RO Test

1

This Exam Level Appears on:	RO EXAM Tier 2 Group 1	SRO EXAM Tier 2 Group 1
K/A #	32013K103	
Importance Rating:	3.80	4.10

Given the following plant conditions:

- The Unit 2 reactor has tripped.
- A feed line break has occurred inside containment.
- Containment pressure is 1.2 psig and rising slowly.
- There is an 86 Lockout on PBB-S04K, Normal Supply Breaker to PBB-SO4
- SIAS/CIAS were manually initiated.
- Train A SIAS load shed panels are re-energized.

Which one of the following components is NOT available due to these conditions?

A. Normal Chiller, WCN-E01C.

B. Condensate Pump, CDN-P01B.

C. CTMT Normal ACU Fan, HCN-A01D.

D. Non Essential Aux Feed Pump, AFN-P01.

Answer: C

Associated KA:
32013K103 Knowledge of the physical connections and/or cause effect relationships between the ESFAS and the following systems: K1.03 CCS 3.8 4.1

Reference Id: Q38148
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: PV Bank Not Modified
Comment:

CTMT Normal ACU Fan, HCN-A01D is not available because it is not reenergized by SIAS reset, it's power supply is from PBB-S04.
Distracters A, B, & D are available following SIAS reset.

Reference: 40OP-9PB04, App. A Page 2 of 7

Objective: L74427

RO Test

2

This Exam Level Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 1	Group 1
K/A #	42040AK105	
Importance Rating:	4.10	4.40

Given the following plant conditions:

- Unit 1 Reactor Power is at 75% and is being raised per 40OP-9ZZ05, Power Operations.
- The CRS is directing a power ascension following a mid-cycle outage.
- #1 SG MSSV SGE-PSV-575 fails partially open.

Which one of the following describes the direct affect on reactor power and why? Reactor Power will...

A. decrease due to a RCS temperature increase.

B. increase due to a RCS temperature decrease.

C. increase due to the Turbine control valves opening due to lower SG pressure.

D. decrease due to the increased heat transfer efficiency across the SG tubes due to lower SG pressure.

Answer: B

Associated KA:
42040AK105 42040AK1 Knowledge of the operational implications of the following concepts as they apply to Steam Line Rupture: AK1.05 Reactivity effects of cooldown 4.1 4.4

Reference Id: Q27586
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Analysis
Question Source: New
Comment:

Distracter A is wrong because RCS cools down which adds positive reactivity from MTC during mid-cycle operations, C and D are wrong because lower SG pressure is not the cause of increased power.

Reference: GFES and Objective

Objective: L59498

RO Test

3

This Exam Level Appears on:	RO EXAM Tier 1 Group 1	SRO EXAM Tier 1 Group 1
K/A #	44A11AK21	
Importance Rating:	3.20	3.40

Given the following plant conditions:

- RRS is selected to LOOP 1 Tavg.
- The Tcold instrument which supplies this indication fails LOW.
- Before the Operating Crew can address this failure, a Reactor Trip occurs.

Which of the following identifies the response of the SBCS to this transient?

A. All eight valves quick open.

B. Quick open is blocked on all eight valves.

C. Only the group X valves (1001 ,1003, 1004 and 1006) quick open.

D. Only the group Y valves (1002 ,1005, 1007 and 1008) quick open.

Answer: B

Associated KA:
44A11AK21 Knowledge of the interrelations between the (RCS Overcooling) and the following: (CFR: 41.7 / 45.7) AK2.1 Components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features. 3.2 3.4

Reference Id: Q38170
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Analysis
Question Source: PV Bank Not Modified
Comment:

Distractor A, C and D are wrong because only Pressurizer pressure and TLI input the Quick Open circuit.

Reference SBCS Simplified Diagram pgs. 37 and 38

Objective L65649

RO Test

4

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 1	Group 1
K/A #	42068AK207	
Importance Rating:	3.30	3.40

Given the following plant conditions for Unit 2:

- The CRS has directed a control room evacuation due to a fire
- The CRS is implementing 40AO-9ZZ19, Control Room Fire
- Required procedural actions were performed prior to evacuating the control room
- No plant system complications have occurred due to the fire
- The crew has just arrived at the remote shutdown panel

Which one of the following describes the expected response of the Diesel Generators to this event at this time?

	'A' DG	'B' DG
A.	STBY	STBY
B.	STBY	Running
C.	Running	STBY
D.	Running	Running

Answer: A

Associated KA:
42068AK207 Knowledge of the interrelations between the Control Room Evacuation and the following: AK2.07 ED/G 3.3 3.4

Reference Id: Q27593
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because offsite power has not been lost and the procedure has the crew stop the DG's if they are running.

Reference: 40AO-9ZZ19

Objective: L57142

RO Test

5

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 1	Group 1
K/A #	42069AK203	
Importance Rating:	2.80	2.90

Which one of the following Containment Penetrations has an interlock between the inside and outside valve/door to prevent having both open at the same time?

