EXAMINATION ANSWER KEY

06-1 NRC Exam

1 **ID: 06-1 NRC EXAM** **Points: 1.00**

Given the following set of conditions:

- Core Alterations are in progress.
- An irradiated fuel bundle being moved from the reactor cavity to the Spent Fuel Pool becomes ungrappled and falls into the reactor vessel downcomer area between the vessel wall and the shroud.
- Bundle integrity is maintained.

Which of the below describes the person at the greatest risk for radiation exposure?

A. A Mechanic working on SRVs.

B. The Refuel SRO on the Bridge.

C. An EMD Technician working on the SBLC Skid.

D. A Mechanic working on a Torus to Drywell Vacuum Breaker.

Answer: A

Question 1 Details

Question Type:	Multiple Choice
Topic:	(001) 295023.K1.01
System ID:	13078
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 232F-01.08 Reference: SAMG K/A: 295023.AK1.01 3.6 / 4.1 Level: High Pedigree: Bank Explanation: The correct answer is the Mechanic working on the SRVs due to LOCATION in the drywell. The other 3 answers represent workers outside of the drywell who are shielded from the area where the Control Rod is setting. **REQUIRED REFERENCES: None.**

2 **ID: 06-1 NRC EXAM** **Points: 1.00**

What is the bases for performing an Emergency Depressurization during execution of DEOP 300-2 RADIATION 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. isotopic mixture of radioactive materials deposited off-site will be within the bounds of the accident analysis.

C. energy level of the radiation and the atmospheric dispersion factors fall 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 2 Details

Question Type:	Multiple Choice
Topic:	(002) 295038.K3.04
System ID:	13080
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29502LK058 Reference: EPG B-9-6 K/A: 295038.K3.04 3.6 / 3.9 Level: Memory Pedigree: Bank Explanation: 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. **REQUIRED REFERENCES: None.**

3 **ID: 06-1 NRC EXAM** **Points: 1.00**

Given a DBA LOCA, which of the following would be the MINIMUM ECCS injection systems that would provide adequate core cooling?

A. 'A' and 'B' LPCI pumps.

B. 'A' LPCI pump and 'A' Core Spray pump.

C. 'A' and 'B' LPCI pumps AND 'A' Core Spray pump.

D. 'A', 'B' and 'C' LPCI pumps AND 'A' Core Spray pump.

Answer: C

Question 3 Details

Question Type:	Multiple Choice
Topic:	(003) 203000.K5.02
System ID:	13081
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 299LN049-2 Reference: UFSAR Ch 6.3 and figures K/A: 203000.K5.02 3.5 / 3.7 Level: Memory Pedigree: Bank Explanation: The correct answer is A and B LPCI pumps and Core Spray A pump as described in the UFSAR. **REQUIRED REFERENCES: None.**

4 **ID: 06-1 NRC EXAM** **Points: 1.00**

Given the following conditions for Unit-2:

- Isolation Condenser is being used for pressure control.
- RR 2-1840-12, ISOL CONDR VENT RAD, recorder is reading 13 mrem/hr rising steadily.
- LI 2-1340-2, ISOL CONDR LVL, indicates 8 ft. rising slowly.

Analyzing these conditions and with no operator action, this would result in . . . . .

A. a loss of reactor water inventory.

B. a potential Group 4 containment isolation.

C. increased makeup flow to the Isolation Condenser.

D. NO adverse consequences since these are normal indications.

Answer: A

Question 4 Details

Question Type:	Multiple Choice
Topic:	(004) 207000.K3.02
System ID:	13082
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE207LN001.12 Reference: DOA 1300-01 K/A: 207000.K3.02 3.8 / 4.0 Level: High Pedigree: Bank Explanation: Per the symptoms of DOA 1300-01, the indications given show a IC tube leak in progress. This will result in a loss of reactor water inventory. Group 4 is for HPCI, not the Isolation Condenser. Makeup flow to the Isolation Condenser is NOT controlled automatically (stem says no operator action). **REQUIRED REFERENCES: None.**

5 **ID: 06-1 NRC EXAM** **Points: 1.00**

Given the following conditions:

- Unit 2 is operating at rated power.
- A half scram is received due to a loss of an RPS Bus.

An NLO in the AEER reports the following:

- RPS MG Set is coasting to a stop.
- The associated EPAs are tripped and have NO indicating lights illuminated.
- The underfrequency relay on the bus has a red flag.
- The MG Set control switch lights are NOT lit.

Based on these conditions, the probable cause for this event is a(an) _____

A. Trip of the thermal overloads on the RPS Bus.

B. Overcurrent trip of the MG Set's feed breaker.

C. Underfrequency condition sensed by the bus relaying.

D. Undervoltage condition due to failure of the MG Set Voltage Regulator.

Answer: B

Question 5 Details

Question Type:	Multiple Choice
Topic:	(005) 212000.K2.01
System ID:	13083
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE262LN005.03 Reference: DOA 0500-05, DOP 0500-03 K/A: 212000.K2.01 3.2 / 3.3 Level: High Pedigree: Bank Explanation: The EPAs have tripped and underfrequency flags, on the Bus, have come in due to the entire machine coasting down. The EPAs do not have any input or output voltage and the trip lights don't seal in, therefore there are no lights. The MG set control switch lights are out due to loss of power from MCC 29-2. If the thermal overloads OR underfrequency on the Bus had tripped, the MG Set would still be running, thus still have control switch light(s) illuminated. **REQUIRED REFERENCES: None.**

6 **ID: 06-1 NRC EXAM** **Points: 1.00**

Given the following set of conditions:

- The annunciator U2 OR U3 INST AIR COMP TRIP is received.
- U3 Service to Inst Air AO crosstie valve has auto opened.
- Current Unit 3 Instrument Air pressure is 75 psig and slowly recovering.

The annunciator was received due to _____.

A. 3A IAC breaker trip at Bus 35.

B. 3B IAC breaker trip at Bus 36.

C. a high HP inlet air temperature condition on 3B IAC.

D. a high jacket cooling water temperature condition on 3C IAC.

Answer: C

Question 6 Details

Question Type:	Multiple Choice
Topic:	(006) 300000.A3.02
System ID:	13084
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE278LN001.06 Reference: DAN 923-1 B-5 K/A: 300000.A3.02 2.9 / 2.7 Level: Memory Pedigree: Bank Explanation: The correct answer to cause this trip alarm is 3B IAC HP inlet high temperature. If Bus 36 breaker did trip for 3A IAC, this condition would NOT cause this trip alarm, due to the annunciator circuitry being in parallel with the power supply. Bus 36 is not the power supply for 3B IAC (Bus 37). High jacket cooling water temperature is NOT an ATLAS COPCO compressor trip. **REQUIRED REFERENCES: None.**

7 **ID: 06-1 NRC EXAM** **Points: 1.00**

Automatic TIP traces are in progress on Unit 2 when a transient occurs resulting in the following conditions:

- RPV water level is +5 inches and rising.
- Drywell pressure is 1.5 psig and steady.

Concerning the TIP system you would verify _____ .

A. the shear valve fires, isolating the TIP tube

B. TIP withdrawal to In-Shield position and Ball valve closure

C. the Group II Isolation status light on the TIP drawer is illuminated

D. the Shear AND Squib Valve Monitor lights are illuminated after 5 minutes

Answer: B

Question 7 Details

Question Type:	Multiple Choice
Topic:	(007) 215001.A3.03
System ID:	13085
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE215LN001.06 Reference: DAN 902-5, E-5, DOP 0700-06 K/A: 215001.A3.03 2.5 / 2.6 Level: Memory Pedigree: Bank Explanation: The Group II isolation signal (RPV level less than +8 inches) would cause any TIP detector NOT in its shield to shift to manual reverse and withdraw into its shield chamber. Then the Ball valve would automatically close. Verifying these actions is a requirement of DAN 902-5, E-5. The Group II Isolation status light on the TIP drawer is illuminated is not correct, as this is an indication of the Group II isolation being reset (which it is not with an RPV water level of + 5 inches). **REQUIRED REFERENCES: None.**

8 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 is operating at near rated power, with the following condition:

- 2A 125 VDC battery charger is taken OOS for maintenance.

Then the following occurred:

- Unit 2 experiences a loss of site power (LOOP).
- The Unit 2 125 VDC battery charger was damaged during the transient.
- A DC load shed was completed 30 minutes after the LOOP.

What is the MINIMUM time, after the LOOP, the battery is expected to maintain essential loads of 62 amps?

A. 1 hour.

B. 2 hours.

C. 4 hours.

D. 8 hours.

Answer: C

Question 8 Details

Question Type:	Multiple Choice
Topic:	(008) 295003.K1.01
System ID:	13086
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29501LK083 Reference: DGA 13 K/A: 295003.AK1.01 2.7 / 2.9 Level: Memory Pedigree: Bank Explanation: With a LOOP and a loss of all 125 VDC battery chargers, the immediate operator actions of DGA 13 load shedding must be complete within 30 minutes to ensure batteries supply a load of 62 amps for four hours. **REQUIRED REFERENCES: None.**

9 **ID: 06-1 NRC EXAM** **Points: 1.00**

What is the bases for the 'High Drywell Pressure' SCRAM function for the Reactor Protection System?

A. To prevent fuel damage resulting from bulk power increases.

B. To reduce the heat generation to terminate the pressure rise.

C. To assure that the reactor is not operated without a path to the main heat sink.

D. To minimize the energy which must be accommodated during a Loss of Coolant Accident.

Answer: D

Question 9 Details

Question Type:	Multiple Choice
Topic:	(009) 295024.K3.06
System ID:	13087
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 299LN049-2 Reference: UFSAR section 7.2.2.2 K/A: 295024.K3.06 4.0 / 4.1 Level: Memory Pedigree: New Explanation: The correct answer from the UFSAR. The incorrect choices are: • Prevent fuel damage resulting from bulk power increases is from the High Neutron Flux Scram. • To reduce the heat generation to terminate the pressure rise is from the High Reactor Pressure Scram. • Assures that the reactor is not operated without a path to the main heat sink is from the MSIV closure Scram. **REQUIRED REFERENCES: None.**

10 **ID: 06-1 NRC EXAM** **Points: 1.00**

Why is the required quantity of boron GREATER for COLD shutdown boron weight than it is for HOT shutdown boron weight?

A. To overcome a greater RPV water level.

B. To overcome the reduction in Xenon.

C. To overcome the reduction in Samarium.

D. To overcome a reduction in voids present in the core.

Answer: B

Question 10 Details

Question Type:	Multiple Choice
Topic:	(010) 295037.K3.05
System ID:	13088
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 299LN049-2 Reference: EPG/SAG B-17 K/A: 295037.K3.05 3.2 / 3.7 Level: Memory Pedigree: New Explanation: Per the EPGs, Cold Shutdown boron weight is greater, because of the decrease in Xenon present, not samarium. RPV water and voids are assumed to be the same for both conditions. **REQUIRED REFERENCES: None.**

11 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 is operating at near rated power, when the following occurs:

- Bus 23-1 de-energizes due to an overcurrent condition.

What INITIAL Containment impacts are there with this loss?

A. The Rx Building D/P increases.

B. The Drywell to Torus D/P increases.

C. The Drywell radiation level increases.

D. The Rx Building to Torus D/P increases.

Answer: B

Question 11 Details

Question Type:	Multiple Choice
Topic:	(011) 295012.K2.01
System ID:	13089
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 262LN001.12 Reference: DANs 902-5 G-5, 902-4 G-17, DOP 6700-04, DOA 500-05 K/A: 295012.K2.01 3.4 / 3.5 Level: High Pedigree: New Explanation: The overcurrent on Bus 23-1 causes it to fully de-energize (EDG cannot close onto it). With Bus 23-1 de-energized, Bus 28 becomes de-energized. With Bus 28 de-energized, four of the Drywell Coolers (A, B, F, G) lose power, causing temperature to rise in the Drywell. As temperature rises, a corresponding rise in Drywell pressure will occur. With a Drywell pressure increase, the Drywell to Torus DP would increase, since Torus temperature and pressure will not be immediately affected. Reactor Building DP will actually decrease due to a loss of RB ventilation (loss of Bus 28) and subsequent start of SBGT. With the Reactor Building DP decreasing, this will cause a decrease between Torus and Reactor Building DP. With the loss of Bus 28, a subsequent loss of MCC 28-2 will cause RPS Bus 'B' to de-energize, which will not result in Group I isolation valves closing, although half of the logic is made up. **REQUIRED REFERENCES: None.**

12 **ID: 06-1 NRC EXAM** **Points: 1.00**

The SRM “DRIVE IN” push button needs to be ___(1)____ in order to drive the SRM detectors into the core, and 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 12 Details

Question Type:	Multiple Choice
Topic:	(012) 215004.A4.04
System ID:	13090
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE215LN004.11 Reference: DOP 0700-01 K/A: 215004.A4.04 3.2 / 3.2 Level: Memory Pedigree: Bank Explanation: The “drive in” push button is a 'maintain' contact and the “drive out” is a 'momentary' contact. **REQUIRED REFERENCES: None.**

13 **ID: 06-1 NRC EXAM** **Points: 1.00**

Given the following set of conditions:

- A Reactor startup in progress on Unit 3.
- NSO withdraws control rod G-7 from notch 12 to notch 14.
- Reactor period changes from 100 seconds to a stable 19 seconds.

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

A. Verify IRM/SRM overlap.

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

C. Do NOT move any additional rods until a Core Monitor is run.

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

Answer: D

Question 13 Details

Question Type:	Multiple Choice
Topic:	(013) Generic.2.1.07
System ID:	13091
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 20102LK005 Reference: DGP 1-1, DAN 902-5 E-4 K/A: Generic.2.1.07 3.7 / 4.4 Level: Memory Pedigree: Bank Explanation: 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. **REQUIRED REFERENCES: None.**

14 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 is in a refuel outage, with the following conditions:

- Divers are needed to enter the Unit 2 Torus for the 4 year check for plugging of the ECCS strainers.
- Operations, Contract Personnel, and Engineering all have responsibilities associated with the performance of this evolution.

Of the positions listed below, who is the HIGHEST level of authority required to approve this evolution?

A. Nuclear Station Operator

B. Unit Supervisor

C. Shift Manager

D. Operations Director

Answer: D

Question 14 Details

Question Type:	Multiple Choice
Topic:	(014) Generic.2.1.01
System ID:	13092
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29900LK119 Reference: HU-AA-1211, OP-AA-101-111 K/A: Generic.2.1.01 3.7 / 3.8 Level: Memory Pedigree: New Explanation: Procedure HU-AA-1211 states that Senior Line Management approves evolutions that require HLA/IPA briefings. Torus Diving Operations are an activity that is outlined on HU-AA-1211, as requiring an IPA. **REQUIRED REFERENCES: None.**

15 **ID: 06-1 NRC EXAM** **Points: 1.00**

Which one of the following is a procedural PRECAUTION that exists to prevent an inadvertent and unmonitored release of potentially contaminated atmosphere to the Reactor Building during Primary Containment Purging/Deinerting?

Do NOT open ___(1)___, unless the Drywell and Torus pressure are ___(2)___ 0.0 psig.

A. (1) AO 2(3)-1601-22 Vent Valve
(2) less than

B. (1) AO 2(3)-1601-22 Vent Valve
(2) equal to

C. (1) AO 2(3)-1601-23 DW Vent Valve, OR AO 2(3)-1601-60 Torus Vent Valve
(2) less than

D. (1) AO 2(3)-1601-23 DW Vent Valve, OR AO 2(3)-1601-60 Torus Vent Valve
(2) equal to

Answer: A

Question 15 Details

Question Type:	Multiple Choice
Topic:	(015) Generic.2.3.09
System ID:	13093
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 22301LP002 Reference: DOP 1600-07 K/A: Generic.2.3.9 2.5 / 3.4 Level: Memory Pedigree: Bank Explanation: As stated in the Precaution Section of DOP 1600-07, Primary Containment Deinerting, and as shown on station P&IDs, vent valve, AO 2(3)-1601-22, provides a flow path to the reactor building from piping that is connected to the Drywell (via 1601-21) and the Torus (via 1601-56). **REQUIRED REFERENCES: None.**

16 **ID: 06-1 NRC EXAM** **Points: 1.00**

The following conditions exist on Unit 3:

- All rods are in.
- RPV water level is 26 inches and rising.
- RPV pressure is 1070 and steady.
- EHC pressure is 0 psig.
- The MSIVs are OPEN and the bypass valves are CLOSED.

With these indications the operating team should FIRST enter ___(1)___ and ___(2)___ .

