

**FINAL RO WRITTEN EXAMINATION**

**FOR THE LASALLE INITIAL EXAMINATION - MAY 2003**

ANSWER  
KEY  
  
RO  
NRC ILT  
WRITTEN  
EXAM

Q# 1	BOTH	TIER 2	GROUP	RO 2 SRO 3	201003	A2.10	RO 3.0 SRO 3.4	High
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Control Rod and Drive Mechanism

Ability to (a) predict the impacts of the following on the CONTROL ROD AND DRIVE MECHANISM; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations:

Excessive SCRAM time for a given drive mechanism

The scram time for control rod 22-43 is measured to be 90 seconds during single control rod scram timing.

- (1) Predict how this will effect the rod's response to a full reactor scram and,
- (2) select the action taken to mitigate the consequences of those affects.

- A. (1) The rod will fully insert,  
(2) recharge the accumulator per LOP-RD-20, "Control Rod Accumulator Recharging".
- B. (1) The rod will partially insert,  
(2) recharge the accumulator per LOP-RD-20, "Control Rod Accumulator Recharging".
- C. (1) The rod will fully insert,  
(2) fully insert the control rod and disarm it IAW LOP-RD-12, "Removal of a CRD HCU with Cooling Water On".
- D. (1) The rod will partially insert  
(2) fully insert the control rod and disarm it IAW LOP-RD-12, "Removal of a CRD HCU with Cooling Water On".

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
D	T.S. 3.1.3 and .3.1.4	024.00.14	New	Difficulty:

**PROVIDE  
REFERENCE**

Explanation:

Scram time requires the rod to be inserted per T.S.'s. If the reactor scrammed, prior to rod insertion, the rod will only partially insert due to the SDV becoming full.

Q# 2      BOTH      TIER      GROUP      RO      2      202001      K2.01      RO      SRO      Memory  
                                 2                                   SRO      2                                   3.2      3.2

Recirculation System

Knowledge of electrical power supplies to the following:

Recirculation pumps: Plant-Specific

Reactor Recirculation Pump 2A is powered from   (1)   when in FAST speed and   (2)   when in SLOW speed.

- A. (1) Bus 241Y  
    (2) Bus 251
- B. (1) Bus 251  
    (2) Bus 241Y
- C. (1) Bus 251  
    (2) Bus 251
- D. (1) Bus 241Y  
    (2) Bus 241Y

ANSWER:      Reference:  
          B      LOP-RR-2AE

Task / Objective:  
022.00.06

Question Source:  
CPS ILT0101 NRC  
Q#81

Question  
Difficulty:

Explanation:  
Power supplies as stated.

Q# 3	BOTH	TIER 2	GROUP	RO 1 SRO 1	202002	K3.03	RO 3.3 SRO 3.4	High
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Recirculation Flow Control System

Knowledge of the effect that a loss or malfunction of the RECIRCULATION FLOW CONTROL SYSTEM will have on following:

Reactor water level

Unit 1 is at 100% power when a spurious trip of the 1A RR pump occurs.

INITIALLY, reactor water level will:

- A. decrease, due to a decrease in core voids.
- B. decrease, due to the RWLC system response on a trip of the RR pump.
- C. increase, due to an increase in core voids.
- D. increase, due to the RWLC system response on a trip of the RR pump.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
C	LSCS-UFSAR 15.3-3	023.00.05	New	Difficulty:

Explanation:

Reduction in core flow will initially cause an increase in core voids, resulting in an initial increase in reactor level.

Q# 4	BOTH	TIER 2	GROUP	RO 2 SRO 2	204000	K1.08	RO 3.7	SRO 3.8	Memory
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Reactor Water Cleanup System      Knowledge of the physical connections and/or cause- effect relationships between REACTOR WATER CLEANUP SYSTEM and the following:

SBLC

Which of the following describes the direct response of the Reactor Water Cleanup (RT) system when the Standby Liquid Control (SC) system is initiated?

- A. The operating RT pumps trip when the SC pump starts.
- B. The Outboard Isolation [1(2)G33-F004] valve automatically closes.
- C. The Blowdown Flow Control [1(2)G33-F033] valve automatically closes.
- D. The operating filter demineralizers go into HOLD when the SC pump starts.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
B	LP-27 Section III.E, IV.A	027.00.12	Bank	Difficulty:

Explanation:

The RT system isolates. The RT pumps will trip but NOT from a signal from the SC pump starting. The filter demineralizers do NOT go into HOLD on a signal from the SC pump starting. The Blowdown Flow Control valve does NOT close on a signal from the SC system initiating.

Q# 5	BOTH	TIER 2	GROUP	RO 1 SRO 1	209001	A1.07	RO 3.0 SRO 3.1	High
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Low Pressure Core Spray System Ability to predict and/or monitor changes in parameters associated with operating the LOW PRESSURE CORE SPRAY SYSTEM controls including:

Emergency generator loading

An ECCS condition occurred on Unit 1. Normal power is available, but the operator decided to load the DG and manually close it onto Bus 141Y. Later, an ECCS and Undervoltage condition occurs on Unit 2.

What indication would you expect to see for the SAT feed to 141Y and the "0" DG?

- A. SAT feed to 141Y and "0" DG amps will remain constant.
- B. SAT feed to 141Y amps will increase; "0" DG amps will decrease then immediately increase.
- C. SAT feed to 141Y amps will increase and "0" DG amps will decrease.
- D. SAT feed to 141Y amps will increase; "0" DG amps will decrease and then increase after a 5 second time delay.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
A	LP Ch. 11 p. 50	063.00.05	New	Difficulty:

Explanation:

Unless the U-1 breaker is manually tripped or the ECCS condition is reset, the closure permissives for the U-2 breaker CANNOT be met.

Q# 6	BOTH	TIER 2	GROUP	RO SRO	1 1	209001	K2.03	RO 2.9	SRO 3.1	Memory
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Low Pressure Core Spray System      Knowledge of electrical power supplies to the following:

Initiation logic

The Unit 1 NSO arms and depresses the Division 1 and Division 2 ECCS initiation pushbuttons.

The LPCS pump does NOT start nor do any LPCS valves reposition as a result of his/her action.

The lack of LPCS system component response could be attributed to a loss of ...

A. Bus 111X

B. Bus 111Y

C. Bus 112X

D. Bus 112Y

ANSWER:      Reference:  
                 B      LP 63 p. 20

Task / Objective:  
006.00.018

Question Source:  
LaSalle 2000 ILT  
Certification Exam Q#30

Question  
Difficulty:

Explanation:

LPCS is a Division 1 ECCS component. Logic for Division 1 ECCS, including LPCS, is from 111Y.



Q# 7      BOTH      TIER 2      GROUP      RO 1      SRO 1      215004      K3.02      RO 3.4      SRO 3.4      High

Source Range Monitoring System      Knowledge of the effect that a loss or malfunction of the SOURCE RANGE MONITOR (SRM) SYSTEM will have on the following:

Reactor manual control: Plant Specific

Reactor startup is in progress.

The reactor is NOT critical.

SRM's read as follows:

Channel:	A	B	C	D
Counts Per Second:	$2 \times 10^3$	$3 \times 10^3$	$2 \times 10^3$	$5 \times 10^3$

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

<u>EFFECT</u>	<u>NECESSARY OPERATOR ACTION</u>
A. Rod Block	Suspend startup until repairs are completed.
B. Rod Block	Bypass the affected channel and continue startup.
C. Half Scram	Bypass the affected channel and continue startup.
D. Half Scram	Suspend startup until repairs are completed.

ANSWER: B	Reference: LP 41, Section IV, LOA-NR-101, pp 9	Task / Objective: 041.00.05	Question Source: Modified, CPS ILT0101 Exam	Question Difficulty:
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Explanation:  
High Voltage Power Supply low creates INOP rod block, you are allowed to bypass and continue.

Q# 8	BOTH	TIER 2	GROUP	RO SRO	1 1	211000	A3.08	RO 4.2	SRO 4.2	High
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Standby Liquid Control System      Ability to monitor automatic operations of the STANDBY LIQUID CONTROL SYSTEM including:

System initiation: Plant Specific

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

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

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

- A. The 1A SBLC system will remain in the current configuration.
- B. The 1A SBLC pump will be injecting test tank water into the reactor.
- C. The 1A SBLC pump will be injecting both test tank AND storage tank volumes into the reactor.
- D. The 1A SBLC squib valve will fire and all other components will remain in their current configuration.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
B	LP 28, p.12 of 35.	028.00.05	New	Difficulty:

Explanation:

With the test tank outlet valve open, the suction valves will not open. The pump will start if either the test tank outlet valve is fully open or one of the storage tank outlet valves are fully open. The squib valves fire anytime the keylock switch at 1H13-P603 it turned to SYS A.

Q# 9	BOTH	TIER 2	GROUP	RO 2 SRO 2	214000	K6.02	RO 2.7 SRO 2.7	High
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Rod Position Information System Knowledge of the effect that a loss or malfunction of the following will have on the ROD POSITION INFORMATION SYSTEM:

Position indication probe

Control Rod 38-13 is uncoupled.

The over-travel reed switch on control rod 38-13's position probe is stuck open.

Which of the following describes the expected indication on the Four-Rod Display if control rod 38-13 was withdrawn to position 48 and a coupling check then performed?

The position readout for Control Rod 38-13 on the Four Rod Display will...

- A. be blank and an OVERTRAVEL alarm will be received.
- B. indicate a "48" and an OVERTRAVEL alarm will be received.
- C. be blank and an OVERTRAVEL alarm will NOT be received.
- D. indicate a "48" and an OVERTRAVEL alarm will NOT be received.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
C	LOR 1H13-P603-A402	024.00.05	Dresden 2001	Difficulty:
	LOA-RM-101		NRC/modified	

Explanation:

With the control rod uncoupled, the mechanism will settle to the over-travel position. With the over-travel reed switch stuck open, no alarm will be generated. There is no indication on the Four Rod Display when a control rod is in the over-travel beyond full-out position..

Rod Block Monitor System Knowledge of the effect that a loss or malfunction of the ROD BLOCK MONITOR SYSTEM will have on following:

Unit 1 is at 100% power.

What, if any, rod blocks will be applied?

- |              |  |                                |                         |                              |
|--------------|--|--------------------------------|-------------------------|------------------------------|
| ANSWER:<br>B | Reference:<br>LP 45 – RBM<br>pp 20 & 28 of 47;<br>LOR 1H13-P603-A406 | Task / Objective:<br>45.00.05g | Question Source:<br>New | Question<br>Difficulty:<br>M |
|--------------|--|--------------------------------|-------------------------|------------------------------|

With RBM function switch NOT in operate, a RBM INOP trip exists, preventing rod movement. RBM only provides withdrawal blocks.

Q# 11	BOTH	TIER 2	GROUP	RO SRO	1 1	215004	K5.01	RO 2.6	SRO 2.6	Memory
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Source Range Monitor (SRM)  
System

Knowledge of the operational implications of the following concepts as they apply to SOURCE RANGE MONITOR (SRM) SYSTEM:

Detector operation

Which of the following features of the Source Range Monitoring (SRM) system extends the detector effective lifetime?

