EXAMINATION ANSWER KEY

15-1 (2016-301) NRC Exam - RO

1 **ID: 26978** **Points: 1.00**

Unit 2 was operating at 500 MWe when the 2A Reactor Recirculation Pump was secured due to an oil leak.

Currently the 2B Reactor Recirculation Pump is operating at 30% of rated speed and both Recirc loop flows indicate flow.

Pertaining to the "A" Recirc loop flow is in the ___(1)___ direction and **TOTAL CORE FLOW** indications are considered ___(2)___ .

A. 1) forward
2) accurate due to sufficient flow in the "B" loop

B. 1) forward
2) inaccurate due to the influence of natural circulation

C. 1) reverse
2) accurate due to sufficient flow in the "B" loop

D. 1) reverse
2) inaccurate due to the influence of natural circulation

Answer: B

Question 1 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	26978
User-Defined ID:	26978
Cross Reference Number:	
Topic:	01 - 295001.K2.02
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE202LN001.12 Reference: DGP 03-03 K/A: 295001.K2.02 3.2/3.3 K/A: Knowledge of the interrelations between PARTIAL OR COMPLETE LOSS OF FORCED CORE FLOW CIRCULATION and the following: Nuclear Boiler Instrumentation CFR: 41.7 Safety Function: 1 & 4 Level: High Pedigree: New Explanation: A. Incorrect - Flow is in the forward direction. However because there is indicated flow, indications are inaccurate and must be calculated. B. Correct - Flow is in the forward direction. Due to the influence of natural circulation and low flow in the active loop as well as indication of flow in the B loop, indications are inaccurate must be calculated. C. Incorrect - Flow would be in the reverse direction if running recirc pump speed was greater than 40% rated speed. D. Incorrect - Flow would be in the reverse direction if running recirc pump speed was greater than 40% rated speed. **REQUIRED REFERENCES: None.**

None

2 **ID: 26979** **Points: 1.00**

Unit 2 is operating at near rated power, with the 2A 125 VDC Battery Charger removed from service for maintenance.

Then the following occurred:

Unit 2 experienced a loss of off-site power (LOOP).
The U2 125 VDC Battery Charger was damaged during the transient.
The Reactor Building is inaccessible due to a steam leak
Turbine Building loads were load shed within DGA time requirements

What is the **MINIMUM** time, after the LOOP, the Unit 2 125 VDC battery is expected to maintain essential loads of 62 amps?

A. 4 hours.

B. 4.5 hours

C. 6 hours.

D. 6.5 hours.

Answer: A

Question 2 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	26979
User-Defined ID:	26979
Cross Reference Number:	
Topic:	02 - 295003.K1.01
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29501K083 Reference: DGA 13 K/A: 295003.K1.01 2.7 / 2.9 K/A: Knowledge of the operational implications of the following concepts as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER: Effect of battery discharge rate on capacity CFR: 41.8 to 41.10 Safety Function: 6 Level: High Pedigree: New Explanation: A. Correct - With RX BLDG Distribution Panel loads not shed, the 125 VDC battery will supply a load of 62 amps for a period of 4 hours with a loss of battery chargers. B. Incorrect - This would be correct if the candidate assumed a 4 hour capacity upon completion of load shedding. C. Incorrect - This would be correct if RX BLDG Distribution Panel loads were load shed. Not possible given conditions in stem. D. Incorrect - This would be correct if the candidate assumed a 6 hour capacity upon completion of load shedding. **REQUIRED REFERENCES: None.**

None

3 **ID: 13829** **Points: 1.00**

Unit 2 was operating at near rated power, when U2 125 VDC 2A-1 DIST PANEL de-energized.

Which of the following load(s) will have lost control power?

A. U2 'B' EHC Pump.

B. U2 'B' RBCCW Pump.

C. U2 'B' Circulating Water Pump.

D. U2 'C' Circulating Water Pump.

Answer: C

Question 3 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	13829
User-Defined ID:	13829
Cross Reference Number:	
Topic:	03 - 295004.K2.03
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE263LN002.12 Reference: DAN 902-8 F-1, DOP 6900-06, DOA 6900-T1 K/A: 295004.K2.03 3.3/3.3 K/A: Knowledge of the interrelations between PARTIAL OR COMPLETE LOSS OF D.C. POWER and the following: D.C. bus loads CFR: 41.7 Safety Function: 6 PRA: Yes Level: Memory Pedigree: Bank History: 2007 NRC, 2010 Cert Explanation: A. Incorrect - "B" EHC pump is powered from Bus 27. Control power to Bus 27 is 2B-2. B. Incorrect - "B" RBCCW pump is powered from Bus 24-1. Control power to Bus 24-1 is 2B-1. C. Correct - With 2A-1 Dist Panel becoming de-energized, Bus 23 loses its main source of control power (control power indications). 'B' Circ Water pump ispowered from Bus 23 and would have lost indications. D. Incorrect - "C" Circ water pump is powered from Bus 24. Control power to Bus 24 is 2B-1 **REQUIRED REFERENCES: None.**

None

4 **ID: 26980** **Points: 1.00**

Unit 2 is operating at rated power for the past 6 months when the Main Turbine spuriously trips.

How does the plant respond and why?

A. **ONLY** Main Turbine Bypass Valves open to protect against Minimum Critical Power Ratio (MCPR) violation.

B. **ONLY** Main Turbine Bypass Valves open to protect against Power minus Precondition State (P-PCS) violation.

C. Main Turbine Bypass Valves **AND** ERVs open to protect against Minimum Critical Power Ratio (MCPR) violation.

D. Main Turbine Bypass Valves **AND** ERVs open to protect against Power minus Precondition State (P-PCS) violation.

Answer: A

Question 4 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	26980
User-Defined ID:	26980
Cross Reference Number:	
Topic:	04 - 295005.K3.07
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE245LN001.03 Reference: UFSAR 15.2.2.1 K/A: 295005.K3.07 3.8 / 3.8 K/A: Knowledge of the reasons for the following responses as they apply to MAIN TURBINE GENERATOR TRIP: Bypass valve operation CFR: 41.5 Safety Function: 3 Level: High Pedigree: New Explanation: A. Correct - During a scram from rated power, no ERV actuation occurs without additional component failures. The thermal limit of concern is MCPR. B. Incorrect - P-PCS violations are not of concern given the conditions in the stem. C. Incorrect - ERV actuation does not occur during a scram from full power without additional failures D. Incorrect - ERV actuation does not occur during a scram from full power without additional failures **REQUIRED REFERENCES: None.**

None

5 **ID: 26981** **Points: 1.00**

Unit 2 was operating at rated power when thirty (30) seconds ago, a transient occurred.

The following conditions currently exist:

- Drywell pressure is 2.38 psig and slowly rising.
- RPV pressure peaked at 1045 psig and is lowering.
- RPV water level lowered to -72 inches and is currently - 50 inches and recovering

Which of the following indications would the NSO expect to see 2 minutes later?

(1) Isolation Condenser auto-started
(2) U2 and 2/3 EDGs auto-started
(3) 2A and 2B Recirc pumps tripped
(4) Electromatic Relief valves open
(5) 2D Cond/Cond Booster pump tripped

A. 1, 2, and 5 ONLY

B. 1, 3, and 4 ONLY

C. 2, 3, and 4 ONLY

D. 2, 3, and 5 ONLY

Answer: D

Question 5 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	26981
User-Defined ID:	26981
Cross Reference Number:	
Topic:	05 - 295006.A1.04
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE202LN001.06 Reference: DOA 0600-01 K/A: 295006.A1.04 3.1/3.2 K/A: Ability to operate and/or monitor the following as they apply to SCRAM: Recirculation system. CFR: 41.7 Safety Function: 1 Level: Memory Pedigree: Bank History: 2009 NRC, 2011 NRC Explanation: A. Incorrect - This would be correct if RPV pressure was greater than 1055 psig for greater than 12 seconds B. Incorrect - Peak RPV pressure never reached the low set ERV setpoint. Conditions for ADS actuation within 2 minutes were present but when RPV level recovered above RPV lo-lo (-59") the 2 minute timer reset. C. Incorrect - This would be correct if RPV pressure was greater than 1097 psig. D. Correct - When Drywell pressure reaches 2 psig, the following happens: Both Recirc Pumps trip, both EDGs auto start (ECCS signal), and the 2D Cond/Cond Booster pump trips (load shed). **REQUIRED REFERENCES: None.**

None

6 **ID: 26982** **Points: 1.00**

A transient occurred on Unit 2, resulting in the following:

A Main Control Room evacuation has occurred due to a fire.
Reactor Building 545' elevation is inaccessible due to a steam leak.
The Shift Manager has directed you to monitor RPV level during cooldown.

What RPV level indications can be used to monitor cooldown and where are they located?

A. Medium Range Level indications on 2202-5 and 6 racks.

B. Fuel Zone Level indications on 2202-5 and 6 racks.

C. Medium Range Level indications on 2202-7 and 8 racks.

D. Fuel Zone Level indications on 2202-7 and 8 racks.

Answer: D

Question 6 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	26982
User-Defined ID:	26982
Cross Reference Number:	
Topic:	06 - 295016.A2.02
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29501LE018 Reference: DSSP 0200-S K/A: 295016.A2.02 4.2* / 4.3* K/A: Ability to determine and/or interpret the following as they apply to CONTROL ROOM ABANDONMENT: Reactor water level CFR: 41.10/43.5 Safety Function: 7 Level: Memory Pedigree: New Explanation: A. Incorrect - The 2202-5 and 6 instrument racks are located on the 2nd floor of the Reactor Building. These racks contain medium range level indications B. Incorrect - The 2202-5 and 6 instrument racks are located on the 2nd floor of the Reactor Building. These racks contain medium range level indications C. Incorrect - The 2202-7 and 8 instrument racks are located on the 1st floor of the Reactor Building, but they do not contain medium range level indications D. Correct - The 2202-7 and 8 racks are located on the 1st floor of the Reactor Building, below the inaccessible 2nd floor and are the only available option to monitor RPV level. Theses racks contain Fuel Zone level indications only. **REQUIRED REFERENCES: None.**

None

7 **ID: 26983** **Points: 1.00**

Units 2 and 3 were operating at rated power with 2/3 RBCCW pump OOS for motor replacement when the following event occurred:

- 2A RBCCW pump tripped.
- 2B RBCCW pump amps are rising slowly

What actions are the Operating Team required to take?

A. Valve **IN** RBCCW to the 2/3 RBCCW heat exchanger.

B. Valve **OUT** RBCCW to the 2A RBCCW heat exchanger.

C. Insert a manual scram **AND** trip Recirc pumps within 1 minute.

D. Insert a manual scram **AND** trip Recirc pumps within 1 minute **AND** isolate RBCCW to the Drywell.

Answer: B

Question 7 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	26983
User-Defined ID:	26983
Cross Reference Number:	
Topic:	07 - 295018.G.1.20
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE208LN001.08 Reference: DOA 3700-01, DOP 3700-02 K/A: 295018.G.1.20 4.6 / 4.6 K/A: Partial or Complete Loss of Component Cooling Water: Ability to interpret and execute procedure steps CFR: 41.10/43.5 Safety Function: 8 Level: High Pedigree: New Explanation: A. Incorrect - This would be correct if only one heat exchanger was in service and a TCV or RBCCW Heat Exchanger was not functioning. B. Correct - If RBCCW system is degrading with 2 heat exchangers in service, the correct action is to remove 1 RBCCW heat exchanger from service. C. Incorrect - This would be correct if RBCCW flow was lost. D. Incorrect - This would be correct if LOCA had occurred concurrent with a loss of RBCCW. **REQUIRED REFERENCES: None.**

None

8 **ID: 26984** **Points: 1.00**

Unit 2 is in MODE 3 with the following set of conditions:

- RPV pressure is 90 psig.
- RPV water temperature of 331°F and steady.
- 2B Recirc pump is running at minimum speed.
- ALL three trains of Shutdown Cooling are aligned to the RPV removing their rated heat load.

The 2B SDC Pump tripped and cannot be restarted.

What action(s) is/are required to be taken to **MAINTAIN** the **CURRENT** RPV water temperature?

A. Open five (5) Turbine Bypass valves fully.

B. Initiate HPCI in the Pressure control mode.

C. Initiate Isolation Condenser to maximum flow.

D. Start the RWCU system using the RWCU Aux pump and NRHX.

Answer: D

Question 8 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	26984
User-Defined ID:	26984
Cross Reference Number:	
Topic:	08 - 295021.A1.04
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE205LN001.08 Reference: DOA 1000-01, DOP 2300-03, DGP 02-01 K/A: 295021.A1.04 3.7/3.7 K/A: Ability to operate and/or monitor the following as they apply to LOSS OF SHUTDOWN COOLING: Alternate heat removal methods. CFR: 41.7 Safety Function: 4 PRA: Yes Level: High Pedigree: New Explanation: A. Incorrect - Opening the bypass valves would remove too much heat (112.5 MWth each 562.5 MWth for 5 BPVs) and lower temperature. B. Incorrect - HPCI isolation occurs based on RPV pressure of 106 psig. C. Incorrect - Initiating the IC to max flow would remove too much heat and lower reactor water temperature (IC capacity at full flow is 74 MWth) D. Correct - The RWCU system would be capable of suppling enough cooling (~10 MWth) via the NRHX. With an overcurrent on Bus 24-1, 1 train of SDC (7.9 MWth) is lost. **REQUIRED REFERENCES: None.**

None

9 **ID: 27208** **Points: 1.00**

Unit 2 is in Day 15 of a Refuel Outage with Fuel Shuffle moves in progress, with the following conditions:

Mode switch is in Refuel position.
All Control Rods are fully inserted.

A Fuel Handler inserting a fuel assembly from location 33-28 to 37-20, when they bump a Control Rod, causing it to re-position to notch 02.

Which of the following is correct concerning the response to this event?

A. Any further fuel grapple hoist operation is prevented to avoid any reactivity changes.

B. Fuel grapple hoist movement is still allowed in the upward direction to allow Control Rod to be re-inserted.

C. All refueling platform bridge trolley movement (North-South) is stopped immediately to prevent further fuel moves.

D. All refueling platform bridge movement towards and away from the core (East-West) is stopped immediately to prevent further fuel moves.

Answer: A

Question 9 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27208
User-Defined ID:	27208
Cross Reference Number:	
Topic:	09 - 295023.K3.02
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE233LN001.12 Reference: DOS 0800-01, DOA 0800-03 K/A: 295023.K3.02 3.4 / 3.8 K/A: Knowledge of the reasons for the following responses as they apply to REFUELING ACCIDENTS: Interlocks associated with fuel handling equipment CFR: 41.5 / 45.6 Safety Function: 8 PRA: No Level: High Pedigree: Bank History: Explanation: A. Correct - With the Mode Switch in Refuel, the Refuel Platform fuel grapple hoist movement is prevented in both the upward and downward motions to prevent any reactivity changes in the Reactor when all Control Rods are not fully inserted. B. Incorrect - With the Mode Switch in Refuel, the fuel grapple hoist upward movement is not allowed when all Control Rods are not fully inserted. C. Incorrect - With the Mode Switch in Refuel, the refueling platform trolley bridge movement is not restricted as it is already over the core. D. Incorrect - With the Mode Switch in Refuel, the refueling platform trolley bridge movement is not restricted as it is already over the core. **REQUIRED REFERENCES: None.**

None

10 **ID: 26991** **Points: 1.00**

A loss of the _____ will cause a loss of power to the Unit 2 HPCI Flow Controller.

A. U2 ESS Bus

B. U2 Instrument Bus

C. 125 VDC Bus 2A-1

D. 250 VDC MCC 2B

Answer: A

Question 10 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	26991
User-Defined ID:	26991
Cross Reference Number:	
Topic:	10 - 206000.K2.04
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Objective: DRE206LN001.02 Reference: DOA 6800-01, 12E-2499 K/A: 206000.K2.04 2.5* / 2.7* K/A: Knowledge of electrical power supplies to the following: Turbine control circuits: BWR-2,3,4. CFR: 41.7 Safety Function: 2, 4 PRA: Yes Level: Memory Pedigree: Bank History: 2002 Quad, 2009 NRC Explanation: A. Correct - ESS Bus powers the HPCI flow controller. B. Incorrect - Instrument Bus and ESS Bus loads are commonly mistaken for each other. C. Incorrect - 125 VDC powers the initiation logic (2B-1/2A-1). D. Incorrect - 250 VDC powers all valves except 4-Valve (MCC 29-1). **REQUIRED REFERENCES: None.**

None

11 **ID: 27005** **Points: 1.00**

Unit 2 was operating at rated power when annunciator 902-3 E-5, 2A CORE SPRAY HDR DP HI is received.

Which of these conditions would cause this alarm?

A. 2A Core Spray Pump seal leakage is excessive.

B. 2A Core Spray system piping break has occurred.

C. 2A Core Spray system received an autostart signal

D. ECCS keepfill to the 2A Core Spray system has failed.

Answer: B

Question 11 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	1.00
System ID:	27005
User-Defined ID:	27005
Cross Reference Number:	
Topic:	11 - 209001.K4.04
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE209LN001.10 Reference: DAN 902(3)-3 E-5 K/A: 209001.K4.04 3.0 / 3.2 K/A: Knowledge of LOW PRESSURE CORE SPRAY SYSTEM design feature(s) and/or interlocks which provide for the following: Line break detection CFR: 41.7 Safety Function: 2 Level: Memory Pedigree: New Explanation: A. Incorrect - This would be correct if Core Spray Header Pressure Low alarm was received. B. Correct - This alarm is generated by high differential pressure between "A" CS injection header and above core plate. This indicates there is a break in the piping between the RPV wall and the core shroud in the annulus region. C. Incorrect - At rated power, RPV pressure would be too high for CS flow to enter the RPV. This alarm would not be received. D. Incorrect - This would be correct if Core Spray Header Pressure Low alarm was received. **REQUIRED REFERENCES: None.**

None

12 **ID: 26993** **Points: 1.00**

Unit 2 was operating at near rated power, when a fire caused an overcurrent condition on Bus 29.

Subsequently a feedwater transient caused the RPV to scram on RPV water level.

The SRO directs you to initiate SBLC for level control per DOP 1100-02, INJECTION OF SBLC Hard Card.

What would be the expected system response?

A. NEITHER Squib valve would fire

B. 'A' Squib valve would fire ONLY

C. 'B' Squib valve would fire ONLY

D. BOTH Squib valves would fire

Answer: B

Question 12 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	26993
User-Defined ID:	26993
Cross Reference Number:	
Topic:	12 - 211000.K2.02
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Objective: DRE211LN001.02 Reference: 12E-2460 Sheet 2 K/A: 211000.K2.02 3.1* / 3.2* K/A: Knowledge of electrical power supplies to the following: Explosive valves. CFR: 41.7 Safety Function: 1 Level: High Pedigree: Bank History: 2011 Cert, 2015 NRC Explanation: A. Incorrect - Candidate must have knowledge of the power supplies to SBLC squib valves. MCC 28-1 still has power and as such the "A" squib valve would fire. B. Correct - With a loss of Bus 29, MCC 29-1 would be lost. MCC 29-1 is the power supply to both the 'B' pump and squib valve, thus neither of them could become energized. 'A' pump and squib is powered from MCC 28-1, so when the control switch is taken to position "SYS 1 & 2" (per the hard card) they would become energized and operate as designed. C. Incorrect - This would be correct if the control switch was taken to System 2 as directed by the hard card for ATWS conditions. D. Incorrect - Candidate must have knowledge of the power supplies to SBLC squib valves. MCC 29-1 does not have power (due to loss of Bus 29) as such the "B" squib valve will not fire. **REQUIRED REFERENCES: None.**

None

13 **ID: 27235** **Points: 1.00**

Unit 2 was operating at rated power when a transient caused Bus 29 to become de-energized due to overcurrent.

The ___(1)___ will become de-energized and may manually be re-energized from ___(2)___ .

A. (1) ESS Bus;
(2) MCC 28-2

B. (1) 'A' RPS Bus;
(2) MCC 25-2

C. (1) 'B' RPS Bus;
(2) MCC 25-2

D. (1) Instrument Bus
(2) MCC 25-2

Answer: B

Question 13 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27235
User-Defined ID:	27235
Cross Reference Number:	
Topic:	13 - 212000.K6.01
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE262LN005.12 Reference: DOP 0500-03 K/A: 212000.K6.01 3.6 / 3.8 K/A: Knowledge of the effect that a loss or malfunction of the following will have on the REACTOR PROTECTION SYSTEM: A.C. electrical distribution. CFR: 41.7 Safety Function: 7 Level: High Pedigree: 2007 NRC Explanation: A. Incorrect - Bus 29 is a power source for the ESS Bus, but the ESS Bus does not lose power, because of the associated UPS. B. Correct - RPS Bus 'A' is powered from the 'B' RPS MG set, which is powered from MCC 29-2 via Bus 29. With a loss of Bus 29, The 'B' RPS MG set coasts down, de-energizing the 'A' RPS Bus. A mechanical interlock exists allowing either (not both) RPS Bus 'A' or 'B' to be re-energized manually. C. Incorrect - 'B' RPS Bus is powered from Bus 28 via MCC 28-2, not MCC 29 via MCC 28-2 D. Incorrect - Can be re-energized from MCC 25-2, but is powered from Bus 28 via MCC 28-2, NOT Bus 29 via MCC 29-2. **REQUIRED REFERENCES: None.**

None

14 **ID: 26996** **Points: 1.00**

The Unit 2/3 Emergency Diesel Generator is being run per DOS 6600-01, DIESEL GENERATOR SURVEILLANCE TESTS, for the monthly run, when the EO reports the following:

- Local annunciator DG 2/3 B-4, DIESEL ENGINE TEMP HIGH, is received.
- The in field Equipment Operator reports that the 2/3 EDG is running and local engine temperature is 215^{o}F.

Per the above DOS, which of the actions below are required to be taken **NEXT**?

