cannot be restored to the Recirc pumps within on minute, damage may occur to the pump seal and bearings. Pedigree: Bank

Required references: None

72	ID: NRC-12749	Points: 1.00

Cold Shutdown Boron Weight is DEFINED as the amount of boron necessary to maintain the reactor shutdown with RWCU system in service and which of the following additional conditions?

A. Reactor water level +8 to -59 inches
72 hour shutdown Xenon
Reactor Recirc in service

B. Reactor water level in normal operating band
Xenon free core
Reactor Recirc in service

C. Reactor water level in normal operating band
72 hour shutdown Xenon
Reactor Recirc is NOT in service

D. Reactor water level +8 to -59 inches
Xenon free core
Reactor Recirc is NOT in service

Answer: B

Question 72 Details

Question Type:	Multiple Choice
Topic:	72 ATWS conditions and Cold Shutdown Boron Weight
System ID:	12749
User ID:	NRC-12749
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295037
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 295037 EK3.05 3.2/3.7 References: UFSAR section 9.3.5 or LP 211LN001 Comments: Per the above documents Cold Shutdown Boron Weight is defined as the amount of boron necessary to shutdown the reactor and maintain a shutdown condition with the following conditions. Reactor water level is assumed as normal operating level, Xenon is at equilibrium, and RWCU and Recirc system in service. Pedigree: Bank

Required references: None

73 **ID: NRC-12750** **Points: 1.00**

~~Given the following:~~

- ~~Unit 2 was at rated power~~
- ~~CHANNEL 'A' AND 'B' MN STM TUNN TEMP HI annunciators alarm~~
- ~~All other automatic plant systems function as designed~~

~~What would be the expected Reactor PEAK Pressure?~~

~~A.~~ ~~1070 psig~~

~~B.~~ ~~1110 psig~~

~~C.~~ ~~1144 psig~~

~~D.~~ ~~1250 psig~~

Answer: ~~C~~ Question was removed from Exam after NRC review of Post-Exam Comments.

Question 73 Details

~~Question Type:~~	~~Multiple Choice~~
~~Topic:~~	~~73 SCRAM effects on reactor pressure~~
~~System ID:~~	~~12750~~
~~User ID:~~	~~NRC-12750~~
~~Status:~~	~~Active~~
~~Always select on test:~~	~~No~~
~~Authorized for practice:~~	~~No~~
~~Difficulty:~~	~~0.00~~
~~Time to Complete:~~	~~0~~
~~Point Value:~~	~~1.00~~
~~Cross Reference Number:~~	~~295006~~
~~Num Field 1:~~	
~~Num Field 2:~~	
~~Text Field:~~	
~~Comments:~~	~~Level: High~~ ~~K/A: 295006 AA2.04~~ ~~Reference: UFSAR section 15.2.4.1~~ ~~Comments: The events above describe an Inadvertant MSIV closure with a SCRAM from rated power. This has been analyzed for Dresden for a peak reactor pressure of 1144 psig. This assumes all 5 ERV/Target Rock have opened and no Safety Valve setpoints have been reached.~~ ~~Pedigree: Bank~~

~~**Required references: None**~~

74 **ID: NRC-12752** **Points: 1.00**

Given the following:

- Unit 2 is at rated power
- IMD working on LT 2-263-57A MR Water Level
- Annunciator 902-5 E-5 GROUP 2 ISOLATION INITIATED alarms
- Annunciator 902-4 E-16 2A/B PUMPBACK COMPRESSOR TRIP alarms
- Reactor Water level remained stable at 30 inches

Per DAN 902-4 E-16...

(1) What caused the trip of the Pumpback air compressor
(2) What is the FIRST operator action that must be taken?

A. (1) Low suction pressure of 5 inches Hg
(2) Reset the Group 2 isolation

B. (1) Low suction pressure of 5 inches Hg
(2) Open AO 2-4723 DW N2 BACKUP SUPPLY ISOL VLV.

C. (1) High compressor water temperature of 180 degrees F
(2) Reset the Group 2 isolation

D. (1) High compressor water temperature of 180 degrees F
(2) Open AO 2-4723 DW N2 BACKUP SUPPLY ISOL VLV

Answer: B

Question 74 Details

Question Type:	Multiple Choice
Topic:	74 Inadvertant containment islolation
System ID:	12752
User ID:	NRC-12752
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295020
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 295020 2.4.50 3.3/3.3 Reference: DAN 902-5 E-5, DAN 902-4 E-16 Comments: Since level never dropped below the setpoint of 6 inches for a group 2 isolation, this is an invalid group isolation. The valves will still reposition causing the Unit 2 pumpback compressors to trip due to low suction pressure. The operator should FIRST open AO 2-4723, DW N2 BACKUP SUPPLY ISOL VLV to ensure inboard MSIVs do not close. Pedigree: New LINK 10CFR55.41(b)(10)+(4)

Required references: None

75	ID: NRC-12755	Points: 1.00

Unit 2 is at rated conditions with the 902-36 back-panel recorder TIRS 2-1640-200A, Torus Temp Mon Div 1 Out Of Service due to a failed power supply; All appropriate Technical Specifications/TRM conditions have been entered for this failure.