A. (1) DEOP 100, RPV Control
(2) restore level using HPCI

B. (1) DEOP 100, RPV Control
(2) initiate the Isolation Condenser

C. (1) DOA 600-1, Transient Level Control
(2) restore level by starting the standby Condensate/Condensate Booster pumps

D. (1) DOA 5650-2, Pressure Regulator Failure
(2) reduce RPV pressure with pressure set

Answer: B

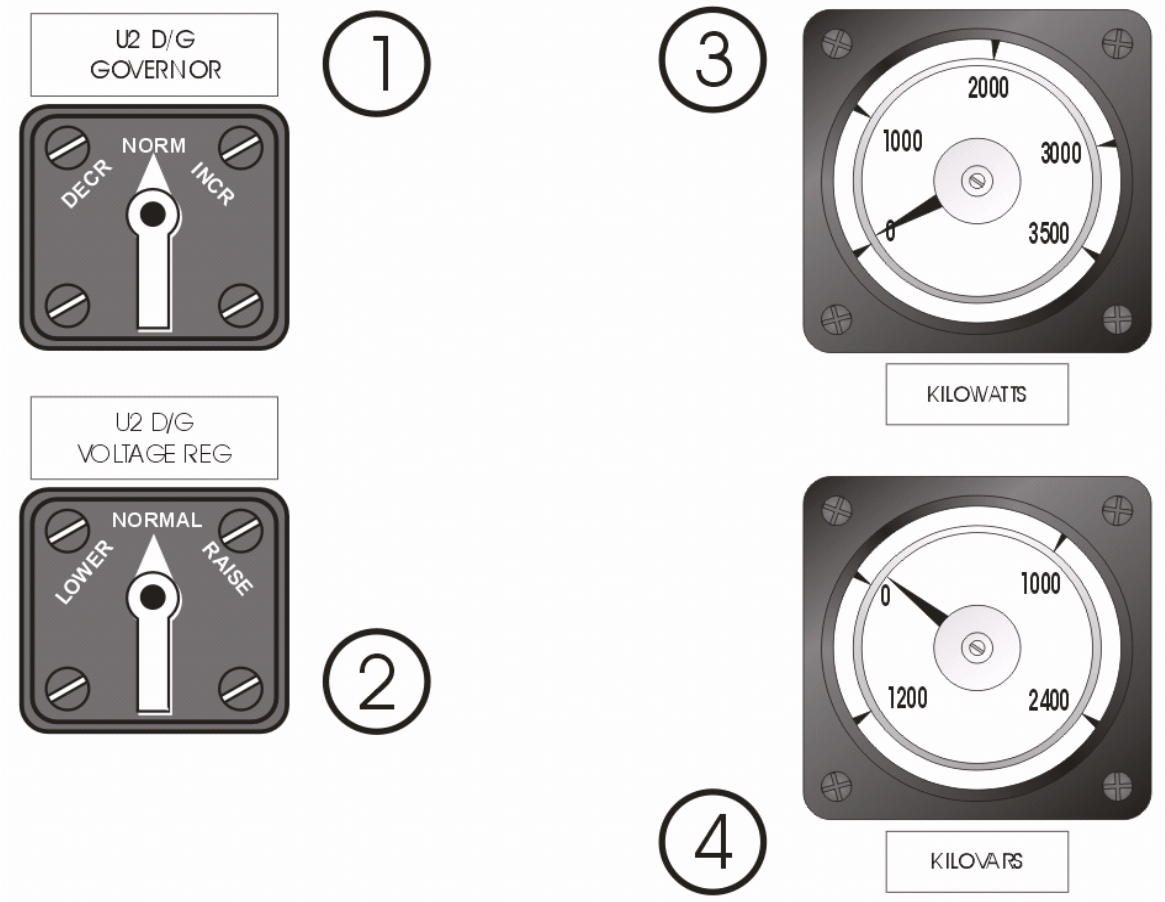
Question 16 Details

Question Type:	Multiple Choice
Topic:	(016) 295025.G.4.04
System ID:	13094
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29502LP002 Reference: DEOP 100 K/A: 295025.G.4.04 4.0 / 4.3 Level: High Pedigree: Bank Explanation: For the conditions given, the action that need to be taken first are restoring pressure in accordance with DEOP 100-1. **REQUIRED REFERENCES: None.**

17 **ID: 06-1 NRC EXAM** **Points: 1.00**

The NSO is performing a Unit 2 Emergency Diesel Generator surveillance. The D/G OUTPUT BREAKER has just been CLOSED.

Given the 902-8 panel indications below, to prevent a trip of the D/G OUTPUT BREAKER, the NSO must position Control Switch # ___(x)___ in the INCR / RAISE position, then observe the needle on meter # ___(y)___ move in the clockwise direction.



A. (x) 1
(y) 3

B. (x) 1
(y) 4

C. (x) 2
(y) 4

D. (x) 2
(y) 3

Answer: A

Question 17 Details

Question Type:	Multiple Choice
Topic:	(017) 264000.A1.09
System ID:	13095
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 264L-S1-6 Reference: DOS 6600-01, DAN DG2 A-2 K/A: 264000.A1.09 Level: High Pedigree: New Explanation: By raising the Governor control switch the DG accepts some load to prevent a reverse power condition, indicated by the KILOWATT meter moving in the clockwise direction. **REQUIRED REFERENCES: None.**

18 **ID: 06-1 NRC EXAM** **Points: 1.00**

What is the operational concern with excessive moisture traveling downstream of the Off Gas Preheater per DOP 5400-23, 2A STEAM JET AIR EJECTOR/RECOMBINER STARTUP, OPERATION AND SHUTDOWN?

A. Off Gas fire

B. Overheating of the Recombiner

C. Overpressurization of the Recombiner

D. Reduction in Main Condenser vacuum

Answer: A + D

Following post exam comment review it was decided to accept two correct answers

Question 18 Details

Question Type:	Multiple Choice
Topic:	(018) 271000.K5.06
System ID:	13096
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 299LN049-2 Reference: DOP 5400-23 K/A: 271000.K5.06 2.7 / 2.7 Level: High Pedigree: New Explanation: With excessive moisture traveling downstream of the Off Gas Preheater, water would be forced through the Catalytic Recombiner, resulting in high hydrogen concentrations downstream of the Recombiner, with the potential for an Off Gas fire. An overpressurization of the recombiner would not occur with water buildup. Condenser vacuum would be unaffected because the SJAEs would still be functioning. The recombiner would NOT overheat, since water would quench the recombination process. **REQUIRED REFERENCES: None.**

19 **ID: 06-1 NRC EXAM** **Points: 1.00**

Both units are operating at near rated power, with the following conditions:

- 2A, 2B, and 3B RBCCW pumps are operating, supplying their own Unit, and being powered from their normal power supply.
- The 2/3 RBCCW pump is operating, supplying Unit 3, and being powered from Unit 3.

Then Bus 34-1 trips on overcurrent.

What effect, if any, does this have on the 3B Pumpback compressor?

A. NO cooling water has been lost.

B. ALL cooling water has been lost.

C. ONLY limited cooling water is being supplied, from the 2/3 RBCCW pump.

D. ONLY limited cooling water is being supplied, from the 3B RBCCW pump.

Answer: A

Question 19 Details

Question Type:	Multiple Choice
Topic:	(019) 295018.K2.01
System ID:	13097
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 223LN001.03 Reference: DOA 3700-01 K/A: 295018.K2.01 3.3 / 3.4 Level: High Pedigree: New Explanation: Cooling water for the Unit 3 pumpback compressors can ONLY be supplied from UNIT 2 (not Unit 3). When Bus 34-1 is lost, the 3B and 2/3 RBCCW pumps are lost, but there is no loss of cooling to the Pumpbacks. **REQUIRED REFERENCES: None.**

20 **ID: 06-1 NRC EXAM** **Points: 1.00**

During an RPS failure to scram condition:

- The operator inserts control rods by initiating the ARI function per DGP 2-3 REACTOR SCRAM.

Which one of the following describes the change in control rod response and the reason for this difference?

The response, as a result of ARI initiation as compared to a normal RPS initiation, is that the Control Rods would take ___(1)___ time to insert, because ARI vents ___(2)___ .

A. (1) less
(2) the scram air header

B. (1) less
(2) each scram valve individually

C. (1) more
(2) the scram air header

D. (1) more
(2) each scram valve individually

Answer: C

Question 20 Details

Question Type:	Multiple Choice
Topic:	(020) 295006.K1.03
System ID:	13098
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 212LN00211 Reference: UFSAR 7.8 K/A: 295006.K1.03 3.7 / 4.0 Level: High Pedigree: Bank Explanation: Distractors that state it would NOT take as long are incorrect due to RPS venting individual scram valves being quicker than the entire header. The distractors that states that ARI vents INDIVIDUAL scram valves are not correct, because ARI vents the header, not individual scram valves. **REQUIRED REFERENCES: None.**

21 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 has been shutdown for 30 hours, with the following set of conditions:

- 2A and 2C SDC pumps are running.
- 2A RBCCW pump is running.
- 2/3 RBCCW pump is running, lined up to Unit 2 and powered from Unit 2.

Then the following occurred:

- Due to a breaker malfunction, Bus 23-1 lost power and was subsequently re-powered.
- RBCCW parameters have stabilized two hours following the transient.

What will the current RBCCW pressure AND RBCCW temperature be compared to the pre-transient values?

Current RBCCW pressure . . . . .

A. will be the same and temperature will be the same.

B. will be lower and temperature will be higher.

C. will be the same and temperature will be lower.

D. will be lower and temperature will be the same.

Answer: A

Question 21 Details

Question Type:	Multiple Choice
Topic:	(021) 295021.A1.03
System ID:	13099
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 205LN001.12 Reference: DOA 3700-01, DOP 1000-06 K/A: 295021.A1.03 3.1 / 3.1 Level: High Pedigree: Bank Explanation: 2A and 2C SDC pumps are powered from Bus 23-1 and will load shed when Bus 23-1 goes under voltage. They will NOT remain connected to Bus 23-1 and therefore will NOT restart when Bus 23-1 is re-energized. 2A RBCCW pump is powered from Bus 23-1 and will STAY connected to Bus 23-1, since a Core Spray initiation signal is NOT present and WILL restart when Bus 23-1 is re-energized. 2/3 RBCCW pump is powered by Bus 24-1 in the above scenario and will NOT lose power. With both RBCCW pumps operating (after system is stable) there is no change in pressure. **REQUIRED REFERENCES: None.**

22 **ID: 06-1 NRC EXAM** **Points: 1.00**

A reactor startup is in progress on Unit 3, when a fire completely de-energizes Unit 3 24/48 VDC Bus 3A.

Which IRMs will still be available for monitoring Reactor power?

A. 11, 12, 13, 14

B. 15, 16, 17, 18

C. 11, 13, 15, 17

D. 12, 14, 16, 18

Answer: B

Question 22 Details

Question Type:	Multiple Choice
Topic:	(022) 215003.K2.01
System ID:	13100
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE215LN003.02 Reference: DOP 6900-03 K/A: 215003.K2.01 2.5 / 2.7 Level: Memory Pedigree: New Explanation: 3A powers channels 11, 12, 13, 14 (de-energized). 3B powers channels 15, 16, 17, 18 (energized). **REQUIRED REFERENCES: None.**

23 **ID: 06-1 NRC EXAM** **Points: 1.00**

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 delay the Low Condenser Vacuum scram with the mode switch in RUN.

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

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

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

Answer: B

Question 23 Details

Question Type:	Multiple Choice
Topic:	(023) Generic.2.3.11
System ID:	13101
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE271LN001.02 Reference: UFSAR 11.3, DAN 902-7 H-3 K/A: Generic.2.3.11 2.7 / 3.2 Level: Memory Pedigree: Bank Explanation: Not permissible in run due to bypassing the Off Gas System **REQUIRED REFERENCES: None.**

24 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 is operating at near rated conditions. The Instrument Air system is in a normal system lineup with one compressor running.

A leak develops in the Unit 2 Instrument Air system that is slightly greater than the capacity of the running IA compressor.

Which of the following Control Room indications would the Unit NSO expect to observe?

U2 INST HDR PRESS will lower to _____ then stabilize or rise.

A. 60 psi

B. 85 psi

C. 90 psi

D. 95 psi

Answer: B

Question 24 Details

Question Type:	Multiple Choice
Topic:	(024) 295019.A1.02
System ID:	13102
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE278LN001.06 Reference: DOA 4700-01, Lesson Plan DRE278LN001 K/A: 295019.AA1.01 3.5/3.3 Level: Memory Pedigree: New Explanation: The AO backup from the Service Air System will open at 85 psi. The 60 psi distractor is credible because that is when the dryers are automatically bypassed. The 90 psi distractor is credible because that is when the compressor loads. The 95 psi distractor is credible because that is when the Unit 1 IA system backup opens, but is normally isolated. **REQUIRED REFERENCES: None.**

25 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 3 is operating at near rated power, with the following equipment out of service:

- 2B CRD Pump.
- Unit 2 HPCI system.

Then the following sequence of events occur:

- 01:16:00, Rx Scram due to a feedwater malfunction.
- 01:16:30, 2A CRD Pump trips on overcurrent.
- 01:17:00, A 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.
- 01:17:00, RPV water level is -19 inches.
- 01:19:30, RPV water level is -39 inches.
- 01:23:00, RPV water level is -59 inches.
- 01:24:00, RPV water level is -77 inches.

With no Operator action, what is the EARLIEST time that the ADS valves will OPEN?

A. 01:25:00

B. 01:25:30

C. 01:31:30

D. 01:33:30

Answer: C

Question 25 Details

Question Type:	Multiple Choice
Topic:	(025) 218000.K5.01
System ID:	13103
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE218LN001.06 Reference: Electrical Print 12E-2461 K/A: 218000.K5.01 3.8 / 3.8 Level: High Pedigree: Bank Explanation: 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.). **REQUIRED REFERENCES: None.**

26 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 was scrammed and the control room evacuated, due to a fire. RPV water level is -88 inches.

Based on the above, which of the following instrument racks is closest to the main Control Room and may be utilized to monitor current RPV water level?

A. 2202-5 Instrument Rack.

B. 2202-6 Instrument Rack.

C. 2202-7 Instrument Rack.

D. 2202-8 Instrument Rack.

Answer: C

Question 26 Details

Question Type:	Multiple Choice
Topic:	(026) 295016.A1.06
System ID:	13104
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE216LN001.12 Reference: DSSP-100CR, Print M-2, DRE216LN001 K/A: 295016.A1.06 4.0 / 4.1 Level: High Pedigree: New Explanation: Per the above procedure, all 4 instrument racks (5, 6, 7, and 8) have remote level indication, but with RPV water level < -60 inches only the 7 and 8 racks will monitor level. The 2202-7 is the closest to the main Control Room (East side Rx Bldg 517') and the 2202-8 is farther (West side Rx Bldg 517'). **REQUIRED REFERENCES: None.**

27 **ID: 06-1 NRC EXAM** **Points: 1.00**

Per the UFSAR, what is the reason for having LPCI pumps operating with the Torus CLG/TEST valves throttled open following Reactor vessel flooding?

A. To ensure adequate mixing of the Torus water.

B. To maintain Torus level in the normal operating band.

C. To immediately terminate the increase in Torus temperature.

D. To terminate the increase in Torus temperature after several hours.

Answer: D

Question 27 Details

Question Type:	Multiple Choice
Topic:	(027) 295013.K3.01
System ID:	13105
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE203LN001.01 Reference: UFSAR 6.2, DOP 1500-02 K/A: 295013.K3.01 3.6 / 3.8 Level: Memory Pedigree: New Explanation: Per the above UFSAR section 6.2.1.3.4.1 page 6.2.33 **REQUIRED REFERENCES: None.**

28 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 3 is operating at near rated power, when the following occurs:

- Bus 34-1 experiences an overcurrent condition.
- A fire in 250VDC Turbine Building MCC 3 causes the MCC to become de-energized.

What effect, if any, does this have on the ESS Bus?

A. The ESS ABT will transfer power to the ESS Bus, from the Inverter to MCC 38-2, via a Transformer.

B. The ESS ABT will transfer power to the ESS Bus, from the Static Switch to MCC 38-2, via a Transformer.

C. The ESS Static Switch will transfer power to the ESS Bus, from the Inverter to Bus 35, via a Voltage Regulator.

D. The ESS Static Switch will transfer power to the ESS Bus, from the Inverter to Bus 36, via a Voltage Regulator.

Answer: D

Question 28 Details

Question Type:	Multiple Choice
Topic:	(028) 262002.K4.01
System ID:	13106
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE262LN001.06 Reference: DAN 902-8 E-8, DOP 6800-01 K/A: 262002.K4.01 3.1 / 3.4 Level: High Pedigree: New Explanation: Upon a loss of Bus 34-1 (overcurrent), Bus 39 becomes de-energized. Subsequently with a loss of the TB 250 VDC MCC 3, the Inverter loses power. With no power into the Inverter, the Static Switch will transfer power to the ESS Bus, from the Inverter to Bus 36, via a Voltage Regulator. **REQUIRED REFERENCES: None.**

29 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 3 is operating at near rated power, with the following conditions:

- Bus 36 is out of service.
- 3B EHC Pump is operating.
- 3A Stator Cooling Pump is operating.

Then the following sequence of events occur:

- Time 0 min 00 sec: Bus 35 experiences an overcurrent condition.
- Time 3 min 07 sec: The Main Turbine/Generator trips.

What is the cause of the Main Turbine/Generator trip?

A. BOTH EHC pumps have lost power and EHC reached the low oil pressure trip setpoint.

B. BOTH Hydrogen Seal Oil pumps have lost power and the plant did NOT achieve a sufficient Turbine runback.

C. BOTH Stator Cooling Pumps have lost power and the plant did NOT achieve a sufficient Turbine runback.

D. BOTH Isolated Phase Bus Duct Cooler blowers have lost power and the Bus Duct temperatures reached the trip setpoint.

Answer: C

Question 29 Details

Question Type:	Multiple Choice
Topic:	(029) 295005.K2.08
System ID:	13107
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE245LN001.08 Reference: DAN 902-7 D-4, 12E-3305 K/A: 295005.K2.08 3.2 / 3.3 Level: High Pedigree: Bank Explanation: With Bus 36 out of service and the overcurrent loss of Bus 35, this causes a loss of all Stator Cooling. Subsequently a Turbine runback is initiated. Without achieving the Turbine runback (stator amps < 7380) within 3 minutes, and the Unit at rated power, a Turbine trip is actuated. **REQUIRED REFERENCES: None.**

30 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 is operating at near rated power, when the following occurs:

- Bus 27 de-energizes due to a fire in the main feed breaker.
- Bus 29 experiences an overcurrent condition.