- A. The SRM detector can internal coating is enriched with U-234.
- B. The SRM detector internal gas pressure is much greater than that used in either the Intermediate Range or Local Power Range Detectors.
- C. The SRM detectors are physically larger than both the Intermediate Range and Local Power Range detectors.
- D. The SRM detectors can be retracted from the core when the flux levels are high.

ANSWER: D  
Reference: LP 41 SRM system,  
page 6 of 29

Task / Objective:  
041.00.05

Question Source:  
Bank, 041.00.05 004

Question  
Difficulty:

Explanation:

The SRM detectors are retracted from the core when NOT being used. All other choices are either incorrect statements, or statements that are true but do NOT add to SRM life extension.

Q# 12	BOTH	TIER 2	GROUP	RO 1 SRO 1	217000	A3.06	RO 3.5 SRO 3.4	Memory
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Reactor Core Isolation Cooling  
System (RCIC)

Ability to monitor automatic operations of the REACTOR CORE  
ISOLATION COOLING SYSTEM (RCIC) including:

Lights and alarms

Two sets of position indicating lights are provided on Panel 1H13-P601 for the RCIC Turbine Trip and Throttle Valve, one on the vertical section and one on the horizontal section of the panel.

What condition is indicated if the lights on the vertical section indicate CLOSED and the indication on the horizontal section indicates OPEN?

The Trip and Throttle Valve ...

- A. is open with an initiation signal present.
- B. was manually closed from the control room.
- C. is closed due to a RCIC turbine trip.
- D. is in a normal standby lineup.

ANSWER: C  
Reference: LP 32 Sect III.P

Task / Objective:  
032.00.05

Question Source:  
B

Question  
Difficulty:

Explanation:

A RCIC turbine trip signal would cause the valve to close, as would be indicated on the vertical section. The valve actuator, however, would still indicate open (horizontal section).

Q# 13	BOTH	TIER 2	GROUP	RO 1 SRO 1	217000	K4.05	RO 3.2 SRO 3.5	Memory
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Reactor Core Isolation Cooling System (RCIC)      Knowledge of REACTOR CORE ISOLATION COOLING SYSTEM (RCIC) design feature(s) and/or interlocks which provide for the following:

Prevents radioactivity release to auxiliary/reactor building

Which of the following correctly states four parameters that will cause an automatic PCIS isolation of the RCIC steam supply line (E51-F008)?

- A. High RCIC Steam Flow Rate,  
High Temperature in the RCIC pipe tunnel,  
High Differential Temperature in the RCIC Pipe Tunnel,  
Low RCIC Steam Flow Rate.
- B. High RCIC Steam Flow Rate,  
High Temperature in the RCIC equipment room,  
High Differential Temperature in the RCIC pipe tunnel,  
Low Steam Supply Pressure.
- C. High Drywell Pressure,  
High Temperature in the RCIC equipment room,  
High Differential Temperature in the RCIC equipment room,  
Low Steam Supply pressure
- D. High Drywell Pressure,  
High Temperature in the RCIC equipment room,  
High Differential Temperature in the RCIC pipe tunnel,  
High Pressure between the rupture discs on the RCIC turbine exhaust line.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
B	LOP-PC-03	032.00.05	Bank 032.00.12 003	Difficulty:

Explanation:

Answer B includes only RCIC isolation signals.

Q# 14	BOTH	TIER 2	GROUP	RO SRO	1 1	223002	A4.01	RO 3.6	SRO 3.5	Memory
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Primary Containment Isolation  
System/Nuclear Steam Supply  
Shut-Off

Ability to manually operate and/or monitor in the control room:

Valve closures

Unit 2 is operating at rated conditions.

"2A" RPS and DC bus 211Y are both lost simultaneously.

Based on this loss, which of the following isolation valve(s) will close?

- A. Inboard VP isolation valves
- B. Inboard MS isolation valves
- C. Outboard RI isolation valves
- D. Outboard WR isolation valves

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
D	LOA-DC-201 p.44 and LOA-RP-201 p.6	091.00.05	INPO Bank Q#1808	Difficulty:

Explanation:

On loss of RPS A, Outboard PCIS valves for groups 1-3, 5-7- and 10 close EXCEPT FOR MSIV's, PCCW and RBCCW. On loss of 211Y, 2WR179/180 close.



Q# 15	BOTH	TIER 2	GROUP	RO 2 SRO 1	226001	K6.10	RO 3.3 SRO 3.5	High
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RHR/LPCI: Containment Spray      Knowledge of the effect that a loss or malfunction of the following will  
 System Mode                              have on the RHR/LPCI: CONTAINMENT SPRAY SYSTEM MODE:  
 Suppression chamber to drywell vacuum breakers: Mark-I-II

One of the suppression chamber to drywell vacuum breakers is found stuck open.

If a reactor water level instrument reference leg ruptured in the drywell, what affect would the vacuum breaker failure have on the use of the drywell and suppression chamber sprays compared to the same event with functional suppression chamber to drywell vacuum breakers?

With the suppression chamber to drywell vacuum breakers stuck open, \_\_\_\_\_  
 would have to be placed in service earlier in the transient.

- A. NEITHER the drywell sprays nor suppression chamber sprays
- B. ONLY the suppression chamber sprays
- C. ONLY the drywell sprays
- D. BOTH the drywell sprays and suppression chamber sprays

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
D	LP 090, p23	064.00.05	New	Difficulty:

**Explanation:**

With the vacuum breaker stuck open, the pressure suppression capacity of the containment would be reduced as steam would NOT be forced through the downcomers to be condensed by the suppression pool. Drywell and suppression chamber pressure would increase at a higher rate requiring alignment of the suppression chamber sprays and the drywell sprays at an earlier point in the transient.

Q# 16	BOTH	TIER 2	GROUP	RO 2 SRO 2	230000	A2.15	RO 4.0 SRO 4.1	High
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RHR/LPCI: Torus/Suppression Pool Spray Mode

Ability to (a) predict the impacts of the following on the RHR/LPCI: TORUS/SUPPRESSION POOL SPRAY MODE; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations:

Loss of coolant accident

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

The following conditions exist 60 seconds after the transient began:

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

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

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

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

- A. (1) OPEN.  
(2) Operators will close the valve to increase vessel injection.
- B. (1) OPEN.  
(2) Operators will leave the valve open to control containment pressure.
- C. (1) CLOSED.  
(2) Operators will leave the valve closed to maximize vessel injection.
- D. (1) CLOSED.  
(2) Operators will open the valve to control containment pressure.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
C	LGA LP 07 – LGA-003	064.00.05	New	Difficulty:

**Explanation:**

The suppression chamber spray valve will NOT automatically open on system initiation. With reactor vessel water level less than the top of active fuel, ECCS flow should NOT be diverted from vessel injection.



Q# 18    BOTH    TIER 2    GROUP    RO 1    239002    K1.07    RO 3.6    SRO 3.8    Memory  
SRO 1

Relief/Safety Valves    Knowledge of the physical connections and/or cause- effect  
relationships between RELIEF/SAFETY VALVES and the following:  
Suppression pool

SRV's discharge to the Suppression Pool at \_\_\_\_ (1) \_\_\_\_ elevation and \_\_\_\_ (2) \_\_\_\_ distances from the center of  
the Suppression Pool.

- A. (1) the same  
    (2) the same
- B. (1) varying  
    (2) various
- C. (1) varying  
    (2) the same
- D. (1) the same  
    (2) various

ANSWER:    Reference:  
D    LP 70 p.7

Task / Objective:  
070.00.05

Question Source:  
N

Question  
Difficulty:

Explanation:

SRV's discharge near the bottom of the pool at varying distances from the center of the pool.

Q# 19	BOTH	TIER 2	GROUP	RO 2 SRO 2	245000	K5.07	RO 2.6	SRO 2.9	Memory
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Main Turbine Generator and Auxiliary Systems      Knowledge of the operational implications of the following concepts as they apply to MAIN TURBINE GENERATOR AND AUXILIARY SYSTEMS:

Generator operations and limitations

Which of the following would occur if generator hydrogen pressure decreases to 25 psig while operating the main generator fully loaded?

Generator damage due to ...

- A. lack of cooling ability.
- B. seal oil backup.
- C. lack of seal oil.
- D. hydrogen detonation.

ANSWER:      Reference:  
A      LP 009 p.30

Task / Objective:  
009.00.05

Question Source:  
New

Question  
Difficulty:

Explanation:

Hydrogen pressure should be maintained within limits of generator loading.

Q# 20	BOTH	TIER 2	GROUP	RO 1 SRO 1	259002	A1.02	RO 3.6 SRO 3.5	High
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Reactor Water Level Control System

Ability to predict and/or monitor changes in parameters associated with operating the REACTOR WATER LEVEL CONTROL SYSTEM controls including:

Reactor feedwater flow

The plant is operating normally at approximately 75% power.

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

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

Reactor feedwater flow will....

- A. remain constant.
- B. initially increase and then decrease prior to an automatic scram.
- C. initially decrease and then increase prior to an automatic main turbine trip.
- D. decrease until the reactor automatically scrams due to low reactor water level.

ANSWER: Reference:  
A LP 31 p. 50

Task / Objective:  
031.00.05

Question Source:  
Modified  
2002R.bnk DFW011

Question  
Difficulty:

Explanation:

Failure of any single component will NOT impair the systems ability to maintain level.

Q# 21	BOTH	TIER 2	GROUP	RO 1 SRO 1	259002	K6.02	RO 3.3 SRO 3.4	Memory
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Reactor Water Level Control System

Knowledge of the effect that a loss or malfunction of the following will have on the REACTOR WATER LEVEL CONTROL SYSTEM:

A.C. power

Unit 1 at 100% power.

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

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

- A. All RWLC M/A Stations will transfer to manual.
- B. TDRFP's will transfer to Demand Substitution, the Feed Reg. Valve and Low Flow Feed Reg. Valve fail closed.
- C. The RWLC system annunciates a minor RWLC failure alarm and component status is unchanged.
- D. Band C Narrow range transmitters will fail downscale, causing a level 8 trip.

ANSWER: C  
Reference: LP 31 p. 44

Task / Objective:  
031.00.16

Question Source:  
N

Question  
Difficulty:

Explanation:

135X-3 and 136X-3 provide redundant power supplies to 1H13-P660 & P612. On loss of 135X-3, power will be supplied from 136X-3.



Q# 22	BOTH	TIER 2	GROUP	RO 2 SRO 1	262001	K1.04	RO 3.1 SRO 3.4	High
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A.C. Electrical Distribution      Knowledge of the physical connections and/or cause- effect relationships between A.C. ELECTRICAL DISTRIBUTION and the following:

Uninterruptible power supply

Unit 2 at 100% power

LOR 2PM01J-A111, "UPS TROUBLE" alarm just received for the Process Computer UPS  
Computer Point R0256 "UPS 480V Norm Sply Volt Lo" received.

The Unit 2 UPS is now fed from...