A. Hydrogen Purge

B. Fuel Transfer Canal

C. Demineralized Water

D. 100' Containment Personal Air Lock

Answer: D

Associated KA:
42069AK203 Knowledge of the interrelations between the Loss of Containment Integrity and the following:
AK2.03 Personnel access hatch and emergency access hatch 2.8 2.9

Reference Id: Q27594
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: Modified INPO Bank
Comment:

Distracters are wrong because these penetrations are not interlocked to prevent having both sides open at the same time.

Reference: Technical Specification 3.6.2

Objective: L89786

RO Test

6

This Exam Level Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 1	Group 1
K/A #	42024AK301	
Importance Rating:	4.10	4.40

Which one of the following requires initiation of emergency boration?

A. Keff less than .95 while in Mode 6.

B. A twelve finger CEA stuck at 120" following a reactor trip from Mode 1.

C. Reactor critical with Group 3 at 51" while performing a reactor startup following a refueling outage.

D. Reactor critical with Group 4 at 15" while performing a reactor startup following a mid-cycle outage.

Answer: C

Associated KA:
42024AK301 Knowledge of the reasons for the following responses as they apply to the Emergency Boration:
AK3.01 When emergency boration is required 4.1 4.4

Reference Id: Q27583
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: Modified INPO Bank
Comment:

Distracter A is wrong because mode 6 is a boron concentration not a keff number, B would require two CEAs stuck, D requires manual insertion of reg groups if below -500 pcm position

Reference: 40OP-9ZZ02

Objective: L11017

RO Test

7

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 1	Group 1
K/A #	42051AK301	
Importance Rating:	2.80	3.10

Given the following:

- Condenser Vacuum temporarily degraded due to a Vacuum leak that was detected and repaired.
- Condenser Interlock alarm (SBCS COND INTLK) is lit Amber.
- Vacuum has returned to normal in all condenser shells.

Concerning SBCS status, choose the correct statement?

A. No SBCVs will currently function until (SGN-HS-1010) EMEG OFF/RESET switch is cycled.

B. No SBCVs will currently function until the SBCS Master controller is placed in Local/Auto.

C. All SBCVs will function upon cycling the (SGN-HS-1010) EMERG OFF/ RESET switch.

D. All SBCVs will currently function with the individual valve controllers in MANUAL with a Manual Permissive.

Answer: C

Associated KA:
42051AK301 42051AK3 Knowledge of the reasons for the following responses as they apply to the Loss of Condenser Vacuum: AK3.01 Loss of steam dump capability upon loss of condenser vacuum
2.8 3.1

Reference Id: Q38182
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

SBCVs 1007 and 8 currently function and all the others will function after the EMERG OFF/RESET switch is cycled. The interlock takes away the control signal to SBCVs 1001 - 6 for all modes of controller position until the EMERG OFF/RESET switch is cycled.

Reference: 40AO-9ZZ07 Loss of Condenser Vacuum, Step 14.

Objective: L56169

RO Test

8

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 1	Group 1
K/A #	42005AA103	
Importance Rating:	3.40	3.40

Given the following plant conditions:

- Unit 3 is performing a Reactor Startup following Refueling.
- The RO begins withdrawing Shutdown Group 'A', per 40OP-9ZZ02, Initial Reactor Startup Following Refuelings.
- Shutdown Group 'A', CEA #80 remains fully inserted.
- The RO stops Shutdown Group 'A' outward motion.
- All other Shutdown Group 'A' CEAs indicate 4.5" withdrawn.

Describe the position indication of CEA #80 by Lower Electrical Limit (LEL) and Rod Bottom lights (i.e. Dropped rod contact, DRC). (As seen by the RO in the Control Room)

A. LEL Illuminated, DRC Illuminated

B. LEL Illuminated, DRC Extinguished

C. LEL Extinguished, DRC Illuminated

D. LEL Extinguished, DRC Extinguished

Answer: A

Associated KA:
42005AA103 Ability to operate and / or monitor the following as they apply to the Inoperable / Stuck Control Rod: AA1.03 Metroscope 3.4 3.4

Reference Id: Q27581
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters all have at least one light off

Reference: STM Volume 48, pg 9,10, 30-34

Objective: L78788

RO Test

9

This Exam Level
Appears on: RO EXAM
Tier 1
Group 1
K/A # 42027AA102
Importance 3.10
Rating:

Given the following plant conditions:

- Proportional Heater bank 1 is energized (Handswitch taken to On/Auto).
- Proportional Heater bank 2 is deenergized (Handswitch taken to Off).
- The Pressurizer Pressure Master Controller (PIC-100) is in Automatic.
- Pressurizer Pressure is at 2240 psia (trending to 2250).
- The Pressurizer Pressure Controller (PIC-100) begins to fail, resulting in the controller output rising to 75%, opening the Main Spray Valves, and lowering Pressurizer Pressure.

