EXAMINATION ANSWER KEY

03-1 NRC Exam (as submitted 6/30/04)

Questions 1-75 make up the RO portion of the exam.
Questions 76-100 make up the SRO portion of the exam.

EXAMINATION ANSWER KEY

03-1 NRC Exam (as submitted 6/30/04)

1 **ID: 03-1 NRC-5874** **Points: 1.00**

Given the following conditions:

•Unit 2 is operating at 55% power.

While single notching a control rod from notch position 18 to 20, the RMCS timer PLC freezes with the "rod out" logic made up.

Annunciator 902-5 D-3, TIMER MALFUNCTION ROD SELECT BLOCK, would be expected upon timer failure _____ after directional control valves are energized.

A. immediately

B. 2 - 3 seconds

C. 5 - 6 seconds

D. 8 - 9 seconds

Answer: B

Question 1 Details

Question Type:	Multiple Choice
Topic:	1 DOPSS.201LN002.06 RMCS: Timer Malfunction
System ID:	5874
User ID:	03-1 NRC-5874
Status:	Active
Must Appear:	No
Difficulty:	3.00
Time to Complete:	2
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE201LN002.06 Reference: LP DRE201LN002 and DAN 902-5 D-3 K/A: 201002 A3.04 2.8 / 2.8 Level: Recall Explanation: As described in the LP. Once the RMCS timer begins its sequence, all "normal" rod blocks are essentially bypassed. The logic assumes the timer will complete its sequence. The 115 (rod out) contacts are monitored by the 130 relay. If they remain closed for more than 2 seconds (and a continuous withdraw signal is not present) the 130 relay will energize. The 130 relay de-energizes the rod out bus causing rod motion to stop and annunciator 902-5 D-3 to alarm.

Pedigree: Modified from Dresden Bank (123296)

2 **ID: 03-1 NRC-5820** **Points: 1.00**

The following conditions exist on Unit 3:

- Reactor pressure is 360 psig and steady.
- The CRD pumps have tripped and cannot be started.
- The accumulators nitrogen side pressures range from 550 to 600 psig.

A scram has been inserted by the Unit 3 NSO.

What will be the response of the control rods?

The controls rods will..

A. insert FASTER than when at 1000 psig reactor pressure.

B. insert SLOWER than when at 1000 psig reactor pressure.

C. insert at the same rate as when at 1000 psig reactor pressure.

D. NOT insert.

Answer: D

Question 2 Details

Question Type:	Multiple Choice
Topic:	2 DILTS.201LN003.12 CRD: Rx pressure only scram
System ID:	5820
User ID:	03-1 NRC-5820
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective:201LN003.12 Reference: LP DRE 201LN003 K/A: 201003 K6.02 3.0/ 3.0 Level: Recall Explanation: per LP, during a reactor pressure only scram, the drive cannot be scrammed below 400 psig. The pressure in the accumulators will be of no use to the CRD since they are already discharged with the piston

all of the way at the top. (Rx pressure is given as 360 psig)
Pedigree: New for ILT 03-1 NRC exam.

3 **ID: 03-1 NRC-5822** **Points: 1.00**

Following the Control Rod Sequence Package, rod H-4 is the next rod to be moved. Rod H-4 is at position 48.

Which of the following would an Operator expect to see on the Rod Worth Minimizer screen when rod H-4 is selected for movement?

A. "++" in white inverse video.

B. "++" in green inverse video.

C. "48" in white inverse video.

D. "48" in green inverse video.

Answer: B

Question 3 Details

Question Type:	Multiple Choice
Topic:	3 DILTS.201LN006.11 RWM: Indications of a selected rod at 48
System ID:	5822
User ID:	03-1 NRC-5822
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE201LN006.11 Reference: DOP 0400-02 Rod Worth Minimizer K/A: 201006 A4.06 3.2 / 3.2 4.0 / 4.0 Level: High Explanation: Per the procedure, "The control rods in the current latched step are green", "Rods at position 48 will show two (++) symbols", and "The selected rod will be shown in inverse video". Pedigree: new for 03-1 NRC exam.

4 **ID: 03-1 NRC-5802** **Points: 1.00**

Given the following conditions:

- At time =0, Unit 2 is at full power.
- At time +10 seconds, Drywell pressure increased to +2.1 psig.
- At time +12 seconds, annunciator "4 KV Bus 23-1 OVERCURRENT" alarms.
- At time +15 seconds, 345kv BT 2-3 CB and 345kv BT 3-4 CB opened.

What is the expected status of LPCI pumps 2A and 2D at time +30 seconds?

	A	D
A.	Running	Running
B.	Stopped	Stopped
C.	Running	Stopped
D.	Stopped	Running

Answer: D

Question 4 Details

Question Type:	Multiple Choice
Topic:	4 DILTS.203LN001.12 LPCI: ECCS Pumps available with LOOP & Loss of 23-1
System ID:	5802
User ID:	03-1 NRC-5802
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 203LN001-12 Reference: LP DRE203LN001 K/A: 203000 K2.01 3.5/3.5 Level: High After a loss of offsite power with a LOCA signal all pumps will attempt to start. The loss of Bus 23-1, due to the overcurrent condition, prevents 2A and 2B from starting. 2C and 2D are powered from 24-1 approximately 8 seconds after bus 24-1 goes undervoltage and the EDG picks up the bus.

EXAMINATION ANSWER KEY

03-1 NRC Exam (as submitted 6/30/04)

Pedigree: Dresden Bank

5 **ID: 03-1 NRC-5862** **Points: 1.00**

The following conditions exist:

- Unit 2 was operating at 912 MWe for 412 days.
- Unit 2 has been shutdown for 48 hours.
- 2A SDC is lined up for cooling.
- 2B SDC is lined up for mixing.
- 2C SDC is out of service for heat exchanger tube plugging.
- SDC is taking a suction on the A Recirc Loop and discharging into the B Recirc Loop.
- B Recirc Loop temperature is currently 320^0F.

Which of the following describes the effect on Reactor pressure if the B Recirc Loop temperature sensor fails high?

Reactor pressure will ___(1)___ because ___(2)___.

A. increase, **ONLY** 2A SDC has tripped.

B. increase, the SDC system has isolated.

C. remain the same, **ONLY** 2B SDC has tripped.

D. remain the same, the SDC system is unaffected.

Answer: B

Question 5 Details

Question Type:	Multiple Choice
Topic:	5 DILTS.205LN001.12 SDC: Recirc loop temp sensor failing high effect on SDC and Rx pressure
System ID:	5862
User ID:	03-1 NRC-5862
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE205LN001.12 Reference: DOA 1000-01 K/A: 205000 K3.01 3.3 / 3.3 Level: High Explanation: All SDC is lost in this event due to the recirc loop temp sensor exceeding 350^OF. The SDC system

will isolate when EITHER recirc loop exceeds the setpoint. Due to the short time after shutdown and the loss of SDC, reactor water temp will go up and since the vessel is a saturated system at this point, reactor vessel pressure will in turn go up.
Pedigree: New for 03-1 NRC Exam.

6 **ID: 03-1 NRC-5803** **Points: 1.00**

Given the following plant conditions exist on Unit 3:

- A LOCA has occurred and HPCI has initiated.
- The HPCI system was aligned for injection.
- Drywell pressure is 6.5 psig and rising 0.25 psig per minute.
- Reactor water level reached +47".
- Reactor water level is currently +40" and dropping one inch per minute.
- The SRO has directed you to maintain RPV water level +8" to +48" using the HPCI system.

What must be done to the HPCI system in order to maintain the specified water level?

A. Depress the HPCI AUTO INITIATE pushbutton and control level with the HPCI FLOW CONTROLLER.

B. Depress the TURB TRIP RESET pushbutton and control level with the HPCI FLOW CONTROLLER.

C. Nothing, HPCI will automatically re-initiate to maintain RPV water level within the specified band.

D. Nothing, HPCI is already maintaining RPV water level within the specified band.

Answer: B

Question 6 Details

Question Type:	Multiple Choice
Topic:	6 DILTS.206LN001.06 HPCI: High RPV/L turb trip - How to reset to maintain RPV/L
System ID:	5803
User ID:	03-1 NRC-5803
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE206LN001.06 Reference: LP DRE206LN001 and DAN 902-3 A-9 K/A: 206000 K4.03 4.2/4.1 Level: High - Analysis & Application Explanation: The HPCI turbine trip will reset itself at –59" following a high level trip and will trip again on a high level. In order to maintain the specified water level

+8 to +48, the Operator will have to depress the TURB TRIP RESET pushbutton and manually control HPCI turbine speed to control the injection flowrate.
Pedigree: New for 03-1 NRC exam.

7 **ID: 03-1 NRC-5901** **Points: 1.00**

With Unit-2 at 100% power, the following sequence of events occur:

- A small steam leak causes HPCI area temperature to peak at 240^{O}F and has now stabilized at 160^{O}F.
- Subsequently, a loss of feedwater causes RPV water level to drop to -85 inches.

HPCI Injection valve (2-2301-8) will ...

A. NOT open automatically until the high temperature condition clears; then HPCI will auto initiate.

B. NOT open automatically until HPCI is manually initiated in accordance with DOA 2300-02, HPCI Fast Startup.

C. NOT open automatically until the isolation signal is reset in accordance with DAN 902-3 C-7, HPCI AUTO ISOL INITIATED.

D. open automatically and level can be controlled in accordance with DOP 2300-03, High Pressure Coolant Injection System Manual Startup and Operation.

Answer: C

Question 7 Details

Question Type:	Multiple Choice
Topic:	7 DILTS.206LN001.12 HPCI: High Area Temperature Isolation Seal-In
System ID:	5901
User ID:	03-1 NRC-5901
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE206LN001.06 Reference: LP Fig 20600-01, DAN 902(3)-3 C-7 K/A: 206000 A2.11 4.1 / 4.2 Level: High Explanation: The HPCI high area temperature isolation signal is SEAL-IN. The RESET pushbutton must be depressed before the 4 and 5 valves will re-open. The HPCI area high temperature is 173^{O}F so the signal is clear. The signal automatically resets, the valve closure

interlock does NOT. Manually initiating HPCI will not work, the 4 and 5 valves are still interlocked closed. Injection valve will NOT automatically open until discharge pressure is above the minimum for injection.
Pedigree: New for 03-1 NRC exam.

8 **ID: 03-1 NRC-5888** **Points: 1.00**

While performing panel walkdowns with the Unit at rated power, the NSO noticed that the 2-1301-17, Iso Cond Vent Vlv, was closed.

What is the concern with this valve being closed for an extended period of time?

Upon Isolation Condenser initiation...

A. a water hammer event will occur due to partially drained condensate return lines.

B. steam flow will be reduced due to non-condensed steam having nowhere to vent.

C. air and non-condensible gases will have built up in the shell side reducing the heat removal capacity.

D. air and non-condensible gases will be forced into the tube side reducing the heat removal capacity.

Answer: D

Question 8 Details

Question Type:	Multiple Choice
Topic:	8 DILTS.207LN001.12 Iso Cond: Implication of vent valve shut during stby ops
System ID:	5888
User ID:	03-1 NRC-5888
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 207LN001.12 Reference: DRE LP207LN001 K/A: 207000 K5.10 3.0 / 3.2 Level: Recall Explanation: The lesson plan states: "The Steamline Vent Valves provide a path to vent non-condensable gases to the "A" main steamline. The driving force for flow is the pressure drop across the Main Steam line flow restrictors and the MSIVs" and "If non-condensable gases were allowed to accumulate in the isolation condenser steam lines, they would be forced into the tube bundles upon initiation of the system. This would

limit or prevent steam condensation and hence natural circulation. As a result, Isolation Condenser heat removal rate would be reduced".
Pedigree: New for 03-1 NRC exam.

9 **ID: 03-1 NRC-5827** **Points: 1.00**

A loss of off-site power has occurred with the following events on Unit 2:

- The U2/3 Diesel Generator jacket water temperature is 205^0F and going up 1^0F every 5 minutes.
- NO Operator actions have been taken yet.
- All equipment responded as expected.

At this time, which Core Spray pumps are available?

A. BOTH Core Spray pumps are available.

B. 2A Core Spray ONLY.

C. 2B Core Spray ONLY.

D. NEITHER Core Spray pump is available.

Answer: A

Question 9 Details

Question Type:	Multiple Choice
Topic:	9 DILTS.209LN001.03 CS: Power Supplies - Analyze Transient/Givens - Determine Pumps Available
System ID:	5827
User ID:	03-1 NRC-5827
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE203LN001.03 and DRE209LN001.03 Reference: LP DRE209LN001, 264LN001, DWG 262LN001-02, DAN 902-8 A-7 and DAN DG2A B-4 K/A: 209001 K6.02 3.8 / 3.9 Level: High Explanation: Since the 2/3 EDG received an autostart signal from the undervoltage on the 4kv-1 buses due to the station blackout, the high engine temperature trip has been bypassed therefor the 2/3 EDG is still loaded onto bus 23-1. Both CS pumps are available. Pedigree: New for 03-1 NRC exam.

10 **ID: 03-1 NRC-5804** **Points: 1.00**

Besides the FLOW light, which of the following would also be indications of Standby Liquid Control Injection flow into the reactor?

1. SBLC SQUIB A and SQUIB B continuity lights lit.
2. SBLC PUMP 1 AND PUMP 2 lights lit.
3. SBLC Pump Discharge Pressure slightly ABOVE Reactor Pressure.
4. Annunciator 902-5 H-6, SBLC SQUIB VLV CKT FAILURE is clear.

A. BOTH 1 AND 2

B. BOTH 1 AND 3

C. BOTH 2 AND 3

D. BOTH 2 AND 4

Answer: C

Question 10 Details

Question Type:	Multiple Choice
Topic:	10 DILTS.211LN001.11 SBLC True indications of flow to reactor
System ID:	5804
User ID:	03-1 NRC-5804
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE211LN001.11 Reference: LP DRE211LN001 K/A: 211000 A1.04 3.8/3.9 Level: High - Analysis & Application Explanation: A and B not correct - if squib valve continuity lights are still lit, no path exists to the reactor for SBLC flow. D not correct - if both pump lights lit and annunciator 902-5 H-6 is clear, the squib valves have NOT fired. C is correct - the pump discharge pressure slightly above reactor pressure and both pumps running would be the best indication that there is flow to the reactor vessel. Pedigree: New for 03-1 NRC exam.

11 **ID: 03-1 NRC-5805** **Points: 1.00**

While at power, the actual water level in the Unit 2 West Scram Instrument Volume (SIV) exceeds the high level setpoint resulting in the following annunciator, 902-5 A-14, CHANNEL A/B INST VOL LVL HI.

In addition to alarms, which of the following will result, AND what action(s) by the Unit NSO will be necessary to mitigate the consequences of the condition?

A. Only a ROD OUT BLOCK; manually open all Scram Instrument Volume vent and drain valves per DAN 902-5 C-1, SCRAM INST VOL HI LVL ROD BLOCK .

B. Only a half scram; manually open the WEST side Scram Instrument Volume vent and drain valves and reset the half scram per DOP 500-7, INSERTION/RESET OF MANUAL HALF SCRAM.

C. A full reactor scram; press scram buttons, place the mode switch to SHUTDOWN, per DGP-2-3, REACTOR SCRAM.

D. The SDV vent and drain valves open automatically; re-close the valves when the high level condition clears per DAN 902-5 D-1, WEST SCRAM INST VOL NOT DRAINED.

Answer: C

Question 11 Details

Question Type:	Multiple Choice
Topic:	11 DILTS.212LN001.10 Scram Inst Vol High level - result
System ID:	5805
User ID:	03-1 NRC-5805
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE212LN001.10 Reference: LP DRE212LN001 p. 16 and DAN 902-5 A-14, CHANNEL A/B INST VOL LVL HI K/A: 212000 A2.12 3.9/4.0 Level: Recall Explanation: DAN 902-5 A-14, a full reactor scram will occur when this alarm comes in. Pedigree: Modified from 1996 Nine Mile Point question:

While at power, the actual water level in ONE Scram Discharge Volume (SDV) exceeds the high-high level setpoint (49 inches). In addition to alarms, which of the following will result?

A full reactor scram.

Only a half reactor scram.

The SDV vent and drain valves open

Only a control rod block

12 **ID: 03-1 NRC-5825** **Points: 1.00**

Unit 3 has just been declared critical.
ALL Full In position indications for rod J-8 have been lost.

Which of the following Tech Spec LCOs is applicable for the above situation?

A. 3.9.3, Control Rod Position AND 3.9.4, Control Rod Position Indication.

B. 3.9.3, Control Rod Position ONLY.

C. 3.1.3, Control Rod Operability AND 3.9.4, Control Rod Position Indication.

D. 3.1.3, Control Rod Operability ONLY.

Answer: D

Question 12 Details

Question Type:	Multiple Choice
Topic:	12 DILTS.201LN002.08 RPIS: Loss of position indication for 1 rod, which LCO is applicable
System ID:	5825
User ID:	03-1 NRC-5825
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 201LN002.08 Reference: TS 3.1.3 K/A: 214000 2.1.33 3.4 / 4.0 Level: High Explanation: The examinee must know that Tech Spec 3.9.3 and 3.9.4 are for Mode 5 only and do not apply since the stem stated the reactor was in Mode 2 (just critical). Tech Spec 3.1.3 SR 3.1.3.1 requires determining the position of each control rod every 24 hrs. This cannot be done with the conditions given, Tech Spec LCO not being met for 3.1.3, Control Rod Operability. Pedigree: New for 03-1 NRC exam.

13 **ID: 03-1 NRC-5875** **Points: 1.00**

Unit 3 is at 270 MWe with a power ascension in progress.

- APRM 3 is reading 31.5%.
- APRM 4 is reading 29.5%.
- 3 LPRM inputs to RBM 7 are operable for rod J-6.
- 4 LPRM inputs to RBM 8 are operable for rod J-6.
- A Limiting Control Rod Pattern exists.

Predict the effects that will occur when the Operator selects rod J-6 and the actions required for those effects.

A Rod Out Block will occur due to ___(1)___. Refer to appropriate procedures and ___(2)___.

	1	2
A.	too few inputs on RBM 7	bypass RBM 7 and continue rod withdrawal
B.	too few inputs on RBM 7	do NOT bypass RBM 7 and halt rod withdrawal
C.	low APRM reference signal on RBM 8	bypass RBM 8 and continue rod withdrawal
D.	low APRM reference signal on RBM 8	do NOT bypass RBM 8 and stop rod withdrawal

Answer: B

Question 13 Details

Question Type:	Multiple Choice
Topic:	13 DILTS.215LN002.10 RBM: Results of <50% inputs and actions.
System ID:	5875
User ID:	03-1 NRC-5875
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE215LN002.10 Reference: DAN 902-5 A-7, C-3, and A-7, DOA 700-03

K/A: 215002 A2.05 3.2 / 3.3
Level: High
Explanation: <50% inputs to the RBM will cause a RBM HI/INOP alarm and also cause a ROD OUT BLOCK. The DAN says to stop control rod withdrawals until the block clears. DOA 700-03 directs the operators to contact the Instrument Maintenance department for assistance. It does NOT give guidance to bypass the reference APRM based on too few inputs. The RBM downscale alarm is generated from RBM 7.10% or Reference APRM 28%. Neither condition exists.
Pedigree: New for 03-1 NRC Exam

14 **ID: 03-1 NRC-5823** **Points: 1.00**

Given the following conditions:

- The mode switch is in RUN
- IRM 14 and 18 have failed up-scale and are bypassed.
- APRM Channel 5 has failed downscale and is bypassed.
- APRM Channel 3 is downscale.