A. Close the Emergency Fuel shutoff valve.

B. Reverse Diesel Generator cooling water flow.

C. Shutdown the Diesel Generator using the fuel injection rack lever.

D. Swap the 2/3 Diesel Generator Cooling Water Pump to its alternate power supply.

Answer: C

Question 14 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	26996
User-Defined ID:	26996
Cross Reference Number:	
Topic:	14 - 264000.K4.07
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Objective: DRE264LN001.05 Reference: DOS 6600-01, DAN DG2(3)(2/3)A B-4 K/A: 264000.K4.07 3.3/3.4 K/A: Knowledge of EMERGENCY GENERATORS (DIESEL/JET) design feature(s) and/or interlocks which provide for the following: Local operation and control CFR: 41.7 Safety Function: 6 PRA: No Level: High Pedigree: Bank History: ILT 11-1 NRC Explanation: A. Incorrect - Closing the Emergency Fuel shutoff valve is the last method of the directed attempts to emergency shutdown the EDG. B. Incorrect - The conditions present are due to lack of cooling or instrumentation failure, however the DOS directs the shutdown of EDG based on thresholds being exceeded. C. Correct - The 2/3 EDG should have tripped based on a manual start and the threshold for engine temperature being exceeded. Per DOS 6600-01, the preferred method for EDG shutdown in this situation is via the fuel injection rack lever. D. Incorrect - The conditions present are due to lack of cooling or instrumentation failure, however the DOS directs the shutdown of EDG based on thresholds being exceeded. **REQUIRED REFERENCES: None.**

None

15 **ID: 26995** **Points: 1.00**

Both units were operating at near rated power with the Unit 2 125 VDC batteries undergoing an equalization charge per DOP 8300-01, SAFETY RELATED STATION 125V AND 250V BATTERY EQUALIZING CHARGE.

Then the Unit 2 125 VDC battery room ventilation system tripped due to an overcurrent condition.

What are the initial implications of the above failure?

A. Oxygen levels may decrease, making the room unsafe for habitability.

B. Pilot cell temperature may increase, causing the battery voltage to increase.

C. Pilot cell temperature may decrease, causing the battery to have reduced capability.

D. Hazardous levels of Hydrogen may accumulate, which could lead to an explosive atmosphere.

Answer: D

Question 15 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	26995
User-Defined ID:	26995
Cross Reference Number:	
Topic:	15 - 263000.K5.01
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE263LN002.12 Reference: DOA 5750-01, DOP 8300-01 K/A: 263000.K5.01 2.6/2.9 K/A: Knowledge of the operational implications of the following concepts as they apply to D.C. ELECTRICAL DISTRIBUTION: Hydrogen generation during battery charging. CFR: 41.7 Safety Function: 6 Level: Memory Pedigree: Bank History: 2011 Cert Explanation: A. Incorrect - Oxygen levels are not affected by ventilation fan operations. B. Incorrect - As temperature rises battery voltage lowers. Additionally significant temperature deviation is not expected. C. Incorrect - As temperature lowers capacity rises. Additionally significant temperature deviation is not expected. D. Correct - Battery Room Ventilation must be operating OR alternate ventilation supplied during an equalizing battery charge. Hazardous levels of hydrogen may accumulate if Battery Room Ventilation is NOT working. **REQUIRED REFERENCES: None.**

None

16 **ID: 27007** **Points: 1.00**

Unit 2 was operating at near rated power when a small break LOCA is experienced, with the following set of initial conditions:

- Drywell pressure is 1.18 psig and rising.
- RPV water level is +30 inches and steady on the Medium Range indicators.

Drywell Spray valves are **FIRST** interlocked closed at ___(X)___ psig. Override of this interlock is accomplished via the use of ___(Y)___ keylock switch(es) in each division.

A. (X) 1.5;
(Y) a single

B. (X) 1.5;
(Y) two

C. (X) 2;
(Y) a single

D. (X) 2;
(Y) two

Answer: C

Question 16 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	1.00
System ID:	27007
User-Defined ID:	27007
Cross Reference Number:	
Topic:	16 - 295024.K2.15
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE203LN001.06 Reference: DOP 1500-03, DAN 902(3)-3 A-7, 12E-2437, 12E-2440 K/A: 295024.K2.15 3.8/3.9 K/A: Knowledge of the interrelations between HIGH DRYWELL PRESSURE and the following: Containment spray logic: Plant Specific CFR: 41.7 Safety Function: 5 Level: Memory Pedigree: Bank History: 2007 NRC Explanation: A - Incorrect. DW pressure of 1.5 psig is the manual scram threshold directed by OP-DR-103-102-1002. There is no interlock in place at this pressure. B - Incorrect. DW pressure of 1.5 psig is the manual scram threshold directed by OP-DR-103-102-1002. There is no interlock in place at this pressure. C - Correct. ECCS initiation logic threshold has been exceeded at a drywell pressure of 2.0 psig. The 316A and 316B keylock switches are required to open the drywell spray valves in these conditions. D - Incorrect. ECCS initiation logic threshold has been exceeded at a drywell pressure of 2.0 psig. This would be a correct answer if RPV level was below 2/3 core height. This would require the use of the 317A and 317B keylock switches to initiate drywell sprays. **REQUIRED REFERENCES: None.**

None

17 **ID: 27008** **Points: 1.00**

Which of the following is performed to minimize power transients through changes in the core void fraction during execution of DEOP 400-5, FAILURE TO SCRAM?

A. Place Core Spray pumps in PTL

B. Control RPV level between -35" and -50"

C. Inject SBLC prior to reaching Boron Injection Initiation Temperature

D. Stabilize RPV pressure below 1060 psig using Main Turbine Bypass Valves

Answer: D

Question 17 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27008
User-Defined ID:	27008
Cross Reference Number:	
Topic:	17 - 295025.K1.01
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29501LK025 Reference: DEOP 400-5, EPG B-6-36 K/A: 295025.K1.01 3.9/4.0 K/A: Knowledge of the operational implications of the following concepts as they apply to HIGH REACTOR PRESSURE: Pressure effects on reactor power. CFR: 41.8 Safety Function: 3 Level: Memory Pedigree: New Explanation: A - Incorrect. These actions are taken to prevent injection inside the core shroud B - Incorrect. The purpose of this action is to control reactor power by reducing subcooling. C - Incorrect. This action is taken to prevent core oscillations which would result in localized fuel damage. These oscillations are caused by subcooling at the core inlet vice core void fraction changes. D - Correct. Pressure oscillations can cause significant power transients through changes in the core void fraction. Controlling RPV pressure at a stable value reduces changes in core void fraction and subsequent power excursions. **REQUIRED REFERENCES: None.**

None

18 **ID: 27009** **Points: 1.00**

Unit 2 is in day 3 of a refueling outage and Unit 3 was operating at rated power when a transient occurred resulting in the following:

- Unit 3 Torus Temperature is 111°F
- Cribhouse intake temperature is 88°F.
- A Loss of Off-Site Power has occurred.
- 2 ERVs on Unit 3 are stuck open and all efforts to reseat them have failed.
- DGA 12 actions have restored power to **ALL** 4KV Busses

You have been directed to start all available Torus Cooling.

What is the **MAXIMUM** number of Unit 3 CCSW pumps that may be started?

A. 0

B. 1

C. 2

D. 4

Answer: D

Question 18 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27009
User-Defined ID:	27009
Cross Reference Number:	
Topic:	18 - 295026.K2.01
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 203LN001.03G Reference: DOP 1500-02, DEOP 200-1 K/A: 295026.K2.01 3.9/4.0 K/A: Knowledge of the interrelations between SUPPRESSION POOL HIGH WATER TEMPERATURE and the following: Suppression pool cooling CFR: 41.7 Safety Function: 5 PRA: Yes Pedigree: New Level: High Explanation: A - Incorrect. This answer would be correct if cribhouse intake temperature was above torus temperature. B - Incorrect. No restrictions apply to Unit 3 CCSW pumps. CCSW pump restrictions are applicable to Unit 2 only when running with a loaded 2/3 EDG. C - Incorrect. This answer would be correct if intake temperature was $\geq$ 91 degrees and applied to Unit 2 D - Correct. DEOP 200-1 directs starting all available torus cooling with stem conditions present. Although the 2/3 EDG is running loaded, the Unit 3 CCSW pumps do not share a common suction with the 2/3 EDG cooling water pump. The operator may start all 4 CCSW pumps. Note: There are no restrictions on number of Unit 3 CCSW pumps running in conjunction with a loaded 2/3 EDG. Restriction applies to Unit 2 only. This question examines candidate knowledge of unit differences. **REQUIRED REFERENCES: None.**

None

19 **ID: 27236** **Points: 1.00**

A transient has occurred on Unit 3 producing the following indications:

- Drywell pressure is 13 psig and rising slowly.
- Drywell Temperature is 340 degrees and rising slowly.
- Torus level is 15 feet and steady.
- Torus Bottom pressure is 24 and rising slowly.
- Drywell Sprays are unavailable.

From the information provided, why is Blowdown required?

A. The Heat Capacity Limit Curve is being exceeded.

B. ERV valve temperature qualification is being exceeded..

C. The Containment design pressure is being exceeded.

D. The Pressure Suppression Pressure curve is being violated.

Answer: B

Question 19 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	3.00
System ID:	27236
User-Defined ID:	
Cross Reference Number:	
Topic:	19 - 295028.K3.01
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Objective: 29502LK015 Reference: DEOP 200-1, EPG B-7-24 K/A: 295028.K3.01 3.6/3.9 K/A: Knowledge of the reasons for the following responses as they aply to HIGHDRYWELL TEMPERATURE: Emergency depressurization. CFR: 41.5 Safety function: 5 Pedigree: Bank History: None Level: High Explanation: A. is incorrect the HCTL is not being violated as Reactor Pressure and Torus Temp are not in jeopardy. PSP is not exceeded. B. is correct ED is required wehn DW/T exceeds the temerature at which ADS valves are qualified. C. is incorrect Containment pressure limit is 62 psig. D. is incorrect PSP is not currently compromised. **Required Reference: DEOP 200-1 with entry conditions removed**

None

20 **ID: 27012** **Points: 1.00**

Following a RX scram and trip of TR-22 the following conditions exist on Unit 2:

- Div 1 LPCI pumps will not start
- Torus temperature is 100°F
- Drywell Pressure is 5 psig
- Torus air space pressure is 3.5 psig
- Torus level is 16 ft.

Without violating NPSH limits what is the **MAXIMUM** allowable flow rate for each Low Pressure ECCS pump?

A. 2500 gpm

B. 3250 gpm

C. 5000 gpm

D. 5500 gpm

Answer: C

Question 20 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27012
User-Defined ID:	27012
Cross Reference Number:	
Topic:	20 - 295030.A1.01
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29502LK002 Reference: DEOP Detail X K/A: 295030.A1.01 3.6/3.8 K/A: Ability to operate and/or monitor the following as they apply to LOW SUPPRESSION POOL WATER LEVEL: ECCS systems (NPSH considerations): Plant-Specific CFR: 41.7 Safety Function: 5 PRA: Yes Level: High Pedigree: New Explanation: A - Incorrect. This distracter is plausible if the candidate determines torus bottom pressure to be 3.5 psig B - Incorrect. This distracter is plausible if the candidate incorrectly assumes the bounding curve is 5 psig (based on DW Pressure) C - Correct. Interpolation between lines on Detail X is not allowed. Without violating NPSH limits with a torus bottom pressure of approximately 12 psig (determined by 16 feet of water and 3.5 psig torus airspace and 5 psig DW pressure), the correct bounding line is the 10 psig line. 5000 gpm is within the bounds of this curve. D - Incorrect. This distracter is plausible if the candidate incorrectly determines Detail W as the correct NPSH limits. Detail W only applies to ECCS flow rates up to 10,750 gpm total. With 4 LP ECCS pumps running, this would be incorrect. **REQUIRED REFERENCES: DEOP 100 with entry conditions redacted**

None

21 **ID: 27013** **Points: 1.00**

What is the **LOWEST** RPV level at which adequate core cooling will be assured at a RPV pressure of 600 psig? (Assume injection sources **ARE** available)

A. -143 inches

B. -170 inches

C. -191 inches

D. -209 inches

Answer: D

Question 21 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27013
User-Defined ID:	27013
Cross Reference Number:	
Topic:	21 - 295031.A2.04
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29501LK012.B Reference: TSG, DEOP 0010-00 K/A: 295031.A2.04 4.6*/4.8* K/A: Ability to determine and/or interpret the following as they apply to REACTOR LOW WATER LEVEL: Adequate core cooling CFR: 41.10/4.35 Safety Function: 2 Pedigree: New Level: Memory Explanation: A - Incorrect. This would be the lowest level at which adequate core cooling by SUBMERGENCE would occur if RPV pressure was < 500 psig B - Incorrect. This would be the lowest level at which adequate core cooling by SUBMERGENCE would occur. C - Incorrect. This would be the lowest level at which adequate core cooling would be assured if RPV pressure was < 500 psig. D - Correct. With RPV pressure above 500 psig, level correction must be applied. MSCRWL above 500 psig is -209" **Required References: None.**

None

22 **ID: 27014** **Points: 1.00**

A transient occurred on Unit 2 with the following conditions present:

- Control rods failed to fully insert
- DEOP 400-1 was entered
- All ADS valves were opened

As RPV pressure continues to lower, at what value will RPV injection with condensate and feedwater **FIRST** be required?

A. 650 psig

B. 430 psig

C. 320 psig

D. 250 psig

Answer: D

Question 22 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27014
User-Defined ID:	27014
Cross Reference Number:	
Topic:	22 - 295037.G.1.07
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29502LK041 Reference: DEOP 400-5, DEOP 400-1 K/A: 295037.G.1.07 4.4/4.7 K/A: Ability to evaluate plant performance and make operational judgements based on operating characteristics, reactor behavior, and instrument interpretation: SCRAM Condition Present and Reactor Power Above APRM Downscale or unknown CFR: 41.5/43.5 Safety Function: 1 Level: High Pedigree: New Explanation: A. Incorrect - This would be correct if only 2 ADS valves were opened B. Incorrect - This would be correct if only 3 ADS valves were opened C. Incorrect - This would be correct if only 4 ADS valves were opened D. Correct - This is the correct minimum steam cooling pressure for 5 open ADS valves. Once RPV pressure lowers to below this value, RPV injection is recommenced. **REQUIRED REFERENCES: DEOP 400-5 and DEOP 400-1, with the entry conditions blanked out.**

None

23 **ID: 27017** **Points: 1.00**

Which of the following gamma dose rates will require entry into DEOP 0300-02, RADIOACTIVITY RELEASE CONTROL?

1) 5 mR/hr at the Meteorological Tower
2) 8 mR/hr in the 345 KV switchyard
3) 15 mR/hr at Lift Station
4) 20 mR/hr in the Training Building parking lot

A. 3 **ONLY**

B. 2 and 3 **ONLY**

C. 3 and 4 **ONLY**

D. 1, 2, 3, **AND** 4

Answer: A

Question 23 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	1.00
System ID:	27017
User-Defined ID:	27017
Cross Reference Number:	
Topic:	23 - 295038.A2.01
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29502LK056 Reference: EP-AA-1000, ODCM, DEOP 300-2, EP-AA-1004 Addendum 3 K/A: 295038.A2.01 3.3*/4.3* K/A: Ability to determine and/or interpret the following as they apply to HIGH OFF-SITE RELEASE RATE: Off-site CFR: 41.10/43.5 Safety Function: 9 Pedigree: New Level: High Explanation: A - Correct. Although this is not the highest rad level, this is the only location outside the site-boundary (off-site). B - Incorrect. Although one of these rad levels is in excess of DEOP 300-2 entry conditions, the 345 kv switchyare is on site. This location is commonly thought of as off-site C - Incorrect. Although these rad levels are in excess of DEOP 300-2 entry conditions, this location is on site. This location is commonly thought of as off-site D - Incorrect. Although some of these rad levels are in excess of DEOP 300-2 entry conditions, some of these locations are on site. It is plausible a candidate may interpret off-site as outside the protected area. DEOP 300-2 entry conditions are release rates in excess of EAL Alert values as measured at the site boundary. Knowledge of the site boundly and EAL Alert levels is required to correctly answer the question. **REQUIRED REFERENCES: EP-AA-1004 Addendum 3 and ODCM Figure 1-2.**

None

24 **ID: 27016** **Points: 1.00**

What is the **MAXIMUM** allowable Torus water level per Technical Specification 3.6.2.2 Suppression Pool Water Level?

A. 14 feet 6.5 inches

B. 14 feet 7.5 inches

C. 14 feet 10.5 inches

D. 15 feet 0.0 inches

Answer: C

Question 24 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27016
User-Defined ID:	27016
Cross Reference Number:	
Topic:	24 - 295029.G.2.38
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE223LN001.7 Reference: TS 3.6.2.2 K/A: 295029.G.2.38 3.6 / 4.5 K/A: High Suppression Pool Water Level: Knowledge of conditions and limitations of the facility license CFR: 41.7/41.10/43.1 Safety Function: 5 Level: Memory Pedigree: New Explanation: A - Incorrect. This is the TS MINIMUM allowable value for Torus Water Level. B. Incorrect - This corresponds to a DEOP 200-1 Entry condition for low suppression pool water level. C - Correct. This is the TS MAXIMUM allowable suppression pool water level. TS 3.6.2.2 requires torus water level to be $\geq$ 14 ft. 6.5 in and $\leq$ 14 ft 10.5 in. D. Incorrect - Nominal value for Torus Level is 15 feet on wide range instrumentation **REQUIRED REFERENCES: None.**

None

25 **ID: 27006** **Points: 1.00**

A Reactor Scram occurred and all rods are in.

Standby Liquid was initiated for level control and the following conditions are present:

- "A" squib valve light is lit
- "B" squib valve light is extinguished
- "A" Standby liquid pump is running
- "B" Standby liquid pump is running

What is the status of SBLC injection into the RPV?

A. "A" SBLC pump is injecting **ONLY**

B. "B" SBLC pump is injecting **ONLY**

C. Both "A" and "B" SBLC pumps are injecting at half flow.

D. Both A and B SBLC pumps are injecting at full flow.

Answer: D

Question 25 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27006
User-Defined ID:	27006
Cross Reference Number:	
Topic:	25 - 211000.K5.04
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE209LN001.05 Reference: UFSAR 9.3.5.2, M-33 K/A: 211000.K5.04 3.1 / 3.2 K/A: Knowledge of the operational implications of the following concepts as they apply to STANDBY LIQUID CONTROL SYSTEM: Explosive valve operation CFR: 41.5 Safety Function: 1 Level: Memory Pedigree: New Explanation: A. Incorrect - With both pumps running, they will inject through the cross-connected piping through the B squib valve B. Incorrect - With both pumps running, they will inject through the cross-connected piping through the B squib valve C. Incorrect - SBLC pumps are positive displacement. Each subsystem is designed to pass full flow from both pumps simultaneously D. Correct - Each subsystem is designed to pass full flow from both pumps simultaneously. With both pumps running, they will both be injecting a full flow. **REQUIRED REFERENCES: None.**

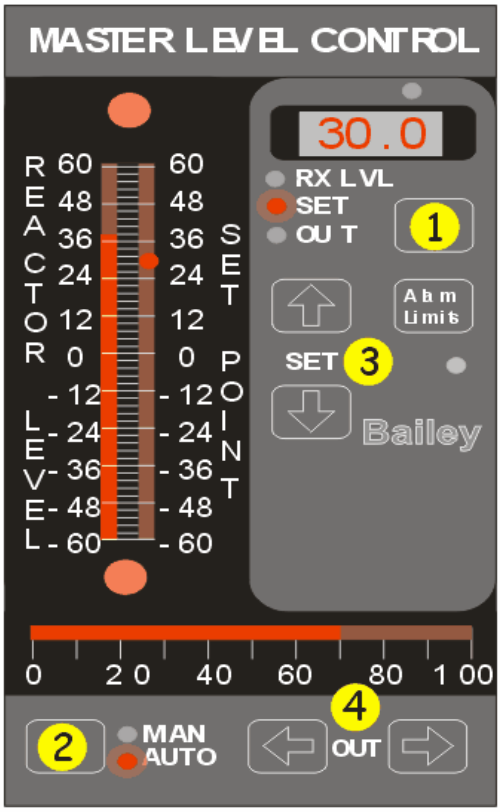
None

26 **ID: 26990** **Points: 1.00**

Unit 2 was operating at near rated power when annunciator 902-5 E-8, RPV LVL HI illuminated.

Provided the indications below, what actions are required to mitigate the transient?

Depress button # ____X____ and then depress the arrow(s) associated with button # ____Y____ .



A. (X) 1;
(Y) 3

B. (X) 1;
(Y) 4

C. (X) 2;
(Y) 3

D. (X) 2;
(Y) 4

Answer: D

Question 26 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	26990
User-Defined ID:	26990
Cross Reference Number:	
Topic:	26 - 295008.A1.01 (Print in Color)
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE259LN002.08 Reference: DAN 902-E-8, DOA 0600-01 K/A: 295008.A1.01 3.7/3.7 K/A: Ability to operate and/or monitor the following as they apply to HIGH REACTOR WATER LEVEL: Reactor water level control: Plant-Specific. CFR: 41.7 Safety Function: 2 Level: High Pedigree: Bank History: 2010 NRC Explanation: A - Incorrect. Depressing (1) will alter information displayed in upper right LCD display. Depressing it once will result in indicated FRV output from controller. B - Incorrect. Adjusting output (4) will have no effect if FRVs are still in manual C - Incorrect. The operator is required to determine that RPV level setpoint is still at +30" and FRVs are not responding correctly. Adjusting RPV level setpoint will have no impact D - Correct. Depressing button (2) will force the FRVs to manual control. Once in manual control the operator can adjust FRV position by depressing (4) as necessary to open or close Main FRVs. **REQUIRED REFERENCES: None.**

None

27 **ID: 27018** **Points: 1.00**

Unit 2 is operating at rated power with the ESS UPS inverter out-of service, when Bus 25 spuriously tripped.

What is the response of the 120 VAC ESS when power is restored to Bus 25?