What effect, if any, does this have on the APRM channels?

Channels 1, 2, 3 would be ___(1)___ and channels 4, 5, 6 would be ___(2)___ .

A. (1) Energized
(2) Energized

B. (1) Energized
(2) De-energized

C. (1) De-energized
(2) Energized

D. (1) De-energized
(2) De-energized

Answer: C

Question 30 Details

Question Type:	Multiple Choice
Topic:	(030) 215005.K2.02
System ID:	13108
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE215LN005.02 Reference: DOA 0500-05 K/A: 215005.K2.02 2.6 / 2.8 Level: Memory Pedigree: New Explanation: With an overcurrent on Bus 29, MCC 29-2 de-energizes, which causes a loss of RPS MG Set 'B', which powers RPS Bus 'A'. RPS Bus 'A' is the power supply to APRM channels 1, 2, and 3. Channels 4, 5, and 6 are uneffected, since they are power via RPS Bus 'B', via RPS MG Set 'A', via MCC 28-2. **REQUIRED REFERENCES: None.**

31 **ID: 06-1 NRC EXAM** **Points: 1.00**

Given the following set of conditions:

- The Security Diesel Generator is O.O.S. for repairs.
- A loss of the NORMAL bus that feeds the Security Systems occurs.
- NO Emergency Diesel Generators automatically start.

What actions can be taken to power the Security Systems?

Attempt to start the . . . . .

A. Unit 2 EDG.

B. Unit 2 SBO D/G.

C. Unit 3 EDG.

D. Unit 2/3 EDG.

Answer: C

Question 31 Details

Question Type:	Multiple Choice
Topic:	(031) Generic.2.2.03
System ID:	13109
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE264LN001.12 Reference: DOA 6500-01, DOP 0080-03, DGA-12 K/A: Generic.2.2.03 3.1 / 3.3 Level: Memory Pedigree: New Explanation: Security MCC receive power from Unit 3 only, Bus 34-1. Bus 34-1 can only be powered from the Unit 3 EDG, given the conditions. The required actions are taken per DGA-12. **REQUIRED REFERENCES: None.**

32 **ID: 06-1 NRC EXAM** **Points: 1.00**

Both units are operating at near rated power, with following initial conditions:

- 2A & 2B RBCCW Pumps and Heat Exchangers are in operation on Unit 2.
- 3A RBCCW Pump and Heat Exchanger are in operation on Unit 3.

Then the following occurs:

- An earthquake occurs causing steams leak inside BOTH Unit's Drywells.
- Unit 2 Drywell pressure is 1.45 psig and steady.
- Unit 3 Drywell pressure is 3.5 psig and steady.
- Bus 33-1 experiences an Overcurrent condition.

With regards to RBCCW, what is the NEXT required action?

A. Manually scram Unit 2.

B. Isolate RBCCW to the Unit 2 Drywell ONLY.

C. Isolate RBCCW to the Unit 3 Drywell ONLY.

D. Isolate RBCCW to BOTH Unit 2 AND Unit 3 Drywells.

Answer: C

Question 32 Details

Question Type:	Multiple Choice
Topic:	(032) Generic.2.4.24
System ID:	13110
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE276LN001.08 Reference: DOA 3700-01 K/A: Generic.2.4.24 3.3 / 3.7 Level: High Pedigree: Bank Explanation: With a LOCA on Unit 3 AND Drywell pressure > 2.0 psig, and a loss of RBCCW (overcurrent on Bus 33-1) the required action is to isolate RBCCW to Unit 3 Drywell ONLY. Unit 2 has a LOCA, but does NOT have Drywell pressure > 2.0 psig . Manual scram of Unit 2 is NOT required, since RBCCW is not lost. **REQUIRED REFERENCES: None.**

33 **ID: 06-1 NRC EXAM** **Points: 1.00**

Given the following conditions:

- An NLO has reported a fire in the Unit 3 Shutdown Cooling Pump Room
- Multiple 'fire messages' have been received on the XL3 system printer

In accordance with DOA 0010-10, FIRE/EXPLOSION, which describes the Immediate Operator Actions in response to these conditions?

Depress and release FIRE ALARM pushbutton and . . . . .

A. IMMEDIATELY announce the fire location on the plant PA system, AND notify Rad Protection to respond to the scene.

B. IMMEDIATELY announce the fire location on the plant PA system, AND notify Mechanical Maintenance to respond to the scene.

C. WAIT 10 seconds, then announce the fire location on the plant PA system, AND notify Rad Protection to respond to the scene.

D. WAIT 10 seconds, then announce the fire location on the plant PA system, AND notify Mechanical Maintenance to respond to the scene.

Answer: C

Question 33 Details

Question Type:	Multiple Choice
Topic:	(033) Generic.2.4.27
System ID:	13129
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29501LK080 Reference: DOA 0010-10 K/A: Generic.2.4.27 3.0 / 3.5 Level: Memory Pedigree: Bank Explanation: Per DOA 0010-10 Immediate Operator Actions. **REQUIRED REFERENCES: None.**

34 **ID: 06-1 NRC EXAM** **Points: 1.00**

You are a licensed NSO performing a JPM at a Unit 2 CRD accumulator as part of requalification training. You hear a continuous 2 minute siren followed by an announcement directing all personnel NOT having emergency assignments, to report to the CLOSEST assembly area.

To which of the following areas are you required to report?

A. Main Control Room

B. Operation Support Center (OSC)

C. Unit 2 Turbine Building Main Corridor

D. Administration Building Lunchroom/Foyer Area

Answer: C

Question 34 Details

Question Type:	Multiple Choice
Topic:	(034) Generic.2.4.39
System ID:	13112
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29501LP083 Reference: EP-AA-1004 K/A: Generic.2.4.39 3.3 / 3.1 Level: Memory Pedigree: New Explanation: Per EP-AA-1004, upon hearing a 2 minute continuous siren (EP assembly siren) all personnel not having emergency assignments have been instructed to assemble in predesignated assembly areas. Refer to figure 4-2. Per figure 4-2, the closest area from the Unit 2 accumulator banks is the Unit 2 turbine building main corridor. IF the licensed RO was on-shift, the assembly area would be the Main Control Room. **REQUIRED REFERENCES: None.**

35 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 3 is at 95% power, with all required OPRMS operable, when the following indications SUDDENLY change:

- Core flow has decreased.
- Thermal Power has decreased.
- Main Generator power has decreased.
- Core differential pressure has decreased.

Based on these indications what has occurred AND what must be done?

A. Recirc pump trip has occurred;
Scram the Reactor, per DOA 0202-01 RECIRCULATION PUMP TRIP.

B. Recirc pump trip has occurred;
CRAM rods must be inserted to reduce Rx power to 25 to 30% per DOA 0202-01, RECIRCULATION PUMP TRIP.

C. Jet pump failure has occurred;
start unit shutdown, per DOA 0201-01 JET PUMP FAILURE/SHROUD ACCESS COVER FAILURE.

D. Jet pump failure has occurred;
secure the affected recirc pump immediately per DOA 0201-01, JET PUMP FAILURE/SHROUD ACCESS COVER FAILURE.

Answer: B

Question 35 Details

Question Type:	Multiple Choice
Topic:	(035) 295001.G.1.23
System ID:	13113
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 202LK016 Reference: DOA 0201-01, DOA 0202-01 K/A: 295001.G.1.23 3.9 / 4.0 Level: High Pedigree: Modified from Bank Explanation: These are the indications of a recirc pump trip. With FCL > 55%, the immediate action for a recirc pump trip is to insert CRAM rods per DOA 0202-01. If a jet pump failed the indicated core flow would go up. **REQUIRED REFERENCES: None.**

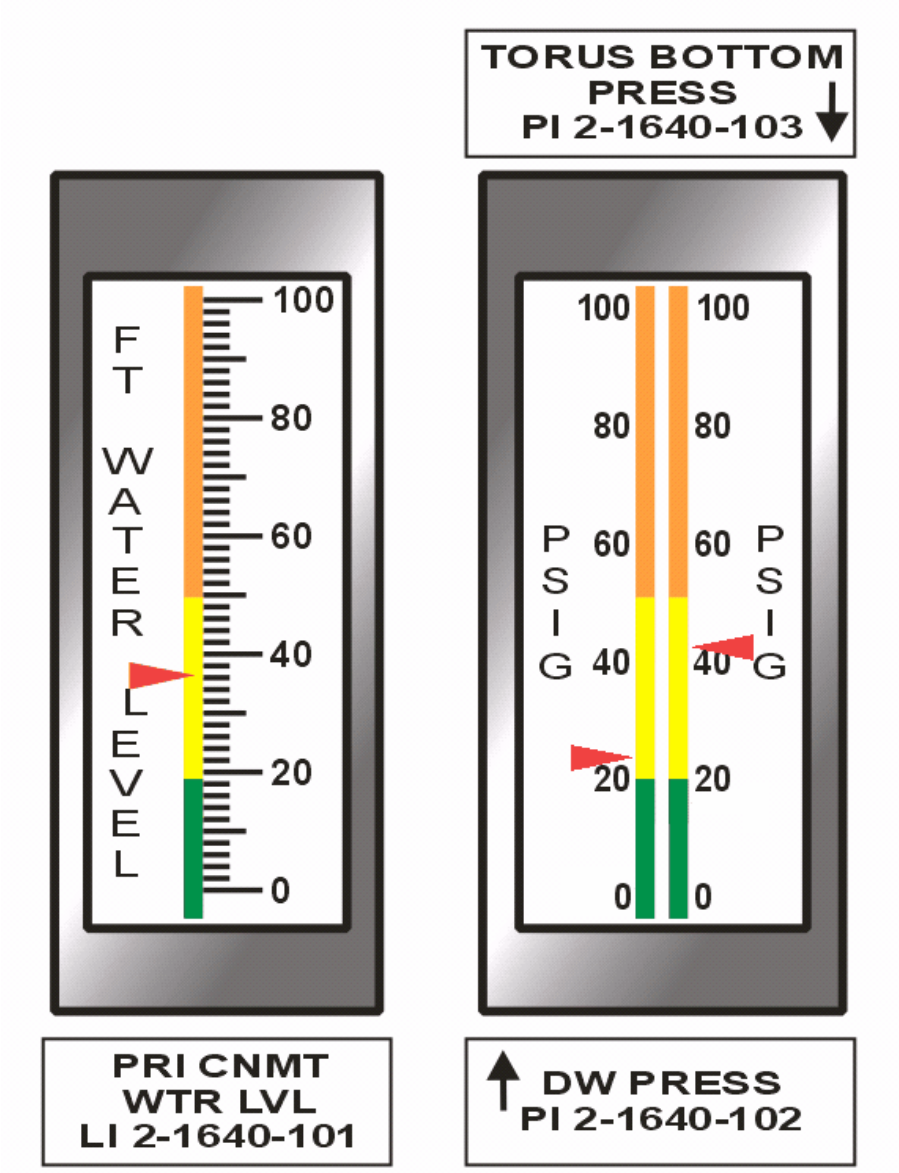
36 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 was operating at near rated power when the reactor scrammed on high Drywell pressure. The following conditions now exist:

- Drywell pressure is 23 psig and steady.
- Drywell Oxygen concentration is 2.0% and steady.
- Drywell Hydrogen concentration is 4.0% and steady.

The SRO has directed you to vent the Containment utilizing DEOP 0500-04, CONTAINMENT VENTING.

Given the indications below, which of the following actions are required?



A. Place the VENT ISOL SIGNAL BYPASS switch on the 902-5 panel to DRYWELL,
Open AO 2-1601-62, DW 2-INCH VENT VLV,
Open AO 2-1601-63 VENT TO SBGT as needed to maintain Primary Containment pressure.

B. Place the VENT ISOL SIGNAL BYPASS switch on the 902-5 panel to TORUS,
Open AO 2-1601-61, TORUS 2-INCH VENT VLV,
Open AO 2-1601-63 VENT TO SBGT as needed to maintain Primary Containment pressure.

C. Place the VENT ISOL SIGNAL BYPASS switch on the 902-5 panel to DRYWELL,
Open AO 2-1601-62, DW 2-INCH VENT VLV,
Open AO 2-1601-63 VENT TO SBGT.

D. Place the VENT ISOL SIGNAL BYPASS switch on the 902-5 panel to TORUS,
Open AO 2-1601-61, TORUS 2-INCH VENT VLV,
Open AO 2-1601-63 VENT TO SBGT.

Answer: C

Question 36 Details

Question Type:	Multiple Choice
Topic:	(036) 500000.A1.03
System ID:	13114
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29502LK068 Reference: DEOP 200-2, DEOP 0500-04 K/A: 500000.A1.03 3.4 / 3.2 Level: High Pedigree: New Explanation: Per DEOP 200-2, given the Hydrogen concentration and Torus level (> 30 feet on figure), the correct action is to vent the Drywell to SBGT per attachment 2 of DEOP 0500-04. The distractors are incorrect based on venting the Torus and/or using attachment 1 (which is for pressure control). **REQUIRED REFERENCES: DEOP 0500-04.**

37 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 was operating at near rated power with the 2B Core Spray pump O.O.S. when a transient occurred resulting in the following conditions:

- RPV pressure is 230 psig and steady.
- Drywell pressure is 4.5 psig and trending down.
- RPV water level is -80 inches and trending down.

After Core Spray automatically initiated and restored RPV water level, the following conditions exist:

- RPV pressure is 230 psig and steady.
- Drywell pressure is 3.0 psig and steady.
- RPV water level is +25 inches and steady.

The crew decided that Core Spray was no longer required for core cooling and placed the control switches for the PP DISCH VLV MO 2-1402-24A and 2-1402-25A to the CLOSE position.

Subsequently RPV water level lowered to -70 inches.

Which of the following describes the MINIMUM required crew actions to ensure Core Spray flow to the RPV is re-established?

A. Verify automatic actions have occurred.

B. Place ONLY the control switch for PP DISCH VLV MO 2-1402-24A to the OPEN position.

C. Place ONLY the control switch for PP DISCH VLV MO 2-1402-25A to the OPEN position.

D. Place BOTH the control switches for PP DISCH VLV MO 2-1402-24A and 2-1402-25A to the OPEN position.

Answer: C

Question 37 Details

Question Type:	Multiple Choice
Topic:	(037) 209001.A2.02
System ID:	13115
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE209LN001.06 Reference: DOP 1400-02 K/A: 209001.A2.02 3.2 / 3.2 Level: High Pedigree: New Explanation: Core Spray initiation signals are +2 psig in the Drywell and -59 inches RPV water level. After Core Spray restored the RPV water level the Drywell pressure is still above the initiation setpoint. When the crew took place the 24 and 25 valve control switches to close, only the 25 valve went close, per system interlocks. With the 2-1402-25A valve closed with an initiation signal continuously present, the valve must be manually opened to establish flow. Opening the 2-1402-24A valve is not needed, since it did not go closed per system interlocks. The distractor with verifying auto actions is not correct, because the 2-1402-25A valve does not automatically open, once closed. **REQUIRED REFERENCES: None.**

38 **ID: 06-1 NRC EXAM** **Points: 1.00**

Given the following conditions on Unit 2:

- An automatic AND manual Scram were attempted, but were unsuccessful.
- RPV pressure is 1063 psi and steady.
- RPV water level is +30" and steady.
- The Unit Supervisor has directed the Unit NSO to initiate SBLC per the hard card.

Which of the following describes the correct response of the 902-5 Panel SBLC pump discharge pressure indicator, during the SBLC System initiation?

Pressure will ramp up to approximately . . . . .

A. 1100 psi, then be maintained at that pressure.

B. 1100 psi, then it will trend with reactor pressure.

C. 1450 psi, then be maintained at that pressure.

D. 1450 psi, then it will trend with reactor pressure.

Answer: B

Question 38 Details

Question Type:	Multiple Choice
Topic:	(038) 211000.A3.01
System ID:	13116
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE211LN001.03 Reference: DOP 1100-02, DOS 1100-04 K/A: 211000.A3.01 3.6 / 3.5 Level: Memory Pedigree: Bank Explanation: The positive displacement pump discharge pressure will ramp up to reactor pressure then follow reactor pressure. It does not go up to a specific pressure or maintain a set pressure. At pressures > 1400, the relief valves will lift. **REQUIRED REFERENCES: None.**

39 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 is operating at near rated power, when the following set of events occur:

- A plant transient occurs which requires the injection of boron into the RPV using SBLC.
- The NSO places the SBLC INJECTION CONTROL keylock switch to the "SYS 1 & 2" position.

Then the following indications are observed:

- Pump 1 light: extinguished.
- Pump 2 light: illuminated.
- Squib A light: extinguished.
- Squib B light: extinguished.

If the SBLC Storage Tank INITIAL level was 3850 gallons *prior* to the transient, the EXPECTED level, 15 minutes after the SBLC system control switch was placed in the “SYS 1 & 2” position, would be _____ gallons.

A. 1450

B. 2650

C. 3250

D. 3850

Answer: C

Question 39 Details

Question Type:	Multiple Choice
Topic:	(039) 211000.A1.01
System ID:	13117
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE211LN001.02 Reference: DOP 1100-02, DOS 1100-03 K/A: 211000.A1.01 3.6 / 3.7 Pedigree: New Level: High Explanation: Each pump AND squib has ~ a 40 gpm capacity. The squibs are downstream of a common discharge header from the pumps. With the indications provided, only ONE pump would be operating (passing flow), and BOTH squibs would be open (passing flow). Since only ONE pump is passing flow, at a rate of ~40 gpm, over a period of 15 minutes, the total drop in the storage tank level would be ~ 600 gpm, resulting in an ending tank level of ~3250 gallons. The other values would indicate the following: 1450 gallons - 2 pumps running for 30 minutes, 2650 gallons - 2 pumps running for 15 minutes, 3850 gallons - no pumps running. **REQUIRED REFERENCES: None.**

40 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 was operating at near rated power, when the following set of conditions occurred:

- The Bailey system experienced a transient, causing RPV water level to drop to -72 inches.
- After an Operator took manual control of feedwater, RPV water level returned to +30 inches.