Then it is noted that TIRS 2-1640-200B (Div 2 Torus Temp Mon) indicates the following:

- Point 1 112F
- Point 2 95F
- Point 3 90F
- Point 4 85F
- Point 5 85F
- Point 6 85F
- Point 7 87F
- Point 8 90F

What actions are required based on the current readings?

A. Enter DAN 902-4 C-18, DIV 2 TORUS WTR BULK TEMP HI

B. Enter DAN 902-4 D-18, DIV 2 TORUS WTR LOCAL TEMP HI

C. Enter DEOP 200-1, PRIMARY CONTAINMENT CONTROL

D. Immediately place the Mode Switch in Shutdown

Answer: A

Question 75 Details

Question Type:	Multiple Choice
Topic:	75 Primary Containment operational impact for high Torus temp
System ID:	12755
User ID:	NRC-12755
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	223001
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 223001 K5.11 2.7/2.7 Reference: DAN 902-4 D-18, DAN 902-4 C-18, DEOP 200-1 Comments: The entry for the DEOP is 95 degrees F torus bulk temperature, DAN 902-4 D-18 entry is 197 degrees local temperature, DAN 902-4 C-18 Torus water bulk temperature is 90 degrees F, and Immediate placing of the MODE Switch to Shutdown is required for Tours Bulk temp of 110 degrees F. Doing the math for the given temperatures, the Average temp is slightly over 91 degrees F, meaning only the DAN for Torus Bulk temp is met. Pedigree: Modified

Required references: None

76	ID: NRC-9995	Points: 1.00

Unit 2 has the following conditions:

- Primary containment is open with recirc pump repairs in progress
- Rx Water temperature is 190 degrees F.
- RPV Water level is 90 inches.
- The Mode switch is in SHUTDOWN.
- Rx Vessel head bolts are tensioned.

An event occurs that causes Rx Water temperature rises to 220 degrees F before being turned.

Which of the following describes the current plant Mode and the HIGHEST priority procedure required to be implemented?

A. Mode 3, enter DOA 1000-01, Residual Heat Removal Alternatives

B. Mode 4, enter DOA 1000-01, Residual Heat Removal Alternatives

C. Mode 3, enter DEOP 300-1, Secondary Containment Control

D. Mode 4, enter DEOP 300-1, Secondary Containment Control

Answer: A

Question 76 Details

Question Type:	Multiple Choice
Topic:	76 Change in Mode and procedure decision
System ID:	9995
User ID:	NRC-9995
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	4.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	G.2.1.22
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: G.2.1.22 2.8/3.3 Reference: DGP 1-1 Comments: When temp exceeds 212 degrees F, the Rx will go from Mode 4 to Mode 3. Due to the Group 2 and temp rise, DOA 1000-01, Residual Heat Removal Alternatives must be entered. There was not a Loss of Containment, but an inadvertant isolation. Pedigree: Bank

Required references: None

77 **ID: NRC-9539** **Points: 1.00**

Unit 2 is at rated conditions when the following occurs:

- The calibration of the LPRMs that must be performed every 2000 effective full power hours (EFPHs) per Tech Specs is scheduled to be done
- The TIP system is found to be Inoperable
- This is the third scheduled LPRM calibration to be performed this fuel cycle

How long since the last calibration is the latest that a new calibration can be performed with no further actions required by Tech Specs?

A. 2000 EFPHs

B. 2200 EFPHs

C. 2300 EFPHs

D. 2500 EFPHs

Answer: D

Question 77 Details

Question Type:	Multiple Choice
Topic:	77 Surveillance Extension Time of 25%
System ID:	9539
User ID:	NRC-9539
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	4.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	2.2.22
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Objective: DRE215LN005.07 Reference: LP DRE215LN005 and TS SR 3.0.2 and 3.3.1.1.9 K/A: 2.2.22 3.4/4.1 Level: High - Application Explanation: As described in training and reference material. TS allow 25% extension time for surveillances: (2000 x 25%) + 2000 = 2500. Bank **REQUIRED REFERENCES: I.T.S. 3.3.1.1**

78 **ID: NRC-9489** **Points: 1.00**

A Non-Licensed Operator has a Clearance Order that requires independent verification.

For which of the following conditions can the Shift Manager waive independent verification?

A Tag Out card to be hung on _____ .