Describe the Proportional Heater Response to this event.

A. Bank 1 to minimum output, Bank 2 auto-energizes.

B. Bank 1 to maximum output, Bank 2 auto-energizes.

C. Bank 1 to maximum output, Bank 2 remains deenergized/off.

D. Bank 1 to minimum output, Bank 2 remains deenergized/off.

Answer: D

Associated KA:
42027AA102 Ability to operate and / or monitor the following as they apply to the Pressurizer Pressure Control Malfunctions: AA1.02 SCR-controlled heaters in manual mode 3.1 3.0

Reference Id: Q27626
Difficulty: 3.00
Time to complete: 3
Cognitive Level: Comprehension
Question Source: New
Comment:

As PIC output goes to 75%, the Proportional Heaters output should go to zero. Bank 1 in auto goes to zero. Bank 2 is deenergized and remains deenergized (manually taken to off).

Reference: Simplified Diagrams and Drawings, Revision 8/18/2000, page 34.

LOIT Objective: L75241

RO Test

10

This Exam Level Appears on:	RO EXAM Tier 1 Group 1	SRO EXAM Tier 1 Group 1
K/A #	42026AA101	
Importance Rating:	3.10	3.10

Given the following plant conditions:

- Plant Cooling Water to Condenser Valve (CWN-HCV-23) is mispositioned to open.
- Alarm Window (7A05A) PW SYS TRBL is in alarm.

Which one of the following describes the expected response of the Turbine Cooling Water system temperature on the inlet and outlet side of the heat exchanger?

	Heat Exchanger Inlet	Heat Exchanger Outlet
A.	Decrease	Decrease
B.	Decrease	Increase
C.	Increase	Decrease
D.	Increase	Increase

Answer: D

Associated KA:
42026AA101 Ability to operate and / or monitor the following as they apply to the Loss of Component Cooling Water: AA1.01 CCW/nuclear service water temperature indications 3.1 3.1

Reference Id: Q27591
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because they include Tc temperature decreasing which is not correct for a loss of heat sink due to PW flow being diverted to Circ Water system via CWN-HCV-23. The Circ Water system is at a lower pressure than PW.

Reference: GFES

Objective: NONE

RO Test

11

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 1	Group 1
K/A #	42067AA109	
Importance Rating:	3.00	3.30

Given the following PVNGS Fire Computer Alarm:

SEQ	IDENTITY	DESCRIPTION	TYPE	REASON
2226	337DLP01	QKNE06D Z37D AUX 77' NE	FIRE	LOP

Using the attached Pre-Fire Strategies sheets identify which one of the following best describes the APPROXIMATE location of the fire panel and the local DETECTION ZONE of the alarm?

A. 88' Aux Building Zone 37

B. 77' Aux Building Zone 37

C. 70' Aux Building Zone 38

D. 88' Aux Building Zone 38

Answer: C

Associated KA:
42067AA109 Ability to operate and / or monitor the following as they apply to the Plant Fire on Site: AA1.09 Plant fire zone panel (including detector location) 3 3.3

Reference Id: Q38118
Difficulty: 4.00
Time to complete: 4
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters A & B are incorrect because they are not the correct detection zones. Distracter D is incorrect because it is the incorrect location.

Reference: Pre-Fire Strategy

Objective: L75394

RO Test

12

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 1	Group 1
K/A #	41074EA124	
Importance Rating:	3.60	3.80

Given the following plant conditions:

- Unit 2 tripped from 100% due to a plant transient
- Main Steam Common Header Pressure, SGN-PT-1024 failed low on the the trip
- Tcold is 572 degrees
- RCPs are running

Which one of the following actions by itself would allow the operator to control SBCS valves?

A. Select MANUAL on Master Controller SGN-PIC-1010.

B. Select LOCAL AUTO on Master Controller SGN-PIC-1010.

C. Place Emergency Off/Reset Handswitch, SGN-HS-1010, to RESET.

D. Lower pressure setpoint on Master Controller SGN-PIC-1010 to 950 psia.

Answer: A

Associated KA:
41074EA124 Ability to operate and monitor the following as they apply to a Inadequate Core Cooling: EA1.24 Turbine bypass valve hand/automatic controls, indicators, and setpoints 3.6 3.8

Reference Id: Q27595
Difficulty: 4.00
Time to complete: 3
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because they will not overcome the effects of the loss of steam pressure input

Reference: simplified control system drawings, page 38

Objective: L65649

RO Test

13

This Exam Level Appears on:	RO EXAM Tier 1 Group 1	SRO EXAM Tier 1 Group 1
K/A #	44A13AA22	
Importance Rating:	2.90	3.80

Given the following sequence of events:

- Unit 2 experienced a Loss of Offsite Power (LOOP).
- #1 SG experienced a SGTR on the unit trip.
- The CRS implemented 40EP-9EO04, SGTR and #1 SG has been isolated.
- The current Thot is 520 degrees.
- The CRS has directed the SO to continue the cooldown at 70^0F /hour.