- A. 235X-3
- B. 135X-2
- C. 221Y
- D. 211Y

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
C	LOP-CX-02E;LP 12 p. 17	012.00.05	N	Difficulty:

Explanation:

Normal power supply is AC from it's own unit. The 250VDC supply backs up the normal. If both normal AC and backup DC are lost, alternate AC is supplied.

Q# 23	BOTH	TIER 2	GROUP	RO SRO	2 1	262001	K2.01	RO 3.3	SRO 3.6	High
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A.C. Electrical Distribution                      Knowledge of electrical power supplies to the following:

Off-site sources of power

Unit 1 has just started a refueling outage (shutdown was 3.5 hours ago).

Unit 2 is critical with a 65°F/hour heat-up rate established.

Given this initial lineup, which one of the following combinations of failures would result in a loss of all Off-Site AC power to both units?

- A. Unit 1 SAT and Lines 0108 and 0101.
- B. Unit 1 SAT and Unit 2 SAT.
- C. Unit 1 Ring Bus and Lines 0102 and 0103.
- D. Unit-2 SAT and Lines 6102 and 0108.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
B	Figure 03-02	005.00.05	B	Difficulty:

Explanation:

With both generators off-line (UAT's are unavailable) a loss of both SAT's will result in a loss of off-site power to both units.

Q# 24	BOTH	TIER 2	GROUP	RO SRO	2 2	263000	A4.02	RO 3.2	SRO 3.1	Memory
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D.C. Electrical Distribution                      Ability to manually operate and/or monitor in the control room:

Battery voltage indicator: Plant-Specific

Unit 1, Division 1, 125VDC Voltage is indicated on the   (1)   panel and indicates   (2)  .

- A. (1) 1PM01J  
    (2) battery output only.
- B. (1) 1PM01J  
    (2) battery and battery charger output.
- C. (1) 1PM02J  
    (2) battery output only.
- D. (1) 1PM02J  
    (2) battery and battery charger output.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
B	LP 6 p. 32	006.00.07	N	Difficulty:

Explanation:  
Battery and charger output indication are located on 1PM01J.

Q# 25	BOTH	TIER 2	GROUP	RO 1 SRO 1	264000	A2.04	RO 2.9 SRO 3.0	High
-------	------	-----------	-------	---------------	--------	-------	-------------------	------

Emergency Generators (Diesel/Jet) Ability to (a) predict the impacts of the following on the EMERGENCY GENERATORS (DIESEL/JET); and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations:

Consequences of operating under/over excited

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

Current load is at 1300 KW with 180 KVARs.

Action should be taken to increase KVARs to (1) in order to (2).

- A. (1) 790 out  
(2) maintain ECCS pump operability requirements should a loss of the SAT occur.
- B. (1) 790 out  
(2) prevent the Diesel Generator from tripping on reverse power due to large load changes on the grid.
- C. (1) 450 out  
(2) maintain ECCS pump operability requirements should a loss of the SAT occur.
- D. (1) 450 out  
(2) prevent the Diesel Generator from tripping on reverse power due to large load changes on the grid.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question Difficulty:
D	LOS-DG-M2 p. 8		New	
	<b>PROVIDE REFERENCE (TABLE ONLY)</b>			

Explanation:  
D is the correct answer per LOS-DG-M2.

Q# 26	BOTH	TIER 2	GROUP	RO 1 SRO 1	264000	K3.01	RO 4.2 SRO 4.4	High
-------	------	-----------	-------	---------------	--------	-------	-------------------	------

Emergency Generators  
(Diesel/Jet)

Knowledge of the effect that a loss or malfunction of the  
EMERGENCY GENERATORS (DIESEL/JET) will have on following:

Emergency core cooling systems

Given the following Unit 1 conditions:

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

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

- A. Division 1 ECCS pumps will trip immediately due to a loss of power.
- B. Division 2 ECCS pumps will trip immediately due to a loss of power.
- C. Division 1 ECCS pumps will run until diesel failure occurs.
- D. Division 2 ECCS pumps will run until diesel failure occurs.

ANSWER: D  
Reference: LOP-DG-01 p.5

Task / Objective:  
011.00.05

Question Source:  
New

Question  
Difficulty:

Explanation:

The 1A DG high cooling water temperature trip is bypassed with a LOCA signal present. As a result, the 1A DG will eventually trip on high water temperature, which will deenergize bus 142, resulting in a loss of power to the Division 2 ECCS Pumps.

Radwaste	Knowledge of the effect that a loss or malfunction of the RADWASTE will have on following:
----------	--

2WE01T, Unit 2 Waste Collector Tank is Out of Service and isolated.  
1WE01T, Unit 1 Waste Collector Tank inlet valve (1WE001) solenoid has failed closed.

- A. Reactor Building Equipment Drain Sumps
- B. Reactor Building Floor Drain Sumps
- C. Fuel Pool Filter Demin Backwash
- D. Laundry Sample Tank

**Explanation:**  
A is the only input to the Waste Collector. All other distracters are collected in other Radwaste Tanks.

Q# 28	BOTH	TIER 2	GROUP	RO 3 SRO 3	268000	K5.02	RO 3.1 SRO 3.6	High
-------	------	-----------	-------	---------------	--------	-------	-------------------	------

Radwaste Knowledge of the operational implications of the following concepts as they apply to RADWASTE:

Radiation hazards and ALARA concept

Which of the following individuals would have the greatest risk of exceeding their daily radiation exposure limit due to changing radiological conditions during the stated evolution?

An operator standing by the ...

- A. Spent Resin Tank (0WX03T) during a Unit 2 Reactor Water Clean-Up System Filter Demineralizer Backwash.
- B. Phase Separator Tank (2WX01TB) during a Unit 2 Reactor Water Clean-Up System Filter Demineralizer Backwash.
- C. Spent Resin Tank (0WX03T) during a Unit 2 Condensate Polisher Resin Transfer To URC Inlet Vessel.
- D. Phase Separator Tank (2WX01TB) during a Unit 2 Condensate Polisher Resin Transfer To URC Inlet Vessel.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
B	LP 122, Waste Processing System, Page 5 of 41	027.00.06 (location) 122.00.03.	New	Difficulty:

Explanation:

RWCU resin is highly irradiated with corrosion products from the RPV. The F/D is backwashed to the Phase Separator Tank. The CPs only have Condensate corrosion products, which are lower in dose than the RWCU resin and are sent to the URC,





Q# 30	BOTH	TIER 2	GROUP	RO 2 SRO 1	290001	A2.05	RO 3.1 SRO 3.3	High
-------	------	-----------	-------	---------------	--------	-------	-------------------	------

Secondary Containment Ability to (a) predict the impacts of the following on the SECONDARY CONTAINMENT; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations:

High area temperature

Unit 1 is operating at 100% power.

A 2 gpm Reactor Water Cleanup leak has been identified in the 1A RT Pump Room.

Unit 1 Reactor Building Ventilation (VR) system spuriously trips.

Based on the above transient,

- (1) predict the concern of the VR Isolation on the secondary containment, AND
  - (2) actions taken to mitigate the transient.
- 
- A. (1) Temperature increase affecting equipment operability;  
(2) Start ONE Standby Gas Treatment train to maintain area temperatures.
  - B. (1) Temperature increase affecting equipment operability;  
(2) Bypass high differential temperature isolation signals and restart VR.
  - C. (1) Radiation levels increasing, affecting equipment operability;  
(2) Bypass high radiation isolation signals and restart VR.
  - D. (1) Radiation levels increasing, affecting equipment operability;  
(2) Start BOTH Standby Gas Treatment trains to maintain area radiation levels.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
B	LGA-002 Lesson Plan, page 4 of 28	417.00.01	New	Difficulty:

Explanation:

Area Temps. >212°F is an entry cond. for LGA-002. It's bases is to maintain emergency functions and ensure safety of personnel.

Secondary Containment	Knowledge of SECONDARY CONTAINMENT design feature(s) and/or interlocks which provide for the following:
Fluid leakage collection	

- A. NO DIFFERENCE, the floor drain sump will continue to pump down to the Radwaste floor drain collector tank regardless of secondary containment status.
- B. The floor drain sump will isolate and need to be manually aligned to Radwaste floor drain collector tank using the RE/RF isolation bypass keylock switches at 1(2)PM16J.
- C. The floor drain sump CANNOT be pumped down while the secondary containment is isolated, resulting in the sumps overflowing into the other corner room sumps.
- D. The floor drain sump will be pumped to the reactor building equipment drain sump vice the Radwaste floor drain collector tank while the secondary containment is isolated.

**Explanation:**  
The reactor building floor drain sumps have no automatic isolation features associated with secondary containment isolation. The system will continue to operate normally.

Control Room HVAC	Ability to monitor automatic operations of the CONTROL ROOM HVAC including:
Initiation/reconfiguration	

Predict the response of the VC system if high radiation is detected in the outside air by detectors 1D18-K751A and 1D18-K751B?

- |                     |   |                                       |  |                             |
|---------------------|---|---------------------------------------|--|-----------------------------|
| <b>ANSWER:</b><br>C | <b>Reference:</b><br>LOP-VC-01 rev. 19 p.64 | <b>Task / Objective:</b><br>117.00.05 | <b>Question Source:</b><br>Bank, LOP-VC-01 050 | <b>Question Difficulty:</b> |
|---------------------|---|---------------------------------------|--|-----------------------------|

The proper combination of rad monitors have tripped, so the system will realign to the pressurization mode. When in the purge mode, the Odor Eater is placed in service, therefore it will NOT realign. On a high rad condition, the Emergency M/U will start. All min and max outside air dampers will close.

Q# 33	BOTH	TIER 2	GROUP	RO 2 SRO 2	290003	K4.01	RO 3.1 SRO 3.2	Memory
-------	------	-----------	-------	---------------	--------	-------	-------------------	--------

Control Room HVAC Knowledge of CONTROL ROOM HVAC design feature(s) and/or interlocks which provide for the following:

System initiations/reconfiguration: Plant-Specific

The Control Room Ventilation System is aligned for normal operations (NOT in purge) and smoke is detected in the RETURN AIR supply duct.

Which of the following describes the response of the VC System?

- A. The VC Charcoal Filter is automatically placed on line and the Minimum Outside Air Damper closes.
- B. The Emergency Make Up Train automatically comes on line and the Outside Air Supply isolates.
- C. The VC Charcoal Filter is automatically placed on line and the Minimum Outside Air Damper remains open.
- D. The Emergency Make Up Train automatically comes on line and the Minimum Outside Air Damper remains open.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
C	VC LP, pg. 4, 5	117.00.08	LaSalle 1999 NRC Exam	Difficulty:

Explanation:

High return air smoke detection sensed upstream of the VC return fan suction isolation dampers aligns the VC System recirculation charcoal filter dampers to insure smoke removal. The alignment is as follows: 0VC11YA(B), Inlet, OPENS; 0VC12YA(B), Outlet, OPENS; 0VC13YA(B), Bypass, CLOSES. EMU comes on line when smoke is detected in outside air supply NOT return air.