Which of the following would subsequently cause a half scram?

A. Bypassing APRM Channel 3.

B. Taking APRM Channel 5 out of bypass.

C. Taking IRM 14 out of bypass.

D. Taking IRM 18 out of bypass.

Answer: C

Question 14 Details

Question Type:	Multiple Choice
Topic:	14 DILTS.215LN003.06 IRM: Moving IRM 14 out of bypass with APRM 3 downscale
System ID:	5823
User ID:	03-1 NRC-5823
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE215LN003.06 Reference: DOP 0700-02, LP DRE215LN003, and DRE215LN005 K/A: 215003 A1.03 3.7 / 3.7 Level: High - Comprehension & Application Explanation: APRM 3 is the companion APRM to IRM "14". With IRM "14" failed up-scale and taken out of bypass, and it's companion APRM downscale a half-scram will be generated. One APRM failed downscale per channel will NOT cause a half scram nor will a single IRM failed up-scale with the Mode Switch in RUN. Bypassing APRM 3 will clear the APRM Ch 3 DWNSCL

OR INOP light.
Pedigree: New for 03-1 NRC exam.

15 **ID: 03-1 NRC-5896** **Points: 1.00**

Unit 3 is in a startup with power increase in progress.

IRMs indicate 30 on range 6.

Positioning IRM CH 11 RANGE SWITCH from range 6 to 7 will automatically change the scale on IRM-APRM recorder, RR 2-750-10A to ___(1)___ and the recorder will now read ___(2)___.

	1	2
A.	0 - 40	3.0
B.	0 - 40	30
C.	0 - 125	3.0
D.	0 - 125	30

Answer: A

Question 15 Details

Question Type:	Multiple Choice
Topic:	15 DILTS.215LN003.11 IRM: Changes to IRM recorder scale and IRM reading change from 6 to 7
System ID:	5896
User ID:	03-1 NRC-5896
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 215LN003.11 Reference: DRE LP215LN003 K/A: 215003 A3.01 3.3 / 3.3 Level: High Explanation: Odd number ranges have a scale of 0-40, even ranges have a scale of 0 -125. Ranges 5 and 6 are paired and would both read 30. Ranges 6 and 7 vary by a factor of 10, so ranging the IRM up would change the indication on the recorder top 3.0. Pedigree: New for 03-1 NRC exam.

16 **ID: 03-1 NRC-5890** **Points: 1.00**

Currently SRM 22 and 23 are being trended on recorder RR 2-750-2, Source Range Monitor Level.

To trend SRM 21 on the recorder, the Operator would...

A. move the toggle switch above the recorder to position "21".

B. place the SRM recorder channel selector switch below the recorder to "21".

C. depress the SRM 21 "Channel Select" pushbutton on the horizontal portion of the 902-5 panel.

D. press the MENU button on the recorder until SRM 21 was displayed and then press ENTER to trend.

Answer: B

Question 16 Details

Question Type:	Multiple Choice
Topic:	16 DILTS.215LN004.11 SRM: How to trend SRM 21 reading on recorder
System ID:	5890
User ID:	03-1 NRC-5890
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 215LN004.11 Reference: DRE LP215LN004 K/A: 215004 A4.02 3.0 / 3.1 Level: Recall Explanation: Per the lesson plan and recorder installation in the Main Control Room, to display SRM 21 trend on the SRM recorder, the SRM selector switch can be switched/placed in the "21" position. The toggle switch above the recorder is for fast and slow recorder speed. There is no way to choose the SRM to display inside the recorder. The SRM channel select pushbutton is for the detector drive. Pedigree: New for ILT 03-1 NRC exam.

17 **ID: 03-1 NRC-5806** **Points: 1.00**

Which one of the following design features is utilized to offset the effects of LPRM detector aging?

A. The LPRM flux amplifier gain can be increased.

B. The LPRM detector chamber is filled with a high pressure argon gas.

C. The LPRM ion chamber high voltage power supply can be decreased.

D. The LPRM detector chamber is coated with enriched U-235.

Answer: A

Question 17 Details

Question Type:	Multiple Choice
Topic:	17 DILTS.215LN006.03 Effects of detector aging on APRM readings
System ID:	5806
User ID:	03-1 NRC-5806
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE215LN006.03 Reference: LP DRE215LN006 p. 8 K/A: 215005 K4.06 2.6/2.8 Level: Recall Explanation: per the lesson plan. Pedigree: Perry 2002 Exam question.

18 **ID: 03-1 NRC-5824** **Points: 1.00**

Unit 2 is operating at 912 MWe.
APRM 5 is currently bypassed due to maintenance.
Which of the following conditions will result in the LCO requirements for Tech Spec 3.3.1.1, Reactor Protection System (RPS) Instrumentation NOT being met?

A. 3 of 6 LPRMs are currently bypassed which input into the "A" core level of APRM 4 .
Another LPRM input to the "A" core level of APRM 4 fails and cannot be restored.

B. 4 of 6 LPRMs are currently bypassed which input into the "A" core level of APRM 3 .
Another LPRM input to the "A" core level of APRM 3 fails and cannot be restored.

C. 9 LPRMs are currently bypassed which input into APRM 3.
Two additional LPRM inputs to APRM 3 fails and cannot be restored.

D. 9 LPRMs are currently bypassed which input into APRM 4.
Two additional LPRM inputs to APRM 4 fails and cannot be restored.

Answer: D

Question 18 Details

Question Type:	Multiple Choice
Topic:	18 DILTS.215LN005.08 APRM: 1 bypassed and 9 LPRM inputs to another bypassed
System ID:	5824
User ID:	03-1 NRC-5824
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 215LN005.08 Reference: DOP 700-08 and TS 3.3.1.1 K/A: 215005 2.1.33 3.4 / 4.0 Level: High Explanation: Per TS 3.3.1.1 in mode 1, 2 of the 3 APRM channels per trip system need to be available to meet the LCO. With 9 inputs to APRM channel 4 bypassed, it is no longer operable. With APRM channel 5 bypassed there are not enough APRM channels available to meet the LCO. Per DOP 0700-08 at least 2 LPRMs per core

level must be available. Since APRM 3 and 5 are in different channels, <2 operable in APRM 3 still meets the requirements of the LCO.
Pedigree: New for 03-1 NRC exam.

19 **ID: 03-1 NRC-5807** **Points: 1.00**

The Reactor is operating at 70% power when a LOCA condition develops in the Drywell.

The following is a timeline of ADS associated events:

- 17:15:00, Division I, 2 psig High Drywell Pressure
- 17:15:30, Division II, -59" Low Low Reactor Water Level
- 17:15:35, Division I, -59" Low Low Reactor Water Level
- 17:16:00, Division I, ECCS >100 psig Discharge Permissive

Without operator action, at what time will ADS initiate?

A. 17:17:00

B. 17:17:30

C. 17:17:35

D. 17:18:00

Answer: C

Question 19 Details

Question Type:	Multiple Choice
Topic:	19 DILTS.218LN001.06 ADS: Initiation Logic
System ID:	5807
User ID:	03-1 NRC-5807
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE218LN001.06 Reference: LP DRE218LN001 K/A: 218000 K1.04 3.9/4.2 Level: High Objective: 218L-S1-05 Explanation: Unit 2 ADS Initiation Logic requires the following conditions for initiation: High Drywell Pressure and Low-Low Level signals in the same division for 120 seconds + any division's ECCS pump >100# - These conditions are met at 17:17:35

17:17:00 is wrong because the 120 second timer doesn't start until both signals are received in the same division.
17:17:30 is wrong because the 120 second timer doesn't start until both signals are received in the same division.
17:18:00 is wrong because the ECCS pump doesn't affect the timer
Pedigree: Dresden Bank

20 **ID: 03-1 NRC-5808** **Points: 1.00**

Of the four actions listed below, which action would prevent a Unit 2 Div II ADS logic actuation to occur as designed?

A. Placing ALL Div II ECCS pump control switches in PTL.

B. Depressing and holding the ADS Timer Reset Pushbutton.

C. Placing ALL five ADS valve keylock switches to OFF.

D. Loss of 125 Vdc Dist. Pnl. 2B-1.

Answer: B

Question 20 Details

Question Type:	Multiple Choice
Topic:	20 DILTS.218LN001.11 ADS: Preventing/Inhibiting Initiation/Logic
System ID:	5808
User ID:	03-1 NRC-5808
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 218LN001-11 Reference: LP DRE218LN001 K/A: 218000 K5.01 3.8/3.8 Level: High Explanation: Placing all of the Div II ECCS pumps in PTL will not prevent an ADS actuation due to the system still seeing 100 psig from the Div I pumps. Continually holding the ADS Timer Reset Pushbutton DOES prevent the ADS function. ADS is an 'energize to actuate' system -both initiation relays in one or both divisions must energize to cause an ADS blowdown. Losing 2B-1 removes Normal power to Div II ADS logic circuitry however 2A-1 is the backup supply. The OFF position of the individual switches for each valve removes the RELIEF function, NOT the ADS function. This is a commonly confused point. Pedigree: Modified from Dresden Bank DILT-252982

21 **ID: 03-1 NRC-5826** **Points: 1.00**

The following plant conditions exist:

- RPV level is -240" and trending up slowly.
- RPV pressure is 560 psig and trending down slowly.
- Drywell pressure is 10.5 psig and trending up slowly.
- 316 in "MANUAL"

The Unit Supervisor then orders initiation of drywell sprays.

Considering only electrical interlocks, under these conditions, the drywell spray valves can be opened with which of the following switch alignments?

Note: "316" is the Containment Spray Permissive Keylock Switch
"317" is the 2/3 Core Coverage Override Keylock Switch
"318" is the CCSW Pump Start Permissive Keylock

A. 317 in "MANUAL OVERRIDE"

B. 318 in "MANUAL OVERRIDE"

C. 318 in "AUTO" **AND** 30 second timer timed out

D. 317 in "AUTO" **AND** Torus pressure greater than 1 psig

Answer: A

Question 21 Details

Question Type:	Multiple Choice
Topic:	21 DILTS.203LN001.06 LPCI: Conditions required to allow Drywell Spray
System ID:	5826
User ID:	03-1 NRC-5826
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 203LN001-06 Reference: LP DRE203LN001 K/A: 219000 K4.03 3.8 / 3.8 Level: High - Comprehension Without proper control switch position, water is

prevented from being diverted from the vessel. Drywell pressure must be above 1 psig in order to open drywell spray valves with a LPCI initiation signal present - that condition is met in the givens. With an initiation signal present, the 316 must be placed in MANUAL in order to spray the drywell, and with RPV level below 2/3 core height (i.e. less than minus 191), the 317 must ALSO be placed in MANUAL OVERRIDE (correct answer - 316 and 317 operated to Manual & Manual Override respectively). The 318 is only used if it is desired to start CCSW pumps, therefore, distractors including 318 are incorrect. Distractor with 317 in AUTO and Torus Pressure is wrong because 317 must be in Manual and the logic does not monitor Torus pressure.
Pedigree: Dresden Bank

22 **ID: 03-1 NRC-5809** **Points: 1.00**

Unit 3 HPCI is being run for Post Maintenance Test (PMT). The Unit 3 HPCI steam flow instrument fails high causing a SPURIOUS Group IV isolation.

Which of the following valves are DIRECTLY affected by the Group IV signal?

A. MO 3-2301-4, STM ISOL VLV, **and** MO 3-2301-35, TORUS SUCT VLV

B. MO 3-2301-3, TURB STM SUPPLY, **and** MO 3-2301-8, PP DISCH VLV

C. MO 3-2301-3, TURB STM SUPPLY, **and** MO 3-2301-4, STEAM ISOL VLV

D. MO 3-2301-8, PP DISCH VLV, **and** MO 3-2301-9, PP DISCH VLV

Answer: A

Question 22 Details

Question Type:	Multiple Choice
Topic:	22 DOPSS.223LN005.02 PCIS: Group IV Isol Results
System ID:	5809
User ID:	03-1 NRC-5809
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE223LN005.02 Reference: LP 223LN005 and DAN 902-3 C-7 K/A: 223002 K1.04 3.5/3.8 Level: Recall Explanation: As described in training material/LP. Pedigree: Dresden Bank

23 **ID: 03-1 NRC-5811** **Points: 1.00**

The contents from the Fuel Pool Cooling Demineralizer vessel are transferred directly to the _____.

A. Resin Cleaner Sludge Tank

B. Main Concentrated Waste Tank

C. Spent Resin Tank

D. Unit 3 Mix and Hold Tank

Answer: C

Question 23 Details

Question Type:	Multiple Choice
Topic:	23 DILTS.233LN001.02 FPC: spent resins destination
System ID:	5811
User ID:	03-1 NRC-5811
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 233LN001.01 References: LP DRE233LN001, 268LN001, and DOP 1900-08 K/A: 233000 K1.12 2.5/2.6 Level: Recall per the lesson plan and DOP 1900-08 the exhausted resins may be sent directly to the Spent Resin Tank. The resins may be sent to the mix and hold but must be sent to the catex tank first. The Resin Cleaner Sludge tank is where the SRT gets decanted to. There is no direct path for the FPC resins to get to the main concentrated waste tank. Pedigree: New for 03-1 NRC exam.

24 **ID: 03-1 NRC-5893** **Points: 1.00**

How will a complete loss of nitrogen system pressure in the drywell affect the ability of the ADS valves to depressurize the Reactor Vessel on a valid initiation signal?

Automatic depressurization will...

A. NOT occur.

B. occur at approximately 20% design capacity.

C. occur at approximately 80% design capacity.

D. occur at design capacity.

Answer: C

Question 24 Details

Question Type:	Multiple Choice
Topic:	24 DILTS.239LN001.03 MS: loss of all N2 pressue in the drywell, effect on ability to ED
System ID:	5893
User ID:	03-1 NRC-5893
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 239LN001.03 Reference: DRE LP239LN001 K/A: 239002 K3.03 4.3 / 4.4 Level: High Explanation: A complete loss of nitrogen pressure in the drywell will only affect the target rock valve, making it inoperable. The remaining 4 electromatic relief valves will NOT be affected as they are solenoid actuated. Pedigree: New for ILT 03-1 NRC exam.

25 **ID: 03-1 NRC-5828** **Points: 1.00**

Unit 3 was operating at 912 MWe with the following conditions:

- The Auxiliary Power system was in a normal configuration.
- Due to a problem with the Turbine Oil system, the Main Turbine tripped.

What is the expected status of Bus 35 10 seconds after the above transient?

A. De-energized.

B. Powered from Bus 33.

C. Powered from Bus 36.

D. Powered from Bus 37.

Answer: B

Question 25 Details

Question Type:	Multiple Choice
Topic:	25 DILTS.262LN001.12 Aux Pwr: Trip of Main Gen, power to Bus 35
System ID:	5828
User ID:	03-1 NRC-5828
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE262LN001.12 Reference: DRE LP262LN001 K/A: 245000 K3.01 3.4 / 3.7 Level: High Explanation: Bus 31 and Bus 33 will fast transfer to TR 32 without an interruption in power, therefore Bus 35 will NOT see an under-voltage and not seek power from Bus 36. Pedigree: New for 03-1 NRC exam.

26 **ID: 03-1 NRC-5810** **Points: 1.00**

While operating at 95% power with both main feedwater regulating valves (FWRVs) in service controlling reactor vessel water level, the air line supplying FWRV 2B pulse positioner ruptures (air pressure to the four way solenoid valve in local cabinet goes to zero psig).

Which one of the following statements identifies the response of the 2B FWRV?

A. The valve fails full open.

B. The valve will continue to operate normally for up to 30 minutes.

C. The valve "locks up" in its present position.

D. The valve transfers to 'Manual Bypass' mode.

Answer: C

Question 26 Details

Question Type:	Multiple Choice
Topic:	26 DILTS.25902LN002.06 FWLC: FRV Lock Up on Loss of Air at Pulse Positioner
System ID:	5810
User ID:	03-1 NRC-5810
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 259LN002.06 References: LP DRE259LN002, DWG 259LN001-001, DAN 902-6 E-10 K/A: K/A 259002 K4.13 3.5/3.6 Level: High - Application & Analysis The valve locks up due to loss of air pressure (< 65 psig), i.e., the pulse positioner will not move and the pressure at the actuator will not change - so the valve locks up 'as is'. The 30 minute nitrogen backup can't be supplied with a line break as describe in the question. Since the valve locks up, it will not fail open or closed. Auto transfer to 'Manual Bypass' happens on loss of communication between M/A station and Bailey OR M/A station output failure - neither is true. Pedigree: Dresden Bank.

27 **ID: 03-1 NRC-5832** **Points: 1.00**

The following conditions exist on unit 3:

- A small steam leak has developed in the Drywell.
- The operating team has entered DEOP 200-1.
- As directed by DEOP 200-1, Primary Containment Control, Drywell is being vented through "B" SBGT using DOP 1600-01 NORMAL PRESSURE CONTROL OF THE DRYWELL OR TORUS.
- "A" SBGT fan control switch is in "A STBY", and "B" SBGT fan control switch is in "START B"
- Drywell pressure is steady at 1.6 psig.
- NO Group II OR Secondary Containment isolation signals are present.

What is the effect on Drywell pressure if the "B" SBGT heater's feed breaker trips on overload?

Drywell pressure will...

A. rise due to loss of all vent flow.

B. rise slightly until "A" SBGT train auto starts.

C. remain steady but vented gases will be untreated.

D. rise due to an increased differential pressure across the charcoal.

Answer: A

Question 27 Details

Question Type:	Multiple Choice
Topic:	27 DILTS.261LN001.06 SBGT: Effects on drywell pressure when venting and lose power to heater
System ID:	5832
User ID:	03-1 NRC-5832
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 261LN001.06 Reference: LP261LN001, DOP 1600-01, and DOP 7500-01 K/A: 261000 K3.03 3.2 / 3.4 Level: High Explanation: The heater de-energizing will trip the running train. Since it was the STBY train started, per

DOP 7500-01 and since there is no auto initiation signal, the Primary train will not start, therfore there will be no flow through the system. Also the inlet and outlet dampers will go closed automatically when the fan trips.
Pedigree: New for ILT 03-1 NRC exam.

28 **ID: 03-1 NRC-5835** **Points: 1.00**

125 Vdc Reserve Bus 2B is being fed from its Alternate feed.
A loss of 125 Vdc Main Bus 2A-1 occurs.

If Bus 24 voltage drops 5 volts per minute, the BUS 24 TO BUS 24-1 TIE ACB at Bus 24 will ...