After the PCIS isolation signal clears, and the unit is stable, what MINIMUM action(s) is (are) required to meet electrical logic requirements for the OUTBOARD MSIVs to be opened?

Take the GROUP ___(1)___ ISOL RESET switch to the CH ___(2)___ position(s).

A. (1) 1
(2) "A" ONLY

B. (1) 1
(2) "A" AND "B"

C. (1) 2 and 3
(2) "A" ONLY

D. (1) 2 and 3
(2) "A" AND "B"

Answer: B

Question 40 Details

Question Type:	Multiple Choice
Topic:	(040) 223002.G.1.23
System ID:	13118
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE223LN005.06 Reference: DAN 902-5 D-4, DGP 2-3, 12E-2504A sht 1 K/A: 223002.G.1.23 3.9 / 4.0 Level: High Pedigree: New Explanation: An RPV water level low signal will cause a group 1, 2, and 3 isolation. After the condition is cleared, the isolations may be reset. Only the Group 1 reset switch is required the MSIVs to be opened. To reset the Isolation and allow opening of ALL MSIVs, the Group 1 switch is required to be taken to BOTH the channel "A" and "B" positions. The Group 2 and 3 switch (one switch) will not reset the MSIV closure signal signal. **REQUIRED REFERENCES: None.**

41 **ID: 06-1 NRC EXAM** **Points: 1.00**

Both Units are operating at near rated power, with Bus 28 and Bus 38 out of service for Main Feed Breaker replacement, when the following occurs:

- Bus 29 experiences an overcurrent condition.

What is providing power to the Unit 2 Core Spray System I logic?

A. Unit 3 125 VDC batteries

B. Unit 2 125 VDC Battery Charger 2A

C. Unit 2 125 VDC batteries

D. Unit 3 125 VDC Battery Charger 3

Answer: C

Question 41 Details

Question Type:	Multiple Choice
Topic:	(041) 295004.K2.02
System ID:	13182
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE263LN001.12 Reference: DOP 6900-06, DOA 6900-T1 K/A: 295004.K2.02 3.0 / 3.1 Level: High Pedigree: New Explanation: With Bus 28 O.O.S. and a loss of Bus 29, the Unit 2 125 VDC system is being supplied by the Unit 2 batteries. With Bus 38 O.O.S., the Unit 3 125 VDC system is being supplied by Charger 3. The candidate must know that the power supply to Core Spray Div I logic is dist panel 2A-1, which is supplied from the Unit 2 125VDC system and is now being power by the Unit 2 batteries (given the Bus losses in the stem). **REQUIRED REFERENCES: None.**

42 **ID: 06-1 NRC EXAM** **Points: 1.00**

Given the following conditions concerning Unit 2:

- All rods are in and the plant is in the process of being cooled down.
- The 2A and 2B SDC pumps are running.
- RPV temperature is presently 300°F, with Shutdown Cooling (SDC) controlling the cool down rate.
- The temperature element feeding 2A Recirc Loop temperature indicator spikes to 400°F.

Based on these conditions, the SDC _____ .

A. pumps ONLY will trip

B. system will isolate

C. system will remain in service since 2B Recirc Loop temperature is 300°F

D. system will remain in service since high temperature is not present at the SDC pump suction

Answer: B

Question 42 Details

Question Type:	Multiple Choice
Topic:	(042) 205000.K1.03
System ID:	13120
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE205LN001.06 Reference: DAN 902-4 H-4 K/A: 205000.K1.03 3.4 / 3.5 Level: Memory Pedigree: Bank Explanation: High temp in either recirc loop will cause system isolation. High temp isolation switches use same signal that drive recorder and alarm. Note: Alarm is at 330 degrees; System isolation is at 345 degrees; Pump trip is at 345 degrees as sensed by temp switch at pump suction for each pump. **REQUIRED REFERENCES: None.**

43 **ID: 06-1 NRC EXAM** **Points: 1.00**

Given the following set of conditions on Unit 2:

- Time 12:00:00: A Scram occurred on High Drywell pressure.
- Time 12:01:00: Drywell stabilized at 3.5 psig.
- Time 12:02:30: HPCI is being utilized for RPV pressure control.
- Time 12:05:00: RPV pressure is stable at 945 psig.
- Time 12:07:00: Unit 3 Turbine Building MCC 3 de-energizes, due to a fire.

How will the MCC loss affect RPV pressure AND why?

A. RPV pressure decreases;
HPCI stop and control valves will drift open as oil pressure decreases.

B. RPV pressure remains steady;
HPCI stop and control valves fail "as is" as oil pressure decreases.

C. RPV pressure remains steady;
HPCI stop and control valves continue to function as oil pressure is maintained.

D. RPV pressure increases;
HPCI stop and control valves will drift closed as oil pressure decreases.

Answer: C

Question 43 Details

Question Type:	Multiple Choice
Topic:	(043) 206000.K3.02
System ID:	13121
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE206LN001.06 Reference: DOA 6900-04 K/A: 206000.K3.02 3.8 / 3.8 Level: High Pedigree: New Explanation: With a loss of Unit 3 250 VDC MCC 3 power is lost to Unit 2 Reactor Building MCCs 2A and 2B, which causes the Unit 2 Aux Oil pump to become de-energized. With HPCI already operating, HPCI will stay in its current mode of operation, due to high pressure oil being supplied by the Main Oil pump. With HPCI staying in its current mode of operation, RPV pressure will remain steady. **REQUIRED REFERENCES: None.**

44 **ID: 06-1 NRC EXAM** **Points: 1.00**

T-Quenchers are used to mitigate condensation oscillation on which of the following components?

A. Downcomers

B. Safety valves

C. Turbine Bypass valves

D. Electromatic relief valves

Answer: D

Question 44 Details

Question Type:	Multiple Choice
Topic:	(044) 239002.K4.04
System ID:	13122
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE239LN001.06 Reference: UFSAR 6.2.1.3.6.4.3 K/A: 239002.K4.04 3.4 / 3.6 Level: Memory Pedigree: New Explanation: Per the above reference, the electromatic relief and target rock (SRV) are designed with T-quenchers to mitigate the effects of condensation oscillation. **REQUIRED REFERENCES: None.**

45 **ID: 06-1 NRC EXAM** **Points: 1.00**

QUESTION DELETED FROM EXAM

A major fault occurs on the 2A Instrument Air Compressor (IAC), but it's feed breaker does NOT trip.

Bus ___(1)___ will de-energize and the ___(2)___ to re-energize the de-energized Bus.

A. (1) 20;
(2) Bus 20 to Bus 24 cross-tie breaker(s) will AUTOMATICALLY close

B. (1) 24;
(2) Operator will MANUALLY close the Bus 24 to Bus 24-1 cross-tie breaker(s)

C. (1) 25;
(2) Operator will MANUALLY close the Bus 25 to Bus 27 cross-tie breaker(s)

D. (1) 27;
(2) Bus 25 to Bus 27 cross-tie breaker(s) will AUTOMATICALLY close

Answer: C

QUESTION DELETED FROM EXAM

Post exam review resulted in this question being deleted as having no correct answer.

Question 45 Details

Question Type:	Multiple Choice
Topic:	(045) 262001.A2.10
System ID:	13123
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE262LN001.06 Reference: DGA-12, DAN 902-8 A-5 K/A: 262001.A2.10 2.9 / 3.4 Level: High Pedigree: New Explanation: 2A IAC is powered from Bus 26. The overcurrent fault on the 2A IAC is seen on Bus 26. With a fault on Bus 26, its Feed Breaker (at Bus 24) trips, causing Bus 26 to go undervoltage. When the feed breaker to Bus 26 trips, this causes an auto closure of the Bus 25 to Bus 26 cross-tie breaker. The fault is now seen by Bus 25 and its feed breaker (at Bus 23) trips. To re-energize Bus 26, MANUALLY (only) close the Bus 25 to Bus 27 cross-tie breaker. **REQUIRED REFERENCES: None.**

46 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 is operating at near rated power, with Bus 25 OOS for maintenance, when the following occurs:

- Bus 28 experiences an overcurrent condition.

What affect (if any) does this have on the Unit 2 24/48 VDC system?

A. None.

B. ONLY the 'A' battery chargers lose their AC power.

C. ONLY the 'B' battery chargers lose their AC power.

D. BOTH the 'A' AND 'B' battery chargers lose their AC power.

Answer: D

Question 46 Details

Question Type:	Multiple Choice
Topic:	(046) 263000.K1.01
System ID:	13124
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE263LN003.12 Reference: DOP 6800-02, DOA 6900-01 K/A: 263000.K1.01 3.3/3.5 Level: High Pedigree: New Explanation: All 4 (2 positive and 2 negative) chargers are powered from the Instrument Bus. With Bus 25 OOS, MCC 25-2 has no power. With Bus 28 going overcurrent, MCC 28-2 loses power. Without these two MCCs, the Instrument Bus has no power, and subsequently all 4 chargers lose AC power. **REQUIRED REFERENCES: None.**

47 **ID: 06-1 NRC EXAM** **Points: 1.00**

The power supply to the Unit 2 Backup Scram Valve solenoid 302-19A is ___(1)___ and the power supply to the Unit 2 Backup Scram Valve Solenoid 302-19B is ___(2)___ .

A. (1) Unit 2 RPS Bus A
(2) Unit 2 RPS Bus B

B. (1) Unit 2 RPS Bus B
(2) Unit 2 RPS Bus A

C. (1) 125 VDC Dist Panel 2B-1
(2) 125 VDC Dist Panel 2A-1

D. (1) 125 VDC Dist Panel 2A-1
(2) 125 VDC Dist Panel 2B-1

Answer: D

Question 47 Details

Question Type:	Multiple Choice
Topic:	(047) 201001.K2.03
System ID:	13125
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE201LN001.03 Reference: DOA 6900-T1 K/A: 201001.K2.03 3.5 / 3.6 Level: Memory Pedigree: New Explanation: The power supplies for the backup scram valve solenoids are listed in the above DOA. Distractors reflect common misconception, due to A RPS MG powering B RPS Bus. **REQUIRED REFERENCES: None.**

48 **ID: 06-1 NRC EXAM** **Points: 1.00**

Which one of the following events would bring the HPCI pump closer to cavitation (lower the available NPSH), while taking a suction from the Torus?

A. CST leaking into the Torus.

B. Broken tailpipe on an Electromatic Relief Valve.

C. Inadvertently opened Electromatic Relief Valve.

D. A stuck open Torus to Drywell vacuum breaker.

Answer: C

Question 48 Details

Question Type:	Multiple Choice
Topic:	(048) 295026.K1.01
System ID:	13126
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: Reference: UFSAR 6.3 K/A: 295026.K1.01 3.0 / 3.4 Level: High Pedigree: Bank Explanation: The open Relief Valve will cause the Torus water to heat up. Warmer water will lower pump NPSH, bringing the HPCI pump closer to cavitation. A stuck open Torus to Drywell vacuum breaker has no effect on NPSH. Broken tailpipe on a Relief Valve (not open) has no effect on the Torus water temperature. The CST leaking into the Torus will lower the water temperature, thus improving NPSH. **REQUIRED REFERENCES: None.**

49 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 3 is shutdown with the following conditions:

- Drywell temperature is 115^{o}F.
- RPV pressure is 0 psig.
- No Recirc pumps are running.
- No Shutdown Cooling pumps are running.

Which of the following is the lowest usable level indication available at the 903-3 panel to the NSO?

A. -39 inches

B. -51 inches

C. -60 inches

D. -297 inches

Answer: D

Question 49 Details

Question Type:	Multiple Choice
Topic:	(049) 295031.A2.01
System ID:	13127
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29501LK002 Reference: DEOP 100 K/A: 295031.A2.01 4.6 / 4.6 Level: High Pedigree: Bank Explanation: Under the given conditions, -297 is readable at the 903-3 panel, via the Fuel Zone recorder. **REQUIRED REFERENCES: DEOP Charts with the entry conditions blanked out.**

50 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 is in a refuel outage.

Prior to beginning fuel moves, the Radiation Protection Department must place a high radiation lock and post NO ENTRY FUEL TRANSFER IN PROGRESS signs.

Per the Master Refuel Procedure, the locks and signs are posted on the access ladders to the Drywell ABOVE the _____ floor.

A. 1st

B. 2nd

C. 3rd

D. 4th

Answer: B

Question 50 Details

Question Type:	Multiple Choice
Topic:	(050) Generic.2.2.28
System ID:	13128
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 234LK005 Reference: DFP 0800-01 K/A: Generic.2.2.28 2.6 / 3.5 Level: Memory Pedigree: New Explanation: Per the above procedure. **REQUIRED REFERENCES: None.**

51 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 3 is operating at 65% power, with the Recirc pumps operating at a 2% speed difference from each other.

A symptom of a failed Jet pump is an unexplained . . . . .

A. decrease in Recirc pump flow.

B. increase in core thermal power.

C. increase in indicated total core flow.

D. individual Jet pump flow indicator which is significantly less stable than the other Jet pump flow indicators.

Answer: C

Question 51 Details

Question Type:	Multiple Choice
Topic:	(051) 295001.A2.03
System ID:	13130
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE202LN001.12 Reference: DOA 0201-01 K/A: 295001.A2.03 3.3 / 3.3 Level: Memory Pedigree: Bank Explanation: One of the indications of a failed jet pump would be an increase in indicated total core flow. Individual Jet pump flow indicator would be MORE, not less, stable than the other Jet pump flow indicators. Recirc pump flow would INCREASE, not decrease. There would be a DECREASE in core thermal power, not an increase. **REQUIRED REFERENCES: None.**

52 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 3 was operating at ~ 60% power, when the following occurred:

- The 3C Feedwater Flow detector failed downscale.

The FWLC System will be controlling in . . . . .

A. Manual

B. Manual Bypass

C. Single Element

D. Three Element

Answer: C

Question 52 Details

Question Type:	Multiple Choice
Topic:	(052) 259002.K6.04
System ID:	13131
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE259LN002.06 Reference: DRE259LN002 K/A: 259002.K6.04 3.1 / 3.1 Level: Memory Pedigree: New Explanation: The Feedwater detector failing downscale returns a “bad quality” to the FWLC system, which will automatically transfer to single element control. **REQUIRED REFERENCES: None.**

53 **ID: 06-1 NRC EXAM** **Points: 1.00**

Given the following set of conditions:

- Unit 3 is at near rated power.
- HPCI is currently on day 5 of a 14 day LCO due to MOV work on its injection valve (3-2301-8).
- 3-203-3E Electromatic Relief Valve (ERV) is declared INOPERABLE by the Unit Supervisor.

Which one of the following is REQUIRED to be performed within the next hour?

A. Commence a unit shutdown.

B. Verify remaining ADS valves OPERABLE.

C. Verify Iso Condenser system is OPERABLE.

D. Place Reactor MODE switch in SHUTDOWN.

Answer: A

Question 53 Details

Question Type:	Multiple Choice
Topic:	(053) 218000.G.2.22
System ID:	13132
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE218LN001.07 Reference: Tech Spec 3.5.1 K/A: 218000.G.2.22 3.4 / 4.1 Level: High Pedigree: Bank Explanation: TS LCO 3.5.1 condition I states that with HPCI inop and one ADS valve inop, enter LCO 3.0.3 IMMEDIATELY apply LCO 3.0.3. **REQUIRED REFERENCES: None.**

54 **ID: 06-1 NRC EXAM** **Points: 1.00**

Given the following conditions:

- Unit 2 is operating at near rated power.
- Lake temperature is 40°F.
- The 2A TBCCW pump and 2A TBCCW heat exchanger are in operation.
- A failure of the TBCCW 2-3905 Temperature Control Valve (TCV) positioner results in a loss of air to the valve actuator.

How will the TBCCW system respond AND what parameter (if any) is of primary concern?

A. TBCCW system temperature DECREASES;
NO parameter of concern.

B. TBCCW system temperature INCREASES;
EHC oil temperature.

C. TBCCW system temperature INCREASES;
Bus Duct temperature.

D. TBCCW system temperature INCREASES;
Exciter Cooler air temperature.

Answer: A

Question 54 Details

Question Type:	Multiple Choice
Topic:	(054) 400000.K6.01
System ID:	13133
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 208L-S1-05 Reference: P&ID M-22 K/A: 400000.K6.01 2.7 / 2.8 Level: High Pedigree: New Explanation: Upon a loss of IA to the TCV, the valve will fail open allowing full service water flow to the heat exchanger. This will cause TBCCW shell side outlet temperature to lower. **REQUIRED REFERENCES: None.**

55 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 requires 3621 gpm per CCSW pump. Unit 3 requires 3500 gpm per CCSW pump.

This is because . . . . .

A. Unit 2 CCSW pumps also supply cooling water to the control room emergency HVAC system and this flow was determined to be 121 gpm.

B. the analysis for Unit 2 pumps is in question and the plant is conservative in setting the required flow for Unit 2 at a higher flow.

C. Unit 2 CCSW pumps can be used to supply 121 gpm to the LPCI corner room coolers in an emergency, Unit 3 is not able to perform this auxiliary function.

D. the Unit 2 piping is arranged differently in the plant than Unit 3. This piping arrangement results in uneven flow to the two (2) HXs. If 3621 gpm can be shown then the HX that receives the lower flow is guaranteed to be 3500 gpm.