After 15 minutes, the SO observes that the #1 SG pressure and temperature are 'hanging up' (i.e. SG #1 temperature and pressure are not decreasing with RCS temp.), while the #2 SG is cooling down with the RCS.

What action should mitigate this heat removal anomaly?

A. Open ADVs to Lower #1 SG Pressure

B. Close ADVs to Raise #1 SG Pressure

C. Slow the Cooldown Rate to < 30^0F /hour

D. Raise the Cooldown Rate to > 70^0F /hour

Answer: C

Associated KA:
44A13AA22 Ability to determine and interpret the following as they apply to the (Natural Circulation Operations) AA2.2 Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments. 2.9 3.8

Reference Id: Q27582
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracter A would cause an unwanted release, D is not directed as a cooldown limit, B would stop the cooldown.

Reference: 40EP-9EO04

Objective: L11239

RO Test

14

This Exam Level
Appears on: RO EXAM
Tier 1
Group 1
K/A # 42076AA202
Importance 2.80
Rating:

Given the following plant conditions:

- Unit 1 is at 50% power.
- Chemistry reports that RCS activity is elevated.
- Two Charging pumps are in service.
- All available CVCS Ion Exchanger's activity removal capabilities are equal.

Which one of the following describes the expected Chemistry direction to reduce RCS activity?

A. Shift CVCS Ion Exchangers.

B. Only run one charging pump.

C. Start the third charging pump.

D. Add Lithium Hydroxide to the RCS.

Answer: C

Associated KA:
42076AA202 Ability to determine and interpret the following as they apply to the High Reactor Coolant Activity:
AA2.02 Corrective actions required for high fission product activity in RCS 2.8 3.4

Reference Id: Q27596
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Start of the 3rd charging pump will result in an increase in letdown flow. This improves the RCS fluid turnover rate for processing.
Distracters are wrong because they would not increase flow through the letdown system.

Reference: none

Objective L67635

RO Test

15

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 1	Group 1
K/A #	42057AA203	
Importance Rating:	3.70	3.90

Given the following plant conditions:

- Unit 2 is at 100% power and stable
- All Systems are aligned for normal operation
- PNA-D25, 120VAC Instrument Power, deenergizes (Fault on PNA)

Which one of the following describes the expected impact on the RPS System?

A. All RTSG Breakers Open

B. Only RTSG Breaker C Opens

C. Only RTSG Breaker A Opens

D. Only RTSG Breakers A and C Open

Answer: D

Associated KA:
42057AA203 Ability to determine and interpret the following as they apply to the Loss of Vital AC Instrument Bus:
AA2 03 RPS panel alarm annunciators and trip indicators 3.7 3.9

Reference Id: Q38054
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distractors are incorrect due to only A and C RSG Breakers opening on loss of PNA-D25.

Reference: 40AO-9ZZ13, Appendix A. Simplified Drawings and Diagrams, Revision 8/18/2000, page 28.

Objective: L11089 (Knowledge) and L55740 (Practical)

RO Test

16

This Exam Level Appears on:	RO EXAM Tier 1 Group 1	SRO EXAM Tier 1 Group 1
K/A #	42062AA204	
Importance Rating:	2.50	2.90

Given the following plant conditions?

- Unit 1 is at 100% power
- Pressurizer Press is 1850 psia
- 'A' Charging Pump Trips due to a ground fault
- Regenerative heat exchanger outlet temperature is 450 degrees
- NC Flow to the Letdown Heat Exchanger is 42 gpm

Which one of the following valves will go closed?

A. Letdown control valves LV-11OP & Q.

B. Upstream containment isolation valve UV-515.

C. Downstream containment isolation valve UV-516.

D. Outside containment letdown isolation valve UV-523.

Answer: B

Associated KA:
42062AA204 Ability to determine and interpret the following as they apply to the Loss of Nuclear Service Water: AA2.04 The normal values and upper limits for the temperatures of the components cooled by SWS 2.5 2.9

Reference Id: Q38187
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: PV Bank Not Modified
Comment:

CH-UV-515 Closes on: • SIAS • Regen HX Out Temp HI - 450 °F (CHN-TSHH-221)(This can be caused by a letdown flow being greater than charging flow, such as when a charging pump trips)
CH-UV-516 Closes on: • SIAS • CIAS
CH-UV-523 Closes on: • CIAS • Low NC Flow to the Letdown Heat Exchanger - 39 gpm (NCN-FSL-613)
CHE-LV-110P/Q Fails closed on: • Loss of Air • Loss of Power to the PLCS (powered from NNN-D11)

Reference:40AO-9ZZ05, Appendix E

Objective: L65886

RO Test

17

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 1	Group 1
K/A #	41055G212	
Importance Rating:	3.00	4.00

Given the following plant conditions:

- Unit 3 is operating at 100% power.
- A Loss of Offsite Power occurs.
- Both Diesel Generators have failed.
- The CRS is implementing 40EP-9EO08, Blackout.
- The crew is implementing Standard Appendix 80, Align GTG to PBA-S03 (BO).
- An AO reports that NAN-S03AB breaker cannot be closed.
- The Shift Manager is currently acting as the Emergency Coordinator (EC).