A. Reactor Recirc sample valve located in RWCU Hx room

B. the south instrument air cross-connect valve 8 feet off the floor in the turbine building 517 level

C. the 2/3 Diesel Air Start motor that was just replaced

D. the 2/3A SBGT Charcoal Filter that was just replaced

Answer: A

Question 78 Details

Question Type:	Multiple Choice
Topic:	78 Waiving Independent Verification for ALARA
System ID:	9489
User ID:	NRC-9489
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	4.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	G.2.3.2
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A:G.2.3.2 2.5/2.9 Reference: HU-AA-101 Comments: The Shift Manager may waive verification requirements for ALARA concerns. Pedigree: Bank

Required References: None

79 **ID: NRC-12696** **Points: 1.00**

Given the following:

Unit 2 experienced a failure to Scram from a turbine trip at 98% power.The operator successfully initiated a manual scram approximately 4 seconds after the turbine trip. Post trip analysis revealed the following data for the event:

- Peak Reactor Power 116%
- Peak Reactor Pressure 1255 lbs
- Minimum Vessel Level -124 inches
- Most Limiting MCPR 1.08

Which of the following states the Safety Limit violated?

A. MCPR

B. RPV Level

C. Thermal Power

D. RPV Pressure

Answer: A

Question 79 Details

Question Type:	Multiple Choice
Topic:	79 Reactor power on pressure transient
System ID:	12696
User ID:	NRC-12696
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295007 AA2.02
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 295007 AA2.02 4.1/4.1 Reference: T.S. Section 2 Safety Limits Comments: With the successful scram all parameters stayed within safety limits except MCPR which dropped to 1.08, below the limit of 1.11 for duel recirc loop operation. Pedigree: Bank

Required references: None

80 **ID: NRC-9664** **Points: 1.00**

Given the following conditions on Unit 3:

- MCC 38-1 has caught fire and is separated from Bus 38.
- Based on these conditions the DSSP's have been entered.
- An isolation signal was received for the Isolation Condenser.
- The 3-1301-4 valve must be closed to complete the isolation.

An operator must be dispatched to the _____ in order to close the 3-1301-4 Valve

A. Unit 2/3 Diesel Generator Room

B. Unit 2 TIP Room

C. Unit 3 TIP Room

D. Unit 3 Diesel Generator Room

Answer: A

Question 80 Details

Question Type:	Multiple Choice
Topic:	80 Iso Cond: Location of Local Iso Valves
System ID:	9664
User ID:	NRC-9664
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	4.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	G.2.4.35
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Objective: DRE207LN001.05 Reference: LP DRE207LN001/DSSP's K/A: Generic 2.4.35 3.3 / 3.5 Level: Memory Explanation: This knowledge can be gained from the training material/LP and Station drawings and procedures. Pedigree: Bank **Required Reference: None** SRO criteria #5

81 **ID: NRC-12697** **Points: 1.00**

Given the following:

- Unit 2 is starting up, and is currently at 55% power
- Annunciator 902-4 C-19 LPCI/CS East Sump Lvl Hi comes in
- Two minutes later 902-4 C-23 Torus Narrow Range Wtr Lvl Lo comes in
- Operator sent to investigate reports the leak CAN NOT be isolated

What is the cause of the above indications, and what are the required actions?

A. LPCI pumps A+B Torus suction line break
Monitor Torus level
Scram and Enter DEOP 100, RPV Control
Declare an Unusual Event

B. LPCI pumps A+C or HPCI Torus Suction line break
Monitor Torus level
Scram, reduce pressure by opening all Main Turbine Bypass valves
Declare an Unusual Event

C. LPCI pumps A+B Torus Suction line break
Enter DOA 040-2 Local Flooding
Scram, reduce pressure by opening all Main Turbine Bypass valves
Enter Tech Spec 3.6.2.2

D. HPCI Torus Suction line break
Enter DOA 040-2 Local Flooding
Use HPCI on Min Flow
Enter Tech Spec 3.6.2.2

Answer: A

Question 81 Details

Question Type:	Multiple Choice
Topic:	81 Secondary Containment High Sump Levels
System ID:	12697
User ID:	NRC-12697
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295036 EA2.03
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 295036 EA2.03 3.4/3.8 Reference: DEOP 300-1, DAN 902-4 C-19, DAN 902-4 C-23 Comments: Per DEOP 300-1, if primary system leak cannot be isolated Scram and enter DEOP 100 RPV Control. EAL C.2 for containment loss. Pedigree: Bank SRO criteria # 5 **Required references: DEOP 300-1 and EALs**

82 **ID: NRC-12699** **Points: 1.00**

Given the following:

- Fuel Handling Supervisor requests permission to place HI-TRAC into U2 Fuel Pool
- All Tech Spec. requirements have been verified

To ensure fuel pool water level does NOT overflow into the ventilation ducts, Operations must reject water from the Fuel Pool System ....