Q# 34	BOTH	TIER 1	GROUP	RO 2 SRO 1	295003	2.1.28	RO 3.2	SRO 3.3	Memory
-------	------	-----------	-------	---------------	--------	--------	-----------	------------	--------

Partial or Complete Loss of A.C. Power      Conduct of Operations

Knowledge of the purpose and function of major system components and controls.

Unit 1 is at rated power with a normal electrical lineup.

If Bus 141Y voltage drops to 65% of its normal voltage . . .

- A. the UAT feed to 141Y will trip and the 0 DG will start and pick up the bus to restore voltage to essential equipment.
- B. the UAT feed to 141Y will trip and the SAT feed will automatically close to restore voltage to all loads on the bus.
- C. the SAT feed to 141Y will trip and the 0 DG will start and pick up the bus to restore voltage to essential equipment.
- D. the SAT feed to 141Y will trip and the UAT feed will automatically close to restore voltage to all loads on the bus.

ANSWER: C      Reference: LOR-IPM01J-A314

Task / Objective: 005.00.10

Question Source: LaSalle 1999 NRC Exam

Question Difficulty:

Explanation:

If Bus 141Y voltage <69%, ACBs 1412 will trip, the 0 DG will start and ACB 1413 will close. The normal electrical power supply to 141Y is the SAT. The under voltage signal will also trip multiple non-essential loads.

Partial or Complete Loss of A.C. Power	Knowledge of the reasons for the following responses as they apply to <b>PARTIAL OR COMPLETE LOSS OF A.C. POWER:</b>
---	---

Q# 36	BOTH	TIER 1	GROUP	RO 2 SRO 2	295004	AK3.02	RO 2.9	SRO 3.3	Memory
-------	------	-----------	-------	---------------	--------	--------	-----------	------------	--------

Partial or Complete Loss of D.C. Power      Knowledge of the reasons for the following responses as they apply to  
PARTIAL OR COMPLETE LOSS OF D.C. POWER:

Ground isolation/fault determination

The following alarms are received in the control room:

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

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

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

- A. The "B" Narrow Range Indicator will fail downscale.
- B. The 1A TDRFP will NOT respond to speed demand signals.
- C. MDRFP will trip due to Level 8 trip.
- D. RCIC will NOT automatically initiate as designed.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
D	LOA-DC-101 rev. 6 p. 163	06.00.18	LORT BANK LOP-DC-04 002	Difficulty:

Explanation:

RCIC auto initiation is prevented. B NR is NOT fed from 111Y. 1A TDRFP is NOT fed from 111Y and the C level 8 channel fails in a tripped condition, NOT preventing nor causing a trip by itself.

Q# 37	BOTH	TIER 1	GROUP	RO SRO	1 2	295005	AA1.01	RO 3.1	SRO 3.3	Memory
-------	------	-----------	-------	-----------	--------	--------	--------	-----------	------------	--------

Main Turbine Generator Trip      Ability to operate and/or monitor the following as they apply to MAIN TURBINE GENERATOR TRIP:

Recirculation system: Plant-Specific

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

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

	<u>RETS Pressure</u>	<u>RR Pumps</u>
A.	450 psig	OFF
B.	450 psig	SLOW
C.	550 psig	OFF
D.	550 psig	SLOW

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
B	LOR 1H13-P603-B106	071.00.10	New	Difficulty:

Explanation:

With reactor power greater than 25% and RETS header pressure below 510 psig the EOC-RPT downshift to slow speed interlock is activated and the RR pumps will automatically downshift.





SCRAM

### Decay heat generation and removal.

The reactor automatically scrambled.

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

- Control valves failing open would give a Group 1 (MSIV) isolation. Main Turbine Bypass Valves and outboard MSIV drains would NOT be available.

High Reactor Pressure	Knowledge of the operational implications of the following concepts as they apply to HIGH REACTOR PRESSURE:
-----------------------	---

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

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

- |              |   |                                |                         |                         |
|--------------|---|--------------------------------|-------------------------|-------------------------|
| ANSWER:<br>A | Reference:<br>064, RHR System<br>Lesson Plan, IV.L.3.b,<br>Page 34 of 59. | Task / Objective:<br>064.00.21 | Question Source:<br>New | Question<br>Difficulty: |
|--------------|---|--------------------------------|-------------------------|-------------------------|

With a loss of RHR-WS, the vessel will heat up due to decay heat. When pressure reaches 135 psig, SDC will isolate, resulting in a low suction pressure trip of the 1A RHR pump.

Q# 41      BOTH      TIER 1      GROUP      RO 1      SRO 1      295007      AK3.03      RO 3.4      SRO 3.5      High

High Reactor Pressure      Knowledge of the reasons for the following responses as they apply to HIGH REACTOR PRESSURE:

RCIC operation: Plant-Specific

RCIC flow is in automatic, injecting at rated flow.

SRV's are being cycled to maintain reactor pressure.

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

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

ANSWER:      Reference:  
D      LP 32 p. 60

Task / Objective:  
032.00.05

Question Source:  
LaSalle 2000 ILT  
Certification Exam

Question  
Difficulty:

Explanation:

In AUTO, the system will attempt to maintain flow. As reactor pressure rises flow will lower and turbine speed and pump discharge pressure must be higher to maintain flow as described in LP 32.

Q# 42      BOTH      TIER 1      GROUP      RO 2      295008      AK1.02      RO 2.8      SRO 2.8      Memory  
SRO 2

High Reactor Water Level      Knowledge of the operational implications of the following concepts as they apply to HIGH REACTOR WATER LEVEL:

Component erosion/damage

The MDRFP will trip at Level 8 to prevent damaging the ....

1. Safety Relief Valves
2. Main Turbine
3. Reactor Vessel Steam Separator
4. RCIC Turbine

- A. 1, 2, 3 and 4.
- B. 1, 2 and 3 only.
- C. 2 and 4 only.
- D. 1 and 2 only.

ANSWER:      Reference:  
D      LP 77 p. 27.IV.A.3

Task / Objective:  
071.00.05

Question Source:  
Modified from Dresden  
2002

Question  
Difficulty:

Explanation:

High level trip to protect SRV's from water-hammer and prevent carryover to turbine.. RCIC has its own level 8 trip.

Q# 43	BOTH	TIER 1	GROUP	RO 2 SRO 2	295008	AK2.07	RO 2.9 SRO 3.0	Memory
-------	------	-----------	-------	---------------	--------	--------	-------------------	--------

High Reactor Water Level Knowledge of the interrelations between HIGH REACTOR WATER LEVEL and the following:

HPCS: Plant-Specific

HPCS automatically starts and injects to the vessel.

Annunciators for Reactor Vessel Level 8 are received on 1H13-P601.

Which of the following statements is true?

- A. HPCS injection valve will close and the Full Flow Test valve will open.
- B. HPCS injection valve will close and the HPCS pump breaker will trip.
- C. HPCS will continue to inject due to the High Drywell signal.
- D. HPCS pump will continue to run and the Minimum Flow valve will open.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
D	LP 61 p. 13& 14	061.00.05	Modified, Perry 1997 ILT exam	Difficulty:

Explanation:

HPCS Injection valve automatically closes on Level 8, the pump continues to run and the min flow will open. Other answers incorrect because HPCS does NOT continue to inject, the pump breaker does NOT trip, and the Full Flow Test valve does NOT auto open.

High Drywell Pressure	Knowledge of the operational implications of the following concepts as they apply to HIGH DRYWELL PRESSURE:
-----------------------	---

REACTOR OPERATOR

High Suppression Pool Temperature

REACTOR OPERATOR



Inadvertent Reactivity Addition	Knowledge of the interrelations between INADVERTENT REACTIVITY ADDITION and the following:
Neutron monitoring system	

LOA-HD-101, "Heater Drain System Trouble" has been entered.

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

- A. Power-to-Flow Map.
- B. APRM's.
- C. OD3.
- D. RBM.

**Explanation:**  
When AGAF's out of spec., OD3 should be used.



**Incomplete SCRAM** Knowledge of the reasons for the following responses as they apply to INCOMPLETE SCRAM:

During performance of LGA-NB-01, Alternate Rod Insert, Single Rod Insertion, the operator is directed to place the MODE SELECT switch in BYP for the Rod Worth Minimizer.

- A. rod insert blocks to allow inward rod motion.
- B. the settle function to speed the rate of rod insertion.
- C. the single notch function to speed the rate of rod insertion.
- D. nuclear Instrumentation rod blocks to allow all rod motion.

**Explanation:**

REACTOR OPERATOR

REACTOR OPERATOR



Q# 51	BOTH	TIER 1	GROUP	RO SRO	2 1	295017	AA1.09	RO 3.6	SRO 3.8	Higher
-------	------	-----------	-------	-----------	--------	--------	--------	-----------	------------	--------

High Off-Site Release Rate      Ability to operate and/or monitor the following as they apply to HIGH OFF-SITE RELEASE RATE:

Standby gas treatment/FRVS

To reduce containment pressure, operators are venting primary containment using standby gas treatment system (SBGT) post-accident in accordance with LGA-VQ-01, "Containment Vent."

Reactor plant conditions are stable. Other plant conditions are as follows:

- -Unit 1 SBGT train is in operation
- -Unit 2 SBGT train is in standby
- -Radiation levels in primary containment are elevated
  
- -Primary containment pressure is 1.5 psig, decreasing
- -Primary containment temperature is 145 deg F, decreasing

If the discharge rate through the Unit 1 SBGT radiation monitor causes annunciator 1PM07J-A304, "SBGT WIDE RANGE GAS MONITOR TROUBLE" to alarm due to a high radiation release condition, the operator would be required to...

- A. continue venting, no radiation release limits are imposed.
- B. secure venting to prevent exceeding offsite release.
- C. continue venting until General Emergency radiation limits are reached.
- D. verify automatic shutdown of the Unit 1 SBGT.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
B	LGA-VQ-01	427.00.01	Bank	Difficulty:
			2002 NRC Exam	

Explanation:

The above alarm indicates that the ODCM release rates have been exceeded, which is not authorized per LGA-VQ-01 (Limitation D.1) If this alarm is received, direction is provided to shutdown the VG train.



REACTOR OPERATOR



Q# 54      BOTH      TIER 1      GROUP      RO 2      295026      EK1.01      RO 3.0      SRO 3.4      High  
SRO 1

Suppression Pool High Water Temperature      Knowledge of the operational implications of the following concepts as they apply to SUPPRESSION POOL HIGH WATER TEMPERATURE:

Pump NPSH

Unit 1 has experienced a transient.

Suppression Pool Level is -15 feet.

Which of the following conditions could be expected to cause LPCS system damage? *Provide LGA Fig NL*

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

ANSWER: A      Reference: LGA Figure NL

Task / Objective: 413.00.04

Question Source: New

Question Difficulty:

Explanation:

Only A will be above the LPCS NPSH limit.

Q# 55	BOTH	TIER 1	GROUP	RO SRO	2 1	295026	EK2.02	RO 3.6	SRO 3.8	High
-------	------	-----------	-------	-----------	--------	--------	--------	-----------	------------	------

Suppression Pool High Water Temperature Knowledge of the interrelations between SUPPRESSION POOL HIGH WATER TEMPERATURE and the following:

Suppression pool spray: Plant-Specific

Suppression Pool level: -6 feet

Suppression Chamber pressure: 15 psig

Which of the following is the HIGHEST Suppression Pool temperature that Suppression Chamber Sprays can be started without concerns of pump damage?