Can the Shift Manager perform a visual inspection of NAN-S03AB? Why or why not?

A. Yes, provided the CRS remains in the Control Room.

B. No, the Shift Manager shall remain in the Control Room.

C. No, the Shift Manager shall remain in the Control Room or OSC.

D. Yes, provided the Site Manager remains in the Control Room or STSC.

Answer: B

Associated KA:

41055G212	41055G 2.1.2 plant operation.	Generic Blackout : Knowledge of operator responsibilities during all modes of 3.0 4.0

Reference Id:	Q27589
Difficulty:	3.00
Time to complete:	2
Cognitive Level:	Memory
Question Source:	New
Comment:	

Distracter A, C, & D are incorrect because the CRS can not leave the CR during Mode 1 operations.

Reference: 40DP-9OP02

Objective: none

RO Test

18

This Exam Level Appears on:	RO EXAM Tier 1 Group 2	SRO EXAM Tier 1 Group 1
K/A #	42059AK105	
Importance Rating:	2.60	3.60

Given the following plant conditions:

- Unit 3 experiences a Liquid Radwaste (LRS) Tank rupture, releasing the entire contents to the environment.

How does PVNGS FSAR limit the potential Off-Site Dose (at Site Boundary) from such a release?

A. All Liquid Radwaste Tanks are kept under a vacuum.

B. There must be at least 500 feet between each LRS Tank and Boundary.

C. Outdoor LRS Tanks are surrounded by a dike capable of preventing runoff.

D. Outdoor Liquid Radwaste Tanks are located in compartments to contain any leakage.

Answer: C

Associated KA:
42059AK105 42059AK1 Knowledge of the operational implications of the following concepts as they apply to Accidental Liquid Radwaste Release: AK1.05 The calculation of offsite doses due to a release from the power plant 2.6 3.6

Reference Id: Q38052
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

The FSAR list LRS design criteria. The LRS tanks are stated as not being pressurized however they are not under a vacuum. The Indoor LRS Tanks are contained by compartments not the Outdoor Tanks.

Reference: FSAR, Section 11.2

Objective L11726

RO Test

19

This Exam Level Appears on:	RO EXAM Tier 1 Group 2	SRO EXAM Tier 1 Group 1
K/A #	42001AK201	
Importance Rating:	2.90	3.20

Given the following plant conditions:

- A Unit 3 Crew is performing a mid-cycle startup from an outage
- Reactor Power is 2%
- CEDMCS is in 'Manual Sequential'
- Group 4 CEAs are 108" with normal overlap
- "Continuous Gripper High Voltage" alarm was received
- An AO has just placed the affected Group 4 CEA Subgroup 22 on the hold bus
- Continuous outward CEA motion is observed on CEDMCS Groups 4 and 5
- The crew places CEDMCS in 'Standby' which stopped CEA motion

Which one of the following describes the CEAC and PMS CEA position indication response for the CEAs in Subgroup 22 during the outward motion demand?

	CEAC	PMS
A.	Stayed at 108"	Stayed at 108"
B.	Moved out	Stayed at 108"
C.	Stayed at 108"	Moved out
D.	Moved out	Moved out

Answer: C

Associated KA:
42001AK201 42001AK2 Knowledge of the interrelations between the Continuous Rod Withdrawal and the following: AK2.01 Rod bank step counters 2.9 3.2

Reference Id: Q38145
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because CEA motion in subgroup 22 is not possible while on the hold bus. Subgroup 22 CEAC indication (RSPT) will be constant and the PMS indication (Pulse Counter) will display outward movement.

Reference: 40OP-9SF01, pg. 18 of 37.

Objective: L80283, L80284

RO Test

20

This Exam Level
Appears on: RO EXAM
Tier 1
Group 2
K/A # 42025AK301
Importance 3.10
Rating:

Given the following plant conditions:

- Unit 2 is in MODE 5 operation during normal cooldown
- RCS temperature 195° F
- RCS pressure 325 psig
- Train A SDC in service, train B SDC tagged out for repairs

What is the preferred method of core cooling if a loss of SDC occurs? Alternate RCS cooling using:

A. The S/Gs

B. SI Pump hot leg injection

C. Normal charging and letdown

D. Maximize charging and open the RCS Vents

Answer: A

Associated KA:
42025AK301 Knowledge of the reasons for the following responses as they apply to the Loss of Residual Heat Removal System: AK3.01 Shift to alternate flowpath 3.1 3.4

Reference Id: Q38115
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: INPO Bank
Comment:

Intact/non-isolated SGs is the preferred alternate decay heat removal method if the RCS is intact.