Answer: A

Question 55 Details

Question Type:	Multiple Choice
Topic:	(055) Generic.2.2.04
System ID:	13134
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE277LN001.03 Reference: DOS 1500-02 discussion section K/A: Generic.2.2.04 2.8 / 3.0 Level: Memory Pedigree: Bank Explanation: Unit 2 CCSW PP flow requirement is higher because Unit 2 must be capable of supplying the backup Control Room HVAC refrigeration condensing unit (RCU) with its design flow of 102 gpm. Due to the piping configuration and orifice sizing, the actual flow to the RCU was determined to be 121 gpm. To ensure at least 3500 gpm is being supplied to the heat exchanger, a total pump flow of ≥ 3621 gpm is required. **REQUIRED REFERENCES: None.**

56 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 was operating at near rated power, when a leak developed inside containment, resulting in the following parameters:

- Drywell pressure of 2.2 psig.
- Drywell temperature of 180°F.

Which one of the following is a reason why Drywell Temperature is monitored and controlled by DEOP 200-1, PRIMARY CONTAINMENT CONTROL?

A. Ensure NPSH limits for ECCS pumps are not exceeded.

B. Verify proper operation of the Drywell Hydrogen detectors.

C. Prevent or minimize inaccurate indications of RPV water level instruments.

D. Prevent or minimize inaccurate indications of RPV pressure instruments.

Answer: C

Question 56 Details

Question Type:	Multiple Choice
Topic:	(056) 295028.K3.04
System ID:	13135
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE223LN001.01 Reference: EPG B-7-25 and B-5-2 K/A: 295028.K3.04 3.6 / 3.8 Level: Memory Pedigree: Bank Explanation: Per the DEOP Bases, RPV water level indications may be unreliable or must be considered invalid due to the effects of increased Drywell temperatures. NPSH limit for ECCS pumps is ensured by Torus minimum level. Drywell temperature control is not a reason operation of the Hydrogen detectors is verified. Torus pool temperature is monitored, not air temperature. **REQUIRED REFERENCES: None.**

57 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 was operating at near rated power when the following occurred:

- A loss of Feedwater.
- High Pressure Coolant Injection (HPCI) automatically started and injected.
- When RPV Water level reached +53 inches, HPCI tripped.

The reason HPCI tripped is to prevent . . . . .

A. Flooding of the HPCI room.

B. Overspeed of the HPCI turbine.

C. Turbine damage from carry-over.

D. HPCI pump damage from overheating.

Answer: C

Question 57 Details

Question Type:	Multiple Choice
Topic:	(057) 295008.K3.05
System ID:	13136
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE206LN001.06 Reference: UFSAR 7.3 K/A: 295008.K3.05 3.5 / 3.6 Level: Memory Pedigree: Bank Explanation: Per the UFSAR section 7.3 page 7.3-43. Overspeed of the HPCI turbine - the turbine would not be expected to go faster with water as the moving medium. Flooding of the HPCI room - although potentially possible, this is not the reason for the isolation. HPCI pump damage from overheating - discharge bypass is controlled by differential pressure, not level. **REQUIRED REFERENCES: None.**

58 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 3 was operating at near rated power, with TIP traces being performed. The TIP is in the process of being driven to the full in-core position, in MANUAL.

Then the following occurs:

- A small leak develops inside the Drywell.
- Drywell pressure is 1.6 psig and steady.

Drywell Rad Monitors read as follows:

- 2-2419A: 16 R/hr
- 2-2419B: 25 R/hr

Without Operator action, what is the expected response of the TIP system?

A. Detector will CONTINUE to full-in position, then stop.

B. Detector will CONTINUE to full-in position, then REVERSE direction and the ball valve remains open.

C. Detector will immediately REVERSE direction and ball valve will close when the detector is "in-shield".

D. Detector will CONTINUE to full-in position, then REVERSE direction and the ball valve will close when the detector is "in-shield".

Answer: A

Question 58 Details

Question Type:	Multiple Choice
Topic:	(058) 295010.A2.03
System ID:	13137
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE223LN005.02 Reference: DAN 902-5 E-5, DOP 0700-06 K/A: 295010.A2.03 3.3 / 3.6 Level: High Pedigree: New Explanation: While the Drywell pressure is an abnormal level (1.5 psig), it is not to the level to cause a Group II isolation (1.8 psig). TIPS will only withdraw to in-shield position, if a Group II was received (not received by Drywell pressure). Ball valves will close only if a Group II was received. The TIPS will not reverse direction given the conditions in the stem. **REQUIRED REFERENCES: None.**

59 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 was operating at near rated power, when the following occurred:

- NSO increased Recirc flow slightly, using MASTER RECIRC FLOW CONTLR.
- Oil pressure on 2A MG Set decreased to 25 psig for 3 seconds then returned to normal.
- Oil pressure on 2B MG Set decreased to 29 psig for 7 seconds then returned to normal.

Which of the following describes the actions (if any) that are required to be taken concerning the Recirc Flow Control System?

A. NO action required.

B. Place BOTH RECIRC PP SPEED CNTLRs in MAN. Dial BOTH RECIRC PP SPEED CONTLRs potentiometers to 30%.

C. Place BOTH RECIRC PP SPEED CNTLRs in MAN. Dial the 2A RECIRC PP SPEED CONTLR potentiometer ONLY to 30%.

D. Place BOTH RECIRC PP SPEED CNTLRs in MAN. NO adjustment to the RECIRC PP SPEED CONTLR potentiometers are required.

Answer: C

Question 59 Details

Question Type:	Multiple Choice
Topic:	(059) 202002.A4.08
System ID:	13138
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE202LN001.08 Reference: DOP 0202-12, DAN 902-4 C-1 K/A: 202002.A4.08 3.3 / 3.3 Level: High Pedigree: Bank Explanation: With a scoop tube failure (low oil pressure of 27 psig) a scoop tube lockout will automatically occur. With a scoop tube lockout, the actions required would be to verify/place ALL controllers in MAN and to dial the affected (2A) controller to 30%. **REQUIRED REFERENCES: None.**

60 **ID: 06-1 NRC EXAM** **Points: 1.00**

Which of the following does condensate go through FIRST after leaving the Condensate Pumps?

A. Hotwell Reject tap

B. Off Gas Condensers

C. Low Pressure Heaters

D. Condensate Demineralizers

Answer: B

Question 60 Details

Question Type:	Multiple Choice
Topic:	(060) 256000.K1.09
System ID:	13139
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE259LN001.02 Reference: P&IDs M-15, M-16, M-43 K/A: 256000.K1.09 2.9 / 3.0 Level: Memory Pedigree: New Explanation: Per the above station drawings the order is OG cond, Cond Demins, Hotwell Reject tap, and Low Pressure Heaters. **REQUIRED REFERENCES: None.**

61 **ID: 06-1 NRC EXAM** **Points: 1.00**

Given the following set of conditions:

- Unit 3 is operating at near rated power.
- Unit 2 was declared critical during a startup from a refuel outage, when it was scrammed due to a fuel manufacturer notice.
- Unit 2 began fuel moves 12 hours later.
- Two hours into fuel moves, noxious fumes are detected in the Main Control Room.
- The Unit Supervisor directs an NSO to place the Control Room Ventilation system CRM AIR FLOW CONTROL switch to OUTSIDE.

The Control Room team is required to IMMEDIATELY . . . . .

A. suspend fuel moves.

B. start the “B” HVAC train.

C. place the CRM ISOL switch to ISOLATE.

D. verify that the B Air Handling Unit (AHU) automatically starts.

Answer: A

Question 61 Details

Question Type:	Multiple Choice
Topic:	(061) 290003.G.1.32
System ID:	13140
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE288LN003.11 Reference: DOP 5750-05, TS 3.7.4 K/A: 290003.G.1.32 3.4 / 3.8 Level: High Pedigree: New Explanation: Placing the system in the “outside” position, renders the CREVs inoperable. Per the Tech, with the system inoperable during recently irradiated fuel moves in the secondary containment, the team must immediately suspend the fuel moves. Placing the CRM ISOL switch to ISOLATE is NOT applicable for this situation. Starting the “B” HVAC train is required IF Control Room temperature drops below 70°F OR rises above 80°F. Verifying that the B AHU starts is a requirement if the A AHU has tripped (not the case in the stem). **REQUIRED REFERENCES: None.**

62 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 is operating at ~36% power, with load ascension in progress, when the following occurs:

- Time 03:05:00 - Stator Cooling INLET water flow to the Main Generator reaches 450 gpm.
- Time 03:05:03 - DAN 902-7 C-3 TURB STATOR COOLANT RUNBACK is received.
- Time 03:05:30 - The Aux NSO begins reducing Main Generator VARs.
- Time 03:06:15 - The Unit 2 NSO begins to decrease reactor power.
- Time 03:08:05 - Generator stator amps are observed as 7580.

Which of the following describes the additional actions (if any) that would be expected to automatically occur by 03:08:05?

A. The standby Stator Coolant pump starts.

B. The Main Turbine/Generator trips ONLY.

C. No additional automatic actions would occur.

D. The Main Turbine/Generator trips AND the Reactor Scrams.

Answer: B

Question 62 Details

Question Type:	Multiple Choice
Topic:	(062) 245000.K4.06
System ID:	13141
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE253LN001.06 Reference: DOA 7400-01, DANs 902-7 B-10 & C-3 K/A: 245000.K4.06 2.7 / 2.8 Level: High Pedigree: New Explanation: When Stator Cooling water inlet flow is <496 gpm, a Stator Runback is received. If Stator amps are NOT <7380 stator amps within 3 minutes, a Turbine trip is initiated. The reactor does NOT scram since rated core thermal power was < 38.5%. The standby pump will only AUTO start if the running pump trips or its discharge pressure is <44 psig. **REQUIRED REFERENCES: None.**

63 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 is operating at near rated power, when the following occurs:

- RBCCW HEADER ISOL MO 2-3701 inadvertently goes closed.

What affect will occur on Unit 2 FIRST?

A. The RBCCW pumps will trip.

B. Drywell temperatures will begin to rise.

C. Fuel Pool temperatures will begin to rise.

D. Shutdown Cooling heat exchangers cooling flow will stop.

Answer: C

Question 63 Details

Question Type:	Multiple Choice
Topic:	(063) 233000.K6.07
System ID:	13142
User ID:	06-1 NRC EXAM
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:	Objective: DRE233LN001.12 Reference: M-20, DOA 1900-01, 902-4 A-23 K/A: 233000.K6.07 2.7 / 2.8 Level: High Pedigree: New Explanation: With MO 2-3701 going closed, this isolates RBCCW to loop 3 (Reactor Building loads). This causes a loss of cooling medium to the Fuel Pool heat exchangers, which will cause the Fuel Pool temperatures to rise. The RBCCW pumps trip on overcurrent or the supplying bus feed breaker open combined with an ECCS signal. The Drywell temperatures are unaffected since the Drywell coolers are supplied RBCCW via loop 1. 2-3704 is the loop 2 header isolation, and is normally closed. **REQUIRED REFERENCES: None.**

64 **ID: 06-1 NRC EXAM** **Points: 1.00**

The CRM ISOL switch is required to be placed in the ISOLATE mode of operation, if . . . . .

A. smoke is detected in the Main Control Room.

B. CO_2 is discharging into the Aux Electric Equipment Room (AEER).

C. smoke is detected from the Control Room HVAC outside air supply.

D. DAN 923-1 B-3, CONTROL ROOM BREATHING AIR PRESS HI/LO is received.

Answer: C

Question 64 Details

Question Type:	Multiple Choice
Topic:	(064) 600000.A2.06
System ID:	13143
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE288LN003.11 Reference: DOA 5750-04, DANs 923-1 B-3, 923-5 H-2 K/A: 600000.A2.06 2.5 / 2.8 Level: Memory Pedigree: New Explanation: If a source of smoke is from Control Room HVAC outside air supply (not IN the Control Room), then place the CRM ISOL switch is required to be placed in ISOLATE. If Control Room breathing air low pressure alarm comes in, the actions are to check air cylinders or shift to air packs. If CO2 is discharging into the AEER, the action is to place the Control Room HVAC system to purge. **REQUIRED REFERENCES: None.**

65 **ID: 06-1 NRC EXAM** **Points: 1.00**

Which of the following events would REQUIRE a notification to be made to the Load Dispatcher (LD)/Transmission System Operator (TSO) per OP-AA-101-111, ROLES AND RESPONSIBILITIES?

A. A fire in the Waste Water Treatment building.

B. A Hazardous Material Incident on the access road to the plant.

C. An Operator being transported to the hospital by an off-site agency.

D. An off-site release rate that is approaching the "General Emergency" level.

Answer: D

Question 65 Details

Question Type:	Multiple Choice
Topic:	(065) 295017.G.1.14
System ID:	13144
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 299000LK150 Reference: OP-AA-101-111, DEOP 300-2 K/A: 295017.G.1.14 2.5 / 3.3 Level: High Pedigree: New Explanation: Per DEOP 300-2, with an off-site release rate approaching a "General Emergency" level, the plant will need to be scrammed prior to reaching this level. Per OP-AA-101-111, the NSO would COMMUNICATE with the Load Dispatcher relative to immediate and impending changes in plant status. **REQUIRED REFERENCES: None.**

66 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 was operating at near rated power, when the following occurred sequentially:

- An inadvertent closure of all MSIVs caused Reactor pressure to climb to 1085 psig, for 30 seconds and then stabilize at 1005 psig.
- A fire in Unit 2 125 VDC Bus 2B-1 caused it to de-energize.

The effect this has on the plant is . . . . .

A. ALL Isolation Condenser isolation valves will close.

B. ONLY the Isolation Condenser VENT valves will close.

C. A loss of Control Room indications for components powered from Bus 23 AND Bus 24.

D. A loss of Control Room indications for components powered from Bus 23-1 AND Bus 24-1.

Answer: A

Question 66 Details

Question Type:	Multiple Choice
Topic:	(066) 223002.K6.05
System ID:	13145
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE207LN001.12 Reference: DAN 902-3 H-2, 12E-2506 sheets 1-3 K/A: 223002.K6.05 3.0 / 3.3 Level: High Pedigree: New Explanation: With reactor pressure of 1085 psig, for 30 seconds, the Isolation Condenser will have actuated (1070 for 17 seconds). The power supplies for the Group 5 (Iso Cond) isolation instrumentation is 125VDC 2A-1 & 2B-1. A Group 5 isolation is initiated whenever there is a loss of EITHER power supply circuits (de-energize to actuate). A Group 5 causes ALL isolation valves to close (NOT just the inlet valves). 2B-1 is ONLY the control power to (and a loss of control room indication would only happen for) Bus 24 and Bus 24-1, and NOT Bus 23 (2A-1) OR Bus 23-1 (Rx Bldg Dist Pnl). **REQUIRED REFERENCES: None.**

67 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 is at 7% power with a RPV pressure of 970 psig. Control Rod H-5 did not move when given a withdraw signal from its current position of 12. Drive water pressure has been adjusted to 450 psid. All attempts to move the rod have been unsuccessful.

The NSO's next required action is to . . . . . .

A. Attempt to move Control Rod H-5 by performing Double Clutching.

B. Individually scram Control Rod H-5, then disarm it electrically and hydraulically.

C. Raise Drive water pressure an additional 50 psid and attempt to withdraw Control Rod H-5.

D. Recommend to the SRO to declare Control Rod H-5 INOPERABLE, then disarm it electrically and hydraulically.

Answer: C

Question 67 Details

Question Type:	Multiple Choice
Topic:	(067) 201003.A2.01
System ID:	13146
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE201LN001.12 Reference: DOP 0400-01 K/A: 201003.A2.01 3.4 / 3.6 Level: High Pedigree: New Explanation: Per the DOP the correct action is to raise Drive water pressure an additional 50 psid and attempt to withdraw Control Rod H-5. Attempting to Double Clutch is only to be performed for rods at 00. Disarming Control Rod H-5 would only be used if the rod is not coupled. **REQUIRED REFERENCES: None.**

68 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 was operating at near rated power when a steam line rupture in the HPCI room occurred. A scram was attempted. An ATWS occurred, with the following conditions:

- 15 control rods are at position 24 or GREATER.
- All scram valves are open.
- CleanUp Pump Area temperature is 175^{o}F.
- HPCI Room temperature is 235^{o}F.
- HPCI Cubicle Rad Levels are 3750 mrem.
- East CRD Module Area rad levels are 2500 mrem.
- West CRD Module Area rad levels are 2800 mrem.

The Unit Supervisor has directed you to enter DEOP 0500-05, ALTERNATE INSERTION OF CONTROL RODS.

Which action is the PREFERRED method for inserting the control rods that are NOT at position 00?

A. Vent the control rods' overpiston volumes.

B. Bypass the RWM AND drive the control rods MANUALLY.

C. Close the scram air header supply valve AND vent the scram air header.

D. Close the scram discharge vents and drains AND pull power supply fuses for the scram solenoids.

Answer: B

Question 68 Details

Question Type:	Multiple Choice
Topic:	(068) 215002.G.4.06
System ID:	13147
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE215LN002.06 Reference: DEOP 0300-01, DEOP 0500-05 K/A: 215002.G.4.06 3.1 / 4.0 Level: High Pedigree: New Explanation: Control rods should be manually inserted per DEOP 0500-05. Pulling the power supply fuses for the scram solenoids would not be viable, because the scram valves are already opened. Venting the scram air header or the individual overpiston areas are not viable, because of the high dose (greater than Max Safe) in the areas of the CRD module areas. **REQUIRED REFERENCES: None.**

69 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 is in MODE 4 when an inadvertent isolation of the RWCU system occurred. The following conditions exist:

- Unit 2 had been cooling down at a rate of 50°F/hour, prior to the isolation.
- Panel 902-21, TR 2-263-104, RX VESSEL METAL TEMP, Point 6 is reading 180°F.
- Panel 902-21, TR 2-263-104, RX VESSEL METAL TEMP, Point 9 is reading 170°F.
- "Tmod change" has been calculated to be 30°F.