A. to the CSTs until the Skimmer Surge Tank Lo level alarm actuates

B. to 2/3 Radwaste until the Skimmer Surge Tank Lo level alarm actuates.

C. to the CSTs until Fuel Pool level reaches 8 inches below ventilation ducts.

D. to 2/3 Radwaste until Fuel Pool level reaches 8 inches below ventilation ducts.

Answer: A

Question 82 Details

Question Type:	Multiple Choice
Topic:	82 Fuel handling equipment and fuel pool level
System ID:	12699
User ID:	NRC-12699
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	234000
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 234000 A1.01 3.1/3.4 Reference: DFP 0800-82 Comments: Per the DFP Skimmer Surge Tank level should be lowered by rejecting water from the Fuel Pool system to the CST's until the Annunciator 902-4 D-24, Fuel Pool Skimmer TK Lvl Lo has actuated then close the 2-1901-57 valve to stop rejecting. Pedigree: New **Required references: None** SRO criteria #7

83 **ID: NRC-12700** **Points: 1.00**

What is the Tech Spec limit for Drywell Air Temperature and its Bases?

A. 150 degrees F, to ensure peak LOCA temperature DOES NOT exceed maximum allowable drywell temperature of 281 degrees F.

B. 150 degrees F, to ensure RPV water level instruments DO NOT become unreliable due to boiling in the instrument runs in the Drywell.

C. 160 degrees F, to ensure peak LOCA temperature DOES NOT exceed maximum allowable drywell temperature of 281 degrees F.

D. 160 degrees F, to ensure RPV water level instruments DO NOT become unreliable due to boiling in the instrument runs in the Drywell.

Answer: A

Question 83 Details

Question Type:	Multiple Choice
Topic:	83 High Drywell Temperature T.S. Bases
System ID:	12700
User ID:	NRC-12700
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295028
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 295028 G.2.2.25 2.5/3.7 Reference: Tech Spec 3.6.1.5 and the Bases Comments: Per the Bases the temperature limit is 150 degrees to ensure that the safety analysis remains valid by maintaining the expected initial conditions and ensure that the peak LOCA drywell temp does not exceed the maximum allowable temp of 281 degrees. Pedigree: New

Required references: None

SRO criteria #2

84 **ID: NRC-12701** **Points: 1.00**

Given the following:

- Unit 2 is in a Refueling Outage
- 902-3 F-14 Rx BLDG Vent CH A RAD Hi Hi illuminated
- 902-3 A-3 Rx BLDG Vent CH B RAD Hi Hi illuminated
- Reactor building ventilation systems respond as designed
- Fuel Pool Channel A reads 12 R/hr
- Fuel Pool Channel B reads 10 R/hr

Which one of the following Emergency Classifications is required to be declared?

A. Unusual Event

B. Alert

C. Site Area Emergency

D. General Emergency

Answer: B

Question 84 Details

Question Type:	Multiple Choice
Topic:	84 Refuel accident with EAL entry
System ID:	12701
User ID:	NRC-12701
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295023
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 295023 AA2.05 Reference: EP-AA-1004 Comments: Per the tables in EP-AA-1004 the correct classification is MA11 based on Refuel Floor Rad Monitors ≥ 10 R/hr Pedigree: New SRO criteria #4 and #5 **Reference required EP-AA-1004**

85 **ID: NRC-9796** **Points: 1.00**

DOP 2000-110, Attachment 1: Waste Surge Tank Discharge to River Card, contains the calculation for determining the __(1)__ flowrate and radiological monitor alarm setpoints, and must be verified by __(2)__.

A. (1) discharge
(2) Field Supervisor

B. (1) dilution
(2) Field Supervisor

C. (1) discharge
(2) Shift Manager or designee

D. (1) dilution
(2) Shift Manager or designee

Answer: C

Question 85 Details

Question Type:	Multiple Choice
Topic:	85 River Discharge calculations
System ID:	9796
User ID:	NRC-9796
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	3.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	G.2.3.6
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: Memory K/A: Generic 2.3.3 IR: 1.8 / 2.9 Reference: DOP 2000-110 Comments: The calculations that must be completed prior to starting the release determine the maximum discharge rate and calculations must be verified by the Shift Manager or designee. Pedigree: Bank SRO criteria #4

Student References: None

86 **ID: CERT-12702** **Points: 1.00**

Given the following:

- Both Units are at rated power
- 2300 3 SROs are on shift 1, One of the SROs is STA qualified
- 0500 STA qualified individual is forced to leave site for medical issues

What is the LATEST that an STA qualified individual can be absent and still meet Tech Spec requirements?