A. open when bus voltage reaches 2930 volts with NO time delay.

B. open when bus voltage reaches 3870 volts with NO time delay.

C. open 5 minutes after bus voltage reaches 3870 volts.

D. NOT open.

Answer: D

Question 28 Details

Question Type:	Multiple Choice
Topic:	28 DOPSS.262LN001.03 Aux Power: 125 Vdc Reserve Bus 3B-1 on alt feed, effect on bus 34
System ID:	5835
User ID:	03-1 NRC-5835
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE262LN001.03 Reference: LP DRE263LN001, 262LN004, DWG - 263LN002-001, DAN 902-8 E-3 and H-10. K/A: 262001 K6.01 3.1 / 3.4 Level: High Explanation: 125 Vdc Reserve Bus 2B's reserve power supply is Main Bus 2A-1. The control power supply to Bus 24 feed breaker to bus 24-1 is 2B-1. Since 2B-1 has been lost due to the loss of power to its' reserve power supply, the breaker will not open on any protective signal. Pedigree: New for 03-1 NRC exam.

29 **ID: 03-1 NRC-5829** **Points: 1.00**

The Bus 29 feed breaker has opened on a fault.
Which of the following indications in the Main Control Room would alert the Operator to this fault?

A. 902-8 E-8, ESS UPS ON DC OR ALTERNATE AC, annunciator in alarm ONLY.

B. 902-8 E-10, 120/240V AC ESS BUS ON EMERG SPLY, annunciator in alarm ONLY.

C. 902-8 E-8, ESS UPS ON DC OR ALTERNATE AC, annunciator in alarm AND a momentary loss of power to the ESS loads.

D. 902-8 E-10, 120/240V AC ESS BUS ON EMERG SPLY, annunciator in alarm AND a momentary loss of power to the ESS loads.

Answer: A

Question 29 Details

Question Type:	Multiple Choice
Topic:	29 DILTS.262LN005.02 Vow Volt AC: ESS UPS feed breaker from 29 opens, indications
System ID:	5829
User ID:	03-1 NRC-5829
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE262LN005.02 Reference: DAN 902-8 E-8 and LP262LN005 K/A: 262002 A3.01 2.8 / 3.1 Level: Recall Explanation: DAN 902-8 E-8, ESS UPS ON DC OR ALTERNATE AC, warns the operator that the ESS UPS is no longer being powered from Bus 29. As stated in the lesson plan,the static switch "automatically transfers between its two feeds without missing a cycle, thus making a bumpless transfer." DAN 902-8 E-10, 120/240V AC ESS BUS ON EMERG SPLY, indicates that the ABT has transferred and the ESS Bus is being supplied from MCC 28(38)-2. Pedigree: New for ILT 03-1 NRC Exam

30 **ID: 03-1 NRC-5837** **Points: 1.00**

Unit 2 is operating with the 125 Vdc batteries on an equalizing charge.

A loss of ventilation to the Unit 2 125 Vdc Battery Room has occured and repairs will take a minimum of 8 hours to complete.

Radiation Protection has reported there is currently NO buildup of hydrogen in the battery room.

According to DOA 5750-01, Ventilation System Failure, what is the danger with the loss of the battery room ventilation AND what actions need to be taken?

	DANGER	ACTIONS
A.	Buildup of heat and pressure in the battery cells.	Place portable blowers in the battery room to provide temporary ventilation.
B.	Buildup of heat and pressure in the battery cells.	Place the battery on a normal charge.
C.	Buildup of hydrogen in the battery room.	Place portable blowers in the battery room to provide temporary ventilation.
D.	Buildup of hydrogen in the battery room.	Place the battery on a normal charge.

Answer: D

Question 30 Details

Question Type:	Multiple Choice
Topic:	30 DILTS.288LN002.12 DC Systems: Loss of Battery room vent while performing an equalizing charge
System ID:	5837
User ID:	03-1 NRC-5837
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE288LN002.12 Reference: DOA 5750-01 K/A: 263000 A2.02 2.6 / 2.9 Level: High Explanation: Per DOA 5750-01 "IF ventilation to a battery

room will be lost for an extended period of time AND an affected battery is undergoing an Equalizing Battery Charge, Service Test OR Performance Test THEN place the battery on a normal charge." and in the discussion section, "During an Equalizing Battery Charge, Service Test or Performance Test significant amounts of hydrogen are generated. A loss of battery room ventilation during one of these evolutions can result in the build up of a hazardous concentration of hydrogen in the battery room in a short period of time."
Pedigree: New for 03-1 NRC exam.

31 **ID: 03-1 NRC-5813** **Points: 1.00**

The following conditions exist:

- The 2/3 Emergency Diesel Generator Cooling Water Pump Power Source Selector Switch is in the 'U2 AUTO' position.
- The 2/3 EDG has been started for a surveillance on Unit 3 but has NOT been closed in on Bus 33-1.

The 2/3 Emergency Diesel Generator Cooling Water Pump is currently receiving power from...

A. MCC 28-3.

B. MCC 38-3.

C. MCC 29-2.

D. MCC 39-2.

Answer: A

Question 31 Details

Question Type:	Multiple Choice
Topic:	31 DILTS.264LN004.06 EDG Aux: power supply to 2/3 DGCWP
System ID:	5813
User ID:	03-1 NRC-5813
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE264LN004.06 Reference: LP DRE 264LN004 K/A: 264000 A3.06 3.1 / 3.2 Level: High - Comprehension Explanation: Since the 2/3 diesel generator cooling water pump was started for a surveillance and has NOT been loaded onto the Unit 3 bus 33-1, the DGCWP will not swap power supplies to unit 3. It will remain powered from unit 2 (MCC 28-3) Pedigree: Dresden Bank.

32 **ID: 03-1 NRC-5878** **Points: 1.00**

The following conditions exist:

- Unit 3 is at 750 MWe.
- Unit 3 Hydrogen addition flow rate is 14 scfm.
- Unit 3 Oxygen Injection FCV has reduced oxygen flowrate from 7 scfm to 5.25 scfm.

Which of the following indications would alert the NSO to this situation?

A. Off Gas flow increasing.

B. Hydrogen gas concentration decreasing.

C. Preheater outlet temperature decreasing.

D. Annunciator 903-65, O2 INJ FLOW LO, in alarm.

Answer: A

Question 32 Details

Question Type:	Multiple Choice
Topic:	32 DILTS.271LN001.03 Off Gas: O2 FCV going closed
System ID:	5878
User ID:	03-1 NRC-5878
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE271LN001.03 Reference: LP DRE271LN001and Dan 903-65 B-4 K/A: 271001 A1.14 2.7 / 2.8 Level: High Explanation: Oxygen injection rate will not effect preheater temperature. Off gas flow will go up due to more free hydrogen exiting the recombiner, this would also increase hydrogen gas concentration. The hydrogen addition system will NOT try and compensate for the lower oxygen flow, it positions according to feedwater flow rate. 903-65 D-3 will not alarm because oxygen flowrate has not dropped to less than 2 scfm below 1/2 the hydrogen injection rate.

Pedigree: Modified from 03-1 Cert exam.

33 **ID: 03-1 NRC-5858** **Points: 1.00**

Which one of the following describes how the Reactor Building Ventilation System maintains the required 0.25 inches of negative water pressure in the Reactor Building during normal operation of the system?

A. A d/p controller regulates a recirculation damper position.

B. At least one (1) more exhaust fan than supply fan is operated.

C. A variable vane controller positions movable vanes on the operating exhaust fans based on Building D/P.

D. A variable vane controller positions movable vanes on the operating supply fans based on Building D/P.

Answer: C

Question 33 Details

Question Type:	Multiple Choice
Topic:	33 DILTS.288LN001.03 RBV: Proper dp maintained by
System ID:	5858
User ID:	03-1 NRC-5858
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE288LN001 Reference: DRE LP 288LN001 and DOP 5750-02 K/A: 288000 K5.02 3.2 / 3.4 Level: Recall Explanation: The reactor building is maintained at a negative pressure by controlling the variable vanes on the exhaust fans NOT the supply fans. DOP 5750-02 has the operator start 2 supply and 2 exhaust fans for a normal system startup. The reactor building ventilation system does NOT use a recirc damper, the reactor feed pump ventilation system has a recirc damper for temperature control. Pedigree: Cooper 1999 NRC exam

34 **ID: 03-1 NRC-5876** **Points: 1.00**

The following conditions exist:

- Unit 2 and 3 are operating at 912MWe.
- The NSO reports that Reactor Building differential pressure is at 0 inches of water AND going up.

As a result, during a design basis loss of coolant accident...

A. the torus could be overpressurized.

B. an unmonitored release could occur.

C. reactor water level instrumentation may read lower.

D. the secondary containment interlock doors may NOT function.

Answer: B

Question 34 Details

Question Type:	Multiple Choice
Topic:	34 DILTS.288LN001.10 Containment: Reason for keeping at a vacuum.
System ID:	5876
User ID:	03-1 NRC-5876
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE288LN001.10 Reference: DAN 923-5 C-1, DOA 5750-01, DRE LP 295LS03 K/A: 290001 2.1.32 3.4 / 3.8 Level: Recall Explanation: Per the DAN, DOA and Lesson Plan, a building DP that is not negative will result in a potential unmonitored release, especially during a LOCA when primary containment may be breached. If reactor building pressure was higher, the pressure on the outside of the torus would be higher, lowering DP. This will have a minimal positive effect on overpressure of torus during a LOCA. The only level instrument that would be affected by a change in RB pressure would be

Refueling level indication and it has such a large level band, the change would NOT be noticeable on any level instrument. A 0.25 inch of water difference across the access doors will NOT significantly limit access to the reactor building.
Pedigree: Modified from Duane Arnold 2002 Exam

During movement of a large component on the Refuel floor the component contacted the outside wall and opened a large hole in the wall to atmosphere.
The Reactor Building Supply fans are all OFF.
The Reactor Building to Atmosphere DP has stabilized at 0.1 inches of water with the Reactor Building Exhaust Fans EF 1, 2, and 3 running.
HPs report there are NO abnormal radiation level readings.

Which ONE of the following states the adverse consequences that has/will occur in this situation and what procedure directs the actions for this event?

In the event of a design basis Loss of Coolant Accident (LOCA) an unmonitored release could occur. T.S. directs actions (Shutdown using IPOI 4 "Shutdown" or IPOI 5 "Reactor Scram") if secondary containment operability can not be restored.

The Drywell pressure instrumentation is inoperable. ARP 1C23C A-6 "Main Plant Exhaust Plenum HI Pressure" directs re-calibration of the Drywell pressure instruments.

Refuel Floor integrity has been lost to atmosphere with spent fuel in the Fuel Pool. EOP 4 is entered to prevent Radioactive release to the environment.

The differential pressure across the Reactor Building doors will prevent access to the Secondary Containment. EOP 3 is entered on loss of Secondary Containment access.

35 **ID: 03-1 NRC-5921** **Points: 1.00**

Unit 3 is at 500 MWe.
The 3C ERV pressure controller PC 3-203-3C begins momentarily spiking high every 2 seconds.

For the first ten seconds of this transient, steam dryer differential pressure will...

A. increase one time and return to normal.

B. decrease one time and return to normal.

C. increase every two seconds and return to normal.

D. decrease every two seconds and return to normal.

Answer: A

Question 35 Details

Question Type:	Multiple Choice
Topic:	35 DILTS.216LN001.12 NBI: Press controller effect on stm dryer dp
System ID:	5921
User ID:	03-1 NRC-5921
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE216LN001.12 Reference: DRE LP 239LN001 K/A: 290002 K6.08 2.9 / 3.2 Level: High Explanation: When the pressure controller spikes high the 3C ERV will open. The opening of the valve will initially increase steam flow from the Reactor and raise steam dryer dp. The ERV will not cycle on a 2 second frequency because the 3C ERV has a ten second time delay, once open, before it will open again. Pedigree: New for 03-1 NRC exam.

36 **ID: 03-1 NRC-5834** **Points: 1.00**

According to DOA 4700-01, Instrument Air System Failure, where does the Operator monitor Instrument Air system pressure for the manual scram initiation setpoint?

Panel...

A. 901-2

B. 902(3)-4

C. 923-1

D. 923-5

Answer: C

Question 36 Details

Question Type:	Multiple Choice
Topic:	36 DILTS.278LN001.11 IA: Location of header pressure gages used for scram criteria
System ID:	5834
User ID:	03-1 NRC-5834
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE278LN001.11 Reference: DOA 4700-01 K/A: 300000 A4.01 2.6 / 2.7 Level: Recall Explanation: DOA 4700-01 states "IF at panel 923-1, U2(3) IA HDR PRESS, drops to 55 psig, THEN manually scram U2(3) reactor (DGP 02-03)." The 923-5 panel is next to the 923-1 panel and contains ventilation system pressures. The 901-2 panel has U1 instrument air header pressure gage. 902(3)-4 panel has pumpback system air receiver pressure. Pedigree: New for 03-1 NRC exam.

37 **ID: 03-1 NRC-5836** **Points: 1.00**

The following conditions exist:

The Switchyards were in a normal lineup with both Unit 2 and 3 on-line.
345 KV LN 1221 developed a fault.
345 KV BT 2-3 CB failed to open.
The rest of the electrical system operated as designed.

Which of the following is a result of the above transient?

Loss of power to...

A. Transformer 21

B. Transformer 22

C. 138 KV Bus 2

D. 138 KV Bus 4

Answer: B

Question 37 Details

Question Type:	Multiple Choice
Topic:	37 DILTS.262LN001.12 Aux Pwr: Fault on line in 345 yd, 1 breaker fails to open
System ID:	5836
User ID:	03-1 NRC-5836
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE262LN001.12 Reference: LP DRE 262LN001, 262LN003, and DWG 262LN003-001 K/A: 262001 K2.01 3.3 / 3.6 Level: High Explanation: If a fault on Line 1221 occurs and CB 2-3 doesn't open, the next breaker downstream will open to try and protect the system. This will cause CB 3-4 to open causing the loss of the feed to TR-22, our normal supply of offsite power to Bus 22 and 24.

Pedigree: New for 03-1 NRC exam.

38 **ID: 03-1 NRC-5816** **Points: 1.00**

Unit 2 is operating at 750 MWe.
Annunciator 923-1 D-1, U2 OR U3 RBCCW PRESS LO, is received.
In accordance with DOA 3700-1, "LOSS OF COOLING BY REACTOR BUILDING CLOSED COOLING WATER (RBCCW) SYSTEM", if RBCCW pressure CANNOT be restored within one minute you should secure the:

A. Drywell Coolers

B. Fuel Pool Cooling System

C. Reactor Water Cleanup System

D. Reactor Recirculation Pumps

Answer: D

Question 38 Details

Question Type:	Multiple Choice
Topic:	38 DILTS.208LN001.12 RBCCW: Loss of pressure for > 1 min, trip recirc pumps
System ID:	5816
User ID:	03-1 NRC-5816
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE208LN001.12 Reference: LP DRE 208LN001 and DOA 3700-01 K/A: 400000 2.1.2 3.0 / 4.0 Level: Recall Explanation: Per the DOA and lesson plan, IF RBCCW flow is lost and CANNOT be restored within one minute, THEN perform the following: If the Mode switch is in RUN, THEN manually scram the reactor AND enter DGP 2-3, Reactor Scram and perform concurrently with this procedure. Trip the Recirculation Pumps AND enter DOA 202-01, Recirculation (Recirc) Pump Trip - One or Both Pumps and perform concurrently with this procedure. Modified from Quad 1996 Exam:

Annunciator 912-1 D-1, "REACTOR BLDG COOLING WATER LOW PRESSURE", is received. In accordance with QCOA 3700-1, "RBCCW LOW PRESSURE", within one minute you should shutdown the:

Reactor recirculation pumps.

Drywell Coolers

Fuel Pool Cooling System.

Reactor Water Cleanup System

39 **ID: 03-1 NRC-5809** **Points: 1.00**

A malfunction in the EHC system has caused Reactor pressure to increase.

A and C Reactor pressure transmitters from Division 1 sense 1192 psig.
B Reactor pressure transmitter from Division 2 senses 1250 psig.
D Reactor pressure transmitter from Division 2 senses 1193 psig.

Which of the following describes the response of the Recic pumps?

A. Both Recirc Pumps will continue to operate.

B. Both Recirc pumps will trip immediately.

C. Only the B Recirc pump will trip immediately.

D. Both Recirc pumps will trip after a 9 second time delay.

Answer: A

Question 39 Details

Question Type:	Multiple Choice
Topic:	39 DILTS.212LN002.06 ATWS: Response to ATWS Initiation from high reactor pressure.
System ID:	5908
User ID:	03-1 NRC-5809
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE212LN002.07 Reference: 12E6582F, LP DRE212LN002 K/A: 295001 K2.04 3.3/ 3.3 Level: Recall Explanation: The high reactor pressure setpoint in Division 1 has not been exceeded, so no signal to trip the Recirc pumps has been received. In Division 2, only one transmitter in each channel has been energized so the circuit is not made up to trip the recirc pumps. While a single channel can cause a trip, it takes two transmitters in a channel to trip the recirc pumps. A mod was installed to allow either division to trip both Recirc pumps.The nine second time delay is only applicable to

the low low level trip, not the high reactor pressure trip.
Pedigree: New for 03-1 NRC exam.

40 **ID: 03-1 NRC-5920** **Points: 1.00**

A loss of ALL AC power has occured on Unit 2 from rated conditions.

Which of the following describes the response of the Isolation Condenser to this event AND the reason for that response?

The Isolation Condenser will initiate...

A. immediately due to de-energization of its initiation logic.

B. after a short time delay due to the closure of the MSIVs.

C. immediately due to the closure of the turbine stop valves.

D. after a short time delay due to the EDGs re-energizing its initiation logic.

Answer: B

Question 40 Details

Question Type:	Multiple Choice
Topic:	40 DILTS.207LN001.06 Iso Cond: reason the Iso initaites on Loss of all AC
System ID:	5920
User ID:	03-1 NRC-5920
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE207LN001.06 Reference: DOP 1300-02, DAN 902(3)-5 F-1, DAN 902(3)-5 H-4, DAN 902(3)-7 G-5, DRE LP207LN001 K/A: 295003 AK3.07 3.8 / 4.0 Level: Recall Explanation: Following a loss of all offsite power, the MSIVs will close and pressure will rapidly rise in the RPV due to the loss of the normal heat sink and after a time delay of 15 seconds, the isolation condenser will automaticaly initiate. The isolation condenser will not initiate on a turbine stop valve closure because there is a 15 second time delay on Iso initiation and the MSIVs will close in 3-5 seconds, additionally the bypass valves will open to control Rx pressure with just turbine stop

valve closure. The initiation logic is de-energize to actuate but since it is DC, it will not lose power during this event.
Pedigree: New for 03-1 NRC exam.

41 **ID: 03-1 NRC-5872** **Points: 1.00**

The following conditions exist:

- Unit 2 and Unit 3 were at 912 MWe.
- Unit 3 experienced a loss of 250 Vdc Turbine Building Bus 3.
- Five minutes later a spurious Unit 2 Group I isolation occurs.