Which of the following Bottom Head temperatures is required to be reported?

A. 95°F

B. 105°F

C. 140°F

D. 170°F

Answer: A

Question 69 Details

Question Type:	Multiple Choice
Topic:	(069) 295020.K1.04
System ID:	13148
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE202LN001.12 Reference: DOP 1000-03 K/A: 295020.K1.04 2.5 / 2.8 Level: Bank Pedigree: High Explanation: With a RWCU isolation, there is no Recirc pump flow. Without flow through the temperature indication lines, vessel bottom head temperature indication CAN be used but will indicate HIGHER than actual inside metal surface temperature, due to bottom head stratification. The correct temperature indication is achieved by taking the point 9 reading and subtracting 75^{o}F per DOP 100-03 attachment A "bottom head". **REQUIRED REFERENCES: DOP 1000-03.**

70 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 was operating at near rated power, when the following occurred:

- A LOCA occurred.
- RPV water level stabilized at -75 inches.
- Drywell pressure stabilized at 2.8 psig.
- LPCI Loop Select Logic selected to inject into the 'B' Recirc loop.

Thirteen (13) minutes later, the following parameters are observed:

- RPV water level is +25 inches and steady.
- Drywell pressure is 1.3 psig and steady.

What are the MINIMUM actions required to reset LPCI Loop Select Logic?

LPCI Loop Select Logic . . . . .

A. can be MANUALLY reset by depressing BOTH the 2A AND 2B LOOP SELECT LOGIC RESET pushbuttons.

B. will AUTOMATICALLY reset when BOTH Drywell pressure AND RPV level initiation signals clear.

C. can be MANUALLY reset by depressing ONLY the 2A LOOP SELECT LOGIC RESET pushbutton.

D. can be MANUALLY reset by depressing ONLY the 2B LOOP SELECT LOGIC RESET pushbutton.

Answer: A

Question 70 Details

Question Type:	Multiple Choice
Topic:	(070) 203000.A4.06
System ID:	13149
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE203LN001.06 Reference: DOP 1500-05, 12E-2437A K/A: 203000.A4.06 3.9 / 3.9 Level: Memory Pedigree: New Explanation: Upon either a RPV or Drywell initiation signal, the loop select logic selects a recirc loop. When BOTH the initiation signals clear the loop select logic may be MANUALLY reset by depressing BOTH loop reset pushbuttons. The *initiation signal*, NOT the *loop select logic* does auto resets. **REQUIRED REFERENCES: None.**

71 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 was operating at near rated power, when a spurious Group I initiation occurred.

With NO Operator action, what would be an indication of a successful scram signal being generated by RPS?

A. Annunciator 902-5 A-15, CHANNEL B MANUAL TRIP is lit and solid.

B. Annunciator 902-5 A-10, CHANNEL A MANUAL TRIP is lit and flashing.

C. Annunciator 902-5 C-1, WEST SCRAM INST VOL NOT DRAINED is lit and solid.

D. Annunciator 902-5 A-1, SCRAM VLV AIR SUPPLY PRESS LO, is lit and flashing.

Answer: D

Question 71 Details

Question Type:	Multiple Choice
Topic:	(071) 212000.A3.07
System ID:	13150
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE201LN001.10 Reference: DAN 902-5 A-1 K/A: 212000.A3.07 3.6 / 3.6 Level: Memory Pedigree: New Explanation: Upon a scram signal, the scram dump, backup scram and scram pilot valves reposition to bleed pressure from the scram air header (allowing rods to move into the core). When the scram air header pressure bleeds off, DAN 902-5 A-1 will be lit and flashing (since no operator action was taken to acknowledge the alarms. The distractors with lit and solid are incorrect because with no operator action, this would indicate no change in annunciator status. The distractors with manual scram are incorrect, because this was an automatic scram (without operator action). **REQUIRED REFERENCES: None.**

72 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 has experienced the following transient:

- A fire causes MCC 28-3 to become de-energized.
- Torus water level is 12.5 feet.

With the current conditions, which one of the following Control Room indicators will provide the most accurate value when monitoring Torus water level?

A. Narrow Range level indicator, TORUS LVL LI 2-1640-3, on the 902-3 panel

B. Wide Range level indicator, TORUS LVL LI 2-1640-10A, on the 902-3 panel

C. Wide Range level indicator, TORUS LVL LI 2-1640-10B, on the 902-3 panel

D. Wide Range level indicator, WR DW PRESS TORUS LVL P/LR 2-1640-13A, on the 902-2 panel

Answer: C

Question 72 Details

Question Type:	Multiple Choice
Topic:	(072) 295030.A2.01
System ID:	13151
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE223LN001.09 Reference: 12E-2312, 12E-6587 K/A: 295030.A2.01 4.1 / 4.2 Level: High Pedigree: Bank Explanation: 2-1640-10B Wide Range is the only useable level indicator based on the following. With Torus water level at 12.5 feet, this is below the narrow range water level indicator 2-1602-3 (13 feet 4 inches). 2-1640-10A and 2-1640-13A are supplied via LT 2-1641-5A (12E-6587). The student must utilize 12E-2312 to see that with MCC 28-3 not powered, the panel FP-2 via breaker 2C-3 is not powered and therefore both the 'A' division level indicators in the Control Room are unable to give a proper signal. **REQUIRED REFERENCES: Electrical prints 12E-2312 and 12E-6587.**

73 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 is operating at 40% reactor power, with the following conditions:

- Primary Containment inerting with purge via SBGT began 2 hours ago.
- The DW PRESS CONTLR PIC 2-8540-1 is in MANUAL.
- Drywell pressure is stable.

Then a loss of feedwater caused RPV water level to decrease to -10 inches.

What is the effect on Drywell pressure and why?

A. Drywell pressure will remain STABLE due to isolation of Nitrogen inerting AND SBGT.

B. Drywell pressure will remain STABLE due to Nitrogen inerting and SBGT still being aligned.

C. Drywell pressure will DECREASE due to isolation of Nitrogen inerting WHILE SBGT still being aligned.

D. Drywell pressure will INCREASE due to isolation of SBGT WHILE Nitrogen inerting still being aligned.

Answer: A

Question 73 Details

Question Type:	Multiple Choice
Topic:	(073) 261000.A1.02
System ID:	13152
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE271LN001.06 Reference: Print M-25, DOP 1600-05, DAN 902-5 E-5 K/A: 261000.A1.02 3.1 / 3.2 Level: High Pedigree: New Explanation: With SBGT being used to inert the Drywell and a subsequent Group II isolation signal (+6 inches RPV water level), all valves from Nitrogen inerting and to SBGT receive an isolation signal. This will cause Drywell pressure to stabilize with no supply or return flow. **REQUIRED REFERENCES: None.**

74 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 is operating at near rated power. Last shift a packing leak was identified on MO 2-3102C, 2C3 EXTRACTION MOV. This shift the Chemistry department reported that previous samples of Reactor Water carryover results for Sodium-24 were 0.08% and are currently 1.5%.

Which of the following describes the consequences of the situation described above AND reason for that consequence?

A. Higher off-site dose rates because of potential Steam Dryer damage.

B. A decrease in core power because of increased Feedwater temperature.

C. An increase in plant efficiency because of the loss of Feedwater heating.

D. 2C3 emergency drain AOV will open because of lower pressure in the 2C3 heater.

Answer: A

Question 74 Details

Question Type:	Multiple Choice
Topic:	(074) 290002.K3.05
System ID:	13153
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE223LN001.12 Reference: General Electric Service Information Letter 644, CY-DR-120-0001 K/A: 290002.K3.05 2.9 / 3.2 Level: High Pedigree: New Explanation: Based on industry and Dresden OPEX, an increase of Sodium-24 above 0.1% is an indication of a potential Steam Dryer damage, due to carryover. The Sodium-24 will settle in the Feedwater heaters. With a steam leak on the 2C3 extraction MOV, this will increase radiation levels in the low pressure heater bay. The turbine building ventilation draws from the heater bay and exits to the 310' chimney. This has the potential for an increase in off-site radiation levels. A decrease in core power because of increased Feedwater temperature, is the opposite of what will happen. With a leak of extraction steam, the Feedwater is being heated less and subsequently a lower temperature water is introduced into the vessel (raising reactor power). 2C3 heater level will not rise, but will go down due to less steam (due to leak) being admitted into it. Thus the emergency drain will not open. **REQUIRED REFERENCES: None.**

75 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 was operating at 85% power when the "A" Recirc pump tripped. "B" Recirc pump speed was dialed to 35% per DOA 0202-01, RECIRCULATION PUMP TRIP-ONE.

The following indications are observed:

- "B" Recirc pump speed is 35%.
- Loop "A" flow indicates 11%.
- Loop "B" flow indicates 47%.

The Unit Supervisor directs you to calculate actual core flow (in Mlb/hr) to the nearest tenth.

Core flow is _____ Mlb/hr.

A. 16.5

B. 17.9

C. 26.3

D. 28.2

Answer: D

Question 75 Details

Question Type:	Multiple Choice
Topic:	(075) 202001.A1.03
System ID:	13154
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE202LN002.03 Reference: DGP 03-03, DOA 0202-01 K/A: 202001.A1.03 3.6 / 3.6 Level: High Pedigree: Bank Explanation: This calculation is made per DGP 3-3. Since B recirc pump speed is 30-40% rated, there is forward flow in the inactive loop (A) due to low flow in the active loop and the influence of natural circulation. Thus, per DGP 3-3, the correct formula is WT_{SLO} = (0.49) [(% loop flow active) + (0.95) (% loop flow inactive)]. (0.49) [(47) + (0.95)(11)] = 28.2 Mlb/hr. The distractor 26.3 would be obtained if the active and inactive loop flows are reversed (in forward flow). The two distractors 16.5 and 17.9 would be obtained if using the reverse flow in the inactive loop calculation. **REQUIRED REFERENCES: DGP 03-03.**

76 **ID: 06-1 NRC EXAM** **Points: 1.00**

Given the following set of conditions:

- A PCIS Group 1 isolation has occurred and the Reactor failed to scram.
- RPV 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 automatically maintained by the 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 will result in a lower Reactor power due to increased voiding in the core.

B. 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.

C. 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.

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 76 Details

Question Type:	Multiple Choice
Topic:	(076) 295025.A2.04
System ID:	13156
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29501LP043 Reference: DEOP 200-1 Primary Containment, T.S. 3.6.2.2 bases K/A: 295025.A2.04 3.9 / 3.9 Level: High Pedigree: Bank Explanation: 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. SRO Criteria: # 5 **REQUIRED REFERENCES: DEOP Charts, with the entry conditions blanked out.**

77 **ID: 06-1 NRC EXAM** **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 77 Details

Question Type:	Multiple Choice
Topic:	(077) 295028.G.2.25
System ID:	13157
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 21000LK004 Reference: Tech Spec 3.6.1.5 and the Bases K/A: 295028.G.2.25 2.5/3.7 Level: Memory Pedigree: Bank Explanation: 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. SRO Criteria: 2 **REQUIRED REFERENCES: None.**

78 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 is operating at 55% power, when the following occurs:

- While performing rounds, an NLO reports that the Unit 2 East corner room sump is overflowing.
- Two minutes later annunciator 902-4 C-23, TORUS NARROW RANGE WTR LVL LO alarms.
- The NLO reports that the East corner room water level is 8 inches, coming from a leak in the Torus, which is unisolable.
- The NLO also reports that the West corner room water level is 1 inch.
- Twenty minutes later an NSO reports that Torus water level is 12 feet and trending down.

Which of the following actions are required, due to the source of the leak?

A. Monitor parameters; commence a unit shutdown at this time and scram when water level in the West corner room exceeds 8 inches.

B. Monitor parameters; scram and initiate a blowdown when the water level in the West corner room exceeds 8 inches.

C. Scram the reactor at this time; initiate a blowdown when water level in the West corner room exceeds 8 inches.

D. Scram the reactor AND initiate a blowdown at this time.

Answer: D

Question 78 Details

Question Type:	Multiple Choice
Topic:	(078) 295036.A2.03
System ID:	13158
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29502LK049 Reference: DEOP 200-1,DAN 902-4 C-23 K/A: 295036.A2.03 3.4/3.8 Level: High Pedigree: Bank Explanation: Based on the given conditions, the source of the leak can be determined to be the ECCS suction. Since the leak is not isolable and water level will not be able to be held above 11 feet, DEOP 200-1 states to scram the reactor AND initiate a blowdown. The distractors are based on secondary containment control. SRO Criteria: 5 **REQUIRED REFERENCES: DEOP charts, with the entry conditions blanked out.**

79 **ID: 06-1 NRC EXAM** **Points: 1.00**

Given the following set of conditions:

- Rx Scram with all rods in.
- RPV completely depressurized.
- Torus water level is 9 feet 3 inches.
- Torus bottom pressure is 15 psig.
- Torus bulk water temperature is 150 degrees F.
- RPV water level is being maintained at -160 inches with the 'B' Core Spray pump, operating at rated flow.

Which of the following describes the impact of these conditions on the 'B' Core Spray pump and what are the required actions?

The 'B' Core Spray pump may experience potential pump damage due to violating its ___(1)___ AND the SRO is required to direct ___(2)___ .

A. (1) Vortex limits ONLY;
(2) continuing 'B' Core Spray pump operation regardless of potential pump damage.

B. (1) Vortex limits ONLY;
(2) leaving the 'B' Core Spray pump running BUT open 2-1402-2B, Core Spray Pp Suct Vlv From CST, per DOP 1600-02 TORUS WATER LEVEL CONTROL.

C. (1) Vortex AND NPSH limits;
(2) securing the 'B' Core Spray pump and flood the containment.

D. (1) Vortex AND NPSH limits;
(2) securing the 'B' Core Spray pump, realign its suction to the CST, per DOP 1400-01, CORE SPRAY SYSTEM PREPARATION FOR STANDBY OPERATION, then recommence injection

Answer: A

Question 79 Details

Question Type:	Multiple Choice
Topic:	(079) 209001.A2.09
System ID:	13159
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29502LP005 Reference: DEOP 100, table V and table W. DEOP Bases section 5 page 16 K/A: 209001.A2.09 3.1 / 3.3 Level: High Pedigree: Bank Explanation: With the Core Spray pump operating at rated flow (5000 gpm) the pump is only violating its vortex limit, NOT the NPSH. The second part of the answer is to CONTINUE injection (but not realign to the CST suction). SRO Criteria: 5 **REQUIRED REFERENCES: None.**

80 **ID: 06-1 NRC EXAM** **Points: 1.00**

Which one of the following shift positions is responsible for ensuring Operations implements hanging of Clearance Orders, in the Radwaste basement, per OP-AA-101-111, Roles and Responsibilities of On-shift Personnel?

A. Unit Supervisor.

B. Field Supervisor.

C. Radwaste Specialist.

D. Work Execution Center Supervisor.

Answer: D

Question 80 Details

Question Type:	Multiple Choice
Topic:	(080) Generic.3.03
System ID:	13160
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29900LK012 Reference: OP-AA-101-111 K/A: Generic.3.03 1.8 / 2.9 Level: Memory Pedigree: Bank Explanation: The WEC Supervisor is responsible for ensuring Operations implements scheduled activities, including hanging of clearance orders. SRO Criteria: 1 **REQUIRED REFERENCES: None.**

81 **ID: 06-1 NRC EXAM** **Points: 1.00**

During conduct of a surveillance test of HPCI, the HPCI room temperature reaches 155°F with the room cooler in operation.

What is the status of HPCI AND why?

A. HPCI remains operable, since the HPCI room cooler fan is running and cooling water is available.

B. HPCI remains operable, since the HPCI room cooler fan is running and temperature is less than 180°F.

C. HPCI operability is in question, due to the lack of environmental qualification of components in the HPCI room.

D. HPCI operability is in question, due to the lack of high temperature seismic qualifications on pipe supports and hangers.

Answer: C

Question 81 Details

Question Type:	Multiple Choice
Topic:	(081) 295032.A2.02
System ID:	13161
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 20600LK010 Reference: UFSAR 9.4.6 and 3.11.4, DOS 2300-03 K/A: 295032.A2.02 3.3 / 3.5 Level: Memory Pedigree: Bank Explanation: A HPCI cubicle temperature of > 150°F, is an entry condition for DEOP 200-1, Secondary Containment Control. When HPCI room temp exceeds 120°F, the operability of HPCI needs to be determined. The electrical equipment in the room is not EQ, therefore, when temperature reaches EQ threshold of 120°F - HPCI Operability is questioned. HPCI is operable as long as the room cooler fan is operable, even if cooling water is not available (per UFSAR section 9.4.6 and 3.11.4), but, if temperature exceeds 120°F, operability is in question (i.e., may be inop). SRO Criteria: 1 **REQUIRED REFERENCES: None.**

82 **ID: 06-1 NRC EXAM** **Points: 1.00**

A fire occurs in TR-86. How does this affect the plant AND what action(s) are required to be taken to restore power to the affected component(s)?

A. A loss of the normal power supply to 138KV Buses 1 & 2;
To re-power 138KV Buses 1-2, will need to close 138KV BT 3-4 CB per DAN 923-2 C-2 TR 86 MAJOR TROUBLE.