A. 0600

B. 0700

C. 0900

D. 1100

Answer: B

Question 86 Details

Question Type:	Multiple Choice
Topic:	86 Shift staffing requirements
System ID:	12702
User ID:	CERT-12702
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	G.2.1.4
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: G.2.1.4 /3.4 Reference: Tech Spec 5.2.2 b.and 5.2.2.f SRO criteria #1 Comments: Per the T.S. the station can be below the STA requirement for a time not to exceed 2 hrs for unexpected absence. Pedigree: New

Required references: None

87 **ID: NRC-12703** **Points: 1.00**

Given the following:

- Unit 2 at rated power
- Reactor Feed pump ventilation supply damper fails closed.
- Field Supervisor recommends wiring damper in open position

Per CC-AA-112 Temporary Configuration Changes, what is the MINIMUM level of authorization required to perform this urgent plant action?

A. Unit Supervisor with concurrence of a second SRO

B. Unit Supervisor with concurrence of Shift Manager

C. Shift Manager with concurrence of Site Engineering Director

D. Shift Manager with concurrence of Shift Operating Supervisor (SOS)

Answer: C

Question 87 Details

Question Type:	Multiple Choice
Topic:	87 Configuration Control for urgent plant conditions
System ID:	12703
User ID:	NRC-12703
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	G.2.2.15
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: G.2.2.15 /2.9 Reference: CC-AA-112 Comments: Per CC-AA-112 section 4.1.5 the Shift Manager with concurrence of Site Engineering Director may allow installation of a temp change with paperwork completed in the next 24 hours. Pedigree: New **Required references: None** SRO criteria #3

88 **ID: NRC-12710** **Points: 1.00**

A major plant transient has occurred and an RPV Blowdown is required, due to exceeding the limit for Pressure Suppression Pressure, with the following current conditions:

- Reactor pressure is 650 psig
- Drywell pressure is 14 psig
- Torus pressure is 11 psig
- Torus level is 5.5 feet

Which one of the following describes the required method of depressurizing the RPV and the MAXIMUM allowable reactor pressure following the depressurization?

A. SRVs, below 66 psig

B. SRVs, below 80 psig

C. Turbine bypass valves, below 66 psig

D. Turbine bypass valves, below 80 psig

Answer: D

Question 88 Details

Question Type:	Multiple Choice
Topic:	88 Blowdown and Torus level
System ID:	12710
User ID:	NRC-12710
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	239002
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 239002 G.2.4.6 3.1/4.0 Reference: DEOP 400-2 SRO criteria #5 Comments: Due to Torus level less than 6 feet, the SRVs can not be used for blowdown. Reactor pressure needs to remain within 66# of drywell pressure. Drywell pressure is currently 14#, therefore the maximum reactor pressure is 80#. Pedigree: Modified

Required reference: DEOP 400-2

89 **ID: NRC-12711** **Points: 1.00**

Given the following:

- Unit 2 is shutdown with coolant temperature of 320 degrees F
- 2A and 2B SDC pumps are running aligned to the vessel
- 2C SDC pump is running aligned to the FPC system
- No Recirc pumps are running

Predict system response if reactor coolant temperature trends up to 360 degrees F and required actions to mitigate the issue.

A. ONLY 2C SDC pump trips, required entry into DOA 1000-1 Residual Heat Removal Alternatives

B. 2A, 2B and 2C SDC pumps will auto trip, required entry into ONLY DOA 1000-1 Residual Heat Removal Alternatives

C. ONLY 2A and 2B SDC pumps will auto trip, required entry into DOA 1000-1 Residual Heat Removal Alternatives

D. 2A, 2B, and 2C SDC pumps will auto trip, required entry into DOA 1000-1 Residual Heat Removal Alternatives AND DOA 1900-1 Loss of Fuel Pool cooling

Answer: C

Question 89 Details

Question Type:	Multiple Choice
Topic:	89 Shutdown Cooling vs Recirc loop hi temp
System ID:	12711
User ID:	NRC-12711
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	205000
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 205000 A2.01 3.1/3.3 Reference: T.S. 3.4.7, DOA 1000-01 Comments: The coolant temperature exceeds the setpoint of 339 degrees F for SDC pump trip. Actions of Tech Spec. 3.4.7 are required and entry into the DOA 1000-01 for residual heat removal alternatives. Pedigree: New SRO criteria #5

Required References: T.S. 3.4.7

90	ID: NRC-10255	Points: 1.00

Unit 2 was operating at 100% power with reactor pressure at 1004.6 psig with the 'B' pressure regulator in service when the following occurred:

- 902-5 A 6, APRM HI annunciator alarms.
- 902-5 C-3, Rod Out Block annunciator alarms
- Reactor pressure abruptly rose to 1011 psig AND THEN stabilized at 1008.8 psig
- Reactor power rose to 103% AND THEN LOWERED TO AND stabilized at 100.0%

Based on the above what actions should the Unit Supervisor direct?