The Unit 2 Isolation Condenser MO 2-1301-3, Rx Inlet Isol valve...

A. Can be opened by using control switch located in plant.

B. Will operate as designed upon auto initiation signal.

C. Will open when swapped to it's alternate power supply.

D. Can only be opened through local manual operation.

Answer: D

Question 41 Details

Question Type:	Multiple Choice
Topic:	41 DILTS.207LN001.12 ISO: How to operate Iso with a loss of 250 VDC Bus 2A
System ID:	5872
User ID:	03-1 NRC-5872
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 207LN001.12 Reference: DRE207LN001 K/A: 295004 A1.02 3.8 / 4.1 Level: Recall Explanation: With a loss of U3 250 VDC TB Bus 3, the U2 250 VDC RB Bus 2A and 2B have lost power. U2 RB Bus 2A is the power supply to the U2 Iso 3 vlv so the valve has to be locally opened manually since it has no power. Swapping of power supplies capability and local control switches are provided in the U 2/3 EDG for the Iso 1 and 4 valves. Pedigree: Dresden Bank (276629)

42 **ID: 03-1 NRC-5852** **Points: 1.00**

Unit 3 was at 912 MWe when Annunciator 903-7, TURB TRIPPED MOIST SEP TK LVL HI-HI, alarm came in and would not clear for 15 seconds.

Which of the following describes the expected status of the Main Turbine Stop Valves and The Combined Intermediate Stop Valves?

	Main Turbine Stop Valves	Combined Intermediate Stop Valves
A.	Closed	Open
B.	Closed	Closed
C.	Open	Open
D.	Open	Closed

Answer: B

Question 42 Details

Question Type:	Multiple Choice
Topic:	42 DILTS.245LN001.04 Main Gen: Positions of Turbine stop and CIVs when conditions exist
System ID:	5852
User ID:	03-1 NRC-5852
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE245LN001.09 Reference: DAN 902-7 G-4 K/A: 295005 A2.03 3.1 / 3.1 Level: High Explanation: Per the DAN, the turbine will trip when MSDT level reaches 24 inches from the bottom of the tank with a 10 second time delay. A turbine trip always causes a generator trip. The stop valves and CIVs go closed on a turbine trip. Pedigree: New for ILT 03-1 NRC Exam

43 **ID: 03-1 NRC-5853** **Points: 1.00**

Which of the following is NOT a purpose of a reactor scram?

A. Preserve the integrity of the fuel cladding.

B. Preserve the integrity of the primary system.

C. Bring the reactor to a shutdown condition from full power at any time during core life independent of the Control Rod Drive Hydraulic System.

D. Minimize the energy that must be absorbed, and prevent criticality following a Loss Of Coolant Accident (LOCA).

Answer: C

Question 43 Details

Question Type:	Multiple Choice
Topic:	43 DILTS.212LN001.01 SCRAM: function of a reactor scram
System ID:	5853
User ID:	03-1 NRC-5853
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 212LN001.01 Reference: DRE LP212LN001 K/A: 295006 2.1.27 2.8 / 2.9 Level: Recall Explanation: Per the lesson plan, a reactor scram is designed to: "Preserve the integrity of the fuel cladding, Preserve the integrity of the primary system, and Minimize the energy that must be absorbed, and prevent criticality following a Loss Of Coolant Accident (LOCA)." The purpose of SBLC is to "bring the reactor to a shutdown condition from full power at any time during core life independent of the Control Rod Drive Hydraulic System." Pedigree: New for 03-1 NRC exam.

44 **ID: 03-1 NRC-5831** **Points: 1.00**

Given the following information:

- Unit 2 was operating at 700MWe.
- The 2A and 2B RFPs were operating with B RFP being the last RFP started.
- The 2C RFP was selected for standby.
- A transient caused Reactor water level to increase to 54 inches.
- Reactor water level is now 45 inches and lowering at 1 inch per minute.

What will be 2C RFP's response to this transient?

2C RFP will...

A. auto start as soon as level is below the trip setpoint.

B. remain in STBY until the high level trip seal-in signal is reset and then auto start.

C. start and immediately trip and will auto start after the high level trip seal in signal is reset.

D. start and immediately trip and must be manually restarted after level is below the trip setpoint.

Answer: D

Question 44 Details

Question Type:	Multiple Choice
Topic:	44 DOPSS.259LN001.06 FW: Actions to restore RFP after high RPV water level
System ID:	5831
User ID:	03-1 NRC-5831
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE259LN001.06 Reference: DOA 0600-01, DAN 902(3)-6 H-6 K/A: 259008 AA1.08 3.5/3.5 Level: High Explanation: The RPV water level has exceeded ther trip setpoint. As described in training material/LP. Standby

pump will receive a start signal when one or both of the running pumps trip - its breaker will auto-close. Due to high level, as soon as the breaker closes, it will receive a auto-trip signal. There is no auto restart on a RFP when the high level condition clears. 2B RFP being the last pump started, only comes into play on selective tripping on low suction pressure, NOT on RFP auto start.
Pedigree: New for ILT 03-1 NRC Exam

45 **ID: 03-1 NRC-5830** **Points: 1.00**

Unit 2 is at 210 MWe with the following conditions:

- Power ascension in progress.
- FWLC system is maintaining RPV water level at +30 inches.
- EHC system is maintaining RPV pressure is 980 psig.
- Annunciator 902-4 D-18, DIV 2 TORUS WTR LOCAL TEMP HI, has alarmed due to 2B ERV opening.

The expected Operator actions would be to first verify the alarm is valid by checking local Torus temperatures on the Torus Temperature Recorder on panel __(1)__ and then placing the 2B ERV control switch in __(2)__.

	1	2
A.	902-4	"MAN"
B.	902-4	"OFF"
C.	902-36	"MAN"
D.	902-36	"OFF"

Answer: D

Question 45 Details

Question Type:	Multiple Choice
Topic:	45 DILTS.223LN001.10 Cont: Torus local temp hi, where to verify and actions to take
System ID:	5830
User ID:	03-1 NRC-5830
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE223LN001.10 Reference: DAN 902-4 D-18 K/A: 295013 2.4.50 3.3 / 3.3 Level: Recall Explanation: DAN 902(3)-4 D-18, DIV 2 TORUS WTR LOCAL TEMP HI, states "Check TIRS 2-1640-200B, Torus Water Temperature Recorder, on Panel 902-36 to

determine which alarm sensor(s) generated the alarm." and "IF a high temperature condition exists, THEN verify bulk torus water temperature using the following recorders: TIRS 2-1640-200B on Panel 902-36 and TR 2(3)-1641-9 on Panel 902-4." The Temp Recorder TR 2-1641-9 on the 902-4 panel will only give BULK temp, not local temp. For Operator Actions the DAN states "IF a relief valve is open, THEN close the valve." Taking the control switch to MAN will OPEN the valve. Taking the control switch to OFF will CLOSE the valve.
Pedigree: New for ILT 03-1 NRC Exam

46 **ID: 03-1 NRC-5841** **Points: 1.00**

DSSP 0100-CR, Control Room Evacuation, is in progress.

Due to damage in the control room wiring for the 2-1301-1, U2 ISOLATION CONDENSER RX OUTLET ISOL VLV, has gone closed.

How would the Unit 2 Aux NSO re-open the 2-1301-1 valve?

Proceed to ___(1)___ and open the valve at the ___(2)___.

	1	2
A.	Reactor Building 3rd floor	2202-76, UNIT 2 ISOLATION CONDENSER VALVES CONTROL panel
B.	Reactor Building 3rd floor	MO 2-1301-1, U2 ISOL COND RX OUTLET ISOL VLV pushbutton control station
C.	2/3 EDG Room	2202-76, UNIT 2 ISOLATION CONDENSER VALVES CONTROL panel
D.	2/3 EDG Room	MO 2-1301-1, U2 ISOL COND RX OUTLET ISOL VLV pushbutton control station

Answer: C

Question 46 Details

Question Type:	Multiple Choice
Topic:	46 DILTS.207LN001.05 Iso Cond: Where to locally operate Iso 4 valve
System ID:	5841
User ID:	03-1 NRC-5841
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE07LN001.05 Reference: DSSP 0100-CR K/A: 295016 AK2.02 4.0 / 4.1 Level: Recall Explanation: Per DOA 5750-01 "Perform the following at 2202-76 UNIT 2 ISOLATION CONDENSER VALVES

CONTROL panel (2/3 D/G room top of stairs) to verify U2 Isolation Condenser Valves are open..." The 2-1301-3 valve would be operated from the 3rd floor of the reactor building. Only the 2-1301-10 valve has a MOV local pushbutton control station.
Pedigree: New for 03-1 NRC exam.

47 **ID: 03-1 NRC-5817** **Points: 1.00**

The following conditions exist:

- 3A Pumpback compressor is operating normally.
- 2A RBCCW pump is running.
- 2/3 RBCCW pump is lined up to Unit 2 and is being powered by Unit 3 due to maintenance being performed on the Unit 2 breaker that supplies the RBCCW pump.
- 3A and 3B RBCCW pumps are running.
- Bus 33-1 trips on overcurrent.

How does this affect the cooling water supply to the 3A Pumpback compressor?

A. NO cooling water has been lost.

B. Limited cooling water is being supplied from 2/3 RBCCW pump.

C. Limited cooling water is being supplied from 3B RBCCW pump.

D. ALL cooling water has been lost.

Answer: A

Question 47 Details

Question Type:	Multiple Choice
Topic:	47 DILTS.208LN001.12 RBCCW: Loss of 34-1 on U3 Pumpback compressor cooling
System ID:	5817
User ID:	03-1 NRC-5817
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE208LN001.12 Reference: LP DRE 208LN001 K/A: 295018 AK2.01 3.3 / 3.4 Level: High Explanation: Cooling water for the Unit 3 pumpback compressors is supplied from UNIT 2, NOT Unit 3, and 2/3 RBCCW pump is supplied from 34-1 in this case. Therefore NO cooling water is lost. Pedigree: New for 03-1 NRC exam.

48 **ID: 03-1 NRC-5814** **Points: 1.00**

The following conditions exist on Unit 2:

- Operating at 912 MWe.
- 2A Instrument Air compressor is running.
- 3C Instrument Air compressor is secured and lined up to Unit 2.
- The Instrument Air system is in a normal lineup and all systems operate as designed.

What is the FIRST automatic response when Instrument Air pressure drops to the actuation setpoint of Annunciator 923-1 F-4, U2 INST AIR PRESS LO **AND** what is the reason for the automatic action?

A. The Nitrogen Backup Supply Isolation valve will automatically open to keep the MSIVs open.

B. The 3C Instrument Air Compressor will automatically start in an attempt to restore Instrument Air pressure.

C. The Service Air to Instrument Air crosstie valve will automatically open in an attempt to restore Instrument Air pressure.

D. The Instrument Air dryer bypass valve will automatically open to minimize the loads on the Instrument Air system.

Answer: C

Question 48 Details

Question Type:	Multiple Choice
Topic:	48 DILTS.278LN001.06 Inst Air: Response to sys lo press alarm and reason
System ID:	5814
User ID:	03-1 NRC-5814
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE278LN001.06 Reference: LP DRE 278LN001 and DANs 923-1 F-4 and E-4 K/A: 295019 AK3.01 3.3 / 3.4 Level: Recall Explanation: Per the DAN 923-1 F-4, when the alarm is

received, the SA-IA xtie valve will open (<85# IA header press). The IA dryer bypass valve will open at ~ 60 psig downstream of the dryer, well below the setpoint of the SA-IA xtie actuation. The 3C IA compressor can be manually started but will NOT auto start. The N2 backup supply valve will open when a low pressure condition is sensed in the drywell pneumatic system (~70 psig)
Pedigree: Modified from Quad 2001 Exam

What is the automatic response, if any, when instrument air pressure drops low enough to energize Annunciator 912-1 A-11, U1A INST AIR LOW PRESSURE?

The Service air back-up valve will automatically open in an attempt to restore
instrument air pressure.

The Drywell Pneumatic Compressor will automatically start to maintain control air
for the MSIVs and the Target Rock Valve.

The 1 / 2 Instrument Air Compressor will automatically start in an attempt to
restore instrument air pressure.

The air supply to non-critical systems will automatically isolate to conserve
instrument air pressure.

49 **ID: 03-1 NRC-5877** **Points: 1.00**

The following conditions exist on Unit 3:

- A spurious Group I isolation has occured.
- RPV level is 10 inches and lowering 1 inch per minute.
- RPV pressure is 1070 and increasing 1 psig per minute.
- All rods are in.
- EHC pressure is 0 psig.

The Operators FIRST concern is ___(1)___ by ___(2)___.

	1	2
A.	lowering RPV pressure	opening the bypass valves
B.	lowering RPV pressure	initiating the Isolation Condenser
C.	raising RPV water level	injecting with HPCI
D.	raising RPV water level	injecting with feedwater

Answer: B

Question 49 Details

Question Type:	Multiple Choice
Topic:	49 DILTE.29501LK019 EHC Failure: actions to take to control containment pressure
System ID:	5877
User ID:	03-1 NRC-5877
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 29501LK019 Reference: LP 295L-S1 and DEOP 100 K/A: 295020 K1.01 3.7 / 3.9 Level: High - Application Explanation: Entry for DEOP 100 is 1060 psig and 8 inches. For the conditions given, the action that need to be taken **first** are restoring pressure in accordance with DEOP 100-1. Since EHC is NOT available, the bypass valves are unable to be opened.

Pedigree: New for 03-1 NRC exam.

50 **ID: 03-1 NRC-5927** **Points: 1.00**

2C SDC pump motor developed a short circuit direct to ground but the motor supply breaker did NOT trip.
All other AC distribution components worked as designed.

Where AND how would the Operator be expected to obtain Drywell Temperature?

A. Process computer ONLY since the 902-3 panel indication would be lost.

B. Directly off Temperature Recorder TR 2-1340-1, ISOL COND/DW ATMOS TEMPS on the 902-3 panel.

C. Installation of a fluke at the 902-3 panel to read the RTD's for TR 2-1340-1, ISOL COND/DW ATMOS TEMPS.

D. Operator reports from the local drywell temperature monitoring panel since ALL Main Control Room indication would be lost.

Answer: B

Question 50 Details

Question Type:	Multiple Choice
Topic:	50 DILTS.223LN001.12 SDC pump fault effect on ability to monitor torus temp.
System ID:	5927
User ID:	03-1 NRC-5927
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE223LN001.12 Reference: Fig 262LN005-001 and 262LN001-002, LP 22LN001and 205LN001 K/A: 295021 A1.06 2.8 / 3.0 Level: High Explanation: When the faulted SDC pump breaker fails to trip, it will trip the Bus 23-1 feed breaker and lockout Bus 23-1 on over-current. When Bus 23-1 deenergizes, Bus 28 loses power which causes MCC 28-2 to lose power. When MCC 28-2 loses power, the Instrument Bus ABT will swap to MCC 25-2, which is still powered. Therefore, NO drywell temperature recorder will lose

power, though the drywell temperature recorders will temporarily lose power while the Inst. Bus ABT swaps.
Pedigree: New for 03-1 NRC exam.

51 **ID: 03-1 NRC-5926** **Points: 1.00**

During a fuel move from the core to the spent fuel pool, a fuel bundle is dropped rupturing the Drywell to RPV bellows.

As a result fuel pool level will...

A. remain constant.

B. drop to the level of the skimmer surge tank weirs.

C. drop to approximately 3 feet above the top of the spent fuel.

D. drop to approximately 19 feet above the top of the spent fuel.

Answer: C

Question 51 Details

Question Type:	Multiple Choice
Topic:	51 DILTS.233LN001.03 FPC: RPV to Drywell bellows broke, resultant fuel pool level
System ID:	5926
User ID:	03-1 NRC-5926
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE233LN001.03 Reference: Fig 233LN001.001, LP 233LN001 K/A: 295023 AA2.02 3.4 / 3.7 Level: High Explanation: Since a fuel bundle is being moved from the Reactor vessel to the fuel pool, the shielding blocks and fuel pool gates are removed. If a RPV to Drywell bellows is ruptured there would be nothing stopping the level from dropping to the level of the bottom of the cattle shoot. This would have the same effect as draining the RPV with the fuel pool gates removed, so level will drop to approximately 3 feet above the top of the spent fuel in the racks. If the puncture was in the fuel pool skimmer surge tank, level would drop to the level of the skimmer surge tank weirs. 19 feet above the top of the spent fuel is the Tech Spec required minimum water level above

irradiated fuel.
Pedigree: New for 03-1 NRC exam.

52 **ID: 03-1 NRC-5819** **Points: 1.00**

The following conditions exist on Unit 3:

- A loss of RBCCW has occured.
- The reactor mode switch has been placed in shutdown.
- All APRMs are downscale.
- During the transient, reactor water level dropped to 15 inches and is currently 24 inches and going up 0.5 inches per minute.
- Drywell pressure is 2.2 psig and going up 0.2 psig per minute.
- All ECCS pumps have automatically started.

The NSO should notify the Unit Supervisor that entry conditions have been met for which of the following?

A. DGP 2-3, Reactor Scram ONLY.

B. DEOP 100, RPV Control and DGP 2-3, Reactor Scram ONLY.

C. DEOP 200-1, Primary Containment Control and DGP 2-3, Reactor Scram ONLY.

D. DEOP 100, RPV Control, DEOP 200-1, Primary Containment Control, and DGP 2-3, Reactor Scram.

Answer: D

Question 52 Details

Question Type:	Multiple Choice
Topic:	52 DILTS.295L034 Drywell Press: Determine procedures to enter given conditions 100,200-1,DGP 2-3
System ID:	5819
User ID:	03-1 NRC-5819
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 295L034 Reference: DEOP 100, 200-1, and DGP 2-3 K/A: 295024 2.4.4 4.0/4.3 Level: Recall Explanation: Given the following conditions, DEOP 100 and 200-1 must be entered based on drywell pressure

>2#. DGP 2-3 is entered any time a scram is initiated.
Pedigree: New for 03-1 NRC exam.

53 **ID: 03-1 NRC-5928** **Points: 1.00**

A concern during the performance of DEOP 100 is the occurrence of swell and shrink causing RPV level fluctuations. These level fluctuations can then complicate level control actions.

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

A. Verify FWLCS in automatic.

B. Inhibit ADS and initiate IC.

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

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

Answer: C

Question 53 Details

Question Type:	Multiple Choice
Topic:	53 DILTS.29501LK025 Pressure effects on RPV water level
System ID:	5928
User ID:	03-1 NRC-5928
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE29501LK025 Reference: DRE LP295L-S1 K/A: 295025 EK1.06 3.5 / 3.6 Level: Recall Explanation: SRV cycling at high reactor pressure will result in swell and shrink from pressure fluctuations. The swell and shrink will then result in RPV level fluctuations. The SRV cycling is stopped by initiating the IC and opening ADSVs to lower reactor pressure below the opening setpoint of the SRVs. Pedigree: Dresden 2001 NRC exam.