A. ESS Bus is powered from Bus 29 and will AUTOMATICALLY transfer to the static switch.

B. ESS Bus is powered from Bus 29 and must be MANUALLY transferred to the static switch.

C. ESS Bus is powered from MCC 28-2 and will AUTOMATICALLY transfer to the static switch.

D. ESS Bus is powered from MCC 28-2 and must be MANUALLY transferred to to the static switch.

Answer: D

Question 27 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27018
User-Defined ID:	27018
Cross Reference Number:	
Topic:	27 - 262002.K6.03
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE262LN005.06 Reference: DOP 6800-01 K/A: 262002.K6.03 2.7 / 2.9 K/A: Knowledge of the effect that a loss or malfunction of the following will have on the UNITERRUPTABLE POWER SUPPLY (A.C./D.C): Static Inverter CFR: 41.7 Safety Function: 6 PRA: No Level: High Pedigree: New Explanation: A. Incorrect - Bus 29 normally provides power to the Unit 2 ESS Bus but with the ESS inverter OOS Bus 29 will not provide power. Power supplies to ESS Bus and arrangement in circuit is commonly confused. B. Incorrect - Bus 29 normally provides power to the Unit 2 ESS Bus but with the ESS inverter OOS Bus 29 will not provide power. Power supplies to ESS Bus and arrangement in circuit is commonly confused. C. Incorrect - Power to the ESS Bus through the static switch has been interrupted. This will cause the POWER seeking ABT to transfer ESS Bus to Reserve power provided by MCC 28-2 D. Correct - Power to the ESS Bus through the static switch has been interrupted. This will cause the POWER seeking ABT to transfer ESS Bus to Reserve power provided by MCC 28-2. The ABT must be manually transferred back to the static switch. **Required References: None.**

None

28 **ID: 27019** **Points: 1.00**

Which of the following is designed to allow decay of fission product gases into particulate daughters?

A. Offgas prefilters

B. 310 foot chimney

C. Offgas recombiner

D. 30 minute holdup volume

Answer: D

Question 28 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27019
User-Defined ID:	27019
Cross Reference Number:	
Topic:	28 - 271000.K4.06
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE271LN001.03 Reference: UFSAR 11.3.1.4 K/A: 271000.K4.06 2.7 / 2.9 K/A: Knowledge of OFFGAS SYSTEM design feature(s) and/or interlocks which provide for the following: Decay of fission product gases to particulate daughters CFR: 41.7 PRA: No Safety Function: 9 Level: Memory Pedigree: New Explanation: A. Incorrect - The prefilters remove the particulate daughters that are produced in the holdup volume. B. Incorrect - The 310 foot chimney minimizes ground level dose rates. C. Incorrect - The recombiner noncondensible effluent is the input to the holdup volume. The purpose of the recombiner is to convert the radiolytic hydrogen and oxygen into water. D. Correct - In the holdup piping, the shorter lived radioactive isotopes (principally N-13, N-16, O-19 and certain isotopes of xenon and krypton) decay either to nonradioactive isotopes or radioactive particulate daughter products. **REQUIRED REFERENCES: None.**

None

29 **ID: 27020** **Points: 1.00**

Unit 2 was operating at rated power when a transient occurred, resulting in the following:

- Tlme 12:00:00 the TR-22 Sudden Pressure Relay device activated.
- Time 12:00:01 the Aux Power system "fast transfer" FAILED to occur.

At time 12:00:05, which Condensate/Condensate Booster pumps (if any) currently have electrical power available?

A. NONE

B. Only "A" and "B"

C. Only "C" and "D"

D. ALL

Answer: B

Question 29 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27020
User-Defined ID:	27020
Cross Reference Number:	
Topic:	29 - 256000.K2.01
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE259LN001.03 Reference: Electrical Print 12E-2370 K/A: 256000.K2.01 2.7*/2.8 K/A: Knowledge of the electrical power supplies to the following: System pumps CFR: 41.7 PRA: Yes Safety Function: 2 Level: High Pedigree: Bank History: 2007 NRC Explanation: A - Incorrect. Although the fast transfer failed to occur, Bus 23 still has power. Bus 23 powers the A and B Condensate/Condensate Booster Pumps B - Correct. The candidate must recognize TR-2 powers Bus 23 and although the fast transfer failed to occur, this does not dump loads currently attached to TR-2. Thus, 2A and 2B Condensate/Condensate booster pumps still have power. C - Incorrect. With the failure of the fast transfer power is lost to Bus 24 (C and D Condensate/Condensate Booster Pumps) D - Incorrect. With the failure of the fast transfer power is lost to Bus 24 (C and D Condensate/Condensate Booster Pumps) **REQUIRED REFERENCES: None.**

None

30 **ID: 27021** **Points: 1.00**

Unit 2 was operating at rated power with the following conditions present:

- 2A CRD pump is running.
- 2-0302-6A Flow control valve is OOS.
- 2-0302-6B Flow control valve failed closed.

Which of the following annunciators will alarm **FIRST**?

A. 902-5 A-3, ROD DRIFT

B. 902-5 F-3, ROD DRIVE TEMP HI

C. 902-5 C-2, 2A ROD DRIVE PP SUCT LO

D. 902-5 E-2, ROD DRIVE WATER FILTER DP HI

Answer: B

Question 30 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27021
User-Defined ID:	27015
Cross Reference Number:	
Topic:	30 - 201003.K6.01
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE201LN001.10 References: DAN 902(3)-5 A-3,C-2, E-2, F-3, DOA 0300-01 K/A: 201003.K6.01 3.3 / 3.3 K/A: Ability to determine and/or interpret the following as they apply to LOSS OF CRD PUMPS: CRD mechanism temperatures CFR: 41.5 Safety Function: 1 Level: High Pedigree: New Explanation: A. Incorrect - This alarm would be caused if there was excessive cooling water pressure. This is not the case with the FCV failed shut B. Correct - With the FCV failed shut, CRD cooling water flow is secured. This causes CRD mechanism temperature to rise. If the event is not corrected temperatures will reach alarm setpoint threshold. C. Incorrect - This alarm would be generated by high system flow. Not the case with the FCV failed shut. D. Incorrect - This alarm would be generated if the FCV failed open. **REQUIRED REFERENCES: None.**

None

31 **ID: 27022** **Points: 1.00**

DEOP 400-1, RPV FLOODING has been executed.

Which of the following is an indication the RPV is flooded to the main steam lines?

A. Drywell Pressure: 4 psig
Tail pipe temperature: 230°F

B. Drywell Pressure: 15 psig
Tail pipe temperature: 236°F

C. Drywell Pressure: 9 psig
Tail pipe temperature: 250°F

D. Drywell Pressure: 25 psig
Tail pipe temperature: 267°F

Answer: B

Question 31 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27022
User-Defined ID:	27022
Cross Reference Number:	
Topic:	31 - 218000.A4.06
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29502LK026 Reference: DEOP 0010, Operator Aid 238, EPG Chapter 13 (B-13-15) K/A: 218000.A4.06 3.5 / 3.6 K/A: Ability to manually operate and/or monitor in the control room: ADS valve tail pipe temperature CFR: 41.7 Safety Function: 3 Pedigree: New Level: High Explanation: A. Incorrect - Tail pipe temperature is above the saturation temperature for the given DW pressure B. Correct - Tail pipe temperature is below the saturation temperature for the given DW pressure. This is an indication that subcooled water is emitting from the ERV tailpipes C. Incorrect - Tail pipe temperature is above the saturation temperature for the given DW pressure D. Incorrect - Tail pipe temperature is at the saturation temperature for the given DW pressure **REQUIRED REFERENCES: Operator Aid 238.**

None

32 **ID: 27023** **Points: 1.00**

Unit 2 is at rated power. Hydrogen Addition system startup is in progress.

Which of the following Main Control Room indications is expected after Hydrogen flow has been initiated?

A. Main Steam Line radiation levels rise

B. Main Steam Line radiation levels lower

C. Offgas recombiner outlet temperature lowers

D. Offgas recombiner outlet temperature and Main Steam Line radiation levels remain unchanged.

Answer: A

Question 32 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27023
User-Defined ID:	27023
Cross Reference Number:	
Topic:	32 - 272000.K5.01
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 281LN001.04 Reference: DOP 3290-01, DOP 1600-22 K/A: 272000.K5.01 3.2 / 3.5 K/A: Knowledge of the operational implications of the following concepts as they apply to RADIATION MONITORING SYSTEM: Hydrogen injection operation's effect on process radiation indications: Plant-Specific CFR: 41.7 Safety Function: 7 PRA: No Pedigree: New Level: Memory Explanation: A. Correct - Starting Hydrogen addition will cause radiation levels to rise. This will be indicated in the MCR on the MSL radiation monitors B. Incorrect - Starting Hydrogen addition will cause radiation levels to go up not down. C. Incorrect - Offgas recombiner outlet temperature will go up based on additional hydrogen not down D. Incorrect - Both offgas recombiner and MSL rad levels will change based on hydrogen addition. **REQUIRED REFERENCES: None.**

None

33 **ID: 27056** **Points: 1.00**

Unit 3 was in STARTUP, with the following conditions:

- Step 20 of the CRSP contains Control Rods H-8, F-10, H-6 and K-8 with a rod limit from position 08 to 12.
- Control Rod H-8 is withdrawn to position 12.
- Control Rod F-10 is withdrawn to position 10.

The NSO then selects Control Rod H-6, which is currently at position 08.

What color will Control Rod H-6 be indicated on the RWM?

A. Red inverse video

B. Cyan inverse video

C. Green inverse video

D. Magenta inverse video

Answer: C

Question 33 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27056
User-Defined ID:	27056
Cross Reference Number:	
Topic:	33 - 201006.A1.03
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Objective: DRE201LN006.06 Reference: DOP 0400-02 K/A: 201006.A1.03 2.9 / 3.0 K/A: Ability to predict and/or monitor changes in parameters associated with operating the ROD WORTH MINIMIZER SYSTEM (RWM) (PLANT SPECIFIC) controls including: Latched group indication: P-Spec(Not-BWR6). CFR: 41.5 Safety Function: 7 Level: Memory Pedigree: Bank History: 2002 Quad NRC, 2009 NRC, 2015 NRC Explanation: A - Incorrect. Control rods are in red when they are out of sequence. B - Incorrect. Rods taken out of service are colored cyan. C - Correct. Control rods in the current latched step or selected for CRD exercising are colored green. D - Incorrect. Control rods with insert errors are colored magenta. All RWM video colors are displayed in inverse video when the control rod is selected. **REQUIRED REFERENCES: None.**

None

34 **ID: 27057** **Points: 1.00**

Unit 3 is operating at near rated power, with a Control Rod selected for movement.

- APRM 3 failed downscale.
- APRM 5 failed downscale.

RBM ___(x)___ is downscale AND the operator is required per DOA 0700-03, ROD OUT BLOCKS to bypass APRM(s) ___(y)___ to allow rod withdrawal.

A. (x) 7 ONLY;
(y) 3 ONLY

B. (x) 8 ONLY;
(y) 3 ONLY

C. (x) 7 ONLY;
(y) 3 AND 5

D. (x) 8 ONLY;
(y) 3 AND 5

Answer: C

Question 34 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27057
User-Defined ID:	27057
Cross Reference Number:	
Topic:	34 - 215002.A2.03
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Objective: 215LN002.06 References: DAN 902-5 C-6, LP DRE215LN002, DOP 0700-11, DOA 0700-03, DAN 902(3)-5 C-3 K/A: 215002.A2.03 3.1 / 3.3 CFR: 41.5 Safety Function: 7 Level: Memory Pedigree: Bank History: Explanation: A - Incorrect. RBM 7 reference ARPM is downscale. Bypassing APRM 3 will force APRM 2 into the reference position for RBM 7. APRM 5 downscale will initiate an additional rod block and must be cleared or bypassed before control rods can be withdrawn. B - Incorrect. RBM 8 alternate reference APRM has been lost. No issues with proper operation of RBM 8 will result from conditions in the stem. This requires the candidate to display knowledge of APRM reference channel relationships with RBMs. C - Correct. Although APRM 3 must be bypassed to clear the RBM INOP condition, APRM 5 must be bypassed to allow control rod withdrawal due to the additional control rod block present. D - Incorrect. Incorrect. APRMs 3 and 5 must be bypassed to clear the rod blocks (RBM and APRM downscale). RBM 8 has lost the alternate reference APRM given stem conditions. Normal reference APRM (4) is not affected. **REQUIRED REFERENCES: None.**

None

35 **ID: 27058** **Points: 1.00**

When operating at rated power the FUEL ZONE level indications are . . . . .

A. Lower than actual level due to Recirc Pump flow.

B. Higher than actual level due to Recirc Pump flow.

C. Lower than actual level due to Fuel Zone level instruments being calibrated for hot conditions.

D. Higher than actual level due to Fuel Zone level instruments being calibrated for hot conditions.

Answer: B

Question 35 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27058
User-Defined ID:	27058
Cross Reference Number:	
Topic:	35 - 216000.A3.01
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE216LN001.03 Reference: DEOP 0010-00 K/A: 216000.A3.01 3.4 / 3.4 K/A: Ability to monitor automatic operations of the NUCLEAR BOILER Instrumentation including: Relationship between meter/recorder readings and actual parameter values: Plant-Specific CFR: 41.7 Safety Function: 7 Level: Memory Pedigree: New Explanation: A. Incorrect - FZ level instruments will read higher than actual RPV level due to the occurrence of forced flow from RR pumps. B. Correct - RR pump flow will cause higher than actual indications for FZ level instruments due to forced flow through the jet pumps (location of sensing line for FZ) C. Incorrect - FZ level instruments will read higher than actual RPV level due to FZ level instruments are calibrated for cold conditions. D. Incorrect - FZ level instruments are calibrated for cold conditions. **REQUIRED REFERENCES: None.**

None

36 **ID: 27059** **Points: 1.00**

Instrument Air supply to AO-2-1301-17 U2 ISOL CDSR VENT TO MN STM LINE INBD ISOL VLV was found severed.

What are the expected control room indications for AO-2-1301-17?

A. Red light illuminated. AO-2-1301-17 valve is open.

B. Green light illuminated. AO-2-1301-17 valve is open.

C. Red light illuminated. AO-2-1301-17 valve is closed.

D. Green light illuminated. AO-2-1301-17 valve is closed.

Answer: C

Question 36 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27059
User-Defined ID:	27059
Cross Reference Number:	
Topic:	36 - 295019.A2.02
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 278LN001.08 Reference: DOA 4700-01 K/A: 295019.A2.02 3.6 / 3.7 K/A: Ability to determine and/or interpret the following as the apply to PARTIAL OR COMPLETE LOSS OF INSTRUMENT AIR:Status of safety-related instrument air system loads (see AK2.1-AK2.19): Isolation Condenser CFR: 41.10 Safety Function: 8 Pedigree: New Level: Memory Explanation: A. Incorrect - Red light will be illuminated. 2-1301-17 fails closed via spring assist when IA to valve is lost. 2-1301-17 is normally open during full power operations and position indication is green light lit. B. Incorrect - This is the expected control room indication during normal operations. Plausible because not all valves change positions on a loss of IA C. Correct - Red light for 2-1301-17 valve in the closed position will illuminate. On a loss of IA, the 2-1301-17 fails closed via spring actuator. D. Incorrect - Green light is normal valve position (open for the 2-1301-17). Valve is spring closed on loss of IA. **REQUIRED REFERENCES: None.**

None

37 **ID: 27060** **Points: 1.00**

Unit 2 was operating at rated power when Main Condenser vacuum began degrading.

When are Main Turbine Bypass Valves **FIRST** interlocked closed and why?

A. 7 inHg to prevent over pressurizing the main condenser.

B. 7 inHg to prevent severe and excessive stresses on turbine parts.

C. 20 inHg to prevent over pressurizing the main condenser.

D. 20 inHg to prevent severe and excessive stresses on turbine parts.

Answer: A

Question 37 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27060
User-Defined ID:	27060
Cross Reference Number:	
Topic:	37 - 295002.K3.04
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 245LN001.06 Reference: DOA 3300-02 K/A: 295002.K3.04 3.4/3.6 K/A: Knowledge of the reasons for the following responses as they apply to LOSS OF MAIN CONDENSER VACUUM: Bypass valve closure CFR: 41.5 Safety Function: 2 Pedigree: New Level: Memory Explanation: A. Correct - The main turbine bypass valves are interlocked closed when condenser vacuum drops to 7 inHg to prevent over-pressurizing the main condenser B. Incorrect - 7 inHg is correct. The reason is associated with operating the main turbine at low vacuum (below 23.7 inHg). C. Incorrect - 20 inHg is incorrect. The reason given is correct for 7 inHg. 20 inHg is the turbine trip setpoint for low vacuum. This is below the RPS actuation setpoint for low condenser vacuum with the mode switch in run. D. Incorrect - 20 inHg is incorrect. Operation of the main turbine below 23.7 inHg may cause excessive and severe duties on turbine components. 20 inHg is the turbine trip setpoint for low vacuum. This is below the RPS actuation setpoint for low condenser vacuum with the mode switch in run. **REQUIRED REFERENCES: None.**

None

38 **ID: 27061** **Points: 1.00**

Unit 2 was operating at rated power with the RWM Scram Function **ENABLED**.

A manual scram was inserted on Unit 2 and the Full Core display indicates CRD H-6 remained at its initial position of 20.

The Rod Worth Minimizer will display CRD H-6 position as . . . . .

A. **??** in RED.

B. **??** in YELLOW.

C. **20** in RED.

D. **20** in GREEN.

Answer: C

Question 38 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27061
User-Defined ID:	27061
Cross Reference Number:	
Topic:	38 - 295015.A2.02
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 201LN006.03 Reference: DOP 0400-02 K/A: 295015.A2.02 4.1*/4.2* K/A: Ability to determine and/or interpret the following as they apply to INCOMPLETE SCRAM: Control rod position CFR: 41.10 Safety Function: 1 Pedigree: New Level: Memory Explanation: A. Incorrect - Fully inserted rods are displayed as RED ?? after a scram B. Incorrect - When a scram signal is generated any rods with an unknown position are displayed as YELLOW ?? C. Correct - With a known location (given in the stem) and a scram signal has been generated (given) RWM will display the location of any control rods not at 00 in red D. Incorrect - This would be the correct if CRD H-6 was in sequence and no scram was inserted. **REQUIRED REFERENCES: None.**

None

39 **ID: 27062** **Points: 1.00**

Unit 2 has scrammed and the following conditions exist:

- An steam leak has developed in the HPCI room
- An EO has volunteered to enter the HPCI room to isolate the leak
- The leak CANNOT be isolated from the MCR
- The EO has been briefed and understands the health risks

What is the **MAXIMUM** dose the EO can receive to protect **EQUIPMENT** in the HPCI room?

A. 5 Rem

B. 10 Rem

C. 15 Rem

D. There is no emergency exposure limit when the individual is fully aware and volunteers.

Answer: B

Question 39 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27062
User-Defined ID:	27062
Cross Reference Number:	
Topic:	39 - 295033.K1.02
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: N-NGET-RWT-I/R/RE.23 Reference: RP-AA-203, EP-AA-113 K/A: 295033.K1.02 3.9/4.2* K/A: Knowledge of the operational implications of the following concepts as they apply to HIGH SECONDARY CONTAINMENT AREA RADIATION LEVELS: Personnel protection CFR: 41.8 to 41.10 Safety Function: 9 Pedigree: New Level: Memory Explanation: A. Incorrect - This is the annual federal limit for exposure. B. Correct - The maximum emergency exposure limit to protect valuable property is 10 Rem. C. Incorrect - 15 Rem is the annual federal limit for eye lens exposure D. Incorrect - There is no limit for lifesaving or protection of large populations provided the worker is fully aware of the risks involved. **REQUIRED REFERENCES: None.**

None

40 **ID: 27063** **Points: 1.00**

Unit 2 was operating at rated power with TIP traces in progress when annunciator 902-3 F-14 RX BLDG VENT CH A RAD HI HI alarms.

What is the expected plant response?

A. RB Vent system isolates, SBGT initiates, and TIP withdraws to in-shield position.

B. PCIS Group II isolation occurs, SBGT initiates, and TIP withdraws to in-shield position.

C. PCIS Group II isolation occur and **ONLY** Unit 2 Drywell & Torus Purge Fans receive a trip signal.

D. RB Vent system isolates, SBGT initiates, and Drywell & Torus Purge Fans on **BOTH** units receive a trip signal.

Answer: D

Question 40 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27063
User-Defined ID:	27063
Cross Reference Number:	
Topic:	40 - 295034.K2.06
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE288LN001.06 Reference: DAN 902(3)-5 E-5, DAN 902(3)-3 F-14 K/A: 295034.K2.06 3.9 / 4.2 K/A: Knowledge of the interrelations between SECONDARY CONTAINMENT VENTILATION HIGH RADIATION and the following: PCIS/NSSSS: Plant-Specific CFR: 41.7 Safety Function: 9 Level: Memory Pedigree: New Explanation: A. Incorrect - TIP withdrawal does not occur based on conditions in the stem. Candidate must apply knowledge of system response and which systems are actuated by the failure. B. Incorrect - TIP withdrawal would occur if PCIS group II signal was present. Candidate must apply knowledge of PCIS actuation/initiation setpoints and system inter-relations. No PCIS GRP II signal is present. C. Incorrect - PCIS Group II initiation signal is based on DW rad levels not RB Ventilation radiation levels. D. Correct - Only 1 channel of RB Vent rad Hi-Hi is necessary to cause isolations and actuations. SBGT will initiate, Both Unit 2 and 3 DW and Torus purge fans will receive trip signals, and Both Unit 2 and Unit 3 RB Vent systems will isolate. **REQUIRED REFERENCES: None.**

None

41 **ID: 23986** **Points: 1.00**

Unit 3 was operating at near rated power, when a transient occurred, resulting in Hydrogen generation in the Drywell.

The Hydrogen/Oxygen monitors were started up in accordance with DOP 2400-01, CAM SYSTEM H2 AND O2 DETECTION SUBSYSTEM OPERATION.