B. A loss of the normal power supply to 138KV Buses 1 & 2;
To re-power 138KV Buses 1-2, will need to close 138KV BT 2-3 CB per DAN 923-2 C-2 TR 86 MAJOR TROUBLE.

C. A loss of the normal power supply to TR-22;
To power TR-22 from its reserve source, will need to close 345KV BT 4-8 CB per DOP 6400-13, ELECTRICAL YARD SWITCHING.

D. A loss of the normal power supply to TR-22;
To power TR-22 from its reserve source, will need to swap the TR-22 138KV TRANS DISCs per DOP 6100-27, TRANSFERRING TRANSFORMER 22 FEED DURING OPERATION.

Answer: D

Question 82 Details

Question Type:	Multiple Choice
Topic:	(082) 262001.A2.03
System ID:	13162
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 262LN003.12 Reference: DOP 6100-27 and DOP 6400-13 K/A: 262001.A2.03 3.9 / 4.3 Level: High Pedigree: Bank Explanation: A fire in TR-86 will cause the sudden pressure relay to activate. TR-86 will de-energize upon a Sudden Pressure event. This causes a loss of NORMAL power to TR-22. The RESERVE power comes from 138KV Bus 1, via transfer disconnects. SRO Criteria: 5 **REQUIRED REFERENCES: None.**

83 **ID: 06-1 NRC EXAM** **Points: 1.00**

The main control room receives a report of a fire near the Unit 3 Iso Condenser 3-1301-3 valve room. The control room sounds the fire alarm and directs the fire brigade to assemble.

At the minimum ___(1)___ fire brigade members are required to respond and the closest fire equipment cart to the area of the fire would be located in ___(2)___ .

A. (1) 5;
(2) Unit 2/3 Turbine Building 517' elevation, by the Cardox tank

B. (1) 5;
(2) Unit 3 Reactor Building 545' elevation, West side

C. (1) 6;
(2) Unit 2/3 Turbine Building 517' elevation, by the Cardox tank

D. (1) 6;
(2) Unit 3 Reactor Building 545' elevation, West side

Answer: B

Question 83 Details

Question Type:	Multiple Choice
Topic:	(083) Generic.4.26
System ID:	13163
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 286LN00217 Reference: TRM 5.0.a, DFPS 4114-12 K/A: Generic.4.26 2.9 / 3.3 Level: Memory Pedigree: Modified (Dresden 2005 Cert Exam) Explanation: Per the TRM, there are 5 members on the fire brigade. The fire was reported near the Iso Cond 3 valve room, which is located on the second floor of the U3 reactor building. The closest fire cart would be the Unit 3 reactor building 545' elevation. Reactor Operators are not required to be Fire Brigade qualified nor do they respond to fires. SRO Criteria: 1 **REQUIRED REFERENCES: None.**

84 **ID: 06-1 NRC EXAM** **Points: 1.00**

Given the following conditions on Unit 3 at 2315 hours:

- Mode Switch is in REFUEL.
- RPV cavity is flooded.
- BOTH Reactor Recirc Pumps are on.
- 3A and 3B Shutdown Cooling Loops are aligned to Reactor.
- Reactor Water temperature is 133°F.

At 2345 hours, the following annunciators alarm

- 903-4 H-4, 3A RECIRC LOOP WTR TEMP HI
- 903-4 E-7, 3A (B) RECIRC LOOP WTR TEMP HI HI.

3A Reactor Recirc loop temperature element has FAILED, as indicated on MV/I 3-260-13A (red light ON) on the 903-18 panel.

What direction should be given to maintain and/or restore Reactor cool down?

A. Start one SDC pump and one Fuel Pool Cooling pump, per DOA 1900-01, LOSS OF FUEL POOL COOLING.

B. Restart ALL Shutdown Cooling AND Reactor Recirc pumps, per DOA 1000-01, RESIDUAL HEAT REMOVAL ALTERNATIVES.

C. Place the RWCU system in service, per DOP 1200-01, RWCU SYSTEM OPERATION DURING REACTOR SHUTDOWN.

D. Jumper out the failed instrument(s), operate Group III Isolation RESET switch, then restart both Shutdown Cooling loops, per DOA 1000-01, RESIDUAL HEAT REMOVAL ALTERNATIVES.

Answer: D

Question 84 Details

Question Type:	Multiple Choice
Topic:	(084) 295021.G.4.31
System ID:	13164
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29501LK046 Reference: DOA 1000-01, DAN 903-4 E-7 K/A: 295021.G.4.31 3.3 / 3.4 Level: High Pedigree: Bank Explanation: Per DOA 1000-01, with the reactor cavity flooded, IF SDC isolated due to a failed Reactor Recirc loop temperature element as indicated on MV/I 3-260-13A (red light ON) on the 903-18 panel, THEN bypass the failed Reactor Recirc loop temperature element(s). For temperature element 3-261-8A, install a jumper across terminal AA-35 and AA-36 on the 903-18 panel. Reset the Group III isolation using the GROUP 2&3 ISOL RESET switch on the 903-5 panel then restart SDC system. Starting one SDC pump and one Fuel Pool Cooling pump is incorrect because of the high temperature condition. Restart ALL Shutdown Cooling and Reactor Recirc pumps is incorrect due to Recirc pumps did NOT trip. Placing the RWCU system in service is not an alternative if in Mode 5 with the reactor cavity flooded. SRO Criteria: 5 **REQUIRED REFERENCES: None.**

85 **ID: 06-1 NRC EXAM** **Points: 1.00**

U2 is experiencing a partial hydraulic ATWS with the following conditions:

- Bus 24 tripped on overcurrent.
- Torus cooling is established.
- Torus temperature is 81°F and steady.
- 2A CRD pump tripped, due to overcurrent.
- Reactor power is 4% on APRMs and steady.

The Unit Supervisor is required to direct the NSO to . . . . .

A. scram rods individually using the test switches per DEOP 0500-05, ALTERNATE INSERTION OF CONTROL RODS.

B. initiate Standby Liquid Control injection per DOP 1100-02 INJECTION OF STANDBY LIQUID CONTROL, Hard Card.

C. cross-tie CRD to Unit 3 and manually drive control rods per DEOP 0500-05, ALTERNATE INSERTION OF CONTROL RODS.

D. start the 2B CRD pump and manually drive control rods per DEOP 0500-05, ALTERNATE INSERTION OF CONTROL RODS.

Answer: C

Question 85 Details

Question Type:	Multiple Choice
Topic:	(085) 295022.G.4.04
System ID:	13165
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 201LN00114 Reference: DEOP 0500-05 K/A: 295022.G.4.04 4.0 / 4.3 Level: High Pedigree: Bank Explanation: Per DEOP 500-05 if you cannot drive rods due to No pumps on Unit 2 then cross-tieing CRD to U3 is warranted. 2B CRD pump cannot start due to bus 24 being locked out. With a Hydraulic lock scram toggle switches will not work. With reactor power < 6% and no issue with torus temperature reaching 110F SBLC is not warranted in this condition. SRO Criteria: 5 **REQUIRED REFERENCES: DEOP charts, with the entry conditions blanked out.**

86 **ID: 06-1 NRC EXAM** **Points: 1.00**

Given the following set of conditions:

- The RWCU system is in operation.
- Reactor pressure is currently 300 psig.
- The air supply line to the RWCU flow control valve, FCV 2-1219, has just ruptured.

Based on these conditions the RWCU ___(1)___ AND the Unit Supervisor will direct ___(2)___ .

A. (1) FCV locks up;
(2) reducing system flow per DAN 902-4 C-12 RWCU RECIRC PP DISCH PRESS LO.

B. (1) Recirc pump TRIPS;
(2) an operator to check the breaker relay targets per DAN 902-4 A-10 RWCU RECIRC PP TRIP.

C. (1) system isolates on high pressure;
(2) verification of system isolation per DOP 1200-03, RWCU SYSTEM OPERATION WITH THE REACTOR AT PRESSURE hard card.

D. (1) Recirc pump continues to operate;
(2) securing the RWCU system per DOP 1200-03, RWCU SYSTEM OPERATION WITH THE REACTOR AT PRESSURE hard card.

Answer: D

Question 86 Details

Question Type:	Multiple Choice
Topic:	(086) 204000.A2.03
System ID:	13166
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE204LN001.12 Reference: DOP 1200-03, P&ID M-30, DANs 902-4 A-10 & C-12 K/A: 204000.A2.03 2.9 / 2.9 Level: High Pedigree: New Explanation: Loss of IA to the FCV causes valve to fail closed (does not lock up). The pump experiences a dead headed situation (NOT a pump trip). Per DOP 1200-03, during a system transient, secure the system via the hard card. The high pressure isolation (downstream of the PCV) would not occur, since flow was isolated by the failing closed of the FCV. SRO Criteria: 5 **REQUIRED REFERENCES: None.**

87 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 3 is operating at near rated power when an NSO reports that the Isolation Condenser level is decreasing. The NSO reports the following level trend:

- Time 17:10:30 - 7 feet 2 inches.
- Time 17:11:30 - 7 feet 0 inches.
- Time 17:12:30 - 6 feet 10 inches.

If the trend continues at the current rate, what is the EARLIEST time, of the times below, that the Isolation Condenser will NOT meet its L.C.O. requirements AND the bases for this?

A. 17:17:00;
provides the capability to remove heat consistent with the design requirements without makeup water, following a scram from 3016 megawatts thermal.

B. 17:17:00;
provides sufficient decay heat removal capability for 20 minutes operation without makeup water following a scram from 102% rated thermal power.

C. 17:18:00;
provides sufficient decay heat removal capability for 20 minutes operation without makeup water following a scram from 102% rated thermal power.

D. 17:18:00;
provides the capability to remove heat consistent with the design requirements without makeup water, following a scram from 3016 megawatts thermal.

Answer: C

Question 87 Details

Question Type:	Multiple Choice
Topic:	(087) Generic.1.33
System ID:	13167
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE223LN001.07 Reference: Tech Spec and Bases 3.5.3 K/A: Generic.1.33 3.4 / 4.0 Level: High Pedigree: New Explanation: Tech Spec 3.5.3 states that the shellside level must be $\geq$ 6 feet. At the current trend the LCO will no longer be met after time 17:17:30, making time 17:18:00 (of the possible answers) the earliest time the LCO requirements are not met. The bases for this requirement is based on a scram from 102% power this provides sufficient decay heat removal capability for 20 minutes operation without makeup water. Verifying the capability to remove heat consistent with the design requirements of 252.5 x 10^6 Btu/hr is the bases for the heat removal capability to remove design heat load surveillance. SRO Criteria: 2 **REQUIRED REFERENCES: None.**

88 **ID: 06-1 NRC EXAM** **Points: 1.00**

A systems engineer brings a "Special Procedure" for the Control Rod Drive system to the WEC.

How can it be determined if the "Special Procedure" contains any un-reviewed safety questions?

A. The documentation of a 50.59 screening being conducted on the special procedure is included with the special procedure.

B. Any previously un-reviewed safety question will be listed on the procedural approval form, included with the special procedure.

C. The documentation of procedure OP-AA-101-304, EVALUATION OF SPECIAL TESTS OR EVOLUTIONS is included with the special procedure.

D. Any previously un-reviewed safety questions will be listed on DAP 09-09 form 09-09A, CONTENTS OF SPECIAL PROCEDURE CHECKLIST, included with the special procedure.

Answer: A

Question 88 Details

Question Type:	Multiple Choice
Topic:	(088) Generic.2.08
System ID:	13168
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29500SE033 Reference: LS-AA-104 page 5, DAP 09-09 K/A: Generic.2.08 1.8 / 3.3 Level: Memory Pedigree: Bank Explanation: Per the above reference, if it has been determined from the applicability review that 10 CFR 50.59 is applicable to the proposed activity, then prepare a 50.59 screening. This provides complete responses, with justification, to each 50.59 screening question. SRO Criteria: 3 **REQUIRED REFERENCES: None.**

89 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 was operating at near rated power.

Containment venting to Reactor Building ventilation system is in progress to control Drywell pressure per DOP 1600-01, NORMAL PRESSURE CONTROL OF THE DRYWELL, when the following occurred:

- An RPV water level transient caused RPV water level to peak at +55 inches.

RPV water level is currently being lowered to the normal operating band.

What direction is the SRO required to provide to the NSO performing the containment venting?

A. Continue venting per DOP 1600-01, NORMAL PRESSURE CONTROL OF THE DRYWELL.

B. Terminate venting per DOP 1600-01, NORMAL PRESSURE CONTROL OF THE DRYWELL.

C. Verify sufficient SBGT flow per DOP 7500-01, STANDBY GAS TREATMENT SYSTEM OPERATION.

D. Restart venting per DOP 1600-01, NORMAL PRESSURE CONTROL OF THE DRYWELL, when containment isolations reset.

Answer: B

Question 89 Details

Question Type:	Multiple Choice
Topic:	(089) Generic.3.08
System ID:	13169
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE223LN001.08 Reference: DOP 1600-01 K/A: Generic.3.08 2.3 / 3.2 Level: High Pedigree: New Explanation: With RPV water level reaching +55 inches, the Turbine will trip. With Reactor power > 38.5% and a Turbine trip, the Reactor will scram. Upon a Reactor scram, the correct actions with regards to venting, is to secure the vent and resample prior to re-starting the venting. Continue venting is incorrect, per the above DOP. On most scrams from rated conditions, the RPV water level drops low enough to initiate a Group II isolation, but due to the high RPV water level, setpoint setdown will NOT drive RPV water level low enough to initiate a Group II isolation. Restart venting when isolations reset and verify sufficient SBGT flow are incorrect, since the was no Group II isolation. SRO Criteria: 5 **REQUIRED REFERENCES: None.**

90 **ID: 06-1 NRC EXAM** **Points: 1.00**

Per the Technical Specification Bases, concerning a Unit 3 complete loss of AC power:

The ___(1)___ must be capable of starting and connecting to its/their bus(es).

This is designed to provide sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that the ___(2)___ design limits are not exceeded.

A. (1) Unit 3 AND Unit 2 EDGs;
(2) Fuel and Reactor Coolant System ONLY.

B. (1) Unit 3 AND Unit 2/3 EDGs;
(2) Fuel, Reactor Coolant System, and Containment.

C. (1) Unit 3 AND Unit 2 EDGs;
(2) Fuel, Reactor Coolant System, and Containment.

D. (1) Unit 3 AND Unit 2/3 EDGs;
(2) Fuel and Reactor Coolant System ONLY.

Answer: B

Question 90 Details

Question Type:	Multiple Choice
Topic:	(090) 295003.G.2.25
System ID:	13170
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 299LN001-2 Reference: Tech Spec Bases 3.8.1 K/A: 295003.G.2.25 2.5 / 3.7 Level: Memory Pedigree: New Explanation: For a loss of voltage on any given unit, the unit EDG and common EDG (not opposite unit) must be capable of starting and connecting to its own bus(on an undervoltage), to count as a qualified offsite circuit. This design ensures sufficient capacity, capability, redundancy, and reliability to ensure the availability of necessary power to ESF systems so that the designed safety limits of the fuel, Reactor Coolant System, and containment are not exceeded. SRO Criteria: 2 **REQUIRED REFERENCES: None.**

91 **ID: 06-1 NRC EXAM** **Points: 1.00**

A LOCA has occurred on Unit 2, concurrently with a LOOP, with the following conditions:

- Reactor Pressure is 300 psig and LOWERING.
- HPCI and SBLC are the ONLY high pressure systems available AND injecting into the Reactor.
- RPV water level is -193" and LOWERING.
- BOTH loops of Torus Sprays are in operation.
- BOTH loops of Torus Cooling are in operation.
- Drywell sprays are NOT in operation due to valve binding on both loops.
- Drywell Pressure is 19 psig and RISING.
- Torus Bottom Pressure is 24 psig and RISING.
- Torus Level is 14 feet and STABLE.

Complete the following statements.

The SRO is required to direct the NSO to ___(1)___ and blowdown is required based upon ___(2)___ .

A. (1) CONTINUE to operate Torus Cooling AND Torus Sprays;
(2) Torus Bottom Pressure ONLY

B. (1) CONTINUE to operate Torus Cooling AND Torus Sprays;
(2) Reactor Water Level AND Torus Bottom Pressure

C. (1) STOP Torus Cooling AND Torus Sprays;
(2) Reactor Water Level ONLY

D. (1) STOP Torus Cooling AND Torus Sprays;
(2) Reactor Water Level AND Torus Bottom Pressure

Answer: C + D

Follow review of post exam comments answers “C” and “D” were accepted as correct

Question 91 Details

Question Type:	Multiple Choice
Topic:	(091) 230000.A2.15
System ID:	13171
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE203LN001.06 Reference: DEOPs 100 and 200-1 K/A: 230000.A2.15 4.0 / 4.1 Level: High Pedigree: Bank (Quad Cities 2005 NRC exam) Explanation: With the conditions given, Torus sprays or cooling should NOT be used when needed for core cooling. Also blowdown should be performed based on when RPV level drops to -164 inches (DEOP 100). Torus pressure does not exceed the figure "L" on DEOP 200-1. SRO Criteria: 5 **REQUIRED REFERENCES: DEOP charts, with the entry conditions blanked out.**

92 **ID: 06-1 NRC EXAM** **Points: 1.00**

Given the following set of conditions on Unit 2:

- A plant startup is in progress.
- The Recirculation flow input signal to the Average Power Range Monitors (APRM) is 50%.
- As Recirculation flow is raised, the output signal from the "B" Flow Unit remains at 50%.
- Actual Recirculation loop flows respond as expected.