54 **ID: 03-1 NRC-5905** **Points: 1.00**

Torus temperature is maintained below 206^{O}F in order to avoid _____ an emergency depressurization.

A. over-pressurizing the Torus during

B. loss of all RPV level instruments after

C. damaging SRV downstream piping during

D. excessive hydrodynamic loading on downcomer piping during

Answer: A

Question 54 Details

Question Type:	Multiple Choice
Topic:	54 DILTS.29501LK007 HCL curve: Basis for limiting torus temp.
System ID:	5905
User ID:	03-1 NRC-5905
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE29501LK007 Reference: DRE LP295LC01 K/A: 295026 EK2.03 3.2 / 3.6 Level: Recall Explanation: The bases for the torus temperature limit as described in the lesson plan is to prevent overpressurization of the torus in the event of an Emergency Depressurization. This limit is unrelated to SRV tailpipes. The level instrumentation is affected by drywell temperature. Hydrodynamic loading on downcomers is not relevant to HCL. Pedigree: Vermont Yankee 2002 NRC exam.

If torus temperature or RPV pressure cannot be maintained below the Heat Capacity Temperature Limit, EOP-3, Primary Containment Control, requires RPVED. This action is performed to avoid:

overpressurizing the Primary Containment during RPV Emergency Depressurization.

damaging SRV downstream piping during RPV Emergency Depressurization.

loss of all RPV level instruments after RPV Emergency Depressurization.

excessive hydrodynamic loading on downcomer piping during RPV Emergency Depressurization.

55 **ID: 03-1 NRC-5898** **Points: 1.00**

What is the reason the RPV may have to be flooded when Drywell temperatures become excessive?

A. The ADS valves may be unreliable.

B. RPV water level instruments may be unreliable.

C. Increase NPSH to Recirc pumps to prevent cavitation.

D. Provide additional cooling by establishing a flow path to the main condenser.

Answer: B

Question 55 Details

Question Type:	Multiple Choice
Topic:	55 DILTS.29501LK001 RPV water level inst relationship to drywell temp
System ID:	5898
User ID:	03-1 NRC-5898
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE29501LK001 Reference: DRE LP295LC-01 and Fig A on DEOP charts. K/A: 295028 K3.02 Level: Recall Explanation: Per the DEOP chart fig A, with elevated drywell temperatures, boiling may occur in the instrument runs rendering them unreliable. The recirc pumps will be tripped when drywell temperatures are high enough to affect RPV level instruments so cavitation of the recirc pumps is NOT a concern. The ADS valves become a concern when the conditions for a blowdown exist. The main steam lines are isolated during RPV flooding so there would be no way to use the main condenser for additional cooling. Pedigree: New for 03-1 NRC exam.

56 **ID: 03-1 NRC-5917** **Points: 1.00**

A Reactor startup was in progress on Unit 2 when a fire broke out in the Drywell.
- Drywell temperature is 281^{O}F and increasing 5^{O}F per minute.
- The Unit has been successfully scrammed.
- The Unit Supervisor has entered DEOP 200-1, Primary Containment Control, and has ordered an emergency depressurization based on Drywell temperature.

What is the reason the Unit Supervisor ordered an emergency depressurization?

The design temperature limit of the _____ has been exceeded.

A. Drywell

B. ERV solenoids

C. Target Rock solenoid

D. Target Rock nitrogen supply piping

Answer: A

Question 56 Details

Question Type:	Multiple Choice
Topic:	56 DILTS.239LN001.09 ADS: Indications available to determine if ERV open.
System ID:	5917
User ID:	03-1 NRC-5917
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE239LN001.09 Reference: BWROG EPG/SAG and PSTG K/A: 295028 EK3.06 3.4 / 3.7 Level: Recall Explanation: The BWROG EPG/SAG says an emergency depressurization is performed when the maximum temperature the ADS system is qualified for or drywell design temperature is exceeded. The PSTG says the Drywell design temp is 281^{O}F and the ADS qualification temperature is 334^{O}F. The drwell design temp is the reason for the emergency depressurization.

Pedigree: New for 03-1 NRC exam.

57 **ID: 03-1 NRC-5925** **Points: 1.00**

Torus water level is 18.5 feet and going up 1 inch every 10 minutes.

What is the reason the Unit Supervisor orders a scram?

Torus water level has reached the point where...

A. the Torus to Drywell vacuum breakers have become flooded preventing them from opening at the correct pressure.

B. pressure will drop below the design Drywell scram setpoint if torus sprays are initiated.

C. the Torus design load will be exceeded if SRVs are opened.

D. equipment necessary for safe shutdown will fail.

Answer: C

Question 57 Details

Question Type:	Multiple Choice
Topic:	57 DILTS.29501LK009 Torus Water Level: reason to scram
System ID:	5925
User ID:	03-1 NRC-5925
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE29501LK009 Reference: BWROG EPGs/SAG, DRE LP295LC-01 K/A: 295029 EK3.03 3.4 / 3.5 Level: Recall Explanation: BWROG EPGs/SAG describes one of the inputs to developing the Pressure Suppression Pressure curve as being the Maximum Pressure Suppression Primary Containment Water Level. The design of the PSP curve is to ensure if SRVs are opened Torus design load is not exceeded. The concern with the evaporative cooling pressure drop is associated with the Drywell Spray Initiation Limit (EPG/SAG 17.4). The concern with level reaching safe shutdown equipment is the Max Safe

Operating Water Level for the secondary containment, NOT the torus. Dresden's Torus to Drywell vacuum breakers are outside the Torus, not inside so flooding of the vacuum breakers will not occur until the Torus is completely flooded.
Pedigree: New for 03-1 NRC exam.

58 **ID: 03-1 NRC-5889** **Points: 1.00**

The following plant conditions exist following a LOCA with a leak in the Torus:

- Torus Water Temperature is 150^0F and stable.
- Torus Water level is 9.5 feet and stable after the Torus leak was isolated.
- Torus Bottom Pressure is 10 psig and stable.
- Reactor Pressure is 300 psig and slowly going down.
- CST levels are 8 feet.

Under which of the following conditions should the Operator be MOST concerned with cavitation in the ECCS pumps?

A. 2 LPCI pumps injecting at 5000 gpm each.

B. 2 LPCI **AND** 2 CS pumps injecting at 4000 gpm each.

C. 2 LPCI pumps **AND** 1 CS pump injecting at 4250 gpm each.

D. Total ECCS injection flow is 14,000 gpm.

Answer: D

Question 58 Details

Question Type:	Multiple Choice
Topic:	58 DILTS.29501LK003 ECCS vortex limit on low torus water level.
System ID:	5889
User ID:	03-1 NRC-5889
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 29501LK003 Reference: DEOP 200-1 **Provide the students with a copy of the DEOP charts with the entry conditions blanked out.** K/A: 295030 EA1.01 3.6 / 3.8 Level: High Explanation: With the given conditions, torus level and total flow will be the closest to the ECCS Vortex Limit with total ECCS flow at 14,000 gpm. With 2 LPCI pumps at 5000 gpm, fig W is used. With 2 LPCI and 2 CS at

3000 gpm each, fig. X is used. With HPCI at 4000 gpm, fig. Y is used. All are below the NPSH curves. HPCI has swapped to the Torus (CST level 8 feet).
Pedigree: Modified from Fermi 2001 exam.
The following plant conditions exist following a LOCA event:

- Torus Water Temperature 180F and stable
- Torus Water level -70 inches and stable
- Torus Pressure 0 psig and stable
- Reactor Pressure 0 psig and stable

Which one of the following describes the effect that these conditions has on the operation of ECCS pump for RPV level control?

Single pump LPCI flow is limited to 10,000 gpm to ensure vortex limits are not exceeded.

Continued operation of HPCI is allowed if the suction is aligned to the CST to provide adequate suction pressure.

Total core spray loop flow must be limited to 7000 to ensure adequate NPSH.

RCIC operation is allowed up to 650 gpm as long as torus level remains above -105 inches.

59 **ID: 03-1 NRC-5884** **Points: 1.00**

A DBA LOCA accompanied by a partial ATWS has occured resulting in only 2/3 of the core being covered.

Which of the following LPRMs would provide the LEAST accurate indication of power?

A. 1C-32-57

B. 3B-08-33

C. 4D-56-33

D. 5A-48-25

Answer: C

Question 59 Details

Question Type:	Multiple Choice
Topic:	59 DILTS.215LN006.09 LPRM: 2/3 core coverage, which LPRMs would be most accurate
System ID:	5884
User ID:	03-1 NRC-5884
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 215LN006.09 Reference: DRE LP 215LN006 K/A: 295031 EA2.02 4.0 / 4.2 Level: High Explanation: LPRMs with a level designation of "D" are closest to the top of the core. Since this is the portion of the core that has no/little moderator to slow down neutrons, the LPRM will be less accurate. 2/3 core coverage would be near notch position 16. "C" level LPRMs monitor notch position 18. "B" level - notch position 30 and "A" - notch position 42. Pedigree: New for 03-1 NRC exam.

60 **ID: 03-1 NRC-5916** **Points: 1.00**

The HPCI room radiation level has increased to 180 mRem/hr following an automatic HPCI initiation.

As a result of the above condition, the ARM system will...

A. alarm the 902-11 panel indicator and trip unit AND annunciator 902-3 A-1, RX BLDG RAD HI.

B. alarm annunciator 902-3 A-1, RX BLDG RAD HI, **ONLY.**

C. alarm the 902-11 panel indicator and trip unit **ONLY**.

D. **NOT** alarm.

Answer: A

Question 60 Details

Question Type:	Multiple Choice
Topic:	60 DILTS.272LN001.10 ARM: Indications of a high rad condition in the HPCI room.
System ID:	5916
User ID:	03-1 NRC-5916
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE272LN001.10 Reference: DAN 902(3) A-1, 12E-2480, Main Control Room ARM placard K/A: 295033 EK2.01 3.8 / 4.0 Level: Recall Explanation: The radiation level present in the HPCI Cubicle is above the setpoint for ARM alarm (150 mRem/hr). This will send a signal to BOTH the MCR indicator and trip unit on the 902-11 panel and alarm the 902-3 A-1 annunciator. Pedigree: New for ILT 03-1 NRC exam.

61 **ID: 03-1 NRC-5915** **Points: 1.00**

The following actions automatically occurred as the result of high radiation condition:

- Reactor Building ventilation has tripped and isolated on BOTH units.
- SBGT started.

Based on the information provided above, choose the parameter and radiation level that caused the automatic actions.

A. RX BLDG VENT CH B RAD at 4 mRem/hr.

B. REFUEL FLOOR RAD at 8 mRem/hr.

C. U2/3 RX VENT CH A/B RAD at 5,000 cpm.

D. U2/3 CHIMNEY NOBLE GAS at 12,000 cpm.

Answer: A

Question 61 Details

Question Type:	Multiple Choice
Topic:	61 DILTS.288LN001.06 What caused RB vent to isolate and SBGT
System ID:	5915
User ID:	03-1 NRC-5915
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE288LN001.06 Reference: DAN 902(3)-3 A-3 K/A: 295034 A2.01 3.8 / 4.2 Level: Recall Explanation: The RX BLDG VENT CH B RAD HI HI alarm at 4 mRem/hr is the only one of the alarms that would correspond to a trip and isolation of Rx Bldg ventilation. The other alarms have no automatic effect on Rx Bldg ventilation. Pedigree: Modified from Fermi 2001 NRC exam. *The following actions automatically occurred as the result of high radiation:*

- Reactor Building HVAC tripped
- SGTS started
- Control Center HVAC aligned to recirculation mode

Based on the information provided above, CHOOSE the radiation monitor and indicated
radiation level that caused the automatic actions.

Fuel Pool Vent Exhaust = 7.3 mRem.

Reactor Building Vent Exhaust = 14,500 cpm.

Turbine Building Vent Exhaust = 11,500 cpm.

Radwaste Building Vent Exhaust = 14.5 mRem.

62 **ID: 03-1 NRC-5907** **Points: 1.00**

Unit 3 is in Mode 2, withdrawing control rods for a Unit startup with the following conditions:

- APRM 1, 3, 4, 5 indicate 11.2% power.
- APRM 2 and 6 indicate 17.5% power.

Based on the above conditions the NSO's next action should be to...

A. place the Mode switch in RUN.

B. manually drive in the last control rod withdrawn.

C. scram the Reactor and place the Mode switch in S/D.

D. stop the withdrawal of control rods and check APRM GAFs.

Answer: C

Question 62 Details

Question Type:	Multiple Choice
Topic:	62 DILTS.215LN005.06 SCRAM: 2 channels of APRMs high in S/U and no scram
System ID:	5907
User ID:	03-1 NRC-5907
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE215LN005.06 Reference: DRE LP215LN005, DAN 902-5 C-12, OP-AA-101-111, TS 3.3.1.1295037 K/A: 295037 2.1.33 3.4/ 4.0 Level: High Explanation: The Tech Spec setpoint for an APRM Hi flux scram in mode other than run has been exceeded. A scram should have occured and did not. OP-AA-101-111, states that an RO will shutdown the reactor "when operating parameters exceed any of the reactor protection circuit setpoints and automatic shutdown does **not** occur". NO procedure guidance for placing the mode switch to RUN or driving in the last control rod withdrawn.

Pedigree: New for 03-1 NRC exam.

63 **ID: 03-1 NRC-5815** **Points: 1.00**

The following conditions exist at Dresden.

- A Tornado Warning is in effect for the area that includes Dresden.
- Reactor Building crane lifts are in progress to move material from the 517 foot elevation of the reactor building to the refuel floor.
- Dresden Security personnel have sighted a tornado.

Which of the following must be performed as a result of these conditions per DOA 10-2?

A. Verify blowout panels are in place on both Unit 2 and 3 Reactor Buildings.

B. Start EDG's in anticipation of a loss of off-site power.

C. Open ALL Unit 2 and 3 Turbine Building doors to equalize building pressure.

D. Stop crane lifts ONLY if a local assessment determines the tornado will hit on site.

Answer: A

Question 63 Details

Question Type:	Multiple Choice
Topic:	63 DILTS.29501LK063 Off Site Release: Met effects on
System ID:	5815
User ID:	03-1 NRC-5815
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE29501LK063 Reference: DOA 0010-02 Tornado Warning / Severe Winds K/A: 295038 EK1.03 2.8 / 3.8 Level: Recall Explanation: Verifying the blowout panels is the required action per DOA 10-2. Answers b and c are items the procedure directs NOT to do and all crane lifts are stopped whether or not the tornado will impact on site. This would affect the off-site release rate due to a loss of secondary containment. Pedigree: Dresden 2001 Exam

64 **ID: 03-1 NRC-5902** **Points: 1.00**

Containment venting is being established on Unit 2 to reduce hydrogen concentration in the Drywell following a LOCA per DEOP 500-04, Containment Venting.

Placing the AUGMENTED PRI CNMT VENT MODE SWITCH to the APCV position will allow the Operator to open...

A. AO 2-1601-63, VENT TO SBGT.

B. AO 2-1601-92, VENT TO MAIN CHIMNEY.

C. AO 2-1601-23, DW VENT VALVE, with a Group 2 isolation signal present.

D. AO 2-1601-60, TORUS VENT VLV, with a Group 2 isolation signal present.

Answer: B

Question 64 Details

Question Type:	Multiple Choice
Topic:	64 DILTS.223LN003.11 CAC: APCV mode control switch operation.
System ID:	5902
User ID:	03-1 NRC-5902
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE223LN003.11 Reference: DOA 6800-01, LP DRE223LN003 K/A: 500000 EA1.03 3.4 / 3.2 Level: Recall Explanation: The APCV mode control switch controls the operation of the 1601-63, 91 and 92 valves. In the APCV position, the 63 and 91 cannot be opened. In the NORMAL position, the 92 cannot be opened. The CNMT ISOLATION GROUP 2 OVER RIDE switches allow the 23 and 60 valves to be opened with a GROUP 2 isolation signal present. Pedigree: New for 03-1 NRC exam.

65 **ID: 03-1 NRC-5880** **Points: 1.00**

A mechanic has reported a fire with a 10 foot radius surrounding TR-28 due to an oil leak.

The Unit supervisor has ordered Bus 28 be de-energized.

Attempts to de-energize Bus 28 from the Main Control Room have been unsuccessful.

The NSO would direct the NLO to go to...

A. RB 570 foot elevation (3rd floor) and open the Bus 28 main feed breaker at Bus 23-1.

B. RB 545 foot elevation (2nd floor) and open the Bus 28 main feed breaker at Bus 23-1.

C. RB 570 foot elevation (3rd floor) and open the Bus 28 feed breaker at Bus 28.

D. RB 545 foot elevation (2nd floor) and open the Bus 28 feed breaker at Bus 28.

Answer: B

Question 65 Details

Question Type:	Multiple Choice
Topic:	65 DILTO.LOJIP00.26205LP005 DOP 6700-01: Fire at TR-28 where to go to deenergize Bus 28.
System ID:	5880
User ID:	03-1 NRC-5880
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 26205LP005 Reference: DSSP 0100-CR K/A 600000 AK2.04 2.5 / 2.6 Level: High Explanation: Since there is a fire in TR-28, and Bus 28 is right next to TR-28, the NSO will dispatch the operator to Bus 23-1 to deenergize the the Bus. Bus 23-1 is located on the 2nd floor of the RB elevation 545. Pedigree: New for 03-1 NRC exam.

EXAMINATION ANSWER KEY

03-1 NRC Exam (as submitted 6/30/04)

66 **ID: 03-1 NRC-5895** **Points: 1.00**

		Floor Drain Leakage (FDL)	Equipment Drain Leakage (EDL
Day	Time	Integrator Reading Gallons Pumped	Integrator Reading Gallons Pumped
THU	2000	1195	401
	1600	1162	398
	1200	1038	395
	0800	963	400
	0400	847	415
	0000	688	408

Unit 3 is 912 MWe.

Which of the following statements is correct concerning the above readings taken from this weeks Appendix A, Unit NSO Daily Surveillance Log for Unit 3?

A. NO leakage limits have been exceeded.

B. The unidentified leakage limit has been exceeded.

C. The increase in unidentified leakage limit has been exceeded.

D. The total leakage over a 24 hour period limit has been exceeded.

Answer: C

Question 66 Details

Question Type:	Multiple Choice
Topic:	66 DILTS.298L050 Determine if Reactor Coolant leakage is within TS limits.
System ID:	5895
User ID:	03-1 NRC-5895
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00

User Number 2: 0.00

Comment:
Objective: 298L0509
Reference: Appendix A, TS 3.4.4
K/A: Generic 2.1.12 2.9 / 4.0
Level: High
Explanation: The change from Thurs 0000 (2.86 gpm) until 2000 (4.97 gpm) is 2.11 gpm. The TS limit for increase in unidentified leakage (from the Floor Drains) is 2 gpm. 25 gpm is the total leakage limit (FDL + EDL). FDL limit is 5 gpm.
Pedigree: New for 03-1 NRC exam.