- A. 235°F
- B. 240°F
- C. 245°F
- D. 250°F

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
B	LGA-003	413.00.04	New	Difficulty:
	Provide Figure NR			

Explanation:

Using Figure NR, RHR/LPCI NPSH Limit, Suppression Pool temperatures of 245°F and 250°F are in the shaded area for NPSH concerns. 240°F is in the shaded portion for pool levels between -13 feet and -18 feet. And 235°F is NOT in any shaded area. Therefore, 240°F is the highest temperature for the given conditions, that NPSH requirements are met.

Q# 56	BOTH	TIER 1	GROUP	RO 2 SRO 2	295028	EA1.04	RO 3.9 SRO 4.0	High
-------	------	-----------	-------	---------------	--------	--------	-------------------	------

High Drywell Temperature      Ability to operate and/or monitor the following as they apply to HIGH DRYWELL TEMPERATURE:

Drywell pressure

Unit 1 Primary Containment Chillers A & C are off.

Unit 1 Primary Containment Chiller "B" trips.

Which below describes ...

- (1) the status of containment cooling, AND
- (2) the expected IMMEDIATE (within one minute) effect on Unit 1 Drywell pressure?

- A. (1) All cooling is lost  
(2) Drywell pressure will rise.
- B. (1) All cooling is lost  
(2) Drywell pressure will remain constant.
- C. (1) Limited cooling is still maintained  
(2) Drywell pressure will rise.
- D. (1) Limited cooling is still maintained  
(2) Drywell pressure will remain constant.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
C	LP 96, page 16 of 56	096.00.05	NEW	Difficulty:

**Explanation:**

When a chiller unit trips, the Holdup Tank will provide about 10 minutes of residual cooling. The drywell air temperature and pressure will slowly rise should remain steady while the Holdup Tank provides residual cooling.



Q# 58	BOTH	TIER 1	GROUP	RO 2 SRO 1	295030	EA1.03	RO 3.4 SRO 3.4	High
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Low Suppression Pool Water Level

Ability to operate and/or monitor the following as they apply to LOW SUPPRESSION POOL WATER LEVEL:

HPCS: Plant-Specific

Unit 1 is shutdown with HPCS in standby.

Suppression pool water level is being lowered from normal level to -9 feet.

Predict the impact of this change on the High Pressure Core Spray (HPCS) discharge Line Pressure.

HPCS discharge line pressure will...

- A. remain constant due to the water leg pump suction source.
- B. remain constant due to the water leg pump check valve.
- C. will decrease by 3-5 psig.
- D. will decrease by 7-9 psig

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
C	GP GFES Chapter 6, Page 75 of 89	413.00.04	New	Difficulty:

Explanation:

As the SP Level Decreases, the HPCS Water Leg Pump suction pressure will decrease. Pump discharge head is directly related to pump suction head. ( $H_P + v_{OUT} P_{IN} \propto v_{OUT} P_{OUT}$ ). If suction head decreases, discharge head will decrease corresponding to that amount. Therefore, since there is ~.44 psig/foot in a column of water, if water level drops by 8 feet, C is the correct answer.

Q# 59	BOTH	TIER 1	GROUP	RO 1 SRO 1	295031	EA2.01	RO 4.6	SRO 4.6	High
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Reactor Low Water Level      Ability to determine and/or interpret the following as they apply to  
REACTOR LOW WATER LEVEL:

Reactor water level

Drywell Temperature 310°F.

Reactor Building Ventilation has isolated.

Area Coolers are NOT able to maintain Reactor Building Temperatures.

Reactor Building Temperature 180°F.

Reactor Vessel Pressure 90 psig.

Cooldown Rate has NOT exceeded 100°F/hour.

Which of the following is a usable, on-scale level reading?

- A. Shutdown Range level indication reading +80 inches.
- B. Upset Range level indication +2 inches.
- C. Narrow Range level indication reading +3 inches.
- D. Fuel Zone level indication reading -310 inches.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
D	LGA-001, Ref. K.	400.00.02	ILT Bank LGA-001 001	Difficulty:

Explanation:

D is correct because FZ level is indicating >-311 inches which is the minimum usable level with Reactor Building Temp < 200 degrees. S/D level can't be used because 80 is less than minimum usable level (85) with DW temp. 300-399 degrees. Upset level can't be used because it's less than minimum (84) for DW temp 300-399 degrees. NR can't be used because it's min level is +10 inches with Reactor Building Temp >150 degrees and DW temp. 300-399 degrees.



Q# 61	BOTH	TIER 1	GROUP	RO 2 SRO 2	295033	EK1.02	RO 3.9 SRO 4.2	Memory
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High Secondary Containment Area Radiation Levels      Knowledge of the operational implications of the following concepts as they apply to HIGH SECONDARY CONTAINMENT AREA RADIATION LEVELS:

Personnel protection

Unit 1 has experienced a LOCA.

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

Actions during the performance of this procedure should include ...

- A. shutdown of the Control Room Ventilation System.
- B. shutdown of the Control Room Emergency Makeup train.
- C. evacuation of the Reactor Building, Auxiliary Building, and Turbine Building in Unit 1 ONLY.
- D. evacuation of the Reactor Building, Auxiliary Building, and Turbine Building in Unit 1 AND Unit 2.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question Difficulty:
D	LGA-VQ-02, rev 9, page 7 of 74	413.00.02	New	

Explanation:

D is correct due to the possible failure of ductwork in those areas during potentially contaminated venting at high pressures.



Q# 62	BOTH	TIER 1	GROUP	RO SRO	1 1	295037	EA1.03	RO 4.1	SRO 4.1	High
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SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown      Ability to operate and/or monitor the following as they apply to SCRAM CONDITION PRESENT AND REACTOR POWER ABOVE APRM DOWNSCALE OR UNKNOWN:  
 ARI/RPT/ATWS: Plant-Specific

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

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

The NEXT actions to be taken should be:

- A. Initiate Alternate Rod Insertion.
- B. Remove Scram solenoid fuses.
- C. Maintain Reactor water level between +11.0 inches to +59.5 inches.
- D. Maintain Reactor water level between -150 inches and +59.5 inches.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
A	LGA-010	432.00.01	New	Difficulty:

Explanation:

A defines the next required action per LGA's. B is incorrect because ARI should be initiated first. C and D are NOT the next required actions and define an incorrect level band.

Q# 63	BOTH	TIER 1	GROUP	RO SRO	1 1	295037	EK1.04	RO 3.4	SRO 3.6	High
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SCRAM Condition Present and Reactor Power Above APRM Downscale or Unknown      Knowledge of the operational implications of the following concepts as they apply to SCRAM CONDITION PRESENT AND REACTOR POWER ABOVE APRM DOWNSCALE OR UNKNOWN:

Hot shutdown boron weight: Plant-Specific

An ATWS has occurred.

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

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

- A. Cooldown of the reactor.
- B. Placing RCIC in service to maintain vessel level.
- C. Placing RWCU in service to stabilize reactor pressure.
- D. Decay of xenon over the next several hours.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
A	LP 28, p.2: LP LGA-12(LGA-010 LP) p.34.	028.00.01	New	Difficulty:

Explanation:

Hot Shutdown Boron Weight implies that the reactor should be subcritical at rated pressures and temperatures. A cooldown may only be commenced if Cold Shutdown Boron Weight has been injected. RWCU may be utilized provided F/Ds are NOT used and it does NOT remove inventory.

Q# 64	BOTH	TIER 2	GROUP	RO 2 SRO 2	300000	K6.03	RO 2.7	SRO 2.7	High
-------	------	-----------	-------	---------------	--------	-------	-----------	------------	------

Instrument Air System (IAS) Knowledge of the effect that a loss or malfunction of the following will have on the INSTRUMENT AIR SYSTEM:

Temperature indicators

Which of the following would have the greatest impact on Instrument Air system operation?

A station air compressor's ...

- A. lube oil temperature sensor failing low.
- B. discharge air temperature sensor failing low.
- C. air inlet differential pressure sensor failing high.
- D. cooling water pressure sensor failing high.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
A	LP 120 plant air systems, page 4 of 34	120.00.05a	New	Difficulty:

Explanation:

Low or high lube oil temperature will trip the station air compressor. Discharge air temperature will trip the compressor but only if high. Air inlet dP failing high will result in a warning light but does NOT trip the compressor. Cooling water pressure sensor failing high will NOT trip the compressor.

Q# 65	BOTH	TIER 1	GROUP	RO 2 SRO 2	600000	AK2.01	RO 2.6 SRO 2.7	Memory
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Plant Fire On Site Knowledge of the interrelations between PLANT FIRE ON SITE and the following:

Sensors, detectors and valves

A fire in the 1B Diesel Generator room has resulted in an automatic initiation of the CO2 Flooding System.

The CO2 system has NOT been reset, and the fire re-flashes.

Which of the following describes the actions and/or conditions required to re-actuate the system?

The CO2 system activation....

- A. will occur automatically once the detectors reach their setpoint for initiation again.
- B. can be performed via the Local Initiation Pushbutton in the Diesel Generator corridor.
- C. will only occur if the detectors are reset AND temperatures reach initiation setpoint.
- D. can only be performed manually, via the local manual lever from the control panel in the Diesel Generator Corridor, AND will automatically terminate after 15 seconds.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
B	LP 125 -FP p. 22	125.00.06	New	Difficulty:

Explanation:

CO2 system automatically initiates for a certain time. Operation after auto initiation may be done via local pushbutton or manually. If manually performed, it must be manually secured.

Q# 66	BOTH	TIER 3	GROUP	RO SRO	1 1	GENERIC	2.1.11	RO 3.0	SRO 3.8	High
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# Conduct of Operations

Knowledge of less than one hour technical specification action statements for systems.

Unit 1 in MODE 2, withdrawing control rods.

- All IRM's on range 2.
- All SRM's are declared INOPERABLE.

Per Technical Specifications, operator action should include ...

- A. Suspend control rod withdrawal.
- B. Fully insert all control rods.
- C. Place the Mode Switch in SHUTDOWN.
- D. Continue rod withdrawals as IRM operability is met.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
A	T.S.3.3.1.2	041.00.016	New	Difficulty:

## Explanation:

With three required SRM's INOP in Mode 2 with IRM's on Range 2 or below, control rod withdrawal should be suspended immediately.

Q# 67	BOTH	TIER 3	GROUP	RO 1 SRO 1	GENERIC	2.1.9	RO 2.5	SRO 4.0	Memory
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Conduct of Operations

Ability to direct personnel activities inside the control room.

Which of the following tasks are responsibilities of a Reactor Operator per OP-AA-103-104, Reactivity Management Controls?

1. Coordinate the conduct of refueling activities and monitor nuclear instrumentation during refueling activities that could affect the reactivity of the core.
2. Verify critical steps of Emergency Operating Procedure Flowcharts during transients and accident conditions.
3. Ensure activities in the Control Room and plant are conducted in a professional manner, in accordance with approved procedures.