A. enter DOA 5650-02 for failed pressure regulator and ensure the "backup" regulator took control automatically.

B. enter DOA 5650-02 for failed pressure regulator and verify control valves throttle closed to compensate .

C. enter DOA 5650-03 for turbine control valve or bypass valve failure and ensure the Max Combine Flow Limiter took control automatically.

D. enter DOA 5650-03 for turbine control valve or bypass valve failure and verify control valves throttle closed to compensate for failed valve.

Answer: A

Question 90 Details

Question Type:	Multiple Choice
Topic:	90 Pressure Regulator Failure
System ID:	10255
User ID:	NRC-10255
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	241000
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Level: High K/A: 241000 G.2.4.4 4.0/4.3 Reference: DOA 5650-02 Comments: The correct DOA entry is 5650-02 for pressure regulator failure. The back up regulator will come in control an pressure will raise approximately 4 psig when the in control pressure transducer fails low. Pedigree: New SRO criteria #5 Question reflects recent operating event at Dresden Unit 2 **Required reference: None**

91 **ID: NRC-12712** **Points: 1.00**

Given the following:

- A LOCA has occurred on Unit 2
- Drywell pressure is 3 psig and slowly rising
- 'A' Recirc loop pressure is 4 psig higher than 'B' Recirc loop
- No Recirc or LPCI valves have repositioned

What is the impact on the LPCI system, and what procedural actions are required to be taken?

A. NO LPCI injection, take DOP 1500-9 LPCI LOOP SELECT DEFEAT actions to force logic to Div II.

B. NO LPCI injection, take DAN 902-3 A-4 LPCI LOOP SELECTION LOGIC actions to manually position required valves.

C. LPCI injection to BOTH loops, take DOP 1500-9 LPCI LOOP SELECT DEFEAT actions to force logic to Div II.

D. LPCI injection to BOTH loops, take DAN 902-3 A-4 LPCI LOOP SELECTION LOGIC actions to manually position required valves.

Answer: B

Question 91 Details

Question Type:	Multiple Choice
Topic:	91 LPCI Loop Select logic failure
System ID:	12712
User ID:	NRC-12712
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	203000
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 203000 A2.15 4.2/4.2 Reference: T.S. Bases 3.3.5.1 for Loop select logic, Dan 902-3 A-4 for correct actions Comments: For the given conditions LPCI Loop select logic should have chosen the 'A' loop for injection and closed the Recirc Discharge vlv on the 'A' loop and closed the LPCI 21 vlv for the 'B' loop of LPCI. The valves did not reposition therefore both 22 vlvs are in the normal closed position and no injection can occur. The correct actions to properly position the valves are directed in DAN 902-3 A-4. Pedigree: New SRO criteria #5 **Required references: None**

92 **Points: 1.00**

Given the following:

- U2 at rated power
- 'A' LPCI pump is OOS
- 'A' Core Spray pump running per DOS 1400-05 System Operability
- System flow of 4400 gpm with test valve full open

What is the impact to the Core Spray system and what actions are required?

A. 'A' Core Spray subsystem INOP, 7 day LCO to restore to operability

B. 'A' Core Spray subsystem INOP, immediately enter LCO 3.0.3 for shutdown

C. 'A' Core Spray subsystem OPERABLE, 7 day LCO to restore LPCI subsystem to operability

D. 'A' Core Spray subsystem OPERABLE, 30 day LCO to restore 'A' LPCI pump to operability

Answer: B

Question 92 Details

Question Type:	Multiple Choice
Topic:	92 Core Spray system low flow
System ID:	12713
User ID:	
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 209001 A.2.06 Reference: T.S. 3.5.1, DOS 1400-05 Comments: Per DOS 1400-5 the Core Spray pump must achieve a flowrate of 4600 gpm at greater than 235 psig. Per the T.S. flowrate must be greater than 4500 gpm. Since the flowrate is not sufficient the A Core Spray pump is INOP and puts you in a 7 day clock. The 'A' LPCI pump INOP means that you have 2 low pressure subsystem INOP driving to an immediate shutdown per T.S. 3.0.3. Pedigree: New SRO criteria #2 **Required References: Tech Spec 3.5.1 (ECCS-Operating) pages 1 thru 3**

93 **ID: NRC-12714** **Points: 1.00**

Given the following:

- A Reactor Scram occurs on Unit 2
- Reactor Power remains at 20%
- DEOP 500-2 actions are in the field
- Torus temperature is 85 degrees

What is the next reactor water level action required and which isolations will initiate as a result?