67 **ID: 03-1 NRC-5845** **Points: 1.00**

Unit 2 was at 912 MWe when Main Steam line pressure dropped to 810 psig due to a rupture.
The reactor scrammed prior to any Operator action.
Reactor water level dropped to -20 inches and is currently at +5 inches and going up 0.5 inches per minute.

Which of the following conditions would be indicated by a RED Primary Containment Isolation Status box on SPDS?

A. 2-2301-5, HPCI Steam Isol Vlv is OPEN.

B. 2-2301-5, HPCI Steam Isol Vlv is CLOSED.

C. 2-0203-2B, 2B Outboard MSIV is OPEN.

D. 2-0203-2B, 2B Outboard MSIV is CLOSED.

Answer: C

Question 67 Details

Question Type:	Multiple Choice
Topic:	67 DILTS.283LN001.10 SPDS: Meaning of Red PCIS box
System ID:	5845
User ID:	03-1 NRC-5845
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE283LN001.10 Reference: DOP 9900-205 K/A: Generic 2.1.19 3.0 / 3.0 Level: High Explanation: Per DOP 9900-205, " The PCIS box will be red if a Group I or II isolation demand signal is present and the valve positions do not indicate a completion of the isolation." The given conditions will cause Group I, 2, and 3 Isolations. Only Group I and 2 have an input to the Primary Containment Isolation box on SPDS. The HPCI valve is a Group 4 valve. Pedigree: New for 03-1 NRC exam.

68 **ID: 03-1 NRC-5859** **Points: 1.00**

During a core off-load, which one of the following Spent Fuel Pool water levels is the LOWEST level which would allow irradiated fuel handling activities per DGP 4-1, Fuel Moves and Refueling?

A. 10' 4"

B. 19'

C. 23'

D. 37' 7"

Answer: D

Question 68 Details

Question Type:	Multiple Choice
Topic:	68 DILTS.299L042 Refueling: Minimium FP level to allow irradiated fuel movements
System ID:	5859
User ID:	03-1 NRC-5859
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE299L042 Reference: DGP 4-1 K/A: Generic 2.2.27 2.6 / 3.5 Level: Recall Explanation: Per DGP 4-1 the minimum level for moving irradiated fuel inside secondary containment is 37' 7". 10' 4" is the minimum allowed suppression pool level. 19' is the minimum water level permitted in the Spent Fuel pool by Tech Spec 3.7.8. 23' is the minimum reactor water level above the top of the RPV flange when in refueling. Pedigree: Palisades 2003 NRC exam.

69 **ID: 03-1 NRC-5860** **Points: 1.00**

Which one of the following is a responsibility of the Reactor Operator during core alterations?

A. Perform verification of in-core coordinates.

B. Observe Source Range Monitors for rising counts.

C. Observe and directly supervise Core Alterations.

D. Maintain the official copy of the Special Nuclear Material Move Sheets.

Answer: B

Question 69 Details

Question Type:	Multiple Choice
Topic:	69 DILTS.215L016 Generic: RO responsibilities during refueling operations
System ID:	5860
User ID:	03-1 NRC-5860
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 215L016 Reference: DFP 800-01 K/A: Generic 2.2.30 3.5 / 3.3 Level: Recall Explanation: Per DFP 800-01, the NSO shall: "IF the component move will affect core reactivity, THEN check SRM response." A is the responsibility of SNM Custodian / Nuclear Engineer. C is the responsibility of Bridge Operator, Spotter, Refuel SRO. D is the responsibility of Refuel SRO. Pedigree: Clinton 2002 NRC exam.

70 **ID: 03-1 NRC-5850** **Points: 1.00**

You have received no dose for the current calendar year.
Your Administrative Dose Control Level has been raised to the MAXIMUM allowed by the Radiation Protection Manager and your Work Group Supervisor per RP-AA-203 Exposure Control and Authorization.
The dose field you will be working in is 500 mRem/hr.

What is your MAXIMUM stay time in the area?

A. 4 hours.

B. 6 hours.

C. 8 hours.

D. 10 hours.

Answer: B

Question 70 Details

Question Type:	Multiple Choice
Topic:	70 DILTS. Generic Administrative exposure limits and extensions
System ID:	5850
User ID:	03-1 NRC-5850
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: NGET Reference: Nuclear General Employee Training, Rev 28 and RP-AA-203 K/A: Generic 2.3.4 2.5 / 3.1 Level: High Explanation: Per NGET material and RP-AA-203, the administrative limit for exposure is 2000 mRem/yr TEDE. Exposure levels may be authorized by the Radiation Protection Manager up to 3000 mRem/yr. To raise the level to 4000 mrem/yr requires the Station/Plant Manager's permission as well. 3000 mRem/500mRem

per hr = 6 mins. 2000 mRem is the current authorized ADCL. 4000 mRem is an allowed extension by takes Plant Manager permission as well.
Pedigree: New for 03-1 NRC Exam

71 **ID: 03-1 NRC-5818** **Points: 1.00**

In order to purge the containment to the Reactor Building Ventilation system, sample results for which of the following must be below the prescribed limits?

A. Iodine 131 and Alpha (total particulate).

B. Iodine 131 and Beta/Gamma (total particulate)

C. Nitrogen 16 and Alpha (total particulate).

D. Nitrogen 16 and Beta/Gamma (total particulate).

Answer: B

Question 71 Details

Question Type:	Multiple Choice
Topic:	71 Generic.2.3.9: Containment purge through Rx Bldg vent requirements
System ID:	5818
User ID:	03-1 NRC-5818
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 223LN001.02 Reference: DOP 1600-07 K/A: Generic 2.3.9 2.5 / 3.4 Level: Recall Explanation: Per DOP 1600-07, "Purge Containment to the Reactor Building Ventilation System ONLY if sample results indicate that release rates are LESS THAN the following limits: Iodine 131: 7.2 X 10 E-9 uCi/cubic centimeter (uCi/cc). Beta/Gamma (total particulate): 1.8 X 10 E-7 uCi/cc." Pedigree: Dresden 00-1 NRC Exam.

72 **ID: 03-1 NRC-5861** **Points: 1.00**

Unit 2 Drywell venting through Reactor Building Ventilation is in progress per DOP 1600-01, NORMAL PRESSURE CONTROL OF THE DRYWELL OR TORUS due to Drywell pressure approaching 1.3 psig.

Annunciator 902-4 B-17, DRYWELL EQUIP SUMP LVL HI, alarms. 15 seconds later annunciator 902-4 A-17, DRYWELL EQUIP SUMP LVL HI-HI, alarms.

Based on the above conditions, the Operator should...

A. re-align the vent path through SBGT.

B. stop the venting until the drywell atmosphere is resampled.

C. continue venting but have the drywell atmosphere resampled.

D. continue venting but closely monitor Rx Bldg Vent Rad levels for changes.

Answer: B

Question 72 Details

Question Type:	Multiple Choice
Topic:	72 DILTS.223L001 Rad Release: Actions to control radiation release.
System ID:	5861
User ID:	03-1 NRC-5861
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE223L001 Reference: DOP 1600-01, DAN 902-4 A-17, and DOA 40-1 K/A: Generic 2.3.11 2.7 / 3.2 Level: High Explanation: The Operator will realize that a leak has occured in the drywell somewhere. DAN 902-4 A-17 directs the operator to enter DOA 40-1. DOP 1600-01 states, "IF drywell/torus conditions change while venting, THEN: Terminate the venting process. Resample to verify conditions prior to reinitiating the venting process."

If the containment pressure limit was approaching, the operator could vent regardless of release rate.
Pedigree: New for ILT 03-1 NRC exam.

73 **ID: 03-1 NRC-5864** **Points: 1.00**

Unit 2 is being refueled with 2A loop of SDC in use and NO Recirculation Pumps running.

2B SDC loop is in the Fuel Pool Cooling mode of operation.

Which of the following describes Operator's actions if Reactor Vessel Level decreased from +50 inches to +3 inches?

A. Enter DOA 1000-01, RESIDUAL HEAT REMOVAL ALTERNATIVES, verify the running Shutdown Cooling Suction Inboard and Outboard Isolation Valves isolate and verify the 2A **AND** 2B SDC Pumps trip.

B. Enter DOA 600-01 TRANSIENT LEVEL CONTROL, verify the Shutdown Cooling Suction Inboard and Outboard Isolation Valves isolate and verify the 2A **AND** 2B SDC pumps trip.

C. Verify DAN for 902-5 F-8 RPV LVL LO, and verify Shutdown Cooling continues unaffected.

D. Enter DEOP 100 RPV Control, and verify the Shutdown Cooling Suction Inboard and Outboard Isolation Valves isolate and verify **ONLY** the 2A SDC Pump trips.

Answer: D

Question 73 Details

Question Type:	Multiple Choice
Topic:	73 DILTS.295LK019 Generic: Actions if SDC on and level drops to +4"
System ID:	5864
User ID:	03-1 NRC-5864
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 295LK019 Reference: DEOP 100, DOA 600-01, DAN 902-5 D-5 K/A: Generic 2.4.9 3.3 / 3.9 Level: High Explanation: The Operators will enter DEOP 100 on RPV level ≤ +8 inches. The SDC system will isolate due to a Group 3 isolation (RPV level +6). The 2A SDC pump will trip due to low suction pressure sensed when the system

isolation occurs. The 2B pump will NOT trip due to it being lined up to FPC (takes it's suction from FPC).
Pedigree: Modified from Susquehanna 2003 NRC exam question.

The reactor is shut down with one loop of shutdown cooling in use and NO Recirculation Pumps running.

How would the Control Room operators respond if Reactor Vessel Level decreased from +50 inches to +4 inches?

Enter EO-100-102 RPV Control, maximize CRD and check the Shutdown Cooling Suction Inboard and Outboard Isolation Valves isolate, the operating RHR Pump will trip.

Enter ON-149-001, Loss of Shutdown Cooling, maximize RHR keepfill, check the Shutdown Cooling Suction Inboard and Outboard Isolation Valves isolate, the operating RHR Pump remain running.

Verify alarm response for RX WATER HI-LO LEVEL AR-101-B17, verify Shutdown Cooling continues unaffected.

Verify alarm response for HV-151-F006A/C AND HV-151-F007A OPEN DRAINS RX VESSEL AR-109-C09, verify the Shutdown Cooling Suction Inboard and Outboard Isolation Valves isolate, the operating RHR Pump will trip, HV-151-F015A will open, remaining RHR Pumps auto start.

74 **ID: 03-1 NRC-5863** **Points: 1.00**

A reactor scram has occurred and not all rods have inserted.

Which of the following conditions would allow the SRO to make the determination that the "Reactor will remain shutdown under all conditions?"

A. Power is in the source range and decreasing on ALL channels.

B. One control rod remains withdrawn at 48. ALL other control rods are at 00.

C. The only control rods which remain withdrawn are at position 06 or less.

D. No more than one control rod remains withdrawn in any 5 x 5 array.

Answer: B

Question 74 Details

Question Type:	Multiple Choice
Topic:	74 DILTS.29501LK020 Generic: Meaning of Reactor will remain shutdown
System ID:	5863
User ID:	03-1 NRC-5863
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE29501LK020 Reference: LP DRE 295L-S1 K/A: Generic 2.4.17 3.1 / 3.8 Level: Recall Explanation: Reference: all rods at 02 or 00; "Shutdown margin check"- one rod can be fully withdrawn form the core provided all others are at 00. Answer a and c don't meet this check, answer d would allow multiple rods to be withdrawn. Pedigree: LaSalle 2000 NRC exam

75 **ID: 03-1 NRC-5821** **Points: 1.00**

According to HU-AA-104-101, Procedure Use and Adherence, which of the following may be performed from memory?

A. Procedures that have less than or equal to 5 steps.

B. Actions that are instinctive and simple to remember.

C. Actions to manually duplicate an automatic action that has failed to occur.

D. Evolutions that an Operator has performed before and has been briefed by his Supervisor.

Answer: C

Question 75 Details

Question Type:	Multiple Choice
Topic:	75 DILTS.Generic: Actions that can be taken from memory
System ID:	5821
User ID:	03-1 NRC-5821
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE299L081 Reference: HU-AA-104-101 K/A: 2.4.49 4.0 / 4.0 Level: Recall Explanation: per HU-AA-104-101"Actions required to manually duplicate an automatic action that has failed to automatically occur may be performed from memory". Pedigree: New for 03-1 NRC exam.

76 **ID: 03-1 NRC-5919** **Points: 1.00**

MO 2-1501-32A and 32B LPCI XTIE VLVs allow the 'A' LPCI loop to use the 'B' LPCI loop's ___(1)___. If MO 2-1501-32A cannot be returned to full open following DOS 1500-01, LPCI System Valve Operability and Timing, the Unit Supervisor will declare ___(2)___.

	1	2
A.	heat exchanger	BOTH LPCI subsystems inoperable
B.	heat exchanger	ONLY 'A' LPCI subsystem inoperable
C.	injection piping	BOTH LPCI subsystems inoperable
D.	injection piping	ONLY 'A' LPCI subsystem inoperable

Answer: C

Question 76 Details

Question Type:	Multiple Choice
Topic:	76 DILTS.203LN001.02 LPCI: 32 valve purpose and operability.
System ID:	5919
User ID:	03-1 NRC-5919
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE203LN001.02 Reference: M-29, TS 3.5.1 and Bases K/A: 203000 K4.12 3.6 Level: Recall Explanation: The LPCI 32A and 32B valves allow each loop to use the other loops injection path if necessary. The flow coming from the opposite unit uses its own HX and does not flow through the redundant loops HX. TS 3.5.1 Bases state that if the LPCi cross-tie valves are not both full open, BOTH LPCI subsystems must be declared inoperable due to needing 3 pumps for adequate core cooling.. Pedigree: New for 03-1 NRC exam.

77 **ID: 03-1 NRC-5911** **Points: 1.00**

Unit 3 is shutting down per DGP 2-1, Unit Shutdown.
Shutdown cooling is being placed in service per DOP 1000-03, Shutdown Cooling Mode of Operation as directed by DGP 2-1.

- Both Recirc pumps are secured.
- Two SDC loop operation is desired.
- 3A SDC loop is operating.
- 3C SDC heat exchanger is OOS for tube repair.
- While attempting to throttle open MO 3-1001-4B, 3B SDC PP DISCH VLV, the NSO reported the valve did NOT open and position indication was lost.
- An NLO sent to investigate reports that the cable powering the MOV has burned up and EMD estimates repairs to take at least 8 hours.
- MMD reports there is no damage to the valve.

Based on the above information, the Unit Supervisor should...

A. direct the NLO to manually throttle open the 3B pump discharge valve to lineup the system for cooling and consider the 3B SDC loop OPERABLE.

B. lineup FPC to the 3B SDC loop and consider the 3B SDC loop OPERABLE.

C. direct the NLO to manually throttle open the 3B pump discharge valve to lineup the system for mixing and declare the 3B SDC loop INOPERABLE.

D. isolate the 3B SDC loop and declare the 3B SDC loop INOPERABLE.

Answer: A

Question 77 Details

Question Type:	Multiple Choice
Topic:	77 DILTS.205LN001.07 SDC: actions and operability call if SDC pp suct vlv won't open electrically
System ID:	5911
User ID:	03-1 NRC-5911
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00

Comment:

Objective: DRE205LN001.07
Reference: TS 3.4.7
K/A: 205000 2.1.23 4.0
Level: High
Explanation: With Recirc pumps running, 2 SDC subsystems are required to be operable. The repairs will take more than 2 hours to complete, which exceeds the 2 hours allowed by a note in the LCO.The Bases state that a SDC subsystem is considered operable if it can be aligned remotely or locally in the SDC mode for the removal of decay heat. The operator can still locally open the SDC pump discharge valve. There is NO procedure guidance to line up FPC to SDC.
Pedigree: New for 03-1 NRC exam.

78 **ID: 03-1 NRC-5914** **Points: 1.00**

Unit 2 is at rated conditions.

An NLO reported to the control room that he heard an abnormal noise near the 2A RPS MG. The NLO subsequently reported 2A RPS MG and associated RPS Bus voltage are both 105v and stable.

APRM channels ___(1)___ are impacted by the NLO's report and ___(2)___.

	1	2
A.	1, 2, and 3	the affected RPS bus must be transferred to its reserve power supply in accordance with DOP 500-03, Reactor Protection System Operation within 1 hour
B.	1, 2, and 3	a manual half scram must be inserted on the affected RPS channel within 1 hour in accordance with DOA 500-02, Partial 1/2 or Full Scram Actuation, until the affected EPA can be repaired
C.	4, 5, and 6	the affected RPS bus must be transferred to its reserve power supply in accordance with DOP 500-03, Reactor Protection System Operation within 1 hour
D.	4, 5, and 6	a manual half scram must be inserted on the affected RPS channel within 1 hour in accordance with DOA 500-02, Partial 1/2 or Full Scram Actuation, until the affected EPA can be repaired

Answer: C

Question 78 Details

Question Type:	Multiple Choice
Topic:	78 DILTS.262LN005.08 RPS EPA: failure to trip, actions to take.
System ID:	5914
User ID:	03-1 NRC-5914
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE262LN005.08

Reference: TS 3.3.8.2 and Bases and DOA 0500-05
K/A: 215005 A2.01 3.1
Level: High
Explanation: The A RPS MG powers the B RPS Bus which is the power supply to APRM channels 4, 5, and 6. Common confusion is that RPS MG A powers RPS Bus A. Since EPAs 2A-1 and 2A-2 did NOT trip on low voltage as required (greater than or equal to 106.3v) the in service power supply must be removed from service within 1 hour. The bases allow the RPS Bus to be powered from the alternate power supply to regain operability to the affected RPS bus. A half scram does NOT need to be inserted while the EPA is being repaired.
Pedigree: New for 03-1 NRC exam.

79 **ID: 03-1 NRC-5910** **Points: 1.00**

During the Unit 2 NLOs round, he notices breaker C-4 on MCC 29-3 which feeds the Unit 2 Refueling Platform receptacle is damaged.

Unit 3 Refueling Platform is OOS.

Because of the failure described above ___(1)___. Fuel moves may be performed by ___(2)___ in accordance with DFP 0800-21, Refueling Platform and Fuel Handling Grapple Operation.

	1	2
A.	only the frame mounted and monorail hoists lose power	connecting to the Unit 3 refueling platform receptacle
B.	only the frame mounted and monorail hoists lose power	connecting to a welding receptacle
C.	all power to the refueling platform is lost	connecting to the Unit 3 refueling platform receptacle
D.	all power to the refueling platform is lost	connecting to a welding receptacle

Answer: D

Question 79 Details

Question Type:	Multiple Choice
Topic:	79 DILTS.23400LK014 Loss of power to the refueling platform.
System ID:	5910
User ID:	03-1 NRC-5910
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE23400LK014 Reference: DFP 0800-21 K/A: 234000 A2.03 3.1 Level: Recall Explanation: There is only one breaker that supplies the refueling platform, that is from 29-3 Cub C-4, so all power will be lost to the refueling platform. DFP 0800-21

provides guidance to provide temporary power to the refueling platform from a welding receptacle.
Pedigree: New for 03-1 NRC exam.