What is the **EARLIEST** time that the monitors may be used for determining hydrogen concentration in the primary containment?

A. Immediately after they come on scale.

B. 10 to 15 minutes after they are started up.

C. 7 hours after they are started up.

D. 8 hours after they are started up.

Answer: B

Question 41 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	23986
User-Defined ID:	23986
Cross Reference Number:	
Topic:	41 - 500000.A1.01
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE223LN006.06 Reference: DOP 2400-01 K/A: 500000.A1.01 3.4 / 3.3 K/A: Ability to operate and monitor the following as they apply to HIGH CONTAINMENT HYDROGEN CONTROL: Primary containment hydrogen instrumentation CFR: 41.7 / 45.6 Safety Function: 5 Level: Memory Pedigree: Bank History: Explanation: A. Incorrect - The recorders must stabilize for 10 to 15 minutes before readings may be taken. B. Correct - When readings on the monitors stabilize (after approximately 10 to 15 minutes of operation), THEN hydrogen AND oxygen readings can be taken. C. Incorrect - 7 hours would need to be waited, if the heat trace and box heaters had failed, which are not indicated by the stem. D. Incorrect - The 8 hour period is commonly mistaken, since it is the time limit for multiple equipment restoration requirements. **REQUIRED REFERENCES: None.**

Question 41 Table-Item Links

General Question Data - Site Ownership

Dresden

General Question Data - Ops Program

Reactor Operator

42 **ID: 27065** **Points: 1.00**

Unit 2 was operating at near rated power when a transient occurred causing the Operating team to initiate the Isolation Condenser for pressure control.

The following indications are reported:

- Isolation Condenser level is 8 ft. and rising slowly.
- Isolation Condenser vent rad is reading 13 mrem/hr and rising steadily.

With NO operator action, the above conditions will result in . . . . .

A. a loss of reactor water inventory.

B. a PCIS Group 4 containment isolation.

C. increased makeup flow to the Isolation Condenser.

D. NO adverse consequences since this is normal system response.

Answer: A

Question 42 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27065
User-Defined ID:	27065
Cross Reference Number:	
Topic:	42 - 207000.K3.02
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* K/A: Knowledge of the effect that a loss or malfunction of the ISOLATION (EMERGENCY) CONDENSER will have on following: †Reactor water level (EPG's address the isolation condenser as a water source): BWR-2,3 CFR: 41.7 Safety Function: 4 Level: High Pedigree: Bank History: 2006 NRC, 2011 Cert Explanation: A. Correct - 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. B. Incorrect - Group 4 is for HPCI, not the Isolation Condenser. C. Incorrect - Makeup flow to the Isolation Condenser is NOT controlled automatically. D. Incorrect - Based on the tube leak indications. **REQUIRED REFERENCES: None.**

None

43 **ID: 27207** **Points: 1.00**

Unit 2 was operating at rated power when a transient occurred causing Drywell pressure to reach 5.5 psig.

With **NO** Operator actions, what would be the cooling medium to the ECCS room coolers?

A. CCSW

B. RBCCW

C. Service Water

D. ECCS Keepfill

Answer: C

Question 43 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27207
User-Defined ID:	27207
Cross Reference Number:	
Topic:	43 - 209001.K1.12
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE276LN001.02 Reference: DOS 1500-02, DOP 3900-M2 K/A: 209001.K1.12 2.9 / 3.1 K/A: Knowledge of the physical connections and/or cause-effect relationships between LOW PRESSURE CORE SPRAY SYSTEM and the following: ECCS room coolers CFR: 41.2 to 41.9 Safety Function: 2 Level: Memory Pedigree: New Explanation: A. Incorrect - If CCSW was running, but is not at this point, it would be it would be diverted to the EECS room coolers. B. Incorrect. RBCCW cools most heat exchangers located in the RX Bldg, but not the ECCS room coolers. C. Correct - With no Operator action, the ECCS room coolers are cooled by the Service Water system. Core Spray and LPCI pumps are located in the ECCS rooms. D. Incorrect - The ECCS keepfill system is used to keep the LPCI/Core Spray headers full, not to cool the room coolers. **REQUIRED REFERENCES: None.**

None

44 **ID: 27067** **Points: 1.00**

Unit 2 was operating at rated power when Bus 28 tripped.

What is the expected plant response?

A. RPS Channel A half scram **ONLY**.

B. RPS Channel B half scram **ONLY**.

C. RPS Channel A half scram and MR "A" level indication on 902-5 panel fails downscale.

D. RPS Channel B half scram and MR "B" level indication on 902-5 panel fails downscale.

Answer: D

Question 44 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27067
User-Defined ID:	27067
Cross Reference Number:	
Topic:	44 - 212000.K3.05
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE212LN001.06 Reference: DOP 0500-03, DEOP 0010 K/A: 212000.K3.05 3.7 / 3.8 K/A: Knowledge of the effect that a loss or malfunction of the REACTOR PROTECTION SYSTEM will have on the following: RPS logic channels CFR: 41.7 Safety Function: 7 PRA: Yes Level: High Pedigree: New Explanation: A. Incorrect. MCC 28-2 feeds "A" RPS MG set which powers RPS Bus "B". "A" RPS Bus is not affected. B. Incorrect. MCC 28-2 ultimately feeds "B" RPS Bus. However, MR A level instrument is powered by MCC 29-1 (Via ATS panel) C. Incorrect. "A" RPS Bus is not affected and "A" MR level instrument is not affected. D. Incorrect - MCC 28-2 ultimately feeds "B" RPS Bus. MR "B" level instrument is powered by MCC 28-1 (Via ATS panel). With a loss of Bus 28, a loss of power to MCCs 28-1 and 28-2 occurs. **REQUIRED REFERENCES: None.**

None

45 **ID: 27068** **Points: 1.00**

A transient has occurred on Unit 2 resulting in the following:

- Drywell Pressure: 2.5 psig and slowly rising
- RPV Pressure is 800 psig and slowly lowering
- The Unit Supervisor has directed initiation of Torus Sprays
- Torus Cooling has NOT been established

What is the current status of the 2-1501-13A(B), LPCI MIN FLOW VALVES and what is the expected response to initiation of Torus Sprays?

A. Currently OPEN and will REMAIN OPEN once full Torus Spray flow has been established.

B. Currently OPEN and will CLOSE once full Torus Spray flow has been established

C. Currently CLOSED and will REMAIN CLOSED once full Torus Spray flow has been established

D. Currently CLOSED and will OPEN once full Torus Spray flow has been established

Answer: A

Question 45 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27068
User-Defined ID:	27068
Cross Reference Number:	
Topic:	45 - 230000.A4.04
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE203LN001.06 Reference: M-29, DOS 1500-15, TS 3.3.5.1, DOP 0010-10, DIS 1500-14 K/A: 230000.A4.04 3.1 / 2.9 K/A: Ability to monitor automatic operations of the RHR/LPCI: TORUS/SUPPRESSION POOL SPRAY MODE including: Minimum flow valves CFR: 41.7 Safety Function: 5 PRA: Yes Level: High Pedigree: New Explanation: A. Correct - Normal position of 2-1501-13A/B is open. Torus Spray flow (250 gpm) is insufficient to cause closure. 2-1501-13A/B close when flow is 1211 gpm B. Incorrect - This would be correct if Drywell Sprays were initiated. C. Incorrect - This answer is plausible if the candidate assumes sufficient flow due to autostart on DW pressure. D. Incorrect - This answer is plausible if the candidate does not understand operation of min flow valve logic. **REQUIRED REFERENCES: None.**

None

46 **ID: 27069** **Points: 1.00**

Where can the Unit 3 **OUTBOARD** MSIVs be closed from?

A. From the 903-3 Panel **ONLY**

B. From the 903-3 Panel **AND** the 2/3 EDG room **ONLY**

C. From the 903-3 Panel **AND** adjacent to the X-Area **ONLY**

D. From the 903-3 Panel, the 2/3 EDG room, and adjacent to the X-Area

Answer: C

Question 46 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27069
User-Defined ID:	27069
Cross Reference Number:	
Topic:	46 - 239001.G.1.30
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 239LN001.05 Reference: DSSP 0100-CR, DSSP-0100-E/F K/A: 239001.G.1.30 4.4/4.0 K/A: Ability to locate and operate components, including local controls: Main and Reheat Steam CFR: 41.7 Safety Function: 3 Pedigree: New Level: Memory Explanation: A. Incorrect - This is correct for the INBOARD MSIVs. B. Incorrect - IC valves can be controlled from the 2/3 EDG room, not MSIVs. C. Correct - Outboard MSIVs may be operated via Control Switch on the 903-3 panel or closed via venting IA from the actuator adjacent to the x-area D. Incorrect - Unit 3 IC valves can be isolated from the TIPs room, not MSIVs. **REQUIRED REFERENCES: None.**

None

47 **ID: 27070** **Points: 1.00**

Unit 2 was operating at 600 MWe for engineering evaluation post outage when an EHC malfunction caused ALL Main Turbine control valves to fail **FULL OPEN**.

One (1) minute later, with no operator action, which PCIS isolation(s) (if any) have occurred?

A. Group I **ONLY**

B. Group II and III **ONLY**

C. Group I, II, **AND** III

D. **NO** PCIS Group isolations will have occurred.

Answer: C

Question 47 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27070
User-Defined ID:	27070
Cross Reference Number:	
Topic:	47 - 241000.K1.38
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 241LN001.12A Reference: DOA 5650-03, DAN 902(3)-5 D-4, D-5, E-5, G-7, UFSAR Figure 15.1-7, 15.1-8 K/A: 241000.K1.38 2.7/2.8 K/A: Knowledge of the physical connections and/or cause-effect relationships between REACTOR/TURBINE PRESSURE REGULATING SYSTEM and the following: PCIS/NSSSS: Plant-Specific CFR: 41.2 to 41.9 Safety Function: 3 Pedigree: New Level: High Explanation: A. Incorrect - Group II and III isolations will occur based on FWLC setpoint setdown B. Incorrect - Group II and III isolations are resultant of actions from group I isolation C. Correct - With 2 control valves failed full open RPV pressure will drop rapidly. When MSL pressure reaches 827 psig with the mode switch in RUN, a PCIS group I will occur. When MSIVs reach 9.5% closed, RPS actuation will resulting in a full scram. Upon scram, FWLC setpoint setdown will drive RPV level to < +8", will result in a PCIS Group II and III isolation. D. Incorrect - PCIS group I, II, and III isolations will occur. Plausible if candidate does not recall MSL low pressure (w/ mode switch in run) PCIS Group I isolation signal. **REQUIRED REFERENCES: None.**

None

48 **ID: 27071** **Points: 1.00**

Unit 2 was operating at rated power when a transient occurred resulting in the following:

- Drywell pressure is 2.0 psig and rising 0.1 psig/min
- RPV level reached +55" and is lowering at 5 inches/min

With no operator action, how will adequate core cooling be maintained?

A. HPCI will auto-start when RPV level reaches -59"

B. RFPs will auto-start when RPV level drops below the RFP High Level Trip setpoint

C. ADS actuation will occur in 2 minutes and LP ECCS systems will recover RPV level

D. ADS actuation will occur in 8.5 minutes and LP ECCS systems will recover RPV level

Answer: A

Question 48 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27071
User-Defined ID:	27071
Cross Reference Number:	
Topic:	48 - 259001.K3.03
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 259LN001.12 Reference: DAN 902(3)-6 E-7, F-7 DAN 902(3)-3 A-9 K/A: 259001.K3.03 3.3/3.3 K/A: Knowledge of the effect that a loss or malfunction of the REACTOR FEEDWATER SYSTEM will have on the following: HPCI: Plant-Specific CFR: 41.7 Safety Function: 2 Pedigree: New Level: High Explanation: A. Correct - When RPV level reaches -59" (nominal) HPCI will restart based on RPV level. B. Incorrect - RFPs do not restart following high level trip setpoint being cleared. Trip signal is cleared but they must be manually restarted. C. Incorrect - ADS actuation will not occur until RPV level lo-lo and DW pressure Hi are concurrent for 2 minutes D. Incorrect - ADS actuation on RPV level lo-lo only will occur after 8.5 minute time delay. **REQUIRED REFERENCES: None.**

None

49 **ID: 23974** **Points: 1.00**

Unit 2 was operating at rated power when a transient occurred, causing Unit 2 RPV level to drop to -5 inches.

The expected Reactor Building ventilation response would be that . . . . .

A. Vent fans ONLY trip on Unit 2 ONLY.

B. Exhaust fans ONLY trip on Unit 2 ONLY.

C. Vent AND Exhaust fans trip on Unit 2 ONLY.

D. Vent AND Exhaust fans trip on Unit 2 AND Unit 3.

Answer: D

Question 49 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	23974
User-Defined ID:	23974
Cross Reference Number:	
Topic:	49 - 288000.A3.01
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE288LN001.06 Reference: DANs 902-5 E-5, 923-5 A-1 K/A: 288000.A3.01 3.8 / 3.8 K/A: Ability to monitor automatic operations of the PLANT VENTILATION SYSTEMS including: Isolation/initiation signals. CFR: 41.7 / 45.7 Safety Function: 9 Level: High Pedigree: Bank Explanation: A. Incorrect - Both the vent and supply fans will trip. B. Incorrect - Both the vent and supply fans will trip. C. Incorrect - Upon a Group 2 isolation signal is received on either unit, both unit's Reactor Building fans will trip, allowing SBGT to be the ventilation. D. Correct - When RPV water level drops <6 inches, a Group 2 isolation signal is received, causing vent and exhaust fans on both units to trip, allowing SBGT to auto start. **REQUIRED REFERENCES: None.**

Question 49 Table-Item Links

General Question Data - Site Ownership

Dresden

General Question Data - Ops Program

Reactor Operator

50 **ID: 27072** **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 SDC pump is running.
- When starting the 2B SDC pump RPV level drops to +5 inches..

Based on these conditions, 30 seconds later the SDC . . . . .

A. pumps **ONLY** will trip.

B. system will isolate **ONLY**.

C. system will remain in service.

D. system will isolate AND SDC pumps will trip.

Answer: D

Question 50 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27072
User-Defined ID:	27072
Cross Reference Number:	
Topic:	50 - 205000.K1.02
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE205LN001.06 Reference: DAN 902-4 H-4, DOA 1000-01, 12E-2508, 902(3)-4 B-23, DAN 902-5 D-5 K/A: 205000.K1.02 3.6/3.6 K/A: Knowledge of the physical connections and/or cause-effect relationships between SHUTDOWN COOLING SYSTEM (RHR SHUTDOWN COOLING MODE) and the following: Reactor water level CFR: 41.2 to 41.9 Safety Function: 4 Level: High Pedigree: New Explanation: A. is incorrect - SDC pump trip and system isolation are driven by separate signals. Pump trip is based on low suction pressure for 7 seconds, and the system isolation is based on a Group III signal at +8 inches. Both signals would be present. B. is incorrect - SDC pump trip and system isolation are driven by separate signals. Pump trip is based on low suction pressure for 7 seconds, and the system isolation is based on a Group III signal at +8 inches. Both signals would be present.. SDC valve isolation is driven by pressure transmitters (100 psig). C. is incorrect - Both the 2A which was already running and the 2B which was being started will receive isolation signals due to level and close the suctions valves which will trip the pumps after a 7 second time delay. D. is correct - SDC pump trip and system isolation are driven by separate signals. Pump trip is based on low suction pressure for 7 seconds, and the system isolation is based on a Group III signal at +8 inches. **REQUIRED REFERENCES: None.**

None

51 **ID: 27076** **Points: 1.00**

Both Units were operating at near rated power, when a trashcan fire is reported in the Dresden Cafeteria.

The Operating Team entered DOA 0010-10, FIRE/EXPLOSION.

Which of the following are required Operator actions per DOA 0010-10?

1) Initiate the Plant Fire Siren
2) Announce the location on the Public Address System
3) Dispatch the Incident Commander and Fire Brigade

A. 3 ONLY

B. 1 and 2 ONLY

C. 1 and 3 ONLY

D. 1, 2, AND 3

Answer: D

Question 51 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27076
User-Defined ID:	27076
Cross Reference Number:	
Topic:	51 - 600000.K1.02
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29501LK080 Reference: DOA 0010-10 K/A: 600000.K1.02 2.9 / 3.1 K/A: Knowledge of the operational applications of the following concepts as they apply to Plant Fire On Site: Fire Fighting CFR: 41.7 Safety Function: 6 PRA: Yes Level: High Pedigree: New Explanation: A - Incorrect - This is the only immediate action contained in DOA 0010-10, however this is not the only required action. B. Incorrect - Announcing location of fire on Site Public Address System is required. Plausible because the site PA and the fire siren are both methods of alerting personnel to a fire. C - Incorrect. The IC/Fire brigade must be dispatched. This is plausible if the candidate does not recognize the cafeteria as a realm of responsibility since it is located outside the plant. Cafeteria is located inside the protected area but contains no Safe Shutdown equipment. D - Correct. When a fire occurs inside the protected area the IC and fire brigade must be dispatched (Immediate Action of DOA 0010-10), the fire siren sounded (twice), and the location of the fire announced over the plant PA system. **REQUIRED REFERENCES: None.**

None

52 **ID: 27079** **Points: 1.00**

Both Units were operating at rated power when the following occurred:

- 345Kv L1220 experienced a fault.
- 345Kv BT 4-5 CB did NOT open.
- 345Kv BT 5-6 CB responded as designed.

Based on the above failure, which of the following breaker(s) **WILL OPEN** from a Local Breaker Backup trip signal, with regards to the Dresden Switchyard system?

A. 345Kv BT 3-4 **ONLY**

B. 345Kv BT 3-4
AND
345Kv BT 4-8

C. 345Kv BT 4-8 **ONLY**

D. 345Kv BT 4-8
AND
345Kv BT 6-7

Answer: A

Question 52 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27079
User-Defined ID:	27079
Cross Reference Number:	
Topic:	52 - 700000.G.1.28
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE262LN003.06 Reference: DOP 6400-13, 12E-2950A K/A: 700000.G.1.28 4.1 / 4.1 K/A: Generator Voltage and Electric Grid Disturbances: Knowledge of the interrelations between GENERATOR VOLTAGE AND ELECTRIC GRID DISTURBANCES and the following: Knowledge of the purpose and function of major system components and controls. CFR: 41.7 Safety Function: 6 PRA: Yes Level: High History: New Explanation: A. Correct - With a fault on L1220, breakers 4-5 and 5-6 BOTH should open to isolate the line. When 4-5 fails to open, a local breaker backup signal is sent to circuit breakers 3-4 and 4-8, but 4-8 is normally open, with both units operating at full power, and will not trip. B. Incorrect - Breaker 3-4 will trip from a local breaker backup signal, but breaker 4-8 is normally open, with both units operating at full power, and will not trip from a signal. C. Incorrect - Breaker 4-8 4-8 is normally open, with both units operating at full power, and will not trip from a signal. D. Incorrect - Breaker 6-7 would only be correct if the fault was on adjacent line L1123 and breaker 1-7 failed to open. **REQUIRED REFERENCES: None.**

None

53 **ID: 27081** **Points: 1.00**

Unit 2 was operating at rated power, with the 2B CRD pump operating, when a transient occurred, resulting in the following:

- The 2B CRD pump breaker tripped.
- Ten (10) seconds later, the 2A CRD pump 4KV breaker indications on the 902-5 panel extinguished.

To restore remote starting capability of the 2A CRD Pump, the Operating Team must transfer ___(1)___ control power to ___(2)___ .

A. (1) Bus 23
(2) 2A-1 Dist Panel

B. (1) Bus 23
(2) 2B-1 Dist Panel

C. (1) Bus 23-1
(2) 2B-1 Dist Panel

D. (1) Bus 23-1
(2) U2 Rx Bldg Dist Panel

Answer: B

Question 53 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27081
User-Defined ID:	27081
Cross Reference Number:	
Topic:	53 - 262001.K5.02
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE262LN001.12 Reference: DOA 6900-T1 K/A: 262001.K5.02 2.6 / 2.9 K/A: Knowledge of the operational implications of the following concepts as they apply to A.C. ELECTRICAL DISTRIBUTION: Breaker control CFR: 41.5 / 45.3 Safety Function: 6 PRA: Yes Level: High Pedigree: New Explanation: A. Incorrect - 2A CRD pump is powered from Bus 23. 2A-1 is the normal control power source to Bus 23-1 and has been lost per the stem B. Correct - The 2A CRD pump is powered from Bus 23. Bus 23 reserve control power 2B-1. C. Incorrect - The 2A CRD Pump is not powered from Bus 23-1. The reserve control power to Bus 23-1 is 2B-1. D. Incorrect - The 2A CRD Pump is not powered from Bus 23-1, and the normal control power to Bus 23-1 is the U2 Rx Bldg Dist Panel. **REQUIRED REFERENCES: None.**

None

54 **ID: 27082** **Points: 1.00**

Unit 3 was operating at rated power with Division 1 ECCS pumps O.O.S. when a LOCA occurred resulting in the following:

- RPV level is -160" and recovering
- Division 2 LPCI and CS pumps are injecting
- Discharge pressure and flow indications for LPCI and CS pumps are erratic

This is an indication the ___(1)___ and the operator must___(2)___ .