- A. 1 and 2 ONLY
- B. 2 and 3 ONLY
- C. 1 and 3 ONLY
- D. 1, 2 and 3

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
C	OP-AA-103-104 pp. 3 & 4	755.020	N	Difficulty:

Explanation:

2 is the NOT responsibility is NOT required of the Reactor Operator IAW OP-AA-103-104

Q# 68	BOTH	TIER 3	GROUP	RO 1 SRO 1	GENERIC	2.2.12	RO 3.0	SRO 3.4	Memory
-------	------	-----------	-------	---------------	---------	--------	-----------	------------	--------

Equipment Control

Knowledge of surveillance procedures.

Post maintenance testing of the RCIC system is required to be performed per LOS-RI-Q3, Reactor Core Isolation Cooling (RCIC) System Pump Operability and Valve Inservice Tests in Conditions 1, 2, and 3.

Which of the following is required to be performed concurrent with the RCIC run?

- A. Chemistry analysis on the Suppression Pool water.
- B. Suppression Pool Temperature Monitoring Checks.
- C. RCIC Monthly Valve Operability on the RCIC Exhaust Rupture Diaphragm.
- D. Remote Shutdown Panel Post Accident Instrumentation Operability Checks.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
B	LOS-RI-Q3 Rev 31, page 6 of 49, D.3	032.00.20	LaSalle 1999 NRC Exam	Difficulty:

Explanation:

With RCIC System adding heat to the Suppression Pool, Suppression Pool temperatures must be verified less than or equal to 105°F at least once per 5 minutes and documented in LOS-AA-S101[201], Att G. .

Q# 69	BOTH	TIER 3	GROUP	RO 1 SRO 1	GENERIC	2.2.34	RO 2.8	SRO 3.2	Memory
-------	------	-----------	-------	---------------	---------	--------	-----------	------------	--------

Equipment Control

Knowledge of the process for determining the internal and external effects on core reactivity.

A Reactivity Maneuver (ReMa) Form is required for which of the following activities?

- A. Withdrawing control rods for a reactor startup.
- B. Inserting flow control line rods to clear APRM Hi alarms.
- C. Opening RR Flow Control Valves to compensate for xenon buildup.
- D. Closing RR Flow Control Valves to compensate for a heater drain transient.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
A	LAP-100-13, Rev 25, Page 10, B.7 and Attachment H.	300.00.01	Modified, LORT Exam Bank LAP-100-13 005	Difficulty:

Explanation:

'A' is required per LAP-100-13, Attachment H. Actions per LOA's and LOR's are permitted without the use of a ReMa, and a normal shutdown does not require a ReMa.



Q# 70	BOTH	TIER 3	GROUP	RO 1 SRO 1	GENERIC	2.3.2	RO 2.5	SRO 2.9	Memory
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Radiological Controls

Knowledge of facility ALARA program.

Which of the following is the lowest level of authority authorized to waive Independent Verification of a valve position due to ALARA concerns?

- A. Radiation Protection Shift Supervisor
- B. Reactor Operator
- C. Shift Manager
- D. Plant Manager

ANSWER: C  
Reference: HU-AA-101p.7

Task / Objective:  
NGET

Question Source:  
CPS ILT0101

Question  
Difficulty:

Explanation:  
Shift Manager may waive per HU-AA-101.

Q# 71    BOTH    TIER 3    GROUP    RO 1    SRO 1    GENERIC    2.3.9    RO 2.5    SRO 3.4    High

Radiological Controls

Knowledge of the process for performing a containment purge.

Which of the following must be in service prior to performing a containment purge when the unit is at power?

- A. ONLY the MCR Emergency Makeup Train
- B. MCR AND AEER Emergency Makeup Trains
- C. ONLY the MCR Recirculation Charcoal Filter Unit
- D. MCR AND AEER Recirculation Charcoal Filter Units

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
D	LOP-VQ-04, Rev 12, Sect D.3, Pg 8 of 51	93.00.20	LaSalle 1999 NRC Exam	Difficulty:

Explanation:

If the unit is in OC 1,2, or 3, BOTH MCR and AEER Recirculation Charcoal Filters are to be verified in service prior to purging the drywell.

Q# 72	BOTH	TIER 3	GROUP	RO SRO	1 1	GENERIC	2.4.20	RO 3.3	SRO 4.0	Memory
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### Emergency Procedures and Plan

Knowledge of operational implications of EOP warnings, cautions, and notes.

During a casualty, an NSO opens an SRV to control pressure. The SRV is closed and manually opened 15 seconds later.

Which of the following describes the potential adverse consequences of this action?

- A. SRV tailpipe damage due to excessive water level in the tailpipe.
- B. Suppression pool wall damage due to cyclic dynamic loading.
- C. SRV seat damage due to partial opening of the valve with limited air pressure.
- D. ECCS pump damage due to the creation of a vortex in the suppression pool.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question Difficulty:
A	LGA-001 Lesson Plan IV.D.4.a).6) page 12 of 34	070.00.20	New	

#### Explanation:

Following the closure of an SRV, there is a certain amount of time required for the steam to condense in the tailpipe, the vacuum breaker in the tailpipe to open and the water level in the tailpipe to equalize with suppression pool level. Failure to allow the level to equalize could result in water hammer damage of the tailpipe.

Q# 73	BOTH	TIER 3	GROUP	RO SRO	1 1	GENERIC	2.4.35	RO 3.3	SRO 3.5	Memory
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### Emergency Procedures and Plan

Knowledge of local auxiliary operator tasks during emergency operations including system geography and system implications.

The Unit Supervisor has directed performance of LGA-NB-01, "Venting CRD Withdrawal Line". In order to perform this task , the non-licensed operator will need a tygon hose, CRD vent valve wrenches , a crescent wrench and straps.

Tools and equipment required to perform this task are located in the...

- A. Control Room LGA File Cabinet.
- B. Reactor Building Supply Cabinet, 761' Reactor Building.
- C. LGA Support Cabinet, 768' Turbine Building.
- D. Main LGA Support Locker outside Unit 2 Aux. Electric Equip. room, 731' Aux. Building.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
D	LGA-NB-01 p. 2 and 3.	2160.010	Dresden 2002	Difficulty:
			Modified	

Explanation:  
D correctly states the location the equipment can be found.

Q# 74	BOTH	TIER 3	GROUP	RO SRO	1 1	GENERIC	2.4.48	RO 3.5	SRO 3.8	High
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#### Emergency Procedures and Plan

Ability to interpret control room indications to verify the status and operation of system, and understand how operator actions and directives affect plant and system conditions.

LGA-003, Primary Containment Control is in progress.

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

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

- A. Secure Drywell Sprays to prevent exceeding drywell floor limit.
- B. Secure Drywell Sprays to prevent raising oxygen levels in the Drywell.
- C. Secure Suppression Chamber Sprays to prevent exceeding drywell floor limit.
- D. Secure Suppression Chamber Sprays to prevent raising oxygen levels in the Drywell.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
A	LGA Mod 007 – LGA-003 LP, p. 11	400.00.07	Modified, Dresden 1996 ILT Exam	Difficulty:

#### Explanation:

Stopping sprays before 0 psig prevents negative pressure in the containment. This prevents exceeding design criteria of the drywell.

Q# 75	BOTH	TIER 3	GROUP	RO SRO	1 1	GENERIC	2.4.6	RO 3.1	SRO 4.0	Memory
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### Emergency Procedures and Plan

Knowledge symptom based EOP mitigation strategies.

Unit 2 is shutdown with the following conditions:

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

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

- A. Align RHR for Drywell Spray;  
Align RHR for Suppression Chamber Spray;  
Initiate ADS;  
Align VQ for venting the Drywell.
- B. Align VQ for venting the Drywell;  
Align RHR for Suppression Chamber Spray;  
Align RHR for Drywell Spray;  
Initiate ADS.
- C. Align RHR for Suppression Chamber Spray;  
Align RHR for Drywell Spray;  
Initiate ADS;  
Align VQ for venting the Drywell.
- D. Align VQ for venting the Drywell;  
Align RHR for Drywell Spray;  
Align RHR for Suppression Chamber Spray;  
Initiate ADS.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
C	LGA-003 Rev 4	400.00.18	LaSalle 1999 NRC	Difficulty:
			Exam	

#### Explanation:

Suppression chamber sprays are always attempted prior to DW sprays. ADS is always performed prior to venting per LGA-VQ-02. The initial venting of the containment to control pressure is LGA-VQ-01 and CANNOT be performed if VQ has isolated on high containment pressure.

Q# 76	RO	TIER 2	GROUP	RO 1 SRO 1	202002	A1.06	RO 3.4 SRO 3.3	HIGH
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Recirculation Flow Control System

Ability to predict and/or monitor changes in parameters associated with operating the RECIRCULATION FLOW CONTROL SYSTEM controls including:

Reactor core flow

Unit 1 is operating at 80% power with the "A" Recirculation loop HPU's locked up.

Which of the following describes:

- (1) the response of the Recirculation system if a Flow Control Runback signal was received, AND
  - (2) the potential consequences?
- A. (1) Only the "B" Flow Control Valve would partially close, reducing core flow.  
(2) Increased chance of cyclic fatigue at the jet pump riser brace welds.
  - B. (1) Only the "B" Flow Control Valve would partially close, reducing core flow.  
(2) Increased chance of cavitation erosion to the Flow Control Valve seating surface.
  - C. (1) Neither Flow Control valve would reposition, core flow would remain constant.  
(2) Increased chance of reactor scram during level transients.
  - D. (1) Neither Flow Control valve would reposition, core flow would remain constant.  
(2) Increased chance of Recirculation pump trip during level transients.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
A	LOP-RR-07 p. 5	023.00.05	N	Difficulty:

Explanation:

In this arrangement a FCV runback could result in excessive flow differences. Operations with large flow mismatches in loop flows increases cyclical fatigue to component such as jet pp. riser brace welds.

Q# 77	RO	TIER 2	GROUP	RO SRO	2 2	205000	K3.04	RO 3.7	SRO 3.7	High
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Shutdown Cooling System (RHR Shutdown Cooling Mode) Knowledge of the effect that a loss or malfunction of the SHUTDOWN COOLING SYSTEM/MODE will have on following:

Recirculation loop temperatures

Unit 1 in Cold Shutdown.

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

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

1A RR Pump  
Suction Temperature

1B RR Pump  
Suction Temperature

- |    |                          |                          |
|----|--------------------------|--------------------------|
| A. | Increase                 | Remain Relatively Stable |
| B. | Increase                 | Increase                 |
| C. | Remain Relatively Stable | Increase                 |
| D. | Remain Relatively Stable | Remain Relatively Stable |

ANSWER: Reference:  
A LOA-RH-101 p.17  
LOP-RH-07, p. 8

Task / Objective:  
023.00.05

Question Source:  
New

Question  
Difficulty:

Explanation:

The 1A RR loop would warm up with the increasing RPV Temperature due to decay heat. The 1B loop temperature should be at near drywell temperature and will remain relatively constant since its suction or discharge isolation valve is closed while in SDC to prevent short cycling the SDC flow, therefore there is no flow in that loop.