80 **ID: 03-1 NRC-5873** **Points: 1.00**

The following conditions exist on Unit 3:

- The drywell is being vented to control H_2 and O_2.
- Torus level is 31 feet.
- The following values were noted prior to initiating venting:

	Drywell	Torus
Hydrogen	7%	6%
Oxygen	5%	7%

- The NSO reports that A SBGT train has tripped and the B SBGT train will **NOT** start.
- The NSO then reports Nitrogen purge is **NOT** controlling hydrogen and oxygen concentrations.

Given the above conditions, how will the Oxygen and Hydrogen concentrations be lowered?

A. Purge the Torus per DEOP 500-4 "Containment Venting", Attachment 5 through the Augmented Primary Containment Vent.

B. Purge the Drywell per DEOP 500-4 "Containment Venting", Attachment 4 through the Augmented Primary Containment Vent.

C. Secure the venting per DEOP 500-4 "Containment Venting", Attachment 5 and purge the Torus using the Nitrogen Inerting path .

D. Secure the venting per DEOP 500-4 "Containment Venting", Attachment 4 and purge the Drywell using the Nitrogen Inerting path .

Answer: B

Question 80 Details

Question Type:	Multiple Choice
Topic:	80 DILTS.29502LK068 Venting Pri Cont when SBGT unavailable.
System ID:	5873
User ID:	03-1 NRC-5873
Status:	Active
Must Appear:	No
Difficulty:	5.00
Time to Complete:	4
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00

Comment:

Objective: 29502LK068
Reference: DEOP 0200-02 and DEOP 0500-04
K/A: 261000 K3.06 3.3
Level: High
Explanation: Torus level is too high to allow venting of the Torus so atachment 5 cannot be used. A Limitation and Action (F.2) in DEOP 500-4 states that purging without venting is NOT allowed. Attachment 4 Step 11 states that "If the Drywell hydrogen and oxygen concentrations cannot be controlled using SBGT and nitrogen purge, then purge with air as follows:" a description on how to line up APCV system follows.
Pedigree: Modified from Dresden 01-1 NRC exam.

Provide DEOP 200-2 and DEOP 500-4 with Section H blanked out.

81 **ID: 03-1 NRC-5891** **Points: 1.00**

Unit 3 is in a refuel outage with the following conditions:

- A fuel shuffle is currently in progress inside the vessel.
- DOS 5750-06, Control Room Train A Ventilation Automatic and Manual Smoke Purge System Test, is in progress.

When the CRM AIR FLOW CONTROL switch at the 923-9 panel was taken to OUTSIDE to perform the smoke purge test, the following damper positions were noted:

Intake Damper, 2/3-9472-023	OPEN
Recirc Damper, 2/3-9472-024	OPEN
Exhaust Damper, 2/3-5741-XCV-053A	CLOSED
Intake Damper, 2/3-5741-XCV-053B	OPEN 2000 cfm

What is the impact of the ventilation configuration on fuel shuffle operations?

Fuel moves are...

A. suspended immediately.

B. suspended within 15 minutes.

C. suspended within 30 minutes.

D. allowed to continue.

Answer: A

Question 81 Details

Question Type:	Multiple Choice
Topic:	81 DILTS.288LN003.02, 07 CREVS: inoperable smoke purge mode during fuel moves
System ID:	5891
User ID:	03-1 NRC-5891
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE288LN003.02, 07 Reference: TS 3.7.4, DOS 5750-06, Fig. 288LN003-001 K/A: 288000 2.2.32 3.3

Level: High
Explanation: For the smoke purge mode the air is taken in from the outside and exhausted back to the outside. The recirc damper should be closed and the exhaust damper should be open. This does not meet the acceptance criteria of the surveillance. The CREV system is required to be operable during core alterations. If it is not, fuel movements are to be suspended immediately per TS 3.7.4.
Pedigree: New for 03-1 NRC exam.

82 **ID: 03-1 NRC-5869** **Points: 1.00**

Unit 3 was at 95% power when the following indications SUDDENLY changed:

- Indicated total core flow increased.
- Core thermal power decreased.
- Main Generator power has decreased.
- Core differential pressure has decreased.

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

A. Jet pump failure has occurred and the affected recirc pump must be secured.

B. Jet pump failure has occurred and the scoop tube for the affected recirc pump must be locked up.

C. Recirc pump trip has occurred and the affected recirc loop must be isolated.

D. Recirc pump trip has occurred and the scoop tube for the affected recirc pump must be locked up.

Answer: A

Question 82 Details

Question Type:	Multiple Choice
Topic:	82 DILTS.202LK016 Failed jet pump indication & actions to take
System ID:	5869
User ID:	03-1 NRC-5869
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 202LK016 Reference: LP ILTS026 K/A: 295001 AA2.05 3.4 Level: High - Application Explanation: These are the indications of a failed jet pump. If a recirc pump tripped the core flow would go down. The action for a sudden jet pump failure is to secure the affected recirc pump per DOA 0201-01. (SRO Only per criteria 5 the conditions must be assessed and the correct procedure entered to take the

right actions)
Pedigree: Dresden Bank (DSROA-273142)

83 **ID: 03-1 NRC-5899** **Points: 1.00**

With Unit 2 at 912 MWe the following conditions exist:

- Annunciator 902-8 G-9, 120V INST BUS TRANSFER TO EMERG SPLY, alarmed.
- An investigation revealed that MCC 28-2 lost power but has been re-energized.
- Annunciator 902-8 G-9 will NOT reset.
- The NLO sent to investigate reports that the Instrument Bus ABT is lined up to MCC 25-2.

Based on the information given to him, the Unit Supervisor will...

A. dispatch EMD to investigate the failure of the ABT and declare the Instrument Bus INOPERABLE.

B. dispatch EMD to investigate the failure of the ABT and declare the Instrument Bus OPERABLE.

C. dispatch an Operator to RESET the Instrument Bus ABT and declare the Instrument Bus INOPERABLE.

D. dispatch an Operator to RESET the Instrument Bus ABT and consider the Instrument Bus OPERABLE.

Answer: A

Question 83 Details

Question Type:	Multiple Choice
Topic:	83 DILTS.264LN004.07 Inst Bus: Failure of ABT, DAN actions and TS call
System ID:	5899
User ID:	03-1 NRC-5899
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE262LN005.07 Reference: DAN 902(3)-8 G-9, DOP 6800-02, and TS 3.8.7 and Bases K/A: 295003 2.4.31 3.4 Level: High Explanation: The Inst Bus ABT is a normal seeking ABT which should swap back to its normal power supply, 28-2 when re-energized. The ESS Bus ABT has to be

transferred manually by using the RESET toggle switch. The Tech Specs say that the ABT is not required to be Operable to consider the Inst Bus operable however, it is NOT being powered from a safety bus so it is INOPERABLE.
Pedigree: New for 03-1 NRC exam.

84 **ID: 03-1 NRC-5903** **Points: 1.00**

Given the following conditions on Unit 3:

- Unit 3 had been operating at rated capacity for 412 days.
- An electrical malfunction caused all Turbine stop and control valves to go full open.
- The Reactor automatically scrammed.
- The NSO reported the Mode switch will NOT move out of RUN.

Which of the following should the Unit Supervisor direct in order to remove the LEAST amount of decay heat from the Reactor and still maintain a cooldown rate 10 minutes after the scram?

A. Jack open two of the Turbine Bypass valves per DGP 2-1, Unit Shutdown.

B. Initiate HPCI in pressure control mode per DOP 2300-03, High Pressure Coolant Injection System Manual Startup and Operation.

C. Initiate RWCU blowdown per DOP 1200-03, RWCU System Operation with the Reactor at Pressure.

D. Initiate the Isolation Condenser to maximum flow per DOP 1300-03, Manual Operation of the Isolation Condenser.

Answer: D

Question 84 Details

Question Type:	Multiple Choice
Topic:	84 DILTS.29501LK046 DOA 1000-01: decay heat removal options after scram
System ID:	5903
User ID:	03-1 NRC-5903
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 29501LK046 References: DOA 1000-01, GP Reactor Theory LP K/A: 295006 AK1.01 3.9 Level: High Explanation: 10 minutes after the scram decay heat is approximately 59 MWth (2% of 2957 MWth). Initiating the Isolation Condenser to max will remove 74 MWth.

With the Mode switch in run and a low main steam line pressure, the MSIVs will go closed on a Group 1 isolation and will not open without the installation of jumpers so the bypass valves are not available immediately and jacking open 2 of the bypass valves would remove 224 MWth. Increasing RWCU flow rate to the maximum will remove approximately 10 MWth. Initiating HPCI in the pressure control mode will remove approximately 37 MWth.
Pedigree: New for 03-1 NRC exam.

85 **ID: 03-1 NRC-5913** **Points: 1.00**

An accident has occured on Unit 3.

- Three control rods are at position 04, all others are at position 00.
- Feed pumps have been tripped and cannot be restarted.
- Two Condensate/Condensate Booster pumps are running.
- ALL RPV water level indications have been determined to be unreliable.
- The Unit Supervisor has ordered all 5 ADS valves opened.
- The NSO reported **ONLY** the Target Rock opened.
- Annunciator 903-3 B-11, HPCI TURB INLET DRN POT LVL HI, is in alarm.

RPV pressure is 60 psig and slowly rising.
Drywell pressure is is 2.5 psig.

The NSO reports Target Rock tail-pipe temperature is 230^{O}F.

Based on the above indications, the Unit Supervisor will order the NSO to...

A. isolate all the steam lines.

B. initiate the Isolation Condenser.

C. slowly raise injection flowrate with LPCI.

D. isolate all the steam lines **EXCEPT** HPCI.

Answer: A

Question 85 Details

Question Type:	Multiple Choice
Topic:	85 DILTS.29502LP023 DEOP 400-1 actions based on indications
System ID:	5913
User ID:	03-1 NRC-5913
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE29502LP023 Reference: DEOP 0400-01, 100, and DEOP 10 **Give Examinee copy of DEOP 400-01 and DEOP 100 with entry conditions blanked out and a copy of the steam**

tables.
K/A: 295008 EA2.01 3.9
Level: High
Explanation: DEOP 400-01 should begin at 26 since DEOP 100 states if all all control rods are at 04 or less, continue on in DEOP 100. With only 1 ADS valve open, no RFP available, and RPV pressure is NOT greater than 66 psig above drywell pressure, the direction is given to flood up to the MSLs. The indication given by the NSO is that the RPV is flooded to the MSLs based on Target Rock tail-pipe temperature below saturation temperature for RPV pressure and the HPCI drain pot level Hi alarm. The IC will not be initiated due to pressure already being low in the RPV. The HPCI steam line would NOT be left unisolated because HPCI is NOT needed for injection and would be isolated (below 100 psig RPV pressure). LPCI is NOT needed for injection since indications are that RPV level is up to the MSLs using only the available Cond/Cond Booster pumps.
Pedigree: New for 03-1 NRC exam.

86 **ID: 03-1 NRC-5849** **Points: 1.00**

Which of the following REQUIRES notification of the Site Vice President per OP-AA-106-101, Significant Event Reporting?

A. The NRC has requested a copy of the Unit 3 Abnormality Log.

B. An Operator cuts his finger requiring on-site medical attention.

C. An Unusual Event is declared due to exceeding River Discharge Limits.

D. Chemistry reports that two RWCU samples have Action Level 1 parameters.

Answer: C

Question 86 Details

Question Type:	Multiple Choice
Topic:	86 DILTS.299L136 Generic: Requirements to notify the Site VP
System ID:	5849
User ID:	03-1 NRC-5849
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE299L136 Reference: OP-AA-106-101 and EP-MW-114-100 K/A: 295017 2.1.14 3.3 Level: Recall Explanation: Per OP-AA-106-101, When an ENS phone call is made, the Site VP must be notified. Chemistry levels must be at action level II, off-site medical attention needed, and the NRC non-routine and major enforcement actions require Site VP notifications. Pedigree: New for ILT 03-1 NRC exam.

87 **ID: 03-1 NRC-5922** **Points: 1.00**

Instrument Air on Unit 3 has been lost to the Scram Discharge Volume (SDV) vent and drain valves.

Unit 3 remains at 100% power.

It is expected that the SDV vent and drain valves will fail…

A. CLOSED and be INOPERABLE since the SDV would be isolated from the scram outlet header.

B. CLOSED and be INOPERABLE since proper venting and draining of the SDV could NOT be assured.

C. CLOSED and remain OPERABLE since the reactor coolant system would be isolated from the containment.

D. OPEN and be INOPERABLE since the reactor coolant system could NOT be isolated from the containment.

Answer: B

Question 87 Details

Question Type:	Multiple Choice
Topic:	87 DILTS.278LN001.12 IA: Loss of inst air to SDV vent and drain vlvs, operability call.
System ID:	5922
User ID:	03-1 NRC-5922
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE203LN001.02 Reference: DOA 4700-01 and ITS 3.1.8 Bases. K/A: 295019 2.1.28 2.9 Level: High Explanation: The SDV would close, for them to be operable they must be able to be opened and closed. Pedigree: Dresden 2002 NRC exam.

EXAMINATION ANSWER KEY

03-1 NRC Exam (as submitted 6/30/04)

88 **ID: 03-1 NRC-5886** **Points: 1.00**

DOS 2300-03, High Pressure Coolant Injection System Operability and Quarterly IST Verification Test, is in progress.

Unit 2 is at rated conditions with recorder TIRS 2-1640-200A, TORUS TEMP MON DIV I OOS due to a failed power supply.

TIRS 2-1640-200B currently indicates the following:

Point 1	Torus Bay 14	110ºF	Point 5	Torus Bay 6	111ºF
Point 2	Torus Bay 13	104ºF	Point 6	Torus Bay 5	109ºF
Point 3	Torus Bay 10	108ºF	Point 7	Torus Bay 2	104ºF
Point 4	Torus Bay 9	103ºF	Point 8	Torus Bay 1	107ºF

Given the current conditions, the Torus is ___(1)___ and ___(2)___.

	1	2
A.	inoperable	immediately suspend DOS 2300-03.
B.	inoperable	immediately place the Mode Switch in Shutdown.
C.	inoperable	immediately reduce thermal power to less that or equal to 1% RTP.
D.	operable	NO actions are required at this time.

Answer: A

Question 88 Details

Question Type:	Multiple Choice
Topic:	88 DILTS.Torus temp monitor A oos, TS requirements with HPCI surv in progress
System ID:	5886
User ID:	03-1 NRC-5886
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 223L-S1-9 Reference: ITS 3.6.2.1 and 295L-S2 K/A: 295013 AA2.01 4.0

Level: High
Explanation: Bulk water temperature is the average of points 1 through 8. Average water temperature would be 107°F. Immediately suspend all testing that adds heat to the suppression pool. The requirement of ITS section 3.6.2.1 specifically states that the temperature is average temperature, not the highest of any one area.
Pedigree: New for 03-1 NRC exam.

89 **ID: 03-1 NRC-5871** **Points: 1.00**

The following conditions exist:

- Unit 3 Recirc piping has a leak.
- Drywell pressure is 11 psig and steady.
- The LPCI system is being used for Torus sprays.
- RPV pressure is 250 psig and steady.
- RFPs are NOT available.
- HPCI is being used for pressure and level control.
- RPV water level is +20 inches and steady.

The Unit 3 NSO reports Torus water level has been trending up and is now 18.5 feet.

Based on the above conditions, what are the Unit Supervisors actions?

A. Leave HPCI running, it is needed for core cooling.

B. Secure HPCI injection **ONLY.** Control level with LPCI.

C. Secure HPCI injection and blow down. Control level with the Condensate system.

D. Secure HPCI injection **AND** Torus sprays. Control level with the Condensate system.

Answer: B

Question 89 Details

Question Type:	Multiple Choice
Topic:	89 DILTS.206L007 High level in torus, Unit Supervisor actions.
System ID:	5871
User ID:	03-1 NRC-5871
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE206L007 Reference: DEOP 200-1 **Give the examinees a copy of DEOP 200-01 with the entry conditions blanked out.** K/A: 295029 A1.01 3.5 Level: High Explanation: DEOP 200-1 has the Operators stop

injection from outside the primary containment not needed for core cooling or to shut down the reactor. Reactor pressure is low enough that the LPCI system can provide water for injection and pressure can be controlled with the iso cond. The Torus sprays should not be secured due to drywell pressure being 11 psig. They do not need to be secured since their suction source is from the torus. HPCI is NOT needed for core cooling, LPCI can provide that function. There is no need to blow down yet since level should NOT continue to rise since water from outside containment is no longer being used for vessel makeup. Condensate system would not be used for makeup since it would be making the torus level problem worse.
Pedigree: New for 03-1 NRC exam.

90 **ID: 03-1 NRC-5892** **Points: 1.00**

The following conditions exist:

- Unit 2 and 3 are at full rated power.
- 2/3 A SBGT SELECT control switch is in A PRI.
- 2/3 B SBGT SELECT control switch is in B STBY.

The NSO reports:

- RX BLDG VENT CH A AND B process rad monitors on the 902-10 panel indicate 16 mR/hr.
- B SBGT train is running.
- RX BLDG TO ATMOS DP, 2-5740-22, indicates -0.1 inch of water and is steady.
- B SBGT system flow is 3000 scfm.

Based on the above conditions the Unit Supervisor will direct:

A. Placing an OPERABLE SGT subsystem in operation immediately.

B. Restoring one SGT subsystem to OPERABLE status within 1 hour.

C. Restoring SGT subsystem to OPERABLE status within 7 days.

D. Monitoring the SGT system for proper operation.

Answer: B

Question 90 Details

Question Type:	Multiple Choice
Topic:	90 DILTS.261LN001.07 SBGT: Operability with failure to start and low rx bldg dp
System ID:	5892
User ID:	03-1 NRC-5892
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE261LN001.07 Reference: TS 3.6.4.3, DAN 902(3)-3 A-3 **Provide a copy of TS3.6.4.3 with IMMEDIATE completion times blanked out.** K/A: 295034 EA1.04 4.2 Level: High

Explanation: Per surveillance requirement 3.6.4.3.3 a SGT subsystem must actuate on an actual or simulated initiation signal. The rad level is above the RBV setpoint for tripping and the SGT system to start ($\leq$4 mR/hr). The A SGT train should have started since it was in PRI. Since it did not it is inoperable. The SGT system is designed to maintain the secondary containment at a negative pressure of $\geq$0.25 inches of water per 3.6.4.3 Bases, so the B SGT train is also inoperable. This meets the requirements for Condition D, and requires the restoration of one SGT subsystem to operable within 1 hr.
Pedigree: New for 03-1 NRC exam.

91 **ID: 03-1 NRC-5918** **Points: 1.00**

An ATWS condition exists on Unit 3 with the following conditions:

- RPV pressure is 1000 psig.
- RPV water level has been lowered to -140 inches.
- APRMs indicate Reactor power is 5.8%.

Based on the above conditions, the Unit Supervisor will order the NSO to...