Reference: 40EP-9EO11, HR

Objective: L56270

RO Test

21

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 2	Group 2
K/A #	42033AK302	
Importance Rating:	3.60	3.90

Given the following plant conditions:

- Reactor Trip.
- Functional Recovery Procedure has been entered by the CRS.
- CEA insertion can not be verified.
- Log power channel A is reading $6x10^{-6}$ and stable.
- Log power channel B is reading $6x10^{-6}$ and stable.
- Log power channel C is off scale low.
- Log power channel D is reading $4x10^{-3}$ and dropping.

The reactivity control safety function status check is:

A. not met due to inadequate channel indication.

B. not met due to channel A and B power levels remaining stable.

C. met because channel D level is dropping indicating the reactor has reached an adequate Shutdown Margin.

D. met because A and B channel indication meets the criteria and corresponds to the maximum expected sub-critical multiplication level.

Answer: D

Associated KA:
42033AK302 Knowledge of the reasons for the following responses as they apply to the Loss of Intermediate Range Nuclear Instrumentation: AK3.02 Guidance contained in EOP for loss of intermediate-range instrumentation 3.6 3.9

Reference Id: Q38087
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Analysis
Question Source: New
Comment:

Distracters A & B are incorrect because the reactivity safety function is met.
Distracter C is incorrect because channel D at 10^{-3} by itself is not enough to verify reactivity control or SDM (Shutdown Margin)

Reference: Functional Recovery Tech Guideline, 40DP-9AP14, pg 38.

Objective: 56296

RO Test

22

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 2	Group 1
K/A #	41011EK301	
Importance Rating:	3.40	3.50

Following a Reactor Trip, the crew observes the following:

- Containment Pressure = 9 psig and rising.
- Pressurizer Pressure = 1300 psia and dropping.
- Steam Generator Pressures = 1090 psia and stable.
- RWT Level 17% and dropping.
- SG WR Level = 50% and rising in both SG's.
- SIAS, CIAS, MSIS, CSAS actuations.

Describe the reason for a Main Steam Isolation Signal (MSIS)?

A. Containment Pressure > 3 psig

B. Pressurizer Pressure < 1837 psia

C. Steam Generator WR Level > 45%

D. Steam Generator Pressure < 1100 psia

Answer: A

Associated KA:
41011EK301 Knowledge of the reasons for the following responses as the apply to the Large Break LOCA:
EK3.01 Verifying main steam isolation valve position 3.4 3.5

Reference Id: Q37989
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracters C is incorrect because MSIS signal come off NR instrument. Distracters B is not an input to the MSIS signal.
Distracter D is wrong because it is not at the correct setpoint.

Reference : Simplified Diagrams and Drawings, Revision 8/18/2000, pages 1 and 2.
40EP-9EO10, Appendix for SIAS, CIAS, CSAS, & MSIS.

Objective: L77170

RO Test

23

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 2	Group 2
K/A #	41009EA113	
Importance Rating:	4.40	4.40

Given the following plant conditions:

- Unit 1 trip due to a small break LOCA
- RCS Pressure 1350 psia and slowly LOWERING
- #1 S/G Level 42% WR INCREASING
- #1 S/G Pressure 800 psia LOWERING
- #2 S/G Level 40% WR INCREASING
- #2 S/G Pressure 810 psia LOWERING
- Containment pressure 2.0 psig and slowly INCREASING
- RWT level 75% LOWERING

Based on current plant conditions, which one of the following identifies the ESFAS actuations that should have occurred?

A. SIAS, CIAS, CSAS

B. AFAS, RAS, MSIS

C. SIAS, CIAS, MSIS

D. AFAS, RAS, CSAS

Answer: C

Associated KA:
41009EA113 Ability to operate and monitor the following as they apply to a small break LOCA: EA1.13 ESFAS 4.4 4.4

Reference Id: Q38099
Difficulty: 2.00
Time to complete: 3
Cognitive Level: Comprehension
Question Source: PV NRC 99 Exam
Comment:
Objective: L76810

RO Test

24

This Exam Level
Appears on: RO EXAM
Tier 1
Group 2
K/A # 42022AA107
Importance 2.80
Rating:

Given the following plant conditions:

- Unit 1 in Mode 3.
- Pressurizer level control system Master Controller in Automatic.
- Letdown flow is cycling between 28 to 35 gpm.
- Charging pump A in service, pulsation dampener adjustment in progress on pumps B and E.
- VCT level is observed to slowly drop.