A. (1) ECCS suction strainers are clogged
(2) throttle the ECCS pump **SUCTION** valves closed

B. (1) ECCS suction strainers are clogged
(2) throttle the ECCS pump **DISCHARGE** valves closed

C. (1) CST water level is insufficient
(2) verify LP ECCS pump suction has **AUTOMATICALLY** swapped to torus

D. (1) Torus water level is insufficient
(2) verify LP ECCS pump suction has **AUTOMATICALLY** swapped to CST

Answer: B

Question 54 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27082
User-Defined ID:	27082
Cross Reference Number:	
Topic:	54 - 203000.G.2.44
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 203LN001.08 Reference: NRC Bulletin 93-02, DOP 1500-07 K/A: 203000.G.2.44 4.2/4.4 K/A: Ability to interpret control room indications to verify the status and operation of a system, and understand how operator actions and directives affect plant and system conditions: RHR/LPCI: Injection mode CFR: 41.5 Safety Function: 2 PRA: Yes Pedigree: New Level: High Explanation: A. Incorrect - The cause of the condition is correct. Throttling closed the pump suction valves will exacerbate the condition not improve it. B. Correct - Erratic pump flows and discharge pressures is an indication of ECCS suction strainer clogging. Throttling closed the pump discharge valves will lessen the impact of the clogging. C. Incorrect - LP ECCS pumps are not normally aligned to CST. (HPCI is normally aligned to CST). D. Incorrect - Low torus water level would lead to the same indications however autoswap to CST suction applies to HPCI only. **REQUIRED REFERENCES: None.**

None

55 **ID: 27085** **Points: 1.00**

Unit 2 was operating at rated power when Drywell Pressure increased to 2.5 psig.

Thirty (30) seconds later, a thunderstorm caused a fault and subsequent trip of 345KV BT 2-3, and 3-4 CBs.

Ninety (90) seconds later, which of the following is the current lineup?

A. Bus 21 is energized
Bus 25 is energized from Bus 26

B. Bus 21 is NOT energized
Bus 25 is energized from Bus 27

C. Bus 22 is energized
Bus 25 is energized from Bus 26

D. Bus 22 is NOT energized
Bus 28 is energized from Bus 23-1

Answer: D

Question 55 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27085
User-Defined ID:	27085
Cross Reference Number:	
Topic:	55 - 262001.A1.05
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE262LN001.12 Reference: DOP 6400-13, DAN 902-5 D-11, DAN 923-2 A-2, 12E-2301 sht 2 K/A: 262001.A1.05 3.2 / 3.5 K/A: Ability to predict and/or monitor changes in parameters associated with operating the A.C. ELECTRICAL DISTRIBUTION controls including: Breaker lineups CFR: 41.5 / 45.5 Safety Function: 6 PRA: Yes Level: High Pedigree: New Explanation: A. Incorrect - Bus 21 will not be energized due to RX Scram based on DW pressure and subsequent loss of off-site power. Bus 26 will not be energized, so it cannot energize Bus 25. B. Incorrect - Bus 27 is not energized, so it cannot energize Bus 25. Powering Bus 25 from Bus 27 is a manual action. (Unable to be performed in this situation due to lack of power to Bus 27) C. Incorrect - Bus 26 will not be energized, so it cannot energize Bus 25. On a loss of Bus 25, Bus 26 will automatically attempt to power Bus 25 (This will not occur due to loss of power to Bus 26) D. Correct - Drywell pressure greater than 2.0 psig will cause a Reactor scram and loss of Div 1 power, then all Busses will be supplied from Div 2. Then a loss of the 345KV OCBs will cause a loss of TR-86, causing a loss of off-site power and the loss of Div 2. With no Div 1 or Div 2 power, Bus 22 will not be energized. **REQUIRED REFERENCES: None.**

None

56 **ID: 27087** **Points: 1.00**

Unit 2 was operating at rated power with the 2A, 2B, 2C and 2D CCSW Pumps running to support Torus Cooling, when an NSO reported that the 2A CRD Pump lost power due to BUS OVERCURRENT.

Which (if any) of the CCSW Pumps would still be running?

A. **NONE**

B. 2A and 2B **ONLY**

C. 2C and 2D **ONLY**

D. 2A, 2B, 2C, **AND** 2D

Answer: C

Question 56 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27087
User-Defined ID:	27087
Cross Reference Number:	
Topic:	56 - 400000.K2.01
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE208LN001.12 Reference: DAN 902-8 G-3, DOS 6700-04 K/A: 400000.K2.01 2.9 / 3.0 K/A: Knowledge of electrical power supplies to the following: CCW pumps Safety Function: 8 CFR: 41.7 Level: High Pedigree: New Explanation: A. Incorrect - The 2C and 2D CCSW pumps are powered by Bus 24, which has not experienced a loss of power, so they would continue running. B. Incorrect - The 2A and 2B CCSW are powered by Bus 23, which has lost power, causing the pumps to become de-energized and not running. C. Correct - The 2A CRD pump is powered by Bus 23, which experienced an overcurrent condition, causing it to become de-energized. The 2A and 2B CCSW pumps are also powered by Bus 23, and also would have lost power and would not be running. The 2C and 2D CCSW pumps are powered by Bus 24, which is still energized, so they would continue running. D. Incorrect - The 2A and 2B CCSW are powered by Bus 23, which has lost power, causing the pumps to become de-energized and not running, while the 2C and 2D would still be energized by Bus 24 and running.. **REQUIRED REFERENCES: None.**

None

57 **ID: 24221** **Points: 1.00**

DOS 7500-02, SBGT SYSTEM SURVEILLANCE AND IST TEST is in progress for post maintenance testing for the 'A' SBGT, when 902-3 F-14, RX BLDG VENT CH A RAD HI-HI is received.

The Operating team reports both CH A and CH B Rx Bldg Vent monitors on the 902-10 panel indicate 5.8 mr/hr.

The Operating team is required to . . . . .

A. Place C/S for running SBGT train to PRI.

B. Place C/S for non-running SBGT train to PRI.

C. Verify ONLY U2 RB Vent damper isolation has occurred.

D. Verify PCIS GRP III has occurred and SBGT flow rate is within limits.

Answer: B

Question 57 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	24221
User-Defined ID:	24221
Cross Reference Number:	
Topic:	57 - 261000.A2.13
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE261LN001.08 Reference: DOP 7500-01, DOS 7500-02 K/A: 261000 A2.13 3.4/3.7 K/A: Ability to (a) predict the impacts of the following on the STANDBY GAS TREATMENT SYSTEM ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: High secondary containment ventilation exhaust radiation CFR: 41.5 Safety Function: 9 PRA: No Level: High Pedigree: Bank History: 2015 NRC Explanation: A. Incorrect - With BOTH channels A and B of RB Vent Radiation monitors above 4 mr/hr SBGT receives an autostart signal. If an autostart signal is received during post maintenance testing, the operator is directed to place the CS for the running train to STBY. B. Correct - The set point for the alarm is also the setpoint for RB Vent trip and SBGT auto start. With the A Train already running the operator must understand that the non-running train must be placed in primary to allow for proper operation with all automatic functions activated. With BOTH channels A and B of RB Vent Radiation monitors above 4 mr/hr SBGT receives an autostart signal. If an autostart signal is received during post maintenance testing, the operator is directed to place the CS for the non-running train to PRI. C. Incorrect – The DOS directs the operator in these conditions to verify the RB Vent isolation on the 923-4 panel vice the 923-5 panel D. Incorrect - The conditions in the stem represent conditions necessary to actuate PCIS GRP II. A PCIS GRP III signal is not present. **REQUIRED REFERENCES: None.**

Question 57 Table-Item Links

General Question Data - Site Ownership

Dresden

General Question Data - Ops Program

Reactor Operator

58 **ID: 27090** **Points: 1.00**

Unit 2 startup is in progress with all IRMs on Range 7 or 8 when IRM 16 fails upscale.

What is the expected plant response?

A. Full scram

B. RPS Channel A half scram and control rod block

C. RPS Channel B half scram and control rod block

D. Alarm only. No actuations will occur based on current power level.

Answer: C

Question 58 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27090
User-Defined ID:	27090
Cross Reference Number:	
Topic:	58 - 215003.A1.03
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 215LN003.12A Reference: DOP 0700-02, DAN 902(3)-5 C-10, A-5, B-12 K/A: 215003.A1.03 3.6/3.7 K/A: Ability to predict and/or monitor changes in parameters associated with operating the INTERMEDIATE RANGE MONITOR (IRM) SYSTEM: RPS status CFR: 41.5 Safety Function: 7 Pedigree: New Level: High Explanation: A. Incorrect - This would be correct if the RPS shorting links were removed. B. Incorrect - This is the incorrect RPS tie. IRMs 11,12,13, and 14 are inputs to A RPS channel C. Correct - IRM 16 inputs to the B channel of RPS D. Incorrect - This would be correct if the mode switch was in run. The candidate must analyze the conditions to determine the position of the mode switch (Startup) based on IRM readings **REQUIRED REFERENCES: None.**

None

59 **ID: 27091** **Points: 1.00**

Unit 2 was operating at rated power, when a transient caused a loss of the **STEAM FLOW** signal to the Bailey Feedwater Level Control (FWLC) System.

How will the FWLC system respond?

A. The FWRVs will lock-up.

B. The FWLC system will enter SETPOINT SETDOWN.

C. The FWLC system will enter SINGLE ELEMENT control.

D. The FWLC system will transfer from AUTO to MANUAL.

Answer: C

Question 59 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27091
User-Defined ID:	27091
Cross Reference Number:	
Topic:	59 - 259002.A3.03
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE259LN002.06 Reference: DAN 902-5 G-8 K/A: 259002.A3.03 3.2 / 3.2 K/A: Ability to monitor automatic operations of the REACTOR WATER LEVEL CONTROL SYSTEM including: Changes in main steam flow CFR: 41.7 / 45.7 Safety Function: 2 PRA: Yes Pedigree: Bank Level: High Explanation: A - Incorrect - The FWRVs would only lock up as-is, if there is a loss of Instrument Air to them. B - Incorrect - Setpoint setdown is entered only if two of the level inputs are lost. C - Correct - With the Bailey feedwater level control system operating in 3-element control, and experiencing a loss one of its input signals (steam or feed flow), then it will transfer to single element. D - Incorrect - FWLC would transfer to manual if the position of the FRVs could not be determined. (Loss of valve position signal) **REQUIRED REFERENCES: None.**

None

60 **ID: 27093** **Points: 1.00**

Dresden is operating the Cooling Lake in the Indirect Open Cycle mode.

Per the Dresden Station NPDES permit and Station Operating Procedures, what is the **HIGHEST** allowable Cooling Lake Discharge Canal effluent cooling water temperature?

A. 85

B. 90

C. 93

D. 95

Answer: C

Question 60 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27093
User-Defined ID:	27093
Cross Reference Number:	
Topic:	60 - Generic.1.32
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Objective: DBIG NPDES-01.03 Reference: DOP 4450-08 K/A: Generic.1.32 3.8 / 4.0 K/A: Ability to explain and apply system limits and precautions CFR: 41.10 / 43.2 / 45.12 Level: Memory Pedigree: Bank Explanation: A. Incorrect - 85ºF is the temperature limit for Diesel Generator Cooling Water Pumps intake limit. B. Incorrect - 90ºF is the temperature limit, that can be exceeded during In-direct open cycle for 10% of the hours (259.2) between June 15th to September 30. C. Correct - Per the NPDES permit, discharge canal effluent must be maintained less than 93ºF D. Incorrect - 95ºF is the Tech Spec limit in the canal that all containment cooling heat exchangers must be declared inoperable and both units must be in Hot Shutdown within 12 hours and cold shutdown in the next 24 hours. **REQUIRED REFERENCES: None.**

None

61 **ID: 27094** **Points: 1.00**

Unit 2 is in STARTUP with all IRMs on range 4 or 5.

Which of the following rod blocks are automatically bypassed in this condition?

A. SRM HI

B. SRM INOP

C. APRM INOP

D. SRM NOT FULL IN

Answer: D

Question 61 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27094
User-Defined ID:	27094
Cross Reference Number:	
Topic:	61 - 215004.K4.06
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 215LN004.06 Reference: DOP 0700-01, DAN 902(3)-5 C-3, A-4, C-12 K/A: 215004.K4.06 3.2 / 3.2 K/A: Knowledge of SOURCE RANGE MONITOR (SRM) SYSTEM design feature(s) and/or interlocks which provide for the following: IRM/SRM interlock CFR: 41.7 Safety Function: 7 Pedigree: New Level: Memory Explanation: A. Incorrect - This rod out block is not bypassed until IRMs are on range 7 or higher B. Incorrect - This rod out block is not bypassed until IRMs are on range 8 or higher C. Incorrect - This rod out block is not mode dependent. This is plausible because APRMs are downscale and provide no useable feedback at this power level D. Correct - This rod out block is bypassed when IRMs are on range 3 or higher **REQUIRED REFERENCES: None.**

None

62 **ID: 27095** **Points: 1.00**

Unit 2 was operating at near rated power, when a scram signal occurred. The following parameters are observed:

- RPV pressure is 920 psig.
- RPV water level is +5 inches.
- Drywell pressure is 1.2 psig.
- APRMs are cycling between 8% and 10%.
- ALL RPS Channel 'A' and 'B' lights are illuminated.

Which of the statements below demonstrates the **REQUIRED** verbal report from the Unit NSO to the Unit Supervisor per DGP 2-3, REACTOR SCRAM?

A. "Attention for an update, All rods in, Reactor level and pressure and Drywell pressure are trending as expected, End of Update"

B. "Attention for an update, Rods did NOT go in, ARI actuated, it is a hydraulic ATWS, Reactor power is approximately 10%, End of Update"

C. "Attention for an update, Rods did NOT go in, ARI actuated, it is a hydraulic ATWS, Reactor water level is +5 inches, Reactor pressure is 920 psig, Drywell pressure is 1.2 psig, and Reactor power is approximately 10%, End of Update"

D. "Attention for an update, Rods did NOT go in, ARI actuated, it is an electrical ATWS, Reactor water level is +5 inches, Reactor pressure is 920 psig, Drywell pressure is 1.2 psig, and Reactor power is approximately 10%, End of Update"

Answer: D

Question 62 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27095
User-Defined ID:	27095
Cross Reference Number:	
Topic:	62 - Generic.1.17
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Objective: 29800LK065 Reference: DGP 2-3 attachment C, OP-DR-103-102-1002 K/A: Generic.2.1.17 3.9 / 4.0 K/A: Ability to make accurate, clear, and concise verbal reports. CFR: 41.10 / 45.12 / 45.13 Safety Function: N/A Level: High Pedigree: Bank History: 2009 Cert Explanation: A. Incorrect - This report would need to be reported if there was not an ATWS. B. Incorrect - There is an electrical ATWS, not a hydraulic. RPV level, RPV pressure and Drywell pressure are not included. C. Incorrect - There is an electrical ATWS not Hydraulic. D. Correct - Must be able to determine that an ATWS exists, from the ARPMs reading 10%, and that it is an electrical ATWS, since none of the RPS lights are extinguished. Per the procedure attachment C Hard Card, the report must be in order of rods did not go in, ARI actuated, Electric ATWS, RPV level, RPV pressure, Drywell pressure, and power. **REQUIRED REFERENCES: None.**

None

63 **ID: 27103** **Points: 1.00**

Unit 2 was in STARTUP.

All four SRMs are fully inserted and are reading approximately 10,000 CPS when annunciator 902-5 A-4, "SRM HI/INOP" alarms and the associated rod out block occurs.

The Operating team observed that SRM 21 is now reading approximately 5,000 cps and trending down, while SRMs 22, 23 and 24 are still indicating 10,000 cps.

Which of the following would cause the observed indications and what actions are required?

A. (1) 24/48 VDC Bus A voltage is low
(2) Bypass SRM 21

B. (1) SRM 21 high voltage power supply output is low
(2) Bypass SRM 21

C. (1) 24/48 VDC Bus A voltage is low
(2) Verify IRMs are on range 8 or greater

D. (1) SRM 21 high voltage power supply output is low
(2) Verify IRMs are on range 8 or greater

Answer: B

Question 63 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27103
User-Defined ID:	27103
Cross Reference Number:	
Topic:	63 - 215004.A2.01
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE215LN004.02 Reference: DOA 6900-01, DAN 902(3)-5 A-4 K/A: 215004.A2.01 2.7/2.9 K/A: Ability to (a) predict the impacts of the following on the SOURCE RANGE MONITOR (SRM) SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Power supply degraded CFR: 41.5 Safety Function: 7 Pedigree: New Level: High Explanation: A. Incorrect - 24/48 voltage lowering would cause similar indications for SRM 22 B. Correct - A low high voltage power supply to a SRM will cause erratic operation including a low reading and an INOP trip when the high voltage - low setpoint is reached and thus initiating a rod out block. C. Incorrect - SRM 22 indications would be effected, action is plausible because all SRM trips/blocks are bypassed when IRMs are on range 8 or greater. D. Incorrect - Correct cause, action is plausible because all SRM trips/blocks are bypassed when IRMs are on range 8 or greater. **REQUIRED REFERENCES: None.**

None

64 **ID: 27096** **Points: 1.00**

You are about to take the shift as a Unit 2 NSO.

The last time you were on shift was seven (7) days ago.

What is the **MINIMUM** day(s) that are you **REQUIRED** to read the Control Room logs back to, prior to completing relief?

A. 1 day.

B. 2 days.

C. 4 days.

D. 7 days.

Answer: C

Question 64 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27096
User-Defined ID:	27096
Cross Reference Number:	
Topic:	64 - Generic.1.03
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29900LK022 Reference: OP-AA-112-101 K/A: Generic.1.03 3.7 / 3.9 K/A: Knowledge of shift or short-term relief turnover practices. CFR: 41.10 / 45.13 Safety Function: N/A Level: Memory Pedigree: Bank History: 2008 NRC, 2015 NRC Explanation: A. Incorrect - 1 day is based on days off during a normal rotation. B. Incorrect - 2 days are based on days off during a normal rotation. C. Correct - An on-coming Reactor Operator is required to read the Control Room logs through the last previous date on shift, or the preceding four days, whichever is less. D. Incorrect - 7 days would be assumed as the minimum days, since it is the amount of time the individual was not on shift. **REQUIRED REFERENCES: None.**

None

65 **ID: 27100** **Points: 1.00**

A loss of the Unit 2 RBCCW system will cause a loss of cooling to which of the following components listed below?

A. Unit 2 Service Air Compressors **ONLY**.

B. Unit 2 Pumpback Air Compressors **ONLY**.

C. Unit 2 **AND** Unit 3 Pumpback Air Compressors.

D. Unit 2 **AND** Unit 3 Resin Transfer Air Compressors.

Answer: C

Question 65 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27100
User-Defined ID:	27100
Cross Reference Number:	
Topic:	65 - Generic.2.03
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE208LN001.03 Reference: DOA 3700-01, DOP 3800-01, DOP 3700-02 K/A: Generic.2.2.3 3.8 / 3.9 K/A: (multi-unit license) Knowledge of the design, procedural, and operational differences between units. CFR: 41.5 / 41.6 / 41.7 / 41.10 / 45.12 Safety Function: N/A Level: Memory Pedigree: Bank History: 2009 NRC Explanation: A. Incorrect - The Service Air Compressors are cooled by their own units TBCCW. B. Incorrect - The Unit 2 Pumpback Air Compressors are not the only supplied cooling water from Unit 2, as Unit 3 is also supplied by Unit 2. C. Correct - The operational difference between both unit's RBCCW systems is that BOTH unit's Pumpback Air Compressors are supplied cooling water ONLY from Unit 2. D. Incorrect - The Resin Transfer Air Compressors are cooled by their own units TBCCW **REQUIRED REFERENCES: None.**

66 **ID: 27105** **Points: 1.00**

Unit 2 has been operating at rated power for the past 55 days

The Reactor Coolant System Leakage surveillance (SR 3.4.4.1) is required every 12 hours and was last completed today at 0700.

Assuming Unit 2 remains at rated power, when is the **LATEST** that the next surveillance can be performed before LCO 3.4.4 must be declared **NOT** met?

A. Today at 1900

B. Today at 2200

C. Tomorrow at 0700

D. Tomorrow at 1000

Answer: B

Question 66 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27105
User-Defined ID:	27105
Cross Reference Number:	
Topic:	66 - Generic.2.23
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Objective: DRE215LN005.07 Reference: SR 3.0.2 K/A: Generic.2.23 3.1 / 4.6 K/A: Ability to track Technical Specification limiting conditions for operations. CFR: 41.10 / 43.2 / 45.13 Safety Function: N/A Level: High Pedigree: New Explanation: A. Incorrect - 12 hours is the required time, with no extension. B. Correct - The Tech Specs allow a 25% extension time for surveillances, as long as the performance is not the initial performance. With the unit operating for 55, the surveillance would have been performed many times previously. 12 hours x 25%= 3 hours. 12 hours + 3 hours = 15 hours, is the LATEST. C. Incorrect - 24 hours is double the 12 hours, which exceeds the 25% allowed increase. When a surveillance has been discovered as missed the time allowed to complete the surveillance is 24 hours or the length of the surveillance whichever is greater. (SR 3.0.3) D. Incorrect - 27 hours is greater than the 15 hour time limit. When a surveillance has been discovered as missed the time allowed to complete the surveillance is 24 hours or the length of the surveillance whichever is greater. (SR 3.0.3). The 25% time extension is not permitted in this case. **REQUIRED REFERENCES: None.**

67 **ID: 27102** **Points: 1.00**

Unit 2 is operating at rated power, with DOS 6600-01 DIESEL GENERATOR SURVEILLANCE TEST, in progress for the Unit 2 Diesel.

In accordance with the surveillance, when synchronizing the Unit 2 Diesel to Bus 24-1, the Synchroscope should rotate one revolution in approximately ___(1)___ seconds in the ___(2)___ direction.

A. (1) 15
(2) SLOW

B. (1) 15

(2) FAST

C. (1) 30
(2) SLOW

D. (1) 30
(2) FAST

Answer: D

Question 67 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27102
User-Defined ID:	27102
Cross Reference Number:	
Topic:	67 - Generic.2.12
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Objective: DRE264LN001.05 Reference: DOS 6600-01 K/A: Generic.2.12 3.7 / 4.1 K/A: Knowledge of surveillance procedures. CFR: 41.10 / 45.13 Safety Function: N/A PRA: No Level: Memory Pedigree: Bank Explanation: A. Incorrect - Fifteen (15) second is the timer for the D/G to reach 200 rpm, without causing a failure to start, and the slow direction is utilized when backward paralleling Bus 24-1 to Bus 24. B. Incorrect - Fifteen (15) second is the timer for the D/G to reach 200 rpm, without causing a failure to start. C. Incorrect - The slow direction is utilized when backward paralleling Bus 24-1 to Bus 24. D. Correct - When synchronizing the Diesel Generator the synchroscope should rotate one revolution in approximately 30 seconds in the fast direction. The breaker should be CLOSED just before the pointer reaches the vertical position. This is to prevent high transient current in the generator or a reverse power trip. **REQUIRED REFERENCES: None.**

68 **ID: 27104** **Points: 1.00**

Unit 2 was operating at rated power with APRM 1 in **BYPASS** when the mode switch for APRM 4 was taken out of **OPERATE**.