Q# 78	RO	TIER 2	GROUP	RO SRO	1 1	209002	K2.02	RO 2.8	SRO 2.9	Memory
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High Pressure Core Spray System (HPCS) Knowledge of electrical power supplies to the following:

Valve electrical power: BWR-5, 6

A loss of MCC 243-1 will prevent operation of which of the following components?

- A. Unit 2 High Pressure Core Spray Injection Valve.
- B. Unit 2 Low Pressure Core Spray Injection Valve.
- C. Unit 2 Reactor Core Isolation Cooling Injection Valve.
- D. Unit 2 "C" Residual Heat Removal Injection Valve.

ANSWER: A  
Reference: LOP-HP-01E

Task / Objective:  
061.00..16

Question Source:  
New

Question  
Difficulty:

Explanation:  
243-1 supplies 2E22-F004.

Q# 79	RO	TIER 2	GROUP	RO SRO	1 1	209002	K6.04	RO 2.5	SRO 2.5	High
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High Pressure Core Spray System (HPCS) Knowledge of the effect that a loss or malfunction of the following will have on the HIGH PRESSURE CORE SPRAY SYSTEM (HPCS):

Suppression pool suction strainer: BWR-5, 6

HPCS is running in Full Flow Test lineup IAW LOS-HP-Q1, "HPCS SYSTEM INSERVICE TEST."

- HPCS Flow cycling between 1000 and 6000 gpm.
- HPCS Motor current is cycling between 200 and 340 amps.

Which of the following would cause these conditions?

- A. Cycling Min Flow Valve
- B. Damaged Thrust Bearing
- C. Low Cycled Condensate Tank Level
- D. Clogged Suppression Pool Suction Strainer

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
D	LOA-PC-101, Section A.3	061.00.014	New	Difficulty:

Explanation:

HPCS is not normally aligned to the CY tank for the quarterly surveillance. Min Flow valve will not pass enough flow to give these indications. A damaged thrust bearing would not cause cyclic changes.

Q# 80	RO	TIER 2	GROUP	RO SRO	1 1	212000	2.4.50	RO 3.3	SRO 3.3	High
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Reactor Protection System                      Emergency Procedures and Plan

Ability to verify system alarm setpoints and operate controls identified in the alarm response manual.

Unit 1 is operating at 75% power.

- LOR 1H13-P603-B106, "CHAN A1/B1 TCV FAST CLOSURE" is received.
- All Scram Group Solenoid Lights are illuminated.
- The # 1 Turbine Control Valve is observed closed.
- Reactor power, pressure and level remain steady.

What actions, if any should be taken?

- A. No actions required.
- B. Manually insert a scram on "A" RPS subchannel.
- C. Manually insert a scram on "B" RPS subchannel.
- D. Insert a manual full scram.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
B	LOR 1H13-P603-B106	049.00.10	New	Difficulty:

Explanation:

Receipt of LOR 1H13-P603-B106 should initiate a scram of A RPS subchannel. If auto actions fail, the RO should take manual action.

Q# 81	RO	TIER 2	GROUP	RO 1 SRO 1	212000	A4.09	RO 3.9 SRO 3.8	Memory
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Reactor Protection System                      Ability to manually operate and/or monitor in the control room:

SCRAM instrument volume level

Unit 2 is at 80% power.

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

- |    | <u>SCRAM</u> | <u>ROD BLOCK</u> |
|----|--------------|------------------|
| A. | Bypassed     | NOT Affected     |
| B. | Bypassed     | Bypassed         |
| C. | NOT Affected | NOT Affected     |
| D. | NOT Affected | Bypassed         |

ANSWER:    Reference:  
              C        LP 49 p. 19

Task / Objective:  
049.00.05

Question Source:  
New

Question  
Difficulty:

**Explanation:**

C is correct because the High Level Scram bypass is only in affect if the MODE switch S/D or Refuel and switch in bypass. At 80% power, the MODE switch would have to be in RUN.

Q# 82	RO	TIER	GROUP	RO	1	216000	A2.13	RO	SRO	High
		2		SRO	1			2.8	3.0	

Nuclear Boiler Instrumentation Ability to (a) predict the impacts of the following on the NUCLEAR BOILER INSTRUMENTATION; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations:

Instrument isolation valve openings

Unit 2 is at 100% power.

**PROVIDE PRINTS FOR REFERENCES**

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

Which of the following describes

- (1) the impact this would have on the level indicator fed from this instrument, AND
- (2) the action that would be required if an actual Level 1 condition were to occur?

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

- A. (1) Indicated level would be HIGHER than actual.  
(2) LPCS would have to be manually initiated.
- B. (1) Indicated level would be LOWER than actual.  
(2) LPCS would inject when required.
- C. (1) Indicated level would be HIGHER than actual.  
(2) LPCS would inject when required.
- D. (1) Indicated level would be LOWER than actual.  
(2) LPCS would have to be manually initiated.

ANSWER:	Reference:	Task /	Question	Question
A	<b>PROVIDE PRINTS FOR REFERENCES 1E-2-4200ZC, 1E-2-4221AA/AD</b>	Objective:	Source:	Difficulty:
	GP GFE LP #7, pp 32, 33, 43	040.00.021	New	

Explanation:

The equalizing valve isolates the high pressure sensing leg from the low pressure sensing leg. With the valve open, the reference and variable leg pressures would equalize causing the level instrument to indicate higher than actual level.

Following the schematics, on 4200ZC, the N407C Level Transmitter will prevent the N707C Trip Device from ever seeing a low level signal, which will prevent energizing the K707CX Relay. This relay will fail to actuate a contact on 4221AD (3<sup>rd</sup> Leg from the left). This will prevent energizing the K3 relay, which should close a contact in the K10 logic leg (10<sup>th</sup> leg from the left). The K10 logic string is a type of 1 out of 2 taken twice. The K2 and K3 contacts are the Low Level Contacts. The K4 and K5 contacts are the High Drywell Pressure contacts. If an actual Level 1 signal existed, the K2 contact would close (from the A logic), but the K3 would not close, therefore not energizing the K10 contact, which ultimately feeds into the pump start logic through the K12 relay.

The pump would, however start on a high drywell pressure signal, or a combination of the A Level and C DW pressure signals.

Nuclear Boiler Instrumentation	Knowledge of the effect that a loss or malfunction of the following will have on the NUCLEAR BOILER INSTRUMENTATION:
--------------------------------	--

A loss of DC Bus 112X will result in a loss of indication on...

- |              |   |                                |                       |                         |
|--------------|---|--------------------------------|-----------------------|-------------------------|
| ANSWER:<br>C | Reference:<br>NB Inst LP pg. 35<br>RWLC LP pg. 30 | Task / Objective:<br>040.00.16 | Question Source:<br>N | Question<br>Difficulty: |
|--------------|---|--------------------------------|-----------------------|-------------------------|

REACTOR OPERATOR





Q# 85	RO	TIER 2	GROUP	RO SRO	1 1	223001	K1.11	RO 2.7	SRO 2.9	Memory
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Primary Containment System and Auxiliaries      Knowledge of the physical connections and/or cause- effect relationships between PRIMARY CONTAINMENT SYSTEM AND AUXILIARIES and the following:

Post accident sampling system

The primary containment CAM Local Sample Panel 1PL75J (3-Point CAM) shares its Drywell and Suppression Chamber sample taps with the...

- A. 1A Post LOCA Monitor
- B. 1B Post LOCA Monitor
- C. 1A Oxygen Monitor
- D. 1B Oxygen Monitor

ANSWER:      Reference:  
A              LOP-CM-01, D.4.

Task / Objective:  
092.00.-03

Question Source:  
LORT Exam Bank,  
# LOP-CM-01 002

Question  
Difficulty:

Explanation:  
A is correct per the reference.

Q# 86	RO	TIER 2	GROUP	RO 1 SRO 1	223002	K4.05	RO 2.9	SRO 3.1	High
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Primary Containment Isolation  
System/Nuclear Steam Supply  
Shut-Off

Knowledge of PCIS/NSSSS design feature(s) and/or interlocks which  
provide for the following:

Single failures will NOT impair the function ability of the system

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

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

- |    | <u>INBOARD</u> | <u>OUTBOARD</u> | <i>Provide Electrical Prints 1E-1-4203AB-AF, AU</i> |
|----|----------------|-----------------|---|
| A. | Remain Open    | Remain Open     |   |
| B. | Close          | Close           |   |
| C. | Close          | Remain Open     |   |
| D. | Open           | Close           |   |

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
A	LP 091 Att. A	091.00.08	Bank	Difficulty:

*Provide Electrical Prints  
1E-1-4203AB-AF, AU*

Explanation:

In order for the MSIV's to close, both solenoids must de-energize. For this failure, only one solenoid is de-energized for any MSIV. Therefore, all MSIV's will remain open.

Q# 87	RO	TIER 2	GROUP	RO SRO	1 1	241000	2.4.49	RO 4.0	SRO 4.0	High
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Reactor/Turbine Pressure  
Regulating System

Emergency Procedures and Plan

Ability to perform without reference to procedures those actions that require immediate operation of system components and controls.

Unit 2 has scrammed.

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

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

- A. Start RCIC in the pressure control mode.
- B. ARM and DEPRESS the ADS pushbuttons.
- C. Press the Bypass Jack INCREASE pushbutton.
- D. Place the control switches for SRVs 'S' and 'U' in OPEN.

ANSWER: D  
Reference: HU-AA-104-101

Task / Objective:  
614.010

Question Source:  
New

Question  
Difficulty:

Explanation:

Reactor pressure is above the automatic set point to open SRV's 'S' and 'U'. LGA-001 requires reactor pressure to be stabilized below 1059 psig. The MSIVs are closed preventing use of BPV's. HU-AA-104-101 provides authority for operators to take actions required to manually duplicate an automatic action that has failed to automatically occur may be performed from memory during transient conditions.



Q# 89	RO	TIER 2	GROUP	RO SRO	1 2	259001	2.4.6	RO 3.1	SRO 4.0	Memory
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Reactor Feedwater System                      Emergency Procedures and Plan

Knowledge symptom based EOP mitigation strategies.

During a power ATWS and after Hot Shutdown Boron has been injected, LGA-010 directs the operator to raise RPV level above +11 inches, then to hold level between +11 and +59.5 inches.

The reason for raising level here is to...

- A. clear the Level 3 shutdown cooling isolation signals.
- B. clear the Level 3 scram signals, so the scram can be reset.
- C. increase natural circulation to improve boron mixing.
- D. ensure accurate nuclear instrumentation response.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
C	LGA 012 (LGA-010 LP)	400.00.14	Bank	Difficulty:
	p.35		LORT LGA-010 002	

Explanation:  
The reason reactor water level is raised is to improve boron mixing.