A. immediately begin lowering RPV water level until the APRMs indicate downscale to ensure the Reactor is shutdown.

B. immediately begin depressurizing the RPV in order to facilitate raising RPV water level to ensure the core has adequate cooling.

C. wait until RPV pressure is less than 850 psig and then raise RPV water level to ensure the core is adequately cooled.

D. wait until SBLC tank level drops to 14% prior to depressurizing the RPV to ensure the Reactor will stay shutdown once the cooldown begins.

Answer: D

Question 91 Details

Question Type:	Multiple Choice
Topic:	91 DILTS.29502LK039 DEOP 400-5: US actions and reason for cold shutdown boron weight
System ID:	5918
User ID:	03-1 NRC-5918
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE29502LK039 Reference: DEOP 400-5, DRE LP295L-S08, DAN 902(3)-5 C-6 **Give the student a copy of the DEOP charts with the entry conditions and SBLC tank percent values for cold shutdown boron weight 14% blanked out.** K/A: 295037 EK3.05 3.7 Level: High Explanation: When the SBLC tank has lowered to 14%,

the cold shutdown weight of boron has been injected and the Reactor will remain shutdown under all conditions irregardless of rod position or RPV water temp. There is No guidance to continue lowering water level until IRMs indicate below Range 7.
The water level has been intentionally lowered to -140 inches in an attempt to lower Reactor power so the Unit Supervisor will NOT want to raise level yet.
Pedigree: New for 03-1 NRC exam.

92 **ID: 03-1 NRC-5924** **Points: 1.00**

Unit 3 is operating at rated conditions.
- HPCI is running for a surveillance.
- CRD exercising is in progress.
- RWCU is rejecting 100 gpm to the Main Condenser for a post maintenance test.
- Off Gas system is in a normal lineup.

The FIRST offsite release indication due to a Fuel Element Failure would come from the ___(1)___.
If the combined release rate has been stabile at 9.0E+5 μCi/sec for 20 minutes, the Unit Supervisor would order the NSO to isolate ___(2)___.

	1	2
A.	2/3 Chimney SPING	Isolate RWCU blowdown **AND** HPCI
B.	2/3 Chimney SPING	Isolate RWCU blowdown **ONLY**
C.	Reactor Building Chimney SPING	Isolate RWCU blowdown **AND** HPCI
D.	Reactor Building Chimney SPING	Isolate RWCU blowdown **ONLY**

Answer: A

Question 92 Details

Question Type:	Multiple Choice
Topic:	92 DILTS.29502LP016 DEOP 300-1: Indentify possible source of leak and actions to take.
System ID:	5924
User ID:	03-1 NRC-5924
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE29502LP016 Reference: DEOP 300-2, EP-AA-1004 Table R-1 of DR 3-6 **Give the examinees a copy of table R1 from EP-AA-1004 of DR 3-6** K/A: 295038 A2.04 4.5 Level: High Explanation: The HPCI system is drawing steam directly off of the Reactor and SBGT is running discharging to

the 2/3 Chimney so that is where the offsite release will be noticed first. Off Gas will have to go through the 6 hr holdup volume prior to going throughthe stack. The CRD exercising will not elevate release rates at all since no breach of containment is indicated. DEOP 300-2 directs isolating all primary system discharges outside the primary and secondary containment, of which the only one going on is the RWCU discharge to the main condenser.
Pedigree: New for 03-1 NRC exam.

93 **ID: 03-1 NRC-5885** **Points: 1.00**

Unit 2 is in cold shutdown for a Main Turbine outage.
Unit 3 is in hot shutdown.

- A large fire occured between the turbine lube oil sumps due to an oil leak.
- The fire brigade was on the scene and covered the equipment in the area with water and foam.
- The deluge piping in the area was damaged and had to be isolated.

Based on the equipment damaged by the fire and fire fighting activities, which of the following describes the fire watch requirements, if any?

A. Continuous fire watch with backup fire suppression equipment.

B. Hourly fire watch with backup fire suppression equipment.

C. Once per 8 hour fire watch with backup fire suppression equipment.

D. A fire watch is NOT required.

Answer: A

Question 93 Details

Question Type:	Multiple Choice
Topic:	93 DILTS.299L019 Fire at SBGT, fire watch requirements.
System ID:	5885
User ID:	03-1 NRC-5885
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 299L019 References: TRM 3.7.j and Tech Spec 3.6.4.3 **Give examinees a copy of TRM3.7.j** K/A: 600000 AA2.14 3.6 Level: High Explanation: Per TS 3.6.4.3, SBGT is required to be operable when a Unit is in Mode 1, 2, 3. Given Unit 3 is currently in Mode 3 (Hot Shutdown) it is required to be operable. Given the U2 and 3 Turbine Building Common Mezzanine Area Wet Pipe Sprinkler System (534'

elevation) is inoperable, TRM 3.7.j states a continuous fire watch with backup fire fire suppression equip must be established within 1 hour whenever equipment protected by the suppression system is required to be operable.
Pedigree: New for 03-1 NRC exam.

94 **ID: 03-1 NRC-5865** **Points: 1.00**

Following the Unit 3 quarterly SBLC flow test for the 'A' SBLC pump, you receive a report that the results of the required concentration analysis are as follows:

- Tank Volume is 3890 gallons.
- Sodium Pentaborate Concentration is 15.6%.
- Tank Temperature is 103^{O} F.

Select the statement below that describes the actions required by the Technical Specifications:

A. Restore concentration of boron in solution to within acceptable operating region within 8 hours of failure to meet the LCO, or else place the plant in cold shutdown within 12 hours.

B. Restore concentration of boron in solution to within acceptable operating region within 7 days of failure to meet the LCO, or else place the plant in hot shutdown within 12 hours.

C. Restore concentration of boron in solution to within acceptable operating region within 8 hours of failure to meet the LCO, or else place the plant in hot shutdown within 12 hours.

D. No actions are required. Power operations may continue.

Answer: D

Question 94 Details

Question Type:	Multiple Choice
Topic:	94 DILTS.29501LP048 Generic: SBLC tech spec call based on chemistry report
System ID:	5865
User ID:	03-1 NRC-5865
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE29501LP048 Reference: Tech Spec 3.1.7 **Provide copy of TS 3.1.7** K/A: Generic 2.1.25 3.1 Level: High Explanation: Based on information provided, Conditions on Fig. 3.1.7-2, Sodium Pentaborate Temperature

Requirements, are acceptable. The Sodium Pentaborate Concentration, % by Weight (Fig. 3.1.7-1) is within the Acceptable Operating Region as well.
Pedigree: Modified from Pilgrim 2003 NRC exam question.

Following the quarterly SBLC flow test for the 'A' SBLC pump, you receive a report that the results of the required concentration analysis are as follows:

-Tank Volume 4226 gallons
-% Sodium Pentaborate 8.32
-Tank Temperature 68 degrees F

Select the statement below that describes the actions required by the Technical Specifications:

Restore concentration of boron in solution to within limits within 72 hours AND 10 days from discovery of failure to meet the LCO, or else place the plant in hot shutdown within 12 hours.

The plant must be placed in cold shutdown condition within 24 hours.

If the isotopic enrichment of Boron-10 is above 54.4 atom percent then a shutdown can be avoided if the sodium pentaborate solution meets the original design criteria.

Power operation may continue for the next 7 days provided that the 'B' SBLC pump passes the flow rate test immediately and daily thereafter.

95 **ID: 03-1 NRC-5909** **Points: 1.00**

Unit 2 is at rated conditions.

DOS 1500-10, LPCI System Pump Operability Test with Torus Available and Inservice Testing (IST) Program, is in progress.

The A loop of the LPCI surveillance has been completed with all readings within the Acceptance Criteria.

The NSO was increasing flow in the B loop when the NLO called and requested the NSO stop flow adjustments due to an abnormal sound in the area.

The SRO walks over to the 902-3 panel to receive an update and notes the following parameters which have been steady for 2 minutes:

- 2-1501-11B, HX BYPASS VLV CLOSED
- 2-1501-13B, MIN FLOW VLV OPEN
- 2-1501-18B, 19A TORUS SPRAY VLV CLOSED
- 2-1501-20B, TORUS CLG/TEST OPEN
- 2-1501-21B, LPCI VLV OPEN
- 2-1501-22B. INJ VLV CLOSED
- Computer point C255, 2B LPCI FLOW, indicates 3050 gpm and steady.

The NSO reports the 2-1501-38B, TORUS CLG/TEST, valve is currently throttled open for 17 seconds.

Based on the above indications, the LPCI system is currently...

A. inoperable due to the 11B valve being closed.

B. inoperable due to the 13B valve being open.

C. inoperable due to the 38B valve being throttled open for 17 seconds.

D. operable.

Answer: D

Question 95 Details

Question Type:	Multiple Choice
Topic:	95 DILTS.203LN001.07 LPCI: Given lineup, abnormality and TS(min flow open)
System ID:	5909
User ID:	03-1 NRC-5909

Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE203LN001.07 Reference: TS 3.3.5.1, DOS 1500-10, and Fig 203LN001-001 **Provide a copy of TS 3.3.5.1 with completion times less than 1 hr blanked out.** K/A: Generic 2.1.31 3.9 Level: High Explanation: The failure of the min flow valve to go closed does not render the system inoperable.The bases state that the min flow valve is only required to be operable in the open direction. Performance of the system is based on the valve not going closed. The low flow (bypass) does NOT pertain to the HX bypass valve. The 38B valve is allowed to be throttled open for 36 seconds prior to the system having to be declared inoperable. Pedigree: New for 03-1 NRC exam.

96 **ID: 03-1 NRC-5923** **Points: 1.00**

The HPCI system isolation channel functional test is scheduled to begin early on day shift.

This will require entry into a __(1)__ short duration time clock (SDTC). It is the responsibility of the Unit Supervisor to__(2)__.

	1	2
A.	six hour	prepare the applicable SDTC **ONLY**
B.	twelve hour	prepare the applicable SDTC **ONLY**
C.	twelve hour	prepare and track the applicable SDTC
D.	six hour	prepare and track the applicable SDTC

Answer: A

Question 96 Details

Question Type:	Multiple Choice
Topic:	96 DILTS.298L070 SDTC preparation, tracking, and logging
System ID:	5923
User ID:	03-1 NRC-5923
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE298L070 Reference: OP-AA-108-104, TS 3.3.6.1 Bases K/A: Generic 2.2.23 3.8 Level: Recall Explanation: TS 3.3.6.1 Bases state that when an instrument channel is placed in an inoperable status solely for performance of required surveillances, entry into associated Conditions and Required actions may be delayed for up to 6 hours provided the associated function maintains isolation capability. OP-AA-108-104 states that it is the responsibility of the RO to log and track the SDTC and the responsibility of the Unit Supervisor to prepare the SDTC. Pedigree: New for 03-1 NRC exam.

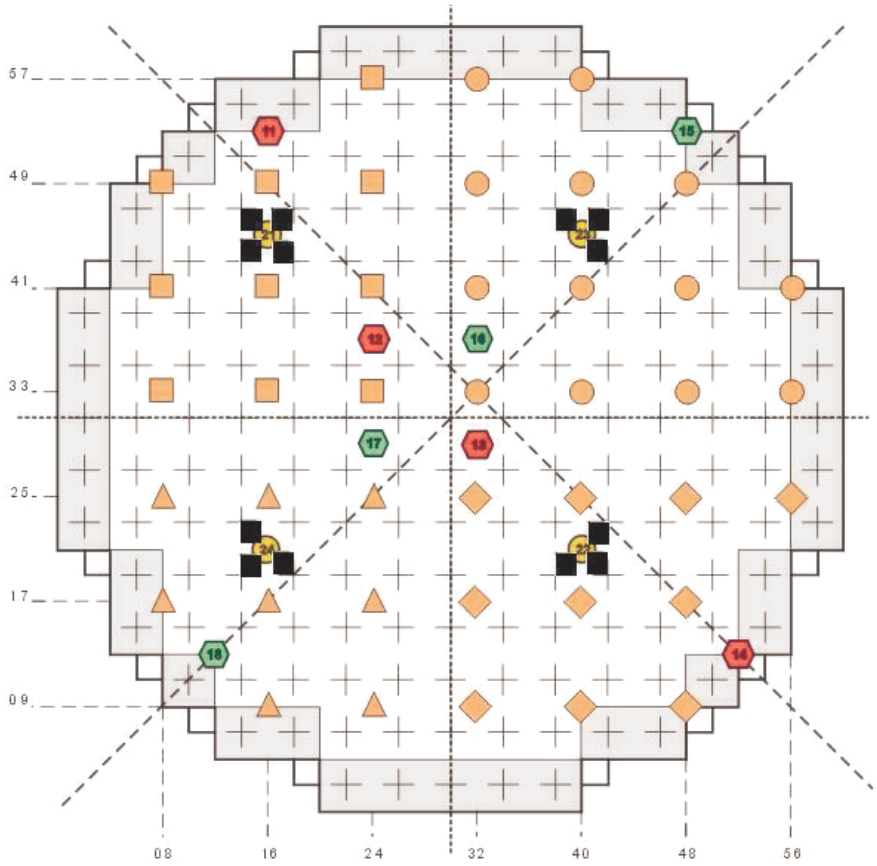
EXAMINATION ANSWER KEY

03-1 NRC Exam (as submitted 6/30/04)

97 **ID: 03-1 NRC-5868** **Points: 1.00**

The following conditions exist.

- The plant is in REFUEL with a spiral offload in progress.
- 13 fuel bundles remain to be removed.
- Fuel Bundle at location 17-43 is next to be removed.
- SRM 21 indicates 10 cps.
- SRM 22 indicates 2 cps.
- SRM 23 indicates 2 cps.
- SRM 24 indicates 6 cps.



Which of the following describes the action(s) to be taken for the above stated conditions AND why?

A. Continue spiral offload. Only 2 operable SRMs are required to be operable with one in the quadrant where core alterations are being performed.

B. Continue spiral offload. No SRM is required to be operable in an adjacent quadrant with less than or equal to 4 fuel assemblies.

C. Immediately suspend fuel moves. Too many SRMs have too low of a count rate.

D. Immediately suspend fuel moves. The count rate is too low for the SRM in quadrant of fuel bundle 17-43.

Answer: A

Question 97 Details

Question Type:	Multiple Choice
Topic:	97 DILTS.Generic: Effect of alts on core configuration
System ID:	5868
User ID:	03-1 NRC-5868
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 29502LK018 Reference: ITS 3.3.1.2 and Bases **Provide students a copy of TS 3.3.1.2 pages 1-6. with completion times less than 1 hour blanked out.** K/A: 2.2.32 3.3 Level: High Explanation: 2 SRMs are required to be operable. One has to be in an adjacent quadrant and one has to be in the quadrant where core alterations are being performed. This condition is being met by an operable SRM 21 and adjacent SRM 24. There is no requirement for non-adjacent SRMs to be operable until core alterations will take place in that quadrant. Pedigree: New for 03-1 NRC exam.

98 **ID: 03-1 NRC-5879** **Points: 1.00**

Given the following:

- A river discharge is required from the Waste Surge Tank.
- The off-stream liquid effluent monitor is unavailable for use.

Who must authorize this type of river discharge?

A. Shift Manager AND Health Physics Supervisor.

B. Shift Manager AND Chemistry Services Supervisor.

C. Rad Protection Supervisor AND Health Physics Supervisor.

D. Rad Protection Supervisor AND Chemistry Services Supervisor.

Answer: B

Question 98 Details

Question Type:	Multiple Choice
Topic:	98 DSROS.268LN001.14 River Discharge: authorization required when monitor unavailable
System ID:	5879
User ID:	03-1 NRC-5879
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: 268LN001.14 References: DOP 2000-111 K/A: Generic 2.3.3 2.9 Level: Recall Explanation: DOP 2000-111, Waste Surge Tank Radwaste Discharge to River with the Off-Stream Liquid Effluent Monitor Inoperable, requires that permission is obtained from the Shift Manager AND Chemistry Services Supervisor prior to implementation of the procedure. SRO only as stated in task list. Pedigree: Dresden Bank (273100)

99 **ID: 03-1 NRC-5870** **Points: 1.00**

Given the following:

- It is 0200 on a Sunday with a Rad Protection Supervisor on site.
- An Operator must enter the RWCU Demin room to verify a valve position.
- The dose rate in the area is 315 mrem/hr due to demin vessel drain line flushing. The RWP alarm setpoint is 300 mRem/hr.

In accordance with RP-MW-403-1001, Radiation Work Permit Processing, which of the following would be the **FASTEST** allowable method of entry into the room to verify the valve?

A. Develop a new RWP.

B. Perform an RWP field change.

C. Formally revise the existing RWP.

D. Make the entry and then document it in the RWP.

Answer: B

Question 99 Details

Question Type:	Multiple Choice
Topic:	99 DILTS.295L095 Generic: Field change to an RWP
System ID:	5870
User ID:	03-1 NRC-5870
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE295L095 Reference: RP-MW-403-1001 K/A: Generic 2.3.7 3.3 Level: Recall Explanation: Since this is not an emergency or for life saving, the entry would not be made until the proper process has been followed. RP-MW-403-1001, allows an RWP to be Field changed if the work is of short duration and the scope of the work is NOT significantly changed. Developing a new RWP or formally revising the existing RWP is NOT the quickest way to allow entry. Pedigree: New for 03-1 NRC exam.

EXAMINATION ANSWER KEY

03-1 NRC Exam (as submitted 6/30/04)

100 **ID: 03-1 NRC-5906** **Points: 1.00**

Unit 2 was at rated conditions when “ANNUN DC PWR FAILURE” alarms are received on several panels simultaneously.
A bell inside 902-4 sounds.

Which of the following describes the expected operator actions?

A. Verify that the normal AC power supply is still available by performing an annunciator checks on each effected panel. Notification of the Shift Manager is NOT required.

B. Verify that the normal AC power supply is still available by performing an annunciator checks on each effected panel. Notification of the Shift Manager is required.

C. Determine the cause of the loss of annunciators. The Shift Manager should evaluate for a possible GSEP condition.

D. Scram the reactor due to the loss of annunciators. The Shift Manager should evaluate for a possible GSEP condition.

Answer: C

Question 100 Details

Question Type:	Multiple Choice
Topic:	100 DILTS.29501LP059: Knowledge of operator response to loss of all annunciators
System ID:	5906
User ID:	03-1 NRC-5906
Status:	Active
Must Appear:	No
Difficulty:	0.00
Time to Complete:	0
Point Value:	1.00
Cross Reference:	
User Text:	
User Number 1:	0.00
User Number 2:	0.00
Comment:	Objective: DRE29501LP059 Reference: 902(3)-5 H-3 K/A: Generic 2.4.32 3.5 Level: High Explanation: Receipt of these alarms indicates a failure of the panels Annunciator System. Operators should determine the cause of the loss of annunciators and attempt to restore. The Shift Manager should evaluate for a possible GSEP condition.

EXAMINATION ANSWER KEY

03-1 NRC Exam (as submitted 6/30/04)

Pedigree: Dresden 2002 NRC exam.