Which of the following alarms are expected for this transient?

1) 902-5 A-6, APRM HI
2) 902-5 C-6, APRM DOWNSCALE
3) 902-5 D-13, CHANNEL 4-6 APRM HI-HI INOP
4) 902-5 D-15, CHANNEL B RX SCRAM

A. 2 **ONLY**

B. 2 and 4 **ONLY**

C. 3 and 4 **ONLY**

D. 1, 3, and 4

Answer: C

Question 68 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27104
User-Defined ID:	27104
Cross Reference Number:	
Topic:	68 - 215005.A3.04
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 251LN005.13 Reference: DAN 902(3)-5 A-6/C-6/D-13/D-15 K/A: 215005.A3.04 3.2 / 3.2 K/A: Ability to monitor automatic operations of the AVERAGE POWER RANGE MONITOR/LOCAL POWER RANGE MONITOR SYSTEM including: Annunciator and alarm signals CFR: 41.7 Safety Function: 7 Pedigree: New Level: High Explanation: A. Incorrect - This transient will result in a B channel half scram. B. Incorrect - This transient will not result in an APRM downscale. C. Correct - APRM 4 INOP alarm is generated when the APRM mode switch is taken out of operate. With APRM 4 not in bypass, a B channel half scram will be received D. Incorrect - This transient will not result in an APRM Hi. **REQUIRED REFERENCES: None.**

None

69 **ID: 27106** **Points: 1.00**

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

If site assembly is required, which of the following actions is required per DGA 16 COOLANT ACTIVITY HIGH - FUEL ELEMENT FAILURE, to prevent excessive personnel exposure?

A. Isolating HPCI steam lines

B. Isolating Recirc sample lines

C. Isolating the Isolation Condenser

D. Isolating HPCI steam drains to the condenser

Answer: D

Question 69 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27106
User-Defined ID:	27106
Cross Reference Number:	
Topic:	69 - Generic.3.14
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Objective: 29501LK049 Reference: DGA 16 K/A: Generic.3.14 3.4 / 3.8 K/A: Knowledge of radiation or contamination hazards that may arise during normal, abnormal, or emergency conditions or activities. CFR: 41.12 Safety Function: 9 PRA: No Level: Memory Pedigree: Bank History: ILT 11-1 NRC Explanation: A. Incorrect - Isolating HPCI steam flow would block the leakage, but would render HPCI unavailable, so this action would not be appropriate B. Incorrect - Recirc sample drains also do not go to the Condenser. C. Incorrect - Isolation Condenser drains do not go to the Condenser. D. Correct - Per DGA 16 Caution. Assembly area inside the RPA is near the feed pumps, which is against the Condenser shield wall. Any flow of radioactive water to the Condenser would increase dose rates in this area. **REQUIRED REFERENCES: None.**

None

70 **ID: 27108** **Points: 1.00**

Unit 3 was operating at near rated power when MCC 38-1 de-energized from a fire.

The Unit Supervisor entered the appropriate DGAs and DSSPs, when an Isolation signal was received for the Isolation Condenser.

The RX INLET ISOL MO 3-1301-4 valve must be closed to complete the isolation.

An Operator must be dispatched to the _____ in order to close the 3-1301-4 valve.

A. Unit 3 TIP room

B. Unit 3 SDC room

C. Unit 2/3 Diesel Generator Room

D. Unit 2/3 Radwaste Control Room

Answer: C

Question 70 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27108
User-Defined ID:	27108
Cross Reference Number:	
Topic:	70 - Generic.4.35
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE207LN001.05 Reference: DSSP 0100-A1 K/A: Generic.4.35 3.8/4.0 K/A: Knowledge of local auxiliary operator tasks during an emergency and the resultant operational effects. CFR: 41.10 / 43.5 / 45.13 Safety Function: N/A Pedigree: New Level: Memory Explanation: A. Incorrect - The TIP room only has controls to isolate the 2/3 EDG panel in case of a fire in the EDG room. B. Incorrect - Isolation Condenser valve control switches are only in the Unit 2 SDC room, not Unit 3. C. Correct - Upon a failed Grp V, the operator must be dispatched to the 2/3 EDG room to make the failed automatic action to occur. This is procedurally directed per the DSSP. D. Incorrect - The 2/3 Radwaste Control Room contains control switches for the Fuel Pool Cooling System, but not the Isolation Condenser. **REQUIRED REFERENCES: None.**

None

71 **ID: 27113** **Points: 1.00**

Unit 2 was operating at rated power when annunciator 902-4 D-23, 2A TARGET ROCK RELIEF VLV INOP alarmed and will not reset.

A transient occurred requiring Emergency Depressurization due to low RPV water level.

All 5 ERV keylock switches were taken to manual.

What are the expected indications on the 902-21 panel acoustic monitors?

A. 4 Red lights lit ONLY

B. 5 Red lights lit ONLY

C. 4 Red lights and 4 Amber lights lit ONLY

D. 5 Red lights and 5 Amber lights lit

Answer: D

Question 71 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27113
User-Defined ID:	27113
Cross Reference Number:	
Topic:	71 - 239002.A4.07
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 239LN001.03 Reference: DAN 902(3)-4 D-23, DOS 0250-06 K/A: 239002.A4.07 3.6 / 3.6 K/A: Ability to manually operate and/or monitor in the control room: Lights and alarms CFR: 41.7 Safety Function: 3 PRA: Yes Pedigree: New Level: High Explanation: A. Incorrect - Amber lights will also be illuminated B. Incorrect - Amber lights will also be illuminated C. Incorrect - All 5 ERV acoustic monitors will have actuated D. Correct - When an ERV opens the red light illuminates based on acoustic noise. When the acoustic monitor is actuated, the amber light illuminates (as a memory function) until the acoustic monitor is reset on the panel. 2A Target Rock Relief Vlv INOP alarm indicates the 2A ERV will not lift in the SAFETY mode. Actuation via keylock switch is not inhibited. **REQUIRED REFERENCES: None.**

None

72 **ID: 27109** **Points: 1.00**

Unit 3 was operating at rated power when annunciator 903-8 H-11, ANNUN DC PWR FAILURE, illuminated on the 903-8 panel **ONLY**.

This was caused due a loss of power from 125VDC ___(1)___ and the required Operator actions is to check fuses ___(2)____ .

A. (1) Div 1;
(2) in the AEER

B. (1) Div 1;
(2) on the 2nd floor of the RB (545' elevation)

C. (1) Div 2;
(2) in the AEER

D. (1) Div 2;
(2) on the 2nd floor of the RB (545' elevation)

Answer: A

Question 72 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27109
User-Defined ID:	27109
Cross Reference Number:	
Topic:	72 - Generic.4.32
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Objective: 26302LK001 Reference: DOA 6900-03, 902-8 H-11 K/A: Generic.4.32 3.6 / 4.0 K/A: Knowledge of operator response to loss of all annunciators. CFR: 41.10 / 43.5 / 45.13 Safety Function: N/A PRA: Yes Pedigree: New Level: High Explanation: A. Correct - All panel annunciators are powered from Div 1 125VDC. With a loss of the 902-8 panel only, the Operator action is to check/replace fuses in the AEER, inside panel 903-34. B. Incorrect - The fuses are not located on the second floor of the RB (545'). This is the location of Unit 3 (Only) ERV fuses. C. Incorrect - The 903-8 panel annunciator feed is not supplied by 125VDC Div 2. D. Incorrect - The 903-8 panel annunciator feed is not supplied by 125VDC Div 2, and also the fuses are not located on the second floor of the RB (545'). This is the location of Unit 3 (Only) ERV fuses. **REQUIRED REFERENCES: None.**

None

73 **ID: 27111** **Points: 1.00**

Unit 3 was operating at near rated power when a steam leak occurred inside the Drywell. The following conditions exist:

- Drywell pressure is 3.7 psig and increasing.
- All control rods fully inserted EXCEPT F-5, which remained at position 24.

Which of the DEOPs below are required to be entered?

1) DEOP 100, RPV CONTROL
2) DEOP 200-1, PRIMARY CONTAINMENT CONTROL
3) DEOP 300-1, SECONDARY CONTAINMENT CONTROL
4) DEOP 400-5, FAILURE TO SCRAM

A. 1 and 2

B. 1 and 3

C. 2 and 3

D. 2 and 4

Answer: A

Question 73 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27111
User-Defined ID:	27111
Cross Reference Number:	
Topic:	73 - Generic.4.01
Num Field 1:	0.00
Num Field 2:	0.00
Text Field:	
Comments:	Objective: 29501LK011 Reference: DEOPs 100 and 200-1 K/A: Generic.4.01 4.6 / 4.8 K/A: Knowledge of EOP entry conditions and immediate action steps. CFR: 41.10 / 43.5 / 45.13 Safety Function: N/A Level: Memory Pedigree: 2007 NRC, 2009 Cert Explanation: A. Correct - DEOP 100 and 200-1 are entered, based on Drywell pressure >2.0#. B. Incorrect - DEOP 100-1 has an entry condition, but DEOP 300-1 is not needed to be entered since Fuel Pool level is an entry, not Reactor Water level. C. Incorrect - DEOP 200-1 has an entry condition, but DEOP 300-1 is not needed to be entered since differential pressure is an entry, not Drywell pressure. D. Incorrect - DEOP 400-5 is not needed to be entered, based on only one rod being >04, and SDM states the reactor will remain shutdown without boron. **REQUIRED REFERENCES: None.**

None

74 **ID: 27199** **Points: 1.00**

Unit 2 was operating at near rated power when a contractor forklift struck the Unit 2 instrument Air System piping, causing a rupture which caused the header pressure to be lost.

Based on the current situation, which of the following system responses will automatically occur?

A. AO 2-0642A, 2A FW REG VLV closes.

B. AO 2-3201A, 2A RFP MIN FLOW VLV opens.

C. AO 2/3-7510-A, A SBGT TRN FAN 2/3A SUCT AO VLV closes.

D. AO 2-2301-30, U2 HPCI INLET DRN POT 2A OTBD DRN TO MN CDSR VLV opens.

Answer: B

Question 74 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27199
User-Defined ID:	27199
Cross Reference Number:	
Topic:	74 - 300000.K3.02
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE278LN001.12 Reference: DOA 4700-01 K/A: 300000.K3.02 3.3 / 3.4 K/A: Knowledge of the effect that a loss or malfunction of the (INSTRUMENT AIR SYSTEM) will have on the following: Systems having pneumatic valves and controls CFR: 41.7 / 45.6 Safety Function: 8 PRA: Yes Level: Memory Pedigree: New Explanation: A. Incorrect - The FWRV will not fail closed. They will lock up, by preventing the pulse positioner from moving the valve. B. Correct - Upon a loss of Inst Air, the RFP min flow valves will spring open, to ensure minimum flow protection for the pumps. C. Incorrect - The SBGT System train suction valves will fail open via an accumulator, to allow system flow to be within Tech Spec limits, when system is operating. D. Incorrect - The HPCI inlet drain pot drain to the Main Condenser will fail closed upon a loss of Inst Air, to ensure the drain path will be removed with an initiation signal. **REQUIRED REFERENCES: None.**

None

75 **ID: 27114** **Points: 1.00**

Unit 2 was utilizing the Head Spray System for cooling down for a refuel outage.

Then a transient occurred, causing RPV water level to decrease to 0 inches.

What are the expected Control Room indications?

The MO 2-205-24 HEAD COOLING VLV ___(1)___ indication light is illuminated and head spray flow ___(2)___ .

A. (1) RED;
(2) lowers

B. (1) RED;
(2) remains steady

C. (1) GREEN;
(2) lowers

D. (1) GREEN;
(2) remains steady

Answer: C

Question 75 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27114
User-Defined ID:	22573
Cross Reference Number:	
Topic:	75 - 223002.G.4.31
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE223LN005.06 Reference: DAN 902-5 E-5, M-26 sht 1 K/A: 223002.G.4.31 4.2 / 4.1 K/A: Primary Containment Isolation System/Nuclear Steam Supply Shut-Off: Knowledge of annunciator alarms, indications, or response procedures. CFR: 41.10 / 45.3 Safety Function: 5 Level: High History: 2009 NRC Explanation: A. Incorrect - With a 2-205-24 valve indication of red, this indicates that the valve is open, not closed. The valve would stay open only if a Group 2 had not initiated. B. Incorrect - A closed 2-205-24 valve indication is not red, and since the FIC is upstream of the 2-205-24 valve, when this valve closes, the Head Cooling flow drops off, not remain steady. C. Correct - When RPV water level drops below +8 inches, a Group 2 isolation is initiated, which causes the 2-205-24 valve to go closed (green light). Since the FIC is upstream of the 2-205-24 valve, when this valve closes, the Head Cooling flow drops off. D. Incorrect - Since the FIC is upstream of the 2-205-24 valve, when this valve closes, the Head Cooling flow drops off, not remain steady. **REQUIRED REFERENCES: None.**

76 **ID: 27028** **Points: 1.00**

Unit 2 was operating at rated power when a transient occurred resulting in the following:

- RPV level reached a scram contingency threshold.
- All eight RPS scram solenoid lights on the 902-5 panel are extinguished.

Unit 2 NSO completed DGP 02-03 Hard Card actions and reports the following:

- Drywell Pressure, RPV level, and RPV pressure are trending as expected.
- All control rods are fully inserted **EXCEPT** H-12 at position 08 and G-12 at position 04.

What is the SRO required to direct **FIRST**?

A. Initiate ARI

B. Verify system isolation and actuations

C. Inhibit ADS and place CS pumps in PTL

D. Enter and execute DGP 02-03, Reactor Scram

Answer: C

Question 76 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27028
User-Defined ID:	27028
Cross Reference Number:	
Topic:	76 - 295037.G.4.04
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29502LE005 Reference: DEOP 100, DEOP 400-5, DGP 02-03 Attachment C K/A: 295037.G.4.04 ---/4.7 K/A: Ability to recognize abnormal indications for system operating parameters that are entry level conditions for emergency and abnormal operating procedures CFR: 43.2 Safety Function: 1 PRA: Yes level: Memory Pedigree: New Explanation: A. Incorrect - ARI initiation is required per DGP 02-03 contingency actions, however this has already been completed per the DGP 02-03 hardcard. B. Incorrect - The candidate could select this distractor based on the assessment that DGP 02-03 is currently being executed (per the hardcard), and the interpretation that the reactor is shutdown under all conditions C. Correct - Candidate must recognize the reactor is not shutdown under all conditions and DEOP 400-5 entry is required. The first order the SRO must give in DEOP 400-5 is to inhibit the actuation of ADS and prevent Core Spray injection D. Incorrect - This answer would be correct if the candidate incorrectly determines the reactor is shutdown under all conditions. SRO Only justification: SRO must determine if the reactor is shutdown under all conditions. **REQUIRED REFERENCES: DEOP 100 with entry conditions redacted, DEOP 400-5**

None

77 **ID: 27030** **Points: 1.00**

Both units were operating at rated power, when Unit 2 125 VDC Main Bus 2A-1 de-energized due to a fire.

The Unit Supervisor is required to direct the Operating team to . . . . .

A. restore Unit 2 Div 1 125 VDC to operable within 2 hours or Unit 2 **ONLY** must be in MODE 3 within 12 hours.

B. restore Unit 2 Div 1 125 VDC to operable within 2 hours or Unit 2 **AND** Unit 3 must be in MODE 3 within 12 hours.

C. place Unit 2 125 VDC Alternate subsystem in-service within 2 hours or Unit 2 **ONLY** must be in MODE 3 within 12 hours.

D. place Unit 3 125 VDC Alternate subsystem in-service within 2 hours or Unit 2 **AND** Unit 3 must be in MODE 3 within 12 hours.

Answer: B

Question 77 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27030
User-Defined ID:	27030
Cross Reference Number:	
Topic:	77 - 295004.G.2.40
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE263LN001.07 Reference: TS 3.8.4 K/A: 295004.G.2.40 3.4 / 4.7 K/A: Ability to apply Technical Specifications for a system CFR: 43.2 / 43.5 Safety Function: 6 PRA: Yes Level: High Pedigree: Bank Explanation: A Incorrect – With a loss of Unit 2 Div 1 supply (Main Bus 2A-1), this also is a loss of Unit 3 Div 2. Both units, not just Unit 2 must restore their the lost power division within 2 hours or commence shutdown. B. Correct – There is a cross-connection between Unit 2 and Unit 3 125 VDC systems. When Unit 2 loses its Div 1 supply (Main Bus 2A-1), this also is a loss of Unit 3 Div 2. With each unit losing a division of its own 125 VDC, they both must enter T.S. 3.8.4 condition H, which is restore the lost power division within 2 hours or Be in Mode 3 within 12 hours. C. Incorrect - Placing the Unit 2 Alternate Battery System in service would be applicable if the Main Bus 2A-1 had not become de-energized from a fire, due to Unit 3 not being in Modes 4 or 5. D. Incorrect – Placing the Unit 3 Alternate Battery System in service would not restore power to both units, thus both units. SRO Only Criteria: 2. This question requires the candidate to have and apply knowledge of facility operating limitations in the technical specifications and their bases. **REQUIRED REFERENCES: TS 3.8.4, with less than 1 hour times removed.**

None

78 **ID: 27026** **Points: 1.00**

Unit 2 was operating at 750MWe, with the Bus 23 and Bus 24 Reserve Feed Breakers O.O.S. for TR-22 maintenance, when a transient occurred resulting in the following:

- 2A Circ Water pump lost power.
- 2B Circ Water pump lost power.
- Bus 25 became de-energized, then auto re-energized from Bus 26.
- 2C Circ Water pump running at 340 Amps.

The cause of the above transient is that the ___(1)___ and the Unit Supervisor is required to direct ___(2)___ .

A. (1) Bus 23 Main Feed Breaker tripped;
(2) close the outboard MSIVs per DOA 4700-01, INSTRUMENT AIR SYSTEM FAILURE

B. (1) Bus 24 Main Feed Breaker tripped;
(2) close the outboard MSIVs per DOA 4700-01, INSTRUMENT AIR SYSTEM FAILURE

C. (1) Bus 23 Main Feed Breaker tripped;
(2) stop the 2C Circ Water pump per DOA 4400-07, REACTOR OPERATION WITH ONLY ONE CIRCULATING WATER PUMP AVAILABLE

D. (1) Bus 24 Main Feed Breaker tripped;
(2) stop the 2C Circ Water pump per DOA 4400-07, REACTOR OPERATION WITH ONLY ONE CIRCULATING WATER PUMP AVAILABLE

Answer: C

Question 78 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27026
User-Defined ID:	27026
Cross Reference Number:	
Topic:	78 - 295003.A2.01
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE262LN001.12 Reference: 12E-2303, DOA 4400-01, DOA 4700-01 K/A: 295003.A2.01 3.4 / 3.7 K/A: Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF A.C. POWER: Cause of partial or complete loss of A.C. power. CFR: 43.5 Safety Function: 6 PRA: Yes Level: High Pedigree: Modified History: 2009 NRC Exam Explanation: A. Incorrect - The Instrument Air Compressors will remain energized from Bus 26, thus closing the MSIVs per the Instrument Air DOA is not required. B. Incorrect - The Instrument Air Compressors will remain energized from Bus 26, thus closing the MSIVs per the Instrument Air DOA is not required. C. Correct - This is a newly created procedure for Dresden. Previous revisions of DOA 4400-01 directed securing Circ Water pump if only 1 was available. Correct actions are to enter DOA 4400-01 for loss of Circ Water. DOA 4400-01 directs entry into DOA 4400-07. Actions in DOA 4400-07 require tripping the remaining Circ Water pump if amps exceed 325. D. Incorrect - Tripping the Circ water pump per DOA 4400-01 was correct prior to creation of DOA 4400-07. Feed Breaker is incorrect for power supply to 2C Circ Water pump. SRO per Criteria: 5. The candidate is required to assess facility conditions and select the appropriate procedure during abnormal situations. **REQUIRED REFERENCES: None.**

None

79 **ID: 27027** **Points: 1.00**

Given the following conditions:

- Unit 2 is operating at rated power.
- Unit 3 is in Day 3 of a refueling outage
- U3 SAC is OOS for overhaul.
- 2B IAC is OOS for desiccant replacement.
- 2A and 3C IACs are running supplying Unit 2.
- 3A and 3B IACs are running supplying Unit 3.