Which one of the following identifies the reason for the observed VCT level change?

A. The output from the SBCS Master Controller lowers.

B. A pressure relief valve is lifting to the equipment drain tank.

C. A small break has developed in the Pressurizer steam space.

D. The output from CHN-LIC-110 Pressurizer Level Controller fails to 100%.

Answer: B

Associated KA:
42022AA107 Ability to operate and / or monitor the following as they apply to the Loss of Reactor Coolant Pump Makeup: AA1.07 Excess letdown containment isolation valve switches and indicators 2.8 2.7

Reference Id: Q38124
Difficulty: 4.00
Time to complete: 3
Cognitive Level: Comprehension
Question Source: PV Bank Not Modified
Comment:

Relief valve lift causes a cyclic loss of inventory resulting in a loss of VCT level. The distracters will not cause the LD flow to cycle.

Reference: Simplified Control System Drawings, Page 35, PLCS.

Objective: L68103

RO Test

25

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 2	Group 2
K/A #	44E09EA13	
Importance Rating:	3.60	3.80

Given the following plant conditions:

- The CRS is implementing the Success Paths in the Functional Recovery Procedure (FRP)

What will the CRS use to determine whether the selected success paths are recovering or maintaining the Safety Functions?

A. SPTA Conditions versus SPTA Acceptance Criteria.

B. Current Conditions versus SPTA Acceptance Criteria.

C. SPTA Conditions versus FRP selected Success Path Acceptance Criteria.

D. Current Conditions versus FRP selected Success Path Acceptance Criteria.

Answer: D

Associated KA:
44E09EA13 Ability to operate and / or monitor the following as they apply to the (Functional Recovery) EA1.3 Desired operating results during abnormal and emergency situations. 3.6 3.8

Reference Id: Q38006
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracters A, B, & C are incorrect because the FRP is based upon current conditions not on conditions from exiting the SPTAs or checked against acceptance criteria in the SPTAs.

Reference: FRP EPTG and Emergency Operating Procedure User's Guide.

Objective: L56272

RO Test

26

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 2	Group 1
K/A #	42003AA201	
Importance Rating:	3.70	3.90

Given the following plant conditions:

- Unit 1 is at 100% power
- PNC-D27 was lost due to a ground fault
- The CRS is implementing 40AO-9ZZ13, Loss of Class Instrument or Control Power

Which one of the following would accurately describe CEA 60, CPC 'A' target rod position, if it dropped or slipped partially into the core?

A. CEAC CRT

B. PMS Pulse Counter

C. Dropped Rod Contact

D. LEL, Lower Electrical Limit light

Answer: A

Associated KA:
42003AA201 Ability to determine and interpret the following as they apply to the Dropped Control Rod: AA2.01 Rod position indication to actual rod position 3.7 3.9

Reference Id: Q27598
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because the CEDMCS cabinet is deenergized causing false LEL and dropped rod contact lights, PMS (B) is wrong because false dropped rod contact zeros the pulse counter

Objective: L110888

Reference: 40AO-9ZZ13

RO Test

27

This Exam Level Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 2	Group 1
K/A #	41029EA201	
Importance Rating:	4.40	4.70

Given the following plant conditions:

- "A" , "C" and "D" RTSG Breakers are open
- Multiple CEAs are not fully inserted
- Log Power (all channels) indicate 4% and stable
- SUR (all channels) = 0
- One charging pump at 44 gpm with suction via CHE-UV-536
- Time since trip = 3 minutes
- The CRS is implementing 40EP-9EO09, Functional Recovery Procedure

The Reactor...

A. is shutdown and reactivity safety function Acceptance Criteria is met.

B. is shutdown but reactivity safety function Acceptance Criteria is not met

C. is not shutdown but reactivity safety function Acceptance Criteria is met.

D. is not shutdown and reactivity safety function Acceptance Criteria is not met.

Answer: D

Associated KA:
41029EA201 Ability to determine or interpret the following as they apply to a ATWS: EA2.01 Reactor nuclear instrumentation 4.4 4.7

Reference Id: Q38114
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters A & B are incorrect because the Reactor is not shutdown.
Distracter C is not correct because the Reactivity Safety Function is not met.

Reference: 40EP-9EO01

Objective: L1043

RO Test

28

This Exam Level Appears on:	RO EXAM Tier 1 Group 2	SRO EXAM Tier 1 Group 2
K/A #	44E02EA22	
Importance Rating:	3.00	4.00

Given the following plant conditions:

- Unit 1 was operating at 75% power when 1B RCP tripped
- During SPTA's an Inadvertent SIAS occurred
- Water Reclamation Facility (WRF) deenergized when switchyard voltage momentarily dropped below low setpoint
- The CRS is implementing 40EP-9EO02, Reactor Trip

Which one of the following describes why this procedure directs restoring power to WRF?