As Recirculation flow continues to be raised, what will be the FIRST effect on plant operation from the APRMs/Flow Unit, AND what direction is the SRO required to give?

A. A control rod block due to a flow biased neutron flux high signal will occur; Bypass the 'B' Flow Comparator Unit trip per DOA 0700-03 ROD OUT BLOCKS, and continue startup.

B. A control rod block due to a flow biased neutron flux high signal will occur; Stop all power increases until the problem with 'B' Flow Comparator Unit is corrected, then continue startup.

C. A control rod block due to a Flow Unit Comparator trip will occur; Bypass the 'B' Flow Comparator Unit trip per DOA 0700-03 ROD OUT BLOCKS, then continue startup.

D. A control rod block due to a Flow Unit Comparator trip will occur; Stop all power increases until the problem with 'B' Flow Comparator Unit is corrected, then continue startup.

Answer: D

Question 92 Details

Question Type:	Multiple Choice
Topic:	(092) 215005.A2.07
System ID:	13181
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE215LN005.06 Reference: DANs 902-5 A-6, C-3, C-6, DOA 0700-03, DGA-2 K/A: 215005.A2.07 3.2 / 3.4 Level: High Pedigree: Bank Explanation: A control rod block due to a Flow Unit Comparator trip will occur (7.5% mismatch), which causes annunciator APRM HI. The auto action on receipt of the alarm is a Rod Withdrawal Block. The ROD OUT BLOCK annunciator and DOA require to stop all power increases until the problem with 'B' Flow Comparator Unit is corrected. After this startup may be continued. Bypassing the 'B' Flow comparator Unit trip per DOA 0700-03 ROD OUT BLOCKS, and continue startup is not correct. SRO Criteria: 5 **REQUIRED REFERENCES: None.**

93 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 is operating at near rated power, when the following occurs:

- 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 93 Details

Question Type:	Multiple Choice
Topic:	(093) 295004.A2.03
System ID:	13173
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE263LN002.12 Reference: T.S. Bases 3.8.4 K/A: 295004.A2.03 2.8 / 2.9 Level: High Pedigree: Bank (2005 Dresden NRC) Explanation: Per the bases, the batteries 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. SRO Criteria: 2 **REQUIRED REFERENCES: None.**

94 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 3 was in a startup, when the following is observed:

- Time 02:15:30 - RPV water level decreased to -62 inches.
- Time 02:17:00 - APRM DOWNSCALE lights are NOT illuminated.
- Time 02:17:15 - NSO reports reactor scram, immediate Operator actions and associated contingency actions are complete.
- Time 02:17:30 - RPV water level is -45 inches.

Which of the following actions is the Unit Supervisor required to direct NEXT?

A. Trip BOTH Recirc pumps per DEOP 400-5, FAILURE TO SCRAM.

B. Bypass interlocks per DEOP 500-2, BYPASSING INTERLOCKS AND ISOLATIONS.

C. Terminate AND Prevent to hold RPV water level between -45 inches and -164 inches, per DEOP 400-5, FAILURE TO SCRAM.

D. Hold RPV water level between +48 inches and -164 inches using HPCI and feedwater per DEOP 400-5, FAILURE TO SCRAM.

Answer: D

Question 94 Details

Question Type:	Multiple Choice
Topic:	(094) 295037.A2.07
System ID:	13174
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29502LP025 Reference: DEOP 400-5, DANs 902-5 D-4, D-5, & E-5 K/A: 295037.A2.07 4.0 / 4.2 Level: High Pedigree: New Explanation: When RPV water level decreases to < -54 inches, a Group 1, 2, and 3 isolation signal was received. With NO aprm downscale lights illuminated, that is an indication of an ATWS. During an ATWS, with power > 6% (or unknown) and RPV water level < -35 inches, per DEOP 400-5 the actions are to hold RPV water level between 48 inches and -143 inches (box 7) using HPCI and feedwater. Terminate and Prevent in to hold level between -45 inches and -164 inches is NOT to be directed since RPV water level is < -35 inches (the overides are NOT met which does NOT send the SRO to box 8). Trip recirc pumps are not the NEXT action (since would have tripped at -59 inches). Bypass interlocks is incorrect, since the MSIVs would have went closed when a Group 1 isolation was received. SRO Criteria: 5 **REQUIRED REFERENCES: DEOP charts, with the entry conditions blanked out.**

95 **ID: 06-1 NRC EXAM** **Points: 1.00**

With both units operating at near rated power, which of the following events would result in a REQUIRED report to the NRC Senior Resident Inspector?

A. A loss of SBO 4KV Bus 71.

B. A loss of the Heating Boilers during winter months.

C. Unit 3 Service Air header pressure decreases to 40 psig.

D. Unit 3 Instrument Air header pressure decreases to 50 psig.

Answer: D

Question 95 Details

Question Type:	Multiple Choice
Topic:	(095) 300000.G.4.30
System ID:	13175
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29900LK152 Reference: OP-AA-106-101, DOA 4700-01 K/A: 300000.G.4.30 2.2 / 3.6 Level: High Pedigree: New Explanation: With Instrument Air header pressure decreasing below 55 psig, a manual scram is required to be initiated. With an unplanned shutdown (scram) the Senior Resident Inspector is required to be notified per OP-AA-106-101. The distractors do NOT require any notifications. SRO Criteria: 5 **REQUIRED REFERENCES: None.**

96 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 3 is operating at near rated power with ONLY the 3A RBCCW pump and 3A RBCCW Heat Exchanger in operation, when the following occurs:

- The TUBE SIDE flow is reduced through 3A RBCCW Heat Exchanger, due to rapid fouling from a shad run.

If this condition goes un-corrected, RBCCW outlet temperatures will ___(1)___ AND the SRO will be required to direct ___(2)___ .

A. (1) DECREASE,
(2) securing the tripped and starting the standby Pumpback air compressor per 903-4 E-16, 3 A/B PUMPBACK COMPRESSOR TRIP.

B. (1) DECREASE;
(2) shutting down and isolating the RWCU system per DOP 1200-03, RWCU SYSTEM OPERATION WITH THE REACTOR AT PRESSURE.

C. (1) INCREASE,
(2) securing the tripped and starting the standby Pumpback air compressor per 903-4 E-16, 3 A/B PUMPBACK COMPRESSOR TRIP.

D. (1) INCREASE;
(2) placing the RWCU PIC 2(3)-1290-2, PRESSURE CONTLR, in MANUAL AND adjusting demand to zero (0) to close the valve per DOP 1200-03, RWCU SYSTEM OPERATION WITH THE REACTOR AT PRESSURE.

Answer: D

Question 96 Details

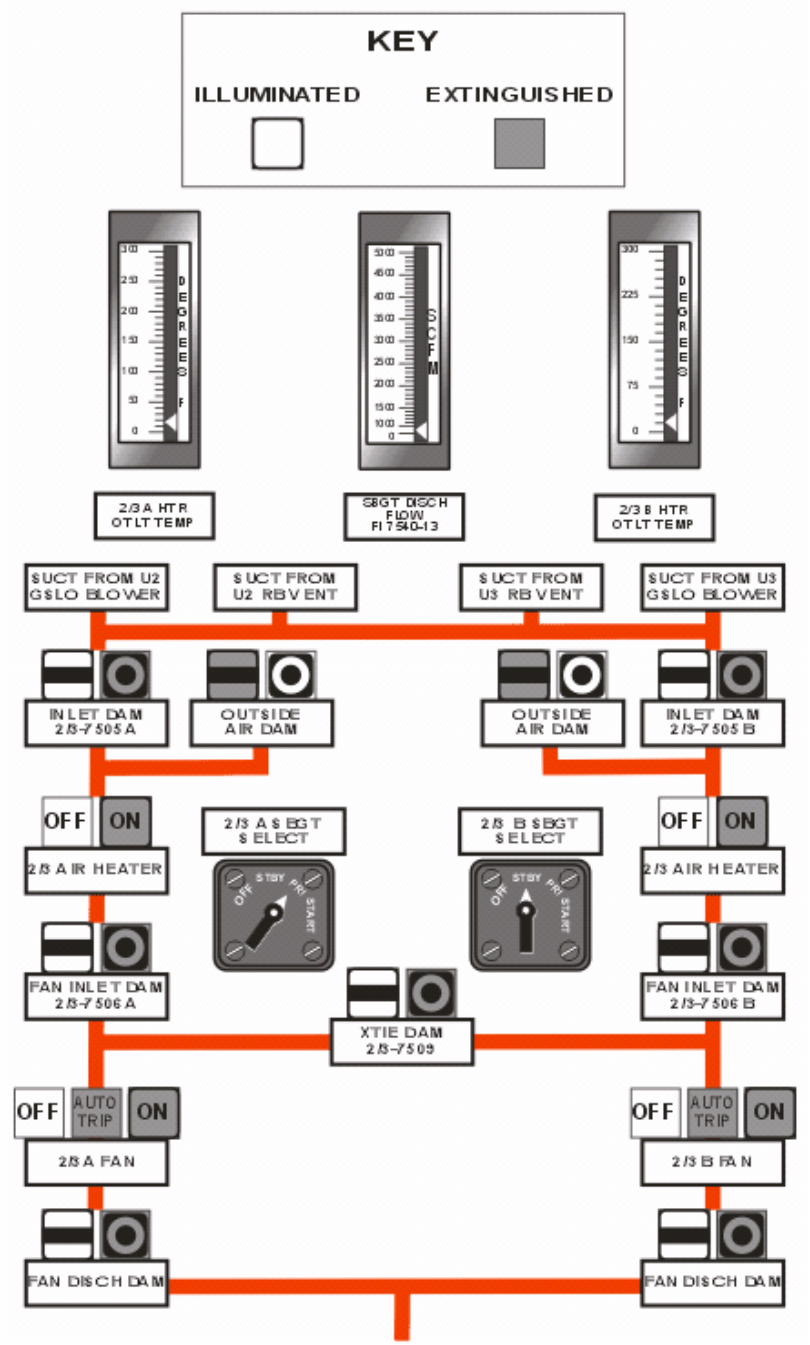
Question Type:	Multiple Choice
Topic:	(096) 295018.A2.02
System ID:	13176
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE204LN001.06 Reference: DOA 3900-01, DOP 1200-03, P&ID M-22 K/A: 295018.A2.02 3.1 / 3.2 Level: High Pedigree: New Explanation: With Service Water (tube side) being reduced through the RBCCW heat exchanger, RBCCW temperatures will increase. If a misconception that RBCCW is on the tube side is assumed, then RBCCW temperatures would decrease (same cooling, less RBCCW flow). With RBCCW temperature increasing, this would cause the RWCU non-regen heat exchanger temperatures to rise, which will cause a system isolation. The action on a system isolation is to dial the pressure controller to zero. Unit 3 Pumpback air compressors are unaffected by a Unit 3 RBCCW problem, since BOTH units Pumpback air compressors are cooled by Unit 2 RBCCW. SRO Criteria: 5 **REQUIRED REFERENCES: None.**

97 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 2 was operating at near rated power, when the following occurs:

- All operating RFPs trip and RPV water level decreases to -12 inches.

1 minute after the transient, the following is observed on the 923-5 panel:



What actions (if any) are FIRST required for the SBGT system AND what is the bases for these actions?

A. Allow the SBGT system to continue in its current configuration; the indications are expected for the current situation.

B. Place the 'A' SBGT SELECT switch to START; to reduce off-site dose rates.

C. Place the 'A' SBGT SELECT switch to START; to reduce Secondary Containment dose rates.

D. Place 'A' and 'B' SBGT SELECT switches to START; to reduce Secondary Containment dose rates.

Answer: B

Question 97 Details

Question Type:	Multiple Choice
Topic:	(097) 288000.G.4.49
System ID:	13177
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	1.00
Time to Complete:	2
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE261LN001.08 Reference: DAN 902-5 E-5, DOP 7500-01, T.S. Bases 3.6.4.3 K/A: 288000.G.4.49 4.0 / 4.0 Level: Memory Pedigree: New Explanation: When RPV water level decreases < 6 inches, an auto start signal is given to the SBGT train which is selected to PRI (A). When the auto actions do not occur (as seen on the figure), the next required action is to take those actions manually (place 'A' train control switch only to START - 'B'). The bases for the SBGT system operation is to ensure that radioactive materials that leak from PRIMARY Containment into SECONDARY Containment are filtered and adsorbed. SRO Criteria: 2 **REQUIRED REFERENCES: None.**

98 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 3 was operating at 20% power, shutting down for repairs inside containment.

On 4/23/07 at 05:00 Chemistry reported the following parameters:

- Reactor Water chlorides 180 ppb
- Reactor Water conductivity 0.07 micromhos/cm
- Reactor pH 8.6

On 4/23/07 at 07:30, Unit 3 NSO placed the MODE switch in STARTUP and Chemistry reported the following parameters:

- Reactor Water chlorides 165 ppb
- Reactor Water conductivity 1.1 micromhos/cm
- Reactor pH 7.2

If the chemistry numbers do NOT change, which of the following is the LATEST time that the Unit may enter MODE 4 and still meet the TLCO required action?

A. 07:30 on 4/25/07

B. 19:30 on 4/25/07

C. 19:30 on 4/26/07

D. 07:30 on 4/27/07

Answer: C

Question 98 Details

Question Type:	Multiple Choice
Topic:	(098) Generic.1.34
System ID:	13178
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE299LN001.04 Reference: TRM 3.4.b K/A: Generic.01.34 2.3 / 2.9 Level: High Pedigree: Bank Explanation: With the Unit unable to restore chemistry parameters, the required action of condition D will not be met after 48 hours from entering MODE 2, (chlorides are exceeded), (time 07:30 on 4/23). If not meeting the required action of condition D, condition E required action are to be in MODE 3 in 12 hours and MODE 4 in 36 hours. 48 hours + 36 hours (for mode 4) from 07:30 on 4/23 is 19:30 on 4/26. Distractor 07:30 on 4/25 may be chosen if the student applied the 48 hours only. Distractor 19:30 on 4/25 may be chosen if the student added 48 hours + 12 hours only. Distractor 07:30 on 4/27 may be chosen if the student applied the 48 hours + 12 hours + 36 hours.. SRO Criteria: 1 **REQUIRED REFERENCES: TRM 3.4.b., with less than one hour completion times blanked out.**

99 **ID: 06-1 NRC EXAM** **Points: 1.00**

With a unit at near rated power, the following conditions exist:

- At 1430 on 4/27/07 it was discovered that a Technical Specification surveillance with a 24 hour frequency was last performed satisfactorily at 1230 hours on 4/25/07.
- The Limiting Condition for Operation (LCO) required actions direct that the equipment be restored to OPERABLE status within 4 hours, or be in MODE 3 in 12 hours and in MODE 4 in 36 hours.

Determine which of the following will be the LATEST time that meets the requirement to be in MODE 4.

A. By 1430 hours on 4/28/07.

B. By 1430 hours on 4/29/07.

C. By 0030 hours on 4/30/07.

D. By 0430 hours on 4/30/07.

Answer: C

Question 99 Details

Question Type:	Multiple Choice
Topic:	(099) Generic.2.23
System ID:	13179
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE299LN001.04 Reference: Tech Specs K/A: Generic.2.23 2.6 / 3.8 Level: High Pedigree: Bank Explanation: Given the last time that the surveillance was performed (1230 on 4/25/07) and not performing the surveillance again, the time that the unit would need to be in MODE 4 by is 0230 on 4/30/07 (24 hours from discovery of not performing the surveillance plus 36 hours). The earliest time, out of the distractors, that would meet this time is 0030 4/30/07. SRO Criteria: 1 **REQUIRED REFERENCES: None.**

100 **ID: 06-1 NRC EXAM** **Points: 1.00**

Unit 3 is operating at near rated power, with HPCI out of service, when the following occurs:

- A trip of all Reactor Feed Pumps.
- The Isolation Condenser is being used for pressure control.
- RPV pressure is 820 psig and steady.
- RPV water level is +20 inches and steady.

A tube leak then develops in the Isolation Condenser.

What actions are required to be taken?

A. Manually restore RPV water level per DOA 0600-01, TRANSIENT LEVEL CONTROL.

B. Start a ISOL CNDR M-U PP per DOP 1300-01, STANDBY OPERATION OF ISOLATION CONDENSER.

C. Drain the Iso Condenser to normal band per DOP 1300-01, STANDBY OPERATION OF ISOLATION CONDENSER.

D. When RPV water level can NOT be maintained above +7 inches use SBLC to inject per DEOP 500-3, ALTERNATE WATER INJECTIONS SYTEMS.

Answer: D

Question 100 Details

Question Type:	Multiple Choice
Topic:	(100) 207000.G.4.06
System ID:	13180
User ID:	06-1 NRC EXAM
Status:	Active
Always select on test:	No
Authorized for practice:	No
Difficulty:	2.00
Time to Complete:	3
Point Value:	1.00
Cross Reference Number:	
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE207LN001.12 Reference: DEOPs 100 and 500-3 K/A: 207000.G.4.06 3.1 / 4.0 Level: High Pedigree: Modified (Dresden 2002 NRC Exam) Explanation: With a tube leak in the Iso Cond (used for pressure control), a path will exist between the vessel and the Iso Cond. The reactor is a higher pressure than the Iso, so RPV water inventory will drain into the Iso shell side. As RPV level decreases to +8 inches, DEOP 100 is entered and this directs using DEOP 500-3. With a loss of the RFPs and HPCI and the reactor pressure above the level for the low pressure injection systems, the correct action is to use alternate water injection systems (SBLC). RPV water level will NOT go up. Increased makeup flow will NOT happen since this is an indication of shell side level lowering. SRO Criteria: 5 **REQUIRED REFERENCES: None.**