A transient occurs resulting in the following:

10:05 Unit 2 IA header pressure begins lowering
10:20 902-6 H-10, FW REG VLVS BACKUP AIR ACTIVE alarm is received

What actions will the SRO direct? (Assume Shift Manager concurrence has been obtained, if necessary)

A. Start all available **Service Air** compressors.

B. Crosstie Unit 2 and Unit 1 **Service Air** systems.

C. Crosstie Unit 2 and Unit 3 **Instrument Air** systems.

D. Close the 2/3-4701-501A, U2 SERV AIR TO INST AIR X-TIE MANUAL ISOL VLV.

Answer: C

Question 79 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27027
User-Defined ID:	27027
Cross Reference Number:	
Topic:	79 - 295019.A2.01
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE278LN001.08 Reference: DOA 4700-01, DOP 4700-03, DAN 902(3)-6 H-10, DAN 923-1 F-4 K/A: 295019.A2.01 3.5 / 3.6 K/A: Ability to determine and/or interpret the following as they apply to PARTIAL OR COMPLETE LOSS OF INSTRUMENT AIR: Instrument air system pressure CFR: 43.5 Safety Function: 8 Level: High Pedigree: New Explanation: A. Incorrect - There are multiple IA compressors (5 total). Only 2 SA compressors (1 on each unit). Given in the stem Unit 3 SAC is OOS (Service Air is no longer unit specific when in a normal lineup. Normal lineup is 2/3 SA crosstie open, 1 SAC running and the other in PTL), U2 SAC is running and the SA-IA crosstie is already open based on alarms given. Unit 2 SAC is unable to keep up with SA loads and IA loads/leakage. B. Incorrect - Unit 1 and Unit 2 Service Air systems can be cross-connected, however Unit 2 supplies Unit 1 SA. Unit 2 IA is capable of supplying U1 IA. This would result in an additional load on the U2 and U3 SA systems. C. Correct - Given the time from the begining of the leak to the alarm, the candidate must identify IA header pressure is dropping at approximately 1 psig per minute. Direction to cross tie U2 and U3 IA headers per DOP 4700-03 is appropriate D. Incorrect - This action would be appropriate if Unit 2 had experienced a loss of offisite power. SRO Only Criteria: 5, The candidate is required to assess facility conditions and select the appropriate procedure during abnormal situations. **REQUIRED REFERENCES: None.**

None

80 **ID: 27031** **Points: 1.00**

Unit 2 was operating at rated power when the Main Turbine tripped.

A hydraulic ATWS occurred, resulting in the following:

- APRM Downscales are illuminated
- RPV pressure is 900 psig and steady.
- Torus temperature is 155°F and rising 1°F every 5 minutes.

What actions are the SRO required to direct?

A. Initiate IC to maximum flow.

B. Terminate and Prevent injection except boron and CRD.

C. Anticipate Emergency Depressurization with the Main Turbine BPVs **ONLY.**

D. Anticipate Emergency Depressurization with the Main Turbine BPVs **AND** IC.

Answer: A

Question 80 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27031
User-Defined ID:	27031
Cross Reference Number:	
Topic:	80 - 295026.G.4.06
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29502LK012 Reference: DEOP 200-1 K/A: 295026.G.4.06 4.7 / 4.7 K/A: Knowledge of EOP mitigation strategies: Suppression Pool High Water Temp CFR: 43.5 Safety Function: 5 Level: High Pedigree: New Explanation: A - Correct. Analysis of the conditions will show DEOP 200-1 Figure M (Heat Capacity Limit) is being violated. DEOP 200-1 directs reducing RPV pressure to stay below Figure M. B - Incorrect. This answer would be correct if the candidate determined that compliance with DEOP 200-1 figure M could not be achieved and Emergency Depressurization needed, then terminate and prevent with all EXCPET Boron and CRD. C - Incorrect. Anticipate ED is NOT permitted during ATWS conditions. D - Incorrect. Anticipate ED is NOT permitted during ATWS conditions. SRO Criteria: 5, The candidate must assess facility conditions and delect appropriate procedures during emergency situations. **REQUIRED REFERENCES: DEOP 100 and 200-1 with entry conditions redacted.**

None

81 **ID: 27033** **Points: 1.00**

Unit 2 and Unit 3 were operating at rated power when:

- A privately owned aircraft crashed into the **EAST** side of the 2/3 Cribhouse igniting a large fire.
- Off-site firefighting support is required.
- 2/3 DG Cooling Water Pump is NOT affected.
- Equipment on the **WEST** side of the 2/3 Cribhouse is NOT affected.

What will the Unit 2 SRO direct?

A. Entry into DSSP 0010-01 and DSSP 0100-A

B. Entry into DSSP 0010-01 and DSSP 0100-B

C. Entry into DSSP 0010-01 and DSSP 0100-E/F

D. Entry into DGP 02-01, Reactor Shutdown **ONLY**

Answer: A

Question 81 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27033
User-Defined ID:	27033
Cross Reference Number:	
Topic:	81 - 600000.A2.13
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29501LP085 Reference: DSSP 0010-01, DOA 0010-10 K/A: 600000.A2.13 3.2 / 3.8 K/A: Ability to determine and interpret the following as they apply to PLANT FIRE ON SITE: Need for emergency plant shutdown Safety Function: 8 PRA: Yes Level: High Pedigree: New Explanation: A - Correct - With a fire disabling Unit 2 Service Water and EDGCW pumps DSSP entry is required. DSSP 0010-01 directs execution of DSSP 0100-A B - Incorrect - If WEST side of cribhouse was damaged Unit 3 would be affected. This would required DSSP 0100-B to be executed. C - Incorrect - This would be correct for a complete loss of the cribhouse (Units 2 AND 3) D - Incorrect - Although reactor shutdown will be required, DSSP 0100-A directs this to be performed via Scram (DGP 02-03) SRO per criteria: This objective/task is SRO ONLY at Dresden Station **REQUIRED REFERENCES: DSSP 0010-01**

None

82 **ID: 27034** **Points: 1.00**

Unit 2 was operating at rated power.

Drywell temperature is 148°F and rising.

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

A. 150°F;
to ensure LOCA peak Drywell temperature DOES NOT exceed 281°F.

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

C. 160°F;
to ensure LOCA peak Drywell temperature DOES NOT exceed 281°F.

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

Answer: A

Question 82 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27034
User-Defined ID:	27034
Cross Reference Number:	
Topic:	82 - 295028.A2.01
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 21000LK004 Reference: Tech Spec 3.6.1.5 and the Bases K/A: 295028.A2.01 4.0 / 4.1 K/A: Ability to determine and/or interpret the following as they apply to HIGH DRYWELL TEMPERATURE: Drywell temperature Safety Function: 5 PRA: No Level: Memory Pedigree: Bank History: ILT 11-1 NRC Explanation: A. Correct - Per the Bases the temperature limit is 150°F 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°F B. Incorrect - Temperature limit of 150 °F is correct. Bases for temperature limit is maintain containment within design limits. Instrument reliability is desired, however not the bases for the temperature limit. DEOP figure C demonstrates minimum useable level indications up to DW temperature of 559 °F. C. Incorrect - 160 °F is DEOP 200-1 entry condition not TS LCO. Bases is correct. D. Incorrect - 160 °F is DEOP 200-1 entry condition not TS LCO. Bases for temperature limit is maintain containment within design limits. Instrument reliability is desired, however not the bases for the temperature limit. DEOP figure C demonstrates minimum useable level indications up to DW temperature of 559 °F. SRO Criteria: 2, The candidate must demonstrate knowledge of facility operating limitations in the technical specifications and their bases. **REQUIRED REFERENCES: None.**

None

83 **ID: 27000** **Points: 1.00**

Unit 2 was operating at near rated power, when an NSO reported that RPV water level was trending down.

The expected indications would be that steam flow is ___(1)___ than feed flow and the Unit Supervisor would be required to direct entering ___(2)___ FIRST.

A. (1) lower;
(2) DEOP 100, RPV CONTROL

B. (1) lower;
(2) DOA 0600-1, TRANSIENT LEVEL CONTROL

C. (1) higher;
(2) DEOP 100, RPV CONTROL

D. (1) higher;
(2) DOA 0600-1, TRANSIENT LEVEL CONTROL

Answer: D

Question 83 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27000
User-Defined ID:	27000
Cross Reference Number:	
Topic:	83 - 295009.A2.02
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE259LN001.06 Reference: DAN 902-5 F-8, DOA 0600-01 K/A: 295009.A2.02 3.6 / 3.7 K/A: Ability to determine and/or interpret the following as they apply to LOW REACTOR WATER LEVEL: Steam flow/feed flow mismatch. CFR: 43.5 Safety Function: 2 Level: High Pedigree: Bank History: 2010 NRC Explanation: A. Incorrect - Feed flow higher than steam flow would cause RPV level to rise. B. Incorrect - Feed flow higher than steam flow would cause RPV level to rise. C. Incorrect - DOA 0600-01 would be entered first. If efforts do not abate the level trend, RX scram would be inserted prior to level reaching +8" and DEOP 100 would be entered. D. Correct - If steam flow is higher than feed flow RPV level will lower due to lack of inventory make-up. If uncorrected, RPV level will decrease to the level (+25 inches) that causes annunciator 902-5 F-8 REACTOR VESSEL LOW LEVEL to annunciate. The DAN directs entering DOA 0600-01, before getting to the entry condition for DEOP 100 (+8 inches). SRO Criteria: 5, The candidate is required to assess facility conditions and select the appropriate procedure during abnormal operations. **REQUIRED REFERENCES: None.**

None

84 **ID: 27035** **Points: 1.00**

Unit 2 was operating at rated power when the 2A CRD Pump tripped.

The NSO reports that multiple CRD accumulator alarms associated with withdrawn control rods have been received.

NO operator actions have been taken.

EO reports accumulator alarms are due to low pressure and multiple CRD accumulators are below 900 psig.

Based on the above conditions, what is the minimum action required to comply with LCO 3.1.5, Control Rod Scram Accumulators, and what is the basis for the allowable time to complete the required action?

A. Restore CRD charging water header pressure above 940 psig within 20 minutes.
20 minutes is sufficient time to place a CRD pump in service.

B. Restore CRD charging water header pressure above 940 psig within 20 minutes.
20 minutes is short enough that CRD mechanism temperatures will not be adversely affected.

C. Declare the affected control rods inoperable within 1 hour.
1 hour is reasonable based on the large number of control rods available to provide the scram function and the ability of the affected control rods to scram only with reactor pressure.

D. Declare the affected control rods inoperable within 1 hour.
1 hour is reasonable based on the ability of only the reactor pressure to scram the control rods and the low probability of a Design Basis Accident or transient occurring while the affected accumulators are inoperable.

Answer: A

Question 84 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27035
User-Defined ID:	27035
Cross Reference Number:	
Topic:	84 - 295022.G.4.11
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE201LN001.12 Reference: TS 3.1.5, TS 3.1.5 Bases, DOA 0300-01 K/A: 295022.G.4.11 4.0/4.2 K/A: Loss of CRD Pumps: Knowledge of abnormal condition procedures. CFR: 43.5 Safety Function: 1 Level: High Pedigree: Bank History: Quad Cities 2012 ILT NRC Explanation: A - Correct. Restoring charging water header pressure to greater than 940 psig will comply with the TS and the bases is to allow sufficient completion B - Incorrect. Restoring charging water header pressure to greater than 940 psig will comply with the TS, however the bases is incorrect. This would be correct for only 1 accumulator alarm C - Incorrect. Declaring the rods inoperable within 1 hour partially complies with the LCO. The bases is for completion time of 1 inoperable accumulator D - Incorrect. Declaring the rods inoperable within 1 hour partially complies with the LCO. The bases is the reason for 1 hour to declare the rod inoperable. These actions are contained in DOA 0300-01, Control Rod Drive System Failure SRO Criteria: 2. The candidate is required to demonstrate knowledge of limitations in the technical specifications and their bases. **REQUIRED REFERENCES: None.**

None

85 **ID: 27036** **Points: 1.00**

Unit 2 was operating at 30% power when a transient occurred, resulting in the following timeline events:

- 11:00 Annunciator 902-7 H-3, TURB VACUUM LO alarmed at 24.0 in Hg vac.
- 11:10 Annunciator 902-5 F-5, CONDR VACUUM LO alarmed at 23.0 in Hg vac.

Assuming vacuum continues to degrade at the same rate, what is the **LATEST** time an action is **REQUIRED** to be directed?

A. At 11:15 trip the Main Turbine per DOA 3300-02, LOSS OF CONDENSER VACUUM

B. At 11:15 insert a manual scram per OP-DR-103-102-1002, STRATEGIES FOR SUCCESSFUL TRANSIENT MITIGATION

C. At 11:40 trip the Main Turbine per DOA 3300-02, LOSS OF CONDENSER VACUUM

D. At 11:40 insert a manual scram per OP-DR-103-102-1002, STRATEGIES FOR SUCCESSFUL TRANSIENT MITIGATION

Answer: B

Question 85 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27036
User-Defined ID:	27036
Cross Reference Number:	
Topic:	85 - 295002.G.4.45
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE245LN001.10 Reference: DOA 5600-01, DAN 902(3)-5 F-5, DAN 902(3)-7 H-3, OP-DR-103-102-1002 K/A: 295002.G.4.45 --- / 4.3 K/A: Ability to prioritize and interpret the significance of each annunciator or alarm: Loss of Main Condenser Vacuum CFR: 43.5 Safety Function: 3 Level: High Pedigree: New Explanation: A. Incorrect - Although a reactor scram via turbine trip will not occur due to 38.5% scram being bypassed, a RX scram is still going to occur based on low vacuum. DOA 3300-02 directs inserting a manual scram if loss of vacuum is imminent. The time is correct to reach OP-DR-103-102-1002 low vacuum scram contingency. B. Correct - OP-DR-103-102-1002 directs setting a scram contingency based on condenser vacuum of 22.5 inHg. Based on the alarms in the stem and the time values, the candidate must determine the rate of change for condenser vacuum is 1 inHg every 10 minutes. Based on this knowledge the candidate must recall and apply the OP-DR-103-102-1002 scram contingency requirements. C. Incorrect - Although a reactor scram via turbine trip will not occur due to 38.5% scram being bypassed, a RX scram is still going to occur based on low vacuum. DOA 3300-02 directs inserting a manual scram if loss of vacuum is imminent. Time is incorrect. This time corresponds to the time based on rate of change to turbine trip on low vacuum (20 inHg) D. Incorrect - This time corresponds to the time based on rate of change to turbine trip on low vacuum (20 inHg) SRO Criteria: 5, The candidate is required to access facility conditions and select appropriate procedures during abnormal situations. **REQUIRED REFERENCES: None.**

None

86 **ID: 27037** **Points: 1.00**

During a control room panel walk-down the 2-1501-21A, LPCI VLV is found closed.

What is the status of Unit 2 LPCI and what actions are required?

A. Both Divisions of LPCI are **INOPERABLE**. Enter LCO 3.0.3 Immediately.

B. Both Divisions of LPCI are **INOPERABLE**. Restore one LPCI subsystem to operable within 72 hours.

C. Division 1 LPCI subsystem **ONLY** is **INOPERABLE**. Restore Division 1 LPCI to operable within 7 days.

D. Both Divisions of LPCI are **OPERABLE**. Open 2-1501-21A, LPCI VLV per DOP 1500-01, PREPARATION OF LOW PRESSURE COOLANT INJECTION FOR AUTOMATIC START.

Answer: B

Question 86 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27037
User-Defined ID:	27037
Cross Reference Number:	
Topic:	86 - 203000.A2.03
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE203LN001.07 Reference: TS 3.5.1, DOS 1500-01 K/A: 203000.A2.03 3.2 / 3.3 K/A: Ability to (a) predict the impacts of the following on RHR/LPCI: INJECTION MODE (PLANT SPECIFIC); and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Valve closures CFR: 41.5 Safety Function: 4 PRA: Yes Level: High Pedigree: New Explanation: A. Incorrect - 3.5.1 condition K requires LCO 3.0.3 entry immediately, however this is not the correct required action as condition E applies. B. Correct - BOTH LPCI subsystems are inoperable with either 21A or 21B valves closed. TS 3.5.1 requires the restoration of 1 LPCI subsystem to operable within 72 hours under required action 3.5.1 E C. Incorrect - Both LPCI subsystems are inoperable. If the candidate incorrectly determines ONLY Div 1 LPCI is inoperable, TS 3.5.1 Required Action B would be selected. D. Incorrect - Both Divisions of LPCI are inoperable. Use of DOP 1500-01 would be required to restore LPCI valve line up SRO Criteria: 2 **REQUIRED REFERENCES: TS 3.5.1.**

None

87 **ID: 27038** **Points: 1.00**

Unit 2 was operating at rated power when IMD informs the control room that Division 2 Automatic Depressurization System Initiation Timer has failed and will not perform its function.

How is the ADS system impacted and what actions, if any, are **REQUIRED**?

A. Both Division 1 and Division 2 ADS logic systems remain operable. No actions required.

B. Division 2 ADS logic system **ONLY** is inoperable. Restore Division 2 ADS logic to operable within 8 days.

C. Division 2 ADS logic system **ONLY** is inoperable. Restore Division 2 ADS logic to operable within 96 hours.

D. Both Division 1 and Division 2 ADS logic systems are inoperable. Declare ADS valves inoperable within 1 hour.

Answer: B

Question 87 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27038
User-Defined ID:	27038
Cross Reference Number:	
Topic:	87 - 218000.A2.04
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE218LN001.07 Reference: TS 3.3.5.1, 12E-2462 Sheet 1, TS 3.3.5.1 Bases K/A: 218000.A2.04 4.1 / 4.2* K/A: Ability to (a) predict the impacts of the following on the AUTOMATIC DEPRESSURIZATION SYSTEM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: ADS failure to initiate CFR: 41.5 Safety Function: 3 PRA: Yes Level: High Pedigree: New Explanation: A. Incorrect - TS 3.3.5.1 Table 1 requires 1 channel per function for the ADS initiation timer. With this channel being inoperable Division 2 ADS is now inoperable. This is plausible due to the various combinations of failures that will maintain ADS system function. B. Correct - With the failure of the ADS initiation timer, Division 2 ADS will not actuate when required. Division 2 ADS logic is inoperable and must be restored within 8 days per TS 3.3.5.1 condition G.2 C. Incorrect - The 96 hour time requirement applies only if HPCI or IC are currently INOP D. Incorrect - Division 1 ADS valves are not inoperable. Therefore 3.3.5.1 Condition G.1 does not apply. The candidate must apply knowledge of functional failures and effects of those failures on system operability SRO Criteria: 2, The candidate must demonstrate knowledge of facility operating limitations in the technical specifications and their bases. **REQUIRED REFERENCES: TS 3.3.5.1**

None

88 **ID: 27039** **Points: 1.00**

Given the following Unit 2 parameters:

- Steam Dome Pressure is 750 psig.
- Core flow is 8% with only ONE Recirc pump operating.

The Reactor Core Safety Limit is ___(1)___ which ___(2)___ .

A. (1) MCPR $\geq$ 1.12;
(2) ensures that fuel cladding integrity is maintained

B. (1) MCPR $\geq$ 1.12;
(2) protects the Reactor Coolant System against over-pressurization

C. (1) Thermal Power $\leq$ 25%;
(2) ensures that fuel cladding integrity is maintained

D. (1) Thermal Power $\leq$ 25%;
(2) protects the Reactor Coolant System against over-pressurization

Answer: C

Question 88 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27039
User-Defined ID:	27039
Cross Reference Number:	
Topic:	88 - 202001.G.2.22
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29501LK093 Reference: Tech Spec Safety Limits 2.0/2.1.2 and bases K/A: 202001.G.2.22 4.0 / 4.7 K/A: Recirculation System: Knowledge of limiting conditions for operations and safety limits CFR: 43.2 Safety Function: 1 Level: Memory Pedigree: Bank History: 2007 NRC, 2008 Cert Explanation: A. Incorrect - MCPR shall be $\geq$ 1.14 with only 1 RR pump running. B. Incorrect - MCPR shall be $\geq$ 1.14 with only 1 RR pump running. Protecting the Reactor Coolant System against over-pressurization is based on the steam dome pressure Safety Limit. C. Correct - With the reactor steam dome pressure < 785 psig or core flow < 10% rated core flow, the reactor core safety limit is $\leq$ 25% RTP, based on maintaining fuel cladding integrity. D. Incorrect - Protecting the Reactor Coolant System against over-pressurization is based on the steam dome pressure Safety Limit. SRO Criteria: 2, The candidate must demonstrate knowledge of facility operating limitations in the technical specifications and their bases. **REQUIRED REFERENCES: None.**

None

89 **ID: 27040** **Points: 1.00**

Unit 3 was operating at near rated conditions, with the 3A Fuel Pool Cooling (FPC) pump O.O.S. for motor replacement, when Bus 39 de-energized due to an overcurrent condition.

The Unit Supervisor is required to direct **LOCAL** monitoring of fuel storage pool water temperature ___(1)___ once per hour locally and ___(2)___ .

A. (1) ONLY
(2) start additional RBCCW pumps, per DOP 3700-02, REACTOR BUILDING CLOSED COOLING WATER SYSTEM OPERATION

B. (1) ONLY
(2) align a SDC pump to the fuel pool system, per DOP 1000-04, FUEL POOL COOLING MODE OF OPERATION OF SHUTDOWN COOLING SYSTEM

C. (1) AND level
(2) start additional RBCCW pumps, per DOP 3700-02, REACTOR BUILDING CLOSED COOLING WATER SYSTEM OPERATION

D. (1) AND level
(2) align a SDC pump to the fuel pool system, per DOP 1000-04, FUEL POOL COOLING MODE OF OPERATION OF SHUTDOWN COOLING SYSTEM

Answer: D

Question 89 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27040
User-Defined ID:	27040
Cross Reference Number:	
Topic:	89 - 233000.A2.09
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE233LN001.08 Reference: DOA 1900-01 K/A: 233000.A2.09 2.7 / 2.9 K/A: Ability to (a) predict the impacts of the following on the FUEL POOL COOLING AND CLEAN-UP ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: A.C. electrical power failures. CFR: 41.5 Safety Function: 9 Level: High Pedigree: Bank History: 2010 NRC Explanation: A. Incorrect - With loss power to both FPC pumps, fuel pool levels and temperatures must be monitored locally. MCR level indication is lost due to power supply failure and temperature indications may be erroneous due to water stagnation. Starting additional RBCCW pumps would be correct if FPC system was not maintaining temperature with forced flow present. B. Incorrect - Alignment of SDC pump to FPC is correct action for given conditions. Due to water stagnation, temperature indications (although available) in the MCR may be erroneous and should be monitored locally. C. Incorrect - Temperature and level of Fuel Storage Pool shall be monitored locally. Starting additional RBCCW pumps is incorrect. Starting additional RBCCW pumps would be correct if FPC system was not maintaining temperature with forced flow present. D. Correct - Due to lack of power to both FPC pumps, MCR alarm capability is removed for spent fuel pool level. (actually based on water level in the spent fuel pool surge tank). Local temperature monitoring is required due to possible erroneous MCR indications caused by water stagnation. SRO Criteria: 5, The candidate is required to assess facility conditions and select the appropriate procedure during abnormal situations **REQUIRED REFERENCES: None.**

None

90 **ID: 27047** **Points: 1.00**

Unit 2 is operating at 900 MWe and +200 MVARS when Machine Gas Pressure begins to lower at a rate of 5 psig every 15 minutes.