A. Terminate and Prevent in AUTO, group 2 AND 3 isolations ONLY

B. Terminate and Prevent in AUTO, group 1, 2, AND 3 isolations ONLY

C. Terminate and Prevent in MANUAL, group 2 AND 3 isolations ONLY

D. Terminate and Prevent in MANUAL, group 1, 2, AND 3 isolations ONLY

Answer: A

Question 93 Details

Question Type:	Multiple Choice
Topic:	93 Containment isolations with an ATWS
System ID:	12714
User ID:	NRC-12714
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295037
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 295037 A2.07 Reference: DEOP 400-5, DOA 600-1, DAN 902-5 E-5, DAN 902-5 D-4, DAN 902-5 D-5 Comments: With an ATWS and power above 6% and level above -35 inches. The Unit Supervisor should order Terminate and Prevent in auto which will lower level to -40 inches. This is below the setpoints for a Group 2 and a Group 3 isolation but above the setpoint for a Group 1. Pedigree: New SRO criteria #5 **Required references: DEOP 400-5**

94 **ID: NRC-12738** **Points: 1.00**

Given the following:

- Unit 2 is operating at rated power
- All 250 vdc battery chargers are lost
- Initial battery voltage is reported at 254 vdc
- Battery voltage is dropping at 12 vdc per hour

If load remains constant, which of the following is the longest time that DC loads would be expected to function properly?

A. 1 hour

B. 3 hours

C. 5 hours

D. 7 hours

Answer: B

Question 94 Details

Question Type:	Multiple Choice
Topic:	94 Loss of DC and battery voltage
System ID:	12738
User ID:	NRC-12738
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295004
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 295004 AA2.03 2.8/2.9 References: T.S. bases 3.8.4 Comments: Per the T.S. bases for DC Sources-Operating, the batteries for DC electrical power subsystems are sized to produce required capacity at 80% of nameplate rating, corresponding to warranted capacity at end of life cycles and the 100% design demand. The minimum design voltage limit is 210 volts. Pedigree: New

Required references: None

95	ID: NRC-12739	Points: 1.00

Given the following:

- Unit 2 is in MODE 1 at 40% power
- A Turbine/Generator Trip occurs

What is the bases for the FIRST immediate action that MUST be taken per DOA 5600-01 TURBINE TRIP?

A. to prevent exceeding bypass capability

B. to prevent overspeeding of the Main Turbine

C. to prevent reverse powering the Main Generator

D. to mitigate the affects on the MCPR during the event

Answer: D

Question 95 Details

Question Type:	Multiple Choice
Topic:	95 Turbine/Generator trip actions without reference and why
System ID:	12739
User ID:	NRC-12739
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295005
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 295005 G2.4.49 4.0/4.0 References: DOA 5600-01, T.S. Bases 3.7.7 Comments: Each of the answers could be a immediate action for a turbine trip, but per DOA 5600-01 the bypass valve operation for pressure control is first. The Tech Spec bases for this is to mitigate the increase in vessel pressure which affects the MCPR during a turbine/generator trip. Pedigree: New SRO Criteria #2

Required references: None

96 **ID: NRC-12751** **Points: 1.00**

During a failure of Unit 2 250 VDC system, paralleling Unit 2 and Unit 3 250 VDC systems is prohibited unless certain operation requirements are met.

This is because paralleling 250 VDC...

A. utilizes WIRING that was NOT analyzed for cross-connected operation.

B. utilizes BREAKERS that were NOT analyzed for cross-connected operation.

C. exceeds system design loading requiring BOTH units be at least in Cold Shutdown.

D. exceeds system design loading requiring ONLY Unit 2 to be at least in Cold Shutdown.

Answer: C

Question 96 Details

Question Type:	Multiple Choice
Topic:	96 DC power ability to apply system limits
System ID:	12751
User ID:	NRC-12751
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	263000
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: Memory K/A: 263000 G2.1.32 3.4/3.8 Reference: DOA 6900-04, TS Bases 3.8.7 and 3.8.4 Comments: If one of the two 250 VDC battery systems in inoperable and the remaining battery system is used to restore power to a bus which is not part of its normal configuration, the remaining battery also becomes Inop because it is outside of its design load profile. With both 250 VDC batteries INOP TS 3.8.4 and 3.0.3 are exceeded. Pedigree: Bank

Required references: None

97 | **ID: NRC-12753** | **Points: 1.00**

Given the following:

- Unit 2 is in REFUEL and defueled
- control rod H-8 has been moved from position 00 to 32
- the NSO selects a different rod

Predict the impact this has on RMCS and actions to mitigate the consequences.