Q# 90	RO	TIER 2	GROUP	RO 1 SRO 1	261000	K1.07	RO 3.1 SRO 3.2	High
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Standby Gas Treatment System Knowledge of the physical connections and/or cause- effect relationships between STANDBY GAS TREATMENT SYSTEM and the following:

Elevated release stack

Following a Loss of Coolant Accident, the Standby Gas Treatment (SBGT) System has been in service for several hours venting the drywell, in accordance with LGA-VQ-01, Containment Vent.

SBGT WRGM indicates elevated release rates.

Which of the following could explain the elevated release?

- A. Charcoal Adsorber access door NOT fully closed.
- B. Pre-Filter differential pressure increase of 2.0 inches water.
- C. Moisture Separator differential pressure increase of 1.0 inches water.
- D. Electric Heater Temperature Controller failure below the controller setpoint.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
D	095, Standby Gas Treatment Lesson Plan, Page 26 of 35, second paragraph	095.00.21	Modified from FERMI 2 ILO Exam, 06/14/01	Difficulty:

Explanation:

The purpose of the electric heater is to raise the relative humidity entering the charcoal train. If relative humidity were to increase, the adsorption properties of the charcoal would decrease, resulting in less iodine being held-up in the train, causing release rates to increase.

Q# 91	RO	TIER 2	GROUP	RO 3 SRO 3	288000	A3.01	RO 3.8	SRO 3.8	Memory
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Plant Ventilation Systems Ability to monitor automatic operations of the PLANT VENTILATION SYSTEMS including:  
Isolation/initiation signals

Which of the following conditions automatically starts the Unit 1 Standby Gas Treatment (SBGT) Train?

- A. Unit 1 Reactor Water Level of -25 inches.
- B. Actuating the Unit 2 manual initiation for SBGT.
- C. Reactor Building differential pressure less than -0.25 inches water.
- D. Failure of the Unit 1 Reactor Building Vent Isolation damper 1VR04Y to the closed position.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
B	095, Standby Gas Treatment Lesson Plan, Page 16&27	095.00.05	LaSalle ILT bank 095.00.08 030	Difficulty:

Explanation:

B is the only statement that will cause an auto start of the Unit 1 SBGT.

Q# 92	RO	TIER 2	GROUP	RO 3 SRO 3	290002	A2.05	RO 3.7 SRO 4.2	High
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Reactor Vessel Internals Ability to (a) predict the impacts of the following on the REACTOR VESSEL INTERNALS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those abnormal conditions or operations:

Exceeding thermal limits

During performance of the shiftly surveillance, MFLCPR is discovered to have increased from a value of 0.980 to 1.003.

Based on this information you can conclude that the number of fuel clad failures will ...

- A. increase significantly and reactor power must be reduced per LGP-3-1, Power Changes.
- B. increase significantly and reactor power must be reduced per LGP-3-2, Reactor Scram.
- C. remain relatively stable but reactor power must be reduced per LGP-3-1, Power Changes.
- D. remain relatively stable but reactor power must be reduced per LGP-3-2, Reactor Scram.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
C	Tech Spec 3.2.2	020.00.21	Modified, 2000 LaSalle	Difficulty:
	BWR Thermodynamics	021.00.24	ILT exam	
	Chapter 9, pp13-15			

Explanation:

The MFLCPR compares the Operating MCRP to the Operating MCPR Limit. This limit is set much higher than the actual CPR value to ensure that CPR is NOT exceeded. By slightly exceeding the MFLCPR, the number of fuel clad failures will NOT increase, however the safety margin is drastically reduced. Reactor power must be reduced but the reactor does not have to be scrambled.



Q# 93	RO	TIER 1	GROUP	RO 2 SRO 2	295020	AA2.04	RO 3.9 SRO 3.9	High
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Inadvertent Containment Isolation      Ability to determine and/or interpret the following as they apply to  
INADVERTENT CONTAINMENT ISOLATION:

Reactor pressure

Due to an error in performing surveillance, an MSIV isolation has occurred while operating at full power for an extended period of time.

If no operator action is taken, which of the following indicates the expected range of reactor pressure 30 minutes after the MSIV's have closed.

- A. 768 to 854 psig
- B. 896 to 1006 psig
- C. 926 to 1046 psig
- D. 976 to 1076 psig

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
B	LP 070, Main Steam, Section III.D.2, pp 10 of 50 BWR GP GFES Rx Theory, Chapter 8, Page 29 of 34.	070.00.12 GFES RX Theory, Chapter 8, Obj. 31.	based on Fermi2 2, 4/6/98 exam	Difficulty:

Explanation:

With the unit a full power for extended period of time, the decay heat rate would be high at the time of the scram. This decay heat would be approximately 7 percent following the scram and at 30 minutes would be 1-2%.

Following the MSIV Isolation, several SRVs would initially open, activating the Lo-Lo Set Logic. Since 1 SRV can pass approximately 7 percent steam flow, once the initial pressure transient is over, one SRV can handle the decay heat load. The S SRV has the lowest LLS Setpoint of 896 to 1006 psig.

Q# 94	RO	TIER 1	GROUP	RO SRO	3 2	295021	2.4.4	RO 4.0	SRO 4.3	High
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Loss of Shutdown Cooling                      Emergency Procedures and Plan

Ability to recognize abnormal indications for system operating parameters which are entry-level conditions for emergency and abnormal operating procedures.

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

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

Given the above transient...

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

- A. 1) Running on min. flow  
2) None
- B. 1) Running on min. flow  
2) LGA-001 RPV CONTROL and LGA-003 PRIMARY CONTAINMENT CONTROL.
- C. 1) Isolated  
2) None.
- D. 1) Isolated  
2) LGA-001 RPV CONTROL and LGA-003 PRIMARY CONTAINMENT CONTROL.

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
D	LOP-PC-03 p. 13	413.00.01	N	Difficulty:

Explanation:

+11 inches will cause a Group VI isolation and entry conditions for LGA-001 and LGA-003.

Q# 95	RO	TIER 1	GROUP	RO 1 SRO 1	295024	EK2.03	RO 3.8 SRO 3.8	High
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High Drywell Pressure Knowledge of the interrelations between HIGH DRYWELL PRESSURE and the following:

LPCS: Plant-Specific

Unit 1 is in Cold Shutdown when an inadvertent Division 1 High Drywell pressure signal is received.

Which of the following describes the operation of the LPCS Injection Valve under these conditions?

- A. Will NOT open unless RPV water level is less than -129 inches.
- B. Automatically opens and CANNOT be remotely closed until the initiation signal is cleared.
- C. Automatically opens; will close and remain closed when the control switch is placed in the closed position and released.
- D. Automatically opens; will close when the control switch is placed in the closed position but will reopen after it has reached the full closed position.

ANSWER: C  
Reference: LP 63 p. 13

Task / Objective:  
063.00.18

Question Source:  
ILT System Bank  
064.00.14 003

Question  
Difficulty:

Explanation:

The conditions to activate the manual override logic have been met, an initiation signal, and RPV pressure less than 500 psig. The valve will go closed and seal in closed.



Q# 97	RO	TIER 1	GROUP	RO 3 SRO 2	295032	EA1.03	RO 3.7 SRO 3.7	High
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High Secondary Containment Area Temperature      Ability to operate and/or monitor the following as they apply to HIGH SECONDARY CONTAINMENT AREA TEMPERATURE:

Secondary containment ventilation

Unit 1 at rated conditions.

- 1H13 P601-F404 "LD MSL PIPE TUNNEL AMB TEMP HI" in alarm.
- MSL Pipe Tunnel Temperatures verified at 160°F and steady.
- MSL Pipe Tunnel Diff. Temperatures at 22°F and steady.

Based on the above conditions, actions required include performance of ...

- A. LOA-MS-101, "Main Steam System Abnormal" and LGP 3-2 "Reactor Scram".
- B. LOA-MS-101, "Main Steam System Abnormal" and LGA-002 "Secondary Cont. Control".
- C. LOA-VR-101, "Unit 1 Recovery from a Group 4 Isolation or Spurious Trip of Reactor Building Vent" and LGP 3-2 "Reactor Scram".
- D. LOA-VR-101, "Unit 1 Recovery from a Group 4 Isolation or Spurious Trip of Reactor Building Vent" and LGA-002 "Secondary Cont. Control".

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
B	LOA-MS-101 page 3/10, LGA-002, and LAP-820-11TG page 142/155 <b>PROVIDE LAP-820- 11TG and LGA-002.</b>	416.001	Modified	Difficulty:

Explanation:

No conditions exist that require a scram or S/D. No conditions exist that would have isolated VR. LGA-002 is entered because the alarm indicates >Max Normal Temp. (ref. LAP-820-11TG p. 142).

Q# 98	RO	TIER 3	GROUP	RO SRO	1 1	GENERIC	2.1.10	RO 2.7	SRO 3.9	High
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Conduct of Operations

Knowledge of conditions and limitations in the facility license.

Unit 1 is shutdown.

Average Reactor Coolant temperature is currently 229°F, with a steady cooldown rate of 10°F/Hr.

Which of the following indicates the earliest that the unit will be in MODE 4?

- A. 90 minutes
- B. 120 minutes
- C. 150 minutes
- D. 180 minutes

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
D	TS Table 1.1-1	005.00.22	New	Difficulty:

Explanation:

Mode 4 is defined as Mode switch in shutdown, Avg. Coolant Temp  $\leq 200^{\circ}\text{F}$ , and all rx vessel head bolts tight. Since this is a cooldown for a refuel outage, all bolts are tight. With temperature at 229°F and a 10°F/Hr Cooldown rate, it will take 3 hours to be less than or equal to 200°F.

Q# 99	RO	TIER 3	GROUP	RO SRO	1 1	GENERIC	2.2.22	RO 3.4	SRO 4.1	Memory
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Equipment Control

Knowledge of limiting conditions for operations and safety limits.

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

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

ANSWER:	Reference:	Task / Objective:	Question Source:	Question
C	TS Safety Limits 2.1.1	020.00.22	LaSalle 2002 Cert Exam	Difficulty:

Explanation:

Safety Limit Violation if reactor power is >25% with pressure less than 785 psig. C. is only choice with correct combination of conditions.

Q# 100	RO	TIER 3	GROUP	RO 1 SRO 1	GENERIC	2.2.30	RO 3.5 SRO 3.3	Memory
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## Equipment Control

Knowledge of RO duties in the control room during fuel handling such as alarms from fuel handling area / communication with fuel storage facility / systems operated from the control room in support of fueling operations / and supporting instrumentation.

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

- A. Maintain the official copy of the Nuclear Component Transfer List.
- B. Observe Source Range Monitors for rising counts.
- C. Perform verification of in-core coordinates.
- D. Observe and directly supervise Core Alterations.

<b>ANSWER:</b> B	<b>Reference:</b> LFP-100-1, Rev. 38, Page 16 of 49	<b>Task / Objective:</b> (task) 30.002	<b>Question Source:</b> CPS ILT0101 NRC Exam	<b>Question Difficulty:</b>
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**Explanation:**

B is correct per the reference. The official copy of the NCTL is maintained on the refuel bridge, the RO cannot verify in-core coordinates from the Main Control Room and also cannot observe or supervise the core alterations from the Main Control Room.