Under which of the following conditions will Main Generator limits **FIRST** be exceeded and what will the SRO direct?

A. In 60 minutes. Trip the Main Turbine per DOA 5600-01, Turbine Trip.

B. In 60 minutes. Perform load reduction per DGP 03-01, Power Changes.

C. In 90 minutes. Trip the Main Turbine per DOA 5600-01, Turbine Trip

D. In 90 minutes. Perform load reduction per DGP 03-01, Power Changes.

Answer: B

Question 90 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27047
User-Defined ID:	27047
Cross Reference Number:	
Topic:	90 - 245000.G.4.47
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE245LN002.12 Reference: DOP 6400-08 K/A: 245000.G.4.47 4.2 / 4.2 K/A: Ability to diagnose and recognize trends in an accurate and timely manner utilizing the appropriate control room reference material. CFR: 43.5 Safety Function: 4 Level: High Pedigree: New Explanation: A. Incorrect - If the candidate is unaware of interpolation restrictions, 90 minutes would place the unit on the limit. This is not the FIRST time generator limits are exceeded. B. Correct - Interpolation between H2 pressure lines on Figure 2 is NOT allowed. Given the rate of change, in 60 minutes machine gas pressure will be 40 psig (normally 60 psig). This requires the use of the 30 psig line. 900 MWe is outside the generator limits of figure 2 at this time. Load reduction to maintain generator within limits is directed per DOP 6400-08. DGP 03-01, governs power maneuvers. C. Incorrect - Time is correct. Tripping the Main Turbine is not required and would result in a reactor scram at the given power. The correct action is to lower output within generator limits. D. Incorrect - Tripping the Main Turbine is not required and would result in a reactor scram at the given power. The correct action is to lower output within generator limits. Time is not the FIRST to exceed generator limits. SRO Criteria: 5, The candidate must demonstrate the ability to assess facility conditions and select appropriate procedures during abnormal situations. Note: Only DOP 6400-08 Figure 2 is required to determine correct answer. The candidate must assess plant conditions and select the correct reference graph **REQUIRED REFERENCES: DOP 6400-08 Figures 2 - 7**

None

91 **ID: 27048** **Points: 1.00**

Unit 2 was operating at rated power with the 2/3A Isolation Condenser Make-Up pump OOS for oil change when:

- Fire erupts from Main Transformer 2.
- Spurious PCIS Group I is received.
- An EO reports oil pressure for the 2/3B Isolation Condenser Make-Up pump is pegged downscale.

What will the SRO direct with regards to RPV pressure control?

A. Control RPV pressure with Main Steam Line drains per DEOP 100, RPV CONTROL

B. Control RPV pressure with the Isolation Condenser with make-up from FIRE WATER per DOP 1300-03, MANUAL OPERATION OF THE ISOLATION CONDENSER

C. Control RPV pressure with the Isolation Condenser with make-up from CLEAN DEMIN per DOP 1300-03, MANUAL OPERATION OF THE ISOLATION CONDENSER

D. Control RPV pressure with the Isolation Condenser with make-up from CONTAMINATED DEMIN per DOP 1300-03, MANUAL OPERATION OF THE ISOLATION CONDENSER

Answer: C

Question 91 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27048
User-Defined ID:	27048
Cross Reference Number:	
Topic:	91 - 207000.A2.05
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE207LN001.08 Reference: DEOP 100, DOP 1300-03, DAN 902(3)-5 D-4 K/A: 207000.A2.05 4.0 / 4.0 K/A: Ability to (a) predict the impacts of the following on the ISOLATION (EMERGENCY) CONDENSER; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations: Insufficient shell side makeup flow: BWR-2,3 CFR: 41.5 Safety Function: 4 PRA: Yes Level: High Pedigree: New Explanation: A. Incorrect - Due to receipt of PCIS GRP I, MSL drain valves are closed. There is no allowance to bypass MSIV isolations in DEOP 100. B. Incorrect - Fire Suppression System use is required due to fire, thus not a viable option for shell side makeup C. Correct - If IC make-up pumps are not available (2/3A OOS in stem and 2/3B failed to develop oil pressure), clean demin pumps are the preferred source of shell side make-up. D. Incorrect - Use of contaminated demin should be avoided. This would be a correct answer if the reason for shell side make-up loss was a piping or valve failure in the clean demin line. SRO Criteria: 5, The candidate must assess facility conditions and select appropriate procedures during abnormal and emergency situations. **REQUIRED REFERENCES: None.**

None

92 **ID: 27051** **Points: 1.00**

Unit 3 is in startup with the MODE switch in STARTUP and Control Rod pulls in progress.

All IRMs are on range 2, with the following indications:

- IRM 11 is 60
- IRM 12 is 55
- IRM 13 is 45
- IRM 14 is 70
- IRM 15 is 60
- IRM 16 is 45
- IRM 17 is 50
- IRM 18 is 50

When the IRM 14 range switch is turned one position clockwise, IRM 14 displays a reading of 1.

What is the plant response and what action will the SRO direct?

A. IRM DOWNSCALE alarm **only**;
continue with startup.

B. IRM DOWNSCALE alarm **and** ROD OUT BLOCK;
bypass IRM 14, contact IMD, and continue with startup.

C. IRM DOWNSCALE alarm **and** ½ SCRAM;
bypass IRM 14, contact IMD, reset the ½ scram, and continue with startup.

D. IRM DOWNSCALE alarm **and** ½ SCRAM;
rotate range switch counter-clockwise 2 positions, reset the ½ scram, and continue with startup.

Answer: B

Question 92 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27051
User-Defined ID:	27050
Cross Reference Number:	
Topic:	92 - 215003.G.4.21
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE215LN003.08 Reference: DAN 902(3)-5 C-5, TS 3.3.1.1, DOP 0700-02 K/A: 215003.G.2.4.21 4.0 / 4.6 K/A: Knowledge of the parameters and logic used to assess the status of safety functions, such as reactivity control, core cooling and heat removal, reactor coolant system integrity, containment conditions, radioactivity release control, etc. : Intermediate Range Monitor (IRM) System CFR: 43.5 Safety Function; 7 Level: High Pedigree: Bank History: 2008 NRC Explanation: A. Incorrect - IRM downscale with Mode Switch in Startup will result in ROD BLOCK when IRMs are on range 2. B. Correct - A faulty range switch or its associated attenuators caused the downscale indication. A downscale (5/125) generates a ROD BLOCK in this condition. Rods cannot to be pulled until the rod block is cleared. This is accomplished by bypassing the IRM. RPS 1/2 Scram would occur for upscale failure, not downscale. C. Incorrect - IRM downscale will not actuate RPS. If the range switch was rotated in the WRONG direction (this did not occur in the stem) RPS 1/2 Scram would occur. This event has occurred in the past at Dresden. D. Incorrect - Rotation of the switch in the opposite direction for 2 ranges would result in RPS 1/2 scram due to IRM reading upscale on Range 1. IRM ranging in the incorrect direction has occurred at Dresden in the past. SRO Criteria: 2, Is required to determine if bypassing IRM is acceptable to maintain compliance with TS 3.3.1.1 **REQUIRED REFERENCES: None.**

None

93 **ID: 27041** **Points: 1.00**

You are the Shift Manager, meeting with the Plant Manager in the Training Building.

At time 09:00 the Main Control room calls you to report that on Unit 2 Drywell pressure is 1.45 psig and rising at a rate of 0.5 psig/1 minute.

Per OP-AA-101-111 Roles and Responsibilities of On-Shift Personnel, what is the LATEST time that the Shift Manager must be capable of being in the Control Room?

A. 0905

B. 0910

C. 0915

D. 0920

Answer: B

Question 93 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27041
User-Defined ID:	27041
Cross Reference Number:	
Topic:	93 - Generic.1.05
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29900LK022 Reference: OP-AA-101-111 K/A: Generic.1.05 2.9 / 3.9 K/A: Ability to use procedures related to shift staffing, such as minimum crew complement, overtime limitations, etc. CFR: 43.5 Safety Function: PRA: Yes SRO per Criteria: 1 Level: Memory Pedigree: Bank History: 2003 Cert, 2008 NRC Explanation: A. Incorrect - 5 minutes is when an ECCS signal initiation occurs. B. Correct - One of the responsibilities of the Shift Manager is to monitor compliance to all license requirements and regulations to ensure minimum staffing requirements are met at all times. Per the above procedure, the Shift Manager will remain within 10 minutes of the control room. C. Incorrect - 15 minutes is the requirement for an EAL declaration. D. Incorrect - 20 minutes is concurrent with the ECCS actuation plus EAL declaration timeframe. SRO Criteria: This objective/task is SRO ONLY at Dresden Station, due to Shift Manager roles and responsibilities. **REQUIRED REFERENCES: None.**

None

94 **ID: 27042** **Points: 1.00**

Which of the following list is **REQUIRED** to be ensured prior to removing **MULTIPLE** control rod blades from the core during REFUEL operations?

1) A Control Rod rod withdrawal block is inserted.
2) Core cells associated with each CRD to be removed are de-fueled.
3) All other Control Rods for cells containing one or more fuel assemblies are fully inserted.
4) Control Rods in a 5 by 5 array centered on Control Rods to be removed are fully inserted **AND** disarmed.

A. 1 and 2 **ONLY**

B. 1 and 3 **ONLY**

C. 2 and 3 **ONLY**

D. 3 and 4 **ONLY**

Answer: C

Question 94 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27042
User-Defined ID:	27042
Cross Reference Number:	
Topic:	94 - Generic.1.40
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29800LK084 Reference: DGP 04-01, TS 3.10.4, 3.10.5 K/A: Generic 2.1.40 2.8 / 3.9 K/A: Knowledge of refueling administrative requirements. CFR: 43.5 Level: Memory Pedigree: New Comments: A. Incorrect. A control rod withdrawal block is only required to be inserted for single control rod removal from an assembly containing fuel. B. Incorrect. A control rod withdrawal block is only required to be inserted for single control rod removal from an assembly containing fuel. C. Correct. When removing more than one Control Rod, the core cells associated with the control rod must be void of fuel. All core cells containing one or more fuel assemblies are required to have fully inserted control rods. D. Incorrect. All control rods in a 5x5 array must be fully inserted and disarmed if removing a single control rod from a core cell containing fuel. This restriction is not in place when the core cell is de-fueled. Multiple CRDs may not be removed if the core cells contain fuel. SRO Criteria 6, The candidate is required to demonstrate knowledge of procedures and limitations involved in alternations in core configuration **REQUIRED REFERENCES: None.**

None

95 **ID: 27045** **Points: 1.00**

Unit 3 was operating at near rated power when an NSO reported the following Isolation Condenser levels:

- 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 the L.C.O.?

A. 17:17:00;
provides the capability to remove heat consistent with the design requirements without makeup water, following a scram from 100% rated thermal power.

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

C. 17:18:00;
provides the capability to remove heat consistent with the design requirements without makeup water, following a scram from 100% rated thermal power.

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

Answer: D

Question 95 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27045
User-Defined ID:	27045
Cross Reference Number:	
Topic:	95 - Generic.2.40
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE223LN001.07 Reference: Tech Spec and Bases 3.5.3 K/A: Generic. 2.40 3.4 / 4.7 K/A: Ability to apply Technical Specifications for a system. CFR: 43.2 / 43.5 PRA: Yes Level: High Pedigree: Bank History: 2009 NRC, 2013 Cert Explanation: A. Incorrect - At this time IC shell side level will be greater than 6 feet. B. Incorrect - At this time IC shell side level will be greater than 6 feet. C. Incorrect - IC shell side level will be outside the LCO requirements, however the bases is incorrect. 2957 MWth corresponds to RTP. D. Correct - At 17:18:00 IC shell side level will be 5'11". This is below the requirement of $\geq$ 6 feet. The bases for shell side water level is to remove sufficient decay heat for 20 minutes without makeup following a scram from 3016 MWth (102% RTP). SRO Criteria: 2, The candidate must demonstrate knowledge of the facility operating limitations in the technical specifications and their bases. **REQUIRED REFERENCES: None.**

None

96 **ID: 24095** **Points: 1.00**

A spent fuel cask is being moved on Unit 2.

The following events occur:
- Reactor Building Overhead Crane Radiation Monitor High Radiation alarms locally.
- Refuel Floor ARM High Radiation alarms locally.
- Overhead Crane dose rates are measured at 40 mr/hr.
- Refuel Floor dose rates are measured at 150 mr/hr.

Which of the following describe the effect of the above conditions?

A. SBGT has started and Reactor Building Overhead Crane movement is inhibited in the hoist raise function ONLY.

B. SBGT has started and Reactor Building Overhead Crane movement is inhibited in the hoist raise and lower function.

C. Reactor Building Ventilation system is running and Reactor Building Overhead Crane movement is inhibited in the hoist raise function ONLY.

D. Reactor Building Ventilation system is running and Reactor Building Overhead Crane movement is inhibited in the hoist raise and lower function.

Answer: A

Question 96 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	0
Difficulty:	0.00
System ID:	24095
User-Defined ID:	
Cross Reference Number:	
Topic:	96 - Generic.3.05
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 299L042 Reference: DFP 0850-03 K/A: Generic 2.3.5 2.9 / 2.9 K/A: Ability to use radiation monitoring systems, such as fixed radiation monitors and alarms, portable survey instruments, personnel monitoring equipment, etc. PRA: No Level: High Pedigree: Bank History: 2012 NRC Comments: a) Correct - DFP 0850-03 states RB Vent isolates and SBGT starts with Refuel Floor Rad > 100 mr/hr and RB Crane hoist raise is inhibited > 30 mr/hr. b) Incorrect - The RB Crane lower function is not inhibited > 30 mr/hr. c) Incorrect - RB Vent isolates with Refuel Floor rad >100 mr/hr. d) Incorrect - RB Vent isolates with Refuel Floor rad >100 mr/hr. SRO per Criteria: 9 **REQUIRED REFERENCES: None.**

Question 96 Table-Item Links

General Question Data - Site Ownership

Dresden

General Question Data - Ops Program

Senior Reactor Operator

Pseudo Objectives

299L042

97 **ID: 27043** **Points: 1.00**

As Unit Supervisor you are reviewing a **SPECIAL TEST** developed per OP-AA-108-110, EVALUATION OF SPECIAL TEST OR EVOLUTIONS, for post-mod testing following installation of an upgrade to DEHC.

What is the **MINIMUM** level of required briefing that must be performed prior to execution?

A. Task Preview

B. Tailored Pre-Job Brief

C. Infrequent Plant Activity (IPA) Brief

D. Heightened Level of Awareness (HLA) Brief

Answer: C

Question 97 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	2
Difficulty:	1.00
System ID:	27043
User-Defined ID:	27043
Cross Reference Number:	
Topic:	97 - Generic.2.07
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: N-AN-OP-HU-DLA.01 Reference: HU-AA-1211, OP-AA-108-110, DAP 09-11 K/A: Generic.2.07 2.9 / 3.6 K/A: Knowledge of the process for conducting special or infrequent tests. CFR: 43.3 Level: Memory Pedigree: New Explanation: A. Incorrect - This level of Pre-Job brief is reserved for frequent or low risk tasks. B. Incorrect - Plausible if candidate determined operational and reactivity management risk were limiting. C. Correct - Special tests require IPA briefings per HU-AA-1211. D. Incorrect - Evolutions covered by special procedures requiring multiple departments to work together in unison and has a potential to adversely affect status of reactivity control requires HLA brief SRO Criteria: 3 **REQUIRED REFERENCES: None.**

None

98 **ID: 24188** **Points: 1.00**

Units 2 was operating at rated power, when a transient occurred, resulting in the following:

- An automatic scram signal was received
- The Unit NSO attempted a manual scram and ARI, both were unsuccessful
- Reactor power is 10%
- RPV pressure is 850 psig
- Torus water level is 16 feet
- RPV Water level is -155 inches
- Torus water temperature is 170°F

What is the minimum EP classification level (if any) that must be declared? (Exclude discretionary EALs)

A. Unusual Event

B. Alert

C. Site Area Emergency

D. General Emergency

Answer: C

Question 98 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	24188
User-Defined ID:	24188
Cross Reference Number:	
Topic:	98 - Generic.4.41
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 29501LP032 Reference: EP-AA-1004 Addendum 3 K/A: Generic.4.41 2.9/4.6 K/A: Knowledge of the emergency action level thresholds and classifications. CFR: 43.5 Level: High Pedigree: New Explanation: A - Incorrect - This would be correct if ARI had been successful OR Rx power was less than 6%. B - Incorrect. This would be correct if reactor power was above 6% and no additional threats to the plant exist. C - Correct. With HCTL being violated, and the correct call is MS3 based on RX power of 10%. D - Incorrect. This was correct per the previous revision of the EALs. If the candidate fails to use the correct RPV level numbers based on current RPV pressure and determines RPV level cannot be maintained and restored above TAF, it is plausible to arrive at a General Emergency. SRO per Criteria: 5. The candidate is required to assess facility conditions and select the appropriate procedure during emergency situations. The determination of EAL classification is an SRO only task at Dresden. **REQUIRED REFERENCES: EP-AA-1004 Addendum 3, DEOP 0200-1**

Dresden

General Question Data - Ops Program

Senior Reactor Operator

99 **ID: 27055** **Points: 1.00**

A transient occurred resulting in an initial declaration of EAL **MG1** due to loss of AC power.

- The Shift Manager has directed you as the Unit 2 Unit Supervisor to perform the initial Protective Action Recommendation (PARs).
- Wind Direction is from 58°.

What is the initial PAR?

A. Shelter Sub Areas 1, 3, 4, 7 **ONLY**

B. Evacuate Sub Areas: 1, 3, 4, 7 **ONLY**

C. Shelter Sub Areas 1, 3, 4, 7, 9, 12 **ONLY**

D. Evacuate Sub Areas 1, 2, 3, 4, 5, 7, 8, 10, 11 **ONLY**

Answer: B

Question 99 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27055
User-Defined ID:	27055
Cross Reference Number:	
Topic:	99 - Generic 4.44
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: 295LP032 Reference: EP-A-111-F-04 K/A: Generic.4.44 2.4 / 4.4 K/A: Knowledge of emergency plan protective action recommendations CFR: 43.5 Level: High Pedigree: New Explanation; A. Incorrect - This answer is plausible if the candidate incorrectly executes the PARs flowchart B. Correct - Per the PARs flowchart, Evacuation should be recommended and based on wind direction the correct areas are 1, 3, 4, and 7 C. Incorrect - This answer is plausible if the candidate incorrectly executes the PARs flowchart D. Incorrect - This answer is plausible if the candidate incorrectly executes the PARs flowchart Execution of PARs flowchart requires the candidate to transverse multiple decision points. An error at any of these decision points will result in an incorrect PARs recommendation. SRO Criteria: This objective/task is SRO ONLY at Dresden Station **REQUIRED REFERENCES: EP-AA-111-F-04**

None

100 **ID: 27049** **Points: 1.00**

Unit 2 was operating at near rated power when the TR-22 Sudden Pressure Relay activated.

Ten (10) minutes later another transient occurred, resulting in the following set of conditions:

- Torus temperature is 90˚F and lowering slowly.
- RPV pressure is 1000 psig and lowering slowly.
- RPV water level is 4 inches and lowering slowly.
- Drywell pressure reached 1.55 psig and is lowering slowly.

Which of the following action(s) is/are the Unit Supervisor **REQUIRED** to direct?

A. Start all available Torus Sprays.

B. Throttle Iso Cond RX INLET ISOL, MO 2-1301-3 valve.

C. Power Bus 24 and 24-1 from SBO 2 AND force 2/3 EDG to Bus 23-1.

D. Depress and hold HPCI AUTO INITIATE pushbutton until the MSC reaches the HSS.

Answer: D

Question 100 Info	
Question Type:	Multiple Choice
Status:	Active
Always select on test?	No
Authorized for practice?	No
Points:	1.00
Time to Complete:	3
Difficulty:	4.00
System ID:	27049
User-Defined ID:	27049
Cross Reference Number:	
Topic:	100 - 206000.G.4.08
Num Field 1:	
Num Field 2:	
Text Field:	
Comments:	Objective: DRE206LN001.12 Reference: DEOP 100, DOA 2300-02, OP-DR-103-102-1002 K/A: 206000.G.4.08 3.8 / 4.5 K/A: High Pressure Coolant Injection System: Knowledge of how abnormal operating procedures are used in conjunction with EOPs. CFR: 43.5 Safety Function: 2 Level: High PRA: Yes Pedigree: Bank Explanation: A. Incorrect - Starting Torus sprays is directed in the containment pressure control leg of DEOP 200-1 only if drywell pressure cannot be held below 2.0 psig with SBGT and DW purge. B. Incorrect - RPV pressure control band is 800-1060 psig given conditions in the stem (per OP-DR-103-102-1002). Direction to throttle the 1301-3 valve is not required at this time with RPV pressure in band and lowering. C. Incorrect - SBO should be started and aligned to Bus 24. Bus 24-1 should remain aligned to Unit 2 EDG. D. Correct - With a loss of TR-22 (SPR event) and then subsequent loss of TR-21 when the reactor scrammed from RPV water level <+8 inches, all normal high pressure feed is lost. The correct action per DEOP 100 is to restore RPV water level using any of the systems listed. Of these systems the only one available to inject is HPCI. DOA 2300-02 directs starting HPCI with by depressing the Auto-start pushbutton until the Motor Speed Changer reaches the High Speed Stop. HPCI system did not receive an initiation signal based on parameters in stem. SRO Criteria: 5, The candidate must assess facility conditions and select appropriate procedures during emergency situations. **REQUIRED REFERENCES: None.**

None