A. Rod Out Block, de-select and clear block per DOP 400-1

B. Rod Select Block, de-select and clear block per DOP 400-1

C. Rod Out Block, drive control rod H-8 to position 00 then de-select and clear block per DOA 700-3

D. Rod Select Block, drive control rod H-8 to position 00 then de-select and clear block per DOA 700-3

Answer: C

Question 97 Details

Question Type:	Multiple Choice
Topic:	97 RMCS rod blocks and corrective actions
System ID:	12753
User ID:	NRC-12753
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	201002
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 201002 A2.04 3.2/3.1 Reference: DOP 400-1, DOA 700-3, LP201LN002 Comments: The selection of a second rod with the MODE switch in REFUEL will cause a ROD OUT BLOCK. In order to clear the rod block the first rod must be taken to position 00 then the first rod de-selected prior to selecting a second rod. Pedigree: New SRO criteria #5

Required reference: None

98 **ID: NRC-12754** **Points: 1.00**

Given the following:

- A PCIS Group 1 isolation has occurred and the Reactor failed to scram
- Reactor water level is being maintained above the top of active fuel
- Condensate and Feedwater are the only available high pressure injection sources
- Reactor pressure is being maintained by ERVs
- Torus water level is 18 feet and rising

Based on the stated conditions, which of the following describes the expected actions the crew will take AND how those actions affect Reactor power and pressure.

A. A blowdown will need to be conducted due to Torus level reaching 18.5 feet. This will cause RPV pressure to drop rapidly and should help to lower Reactor power due to increased voiding in the core.

B. Stop injection to the RPV with Feedwater and Condensate to prevent exceeding 18.5 feet Torus water level. This will result in lower Reactor power and pressure due to increased voiding in the core.

C. A blowdown will need to be conducted due to Torus level reaching 18.5 feet. This will cause RPV pressure to drop rapidly and will result in a power increase due to the increased Feedwater flow into the RPV.

D. Stop injection to the RPV with Feedwater and Condensate to prevent exceeding 18.5 feet Torus water level. This will result in a lower Reactor power due to increased voiding in the core but will cause Reactor pressure to rise due to the loss of inlet subcooling.

Answer: A

Question 98 Details

Question Type:	Multiple Choice
Topic:	98 High Reactor Pressure and Torus level
System ID:	12754
User ID:	NRC-12754
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295025
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 295025 EA2.04 Reference: DEOP 200-1 Primary Containment, T.S. 3.6.2.2 bases Comments: Per DEOP 200-1 if level can not be maintained below 18.5 feet a blowdown is required. Originally the reactor is at High Pressure using the ERV for control, after the blowdown pressure will drop rapidly. The blowdown is required to ensure that excessive clearing loads from relief valve discharges and excessive pool swell loads do not damage the torus. Pedigree: Bank SRO criteria #5 **Required references: DEOPs**

99 **ID: NRC-12756** **Points: 1.00**

Given the following:

- Unit 2 is operating at rated power
- RBCCW flow to the Drywell is lost
- Efforts to restore flow are NOT successful

Which of the following describes the required actions and personnel that must be notified?

A. Enter DGP 2-3, Reactor Scram; Plant Management ONLY.

B. Enter DGP 2-1, Unit Shutdown; Plant Management ONLY.

C. Enter DGP 2-1, Unit Shutdown: All onsite personnel via a plant PA announcement.

D. Enter DGP 2-3, Reactor Scram; All onsite personnel via a plant PA announcement.

Answer: D

Question 99 Details

Question Type:	Multiple Choice
Topic:	99 Loss of RBCCW personel notifications
System ID:	12756
User ID:	NRC-12756
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295018
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 295018 G2.1.14 2.5/3.3 References: DOA 3700-1 Comments: With loss of RBCCW that CAN NOT be restored within 1 minute entry into DGP 2-3 Reactor Scram is required. All onsite personnel are notified via a plant PA announcement. Pedigree: Bank SRO criteria #5

Required references: None

100 | **ID: NRC-12757** | **Points: 1.00**

Given the following:

- Unit 2 is at rated power
- A fire occurs and is contained within the HPCI Room

Which one of the following will require the declaration of an ALERT?

A. HPCI MO 2-2301-5 steam isol valve breaker trips.

B. The fire is unable to be extinguished within 10 minutes.

C. The fire brigade is unable to respond within 10 minutes.

D. HPCI room temperature is 195 degrees F and rapidly rising.

Answer: D

Question 100 Details

Question Type:	Multiple Choice
Topic:	100 Secondary Containment high temp EAL call
System ID:	12757
User ID:	NRC-12757
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference Number:	295032
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Level: High K/A: 295032 G2.4.27 3.0/3.5 Reference: DOA 0010-10, EP-AA-1004 Comments: Per EP-AA-1004 for a fire in the protected area affecting operability of systems require to establish or maintain Mode 4 AND affected system parameter indications show degraded performance, threshold has been met for HA5/Alert classification. Pedigree: Bank

Required references: EP-AA-1004