A. Restoring power to the WRF enables the facility to shutdown the GTG's, saving a significant amount of fuel.

B. The loss of PVNGS to accept incoming effluents could result in the contamination of drinking water in several communities.

C. The loss of cooling tower makeup could jeopardize the availability of circulating water systems in all units within a few hours.

D. The batteries in the WRF are only rated for two hours. If these batteries discharge completely it will mean an extended outage for this facility.

Answer: C

Associated KA:
44E02EA22 Ability to determine and interpret the following as they apply to the (Reactor Trip Recovery) EA2.2 Adherence to appropriate procedures and operation within the limitations of the facility's license and amendments. 3 4

Reference Id: Q27599
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: PV Bank Not Modified
Comment:

Distracters A is wrong because GTG's are not started for this event, B is wrong because effulent can be diverted to the salt river, and D is wrong because this loss of battery would only prevent GTG starting

Reference: 40EP-9EO02, 40DP-9AP07

Objective: L10353, L10352

RO Test

29

This Exam Level Appears on:	RO EXAM Tier 1 Group 2	SRO EXAM Tier 1 Group 2
K/A #	42032AA206	
Importance Rating:	3.90	4.10

Given the following plant conditions:

- A Reactor Trip has occurred on Unit 1
- The SUR Meters are not responding

Which one of the following conditions is checked to verify that the reactor has tripped during performance of the SPTAs?

A. All part length CEAs inserted.

B. Reactor Trip UV coil relay lights are lit.

C. Decreasing power on the log channels.

D. Reactor Trip indicated by the first out annunciator display.

Answer: C

Associated KA:
42032AA206 Ability to determine and interpret the following as they apply to the Loss of Source Range Nuclear Instrumentation: AA2.06 Confirmation of reactor trip 3.9 4.1

Reference Id: Q38137
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracter A requires all full length CEAs be inserted.
B & D provides indication but is not used per SPTAs.

Reference: EOP User's Guide; 40EP-9EO01, SPTAs

Objective: L10403

RO Test

30

This Exam Level
Appears on: RO EXAM
Tier 1
Group 2
K/A # 41038EA207
Importance Rating: 4.40

Given the following plant condition:

- Unit 3 is at 100% power.
- Pressurizer Level is 48% and lowering slowly.
- Two Charging Pumps are Running.
- Letdown is 65 gpm and lowering slowly.
- Tc is on program for 100% power.
- Pressurizer Pressure is 2020 psia and lowering slowly.
- RU-142, Main Steam Line N-16 Monitor, Channels 1 and 2 are in Alert.
- No other RU Monitors are in alarm.

Describe the plant event that is indicated by the above listed symptoms.

A. Excess Steam Demand

B. Steam Generator Tube Leak/Rupture.

C. Steam Space Loss of Coolant Accident

D. Interfacing System Loss of Coolant Accident

Answer: B

Associated KA:
41038EA207 Ability to determine or interpret the following as they apply to a SGTR: EA2.07 Plant conditions, from survey of control room indications 4.4 4.8

Reference Id: Q38012
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters would not cause RU-142 to alarm.

Reference: 74RM-9EF41, RMS Alarm Response, RU-142. 40EP-9EO04 SGTR

Objective: L11220

RO Test

31

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 2	Group 2
K/A #	42060AA204	
Importance Rating:	2.60	3.40

A high alarm on the Waste Gas Decay Tank (WGDT) Monitor (RU-12) will cause:

A. a CREFAS/FBEVAS.

B. an auto closure of the WGDT inlet valves.

C. a trip of the running waste gas compressor.

D. an auto closure of the WGDT discharge valves.

Answer: D

Associated KA:
42060AA204 Ability to determine and interpret the following as they apply to the Accidental Gaseous Radwaste:
AA2.04 The effects on the power plant of isolating a given radioactive-gas leak 2.6 3.4

Reference Id: Q3580
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: PV Bank Not Modified
Comment:

Distracter C is incorrect because RU-12 High is not one of the WG Compressor trips.
Distracter A is incorrect because only RU-29,30,31, and 145 initiate CREFAS/FBVAS.
Distracter B is incorrect since WGDT inlet valves do not auto close on RU-12 High alarm.

Reference: 74RM-9EF41

Objective: 66731

RO Test

32

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 2	Group 2
K/A #	42008AA210	
Importance Rating:	3.60	3.60

Given the following plant conditions:

- A Pressurizer steam space LOCA in excess of charging pump capacity is in progress.
- HPSI injection Throttle criteria was satisfied.
- All the HPSI injection valves were fully closed.
- Assume no further operator action.

Which one of the following states the correct combination of parameters that would be expected to result and require re-injection of HPSI.

A. RCS >24 degrees subcooled and/or RVLMS RVUH >16%.

B. Pressurizer level <10% and lowering and RVLMS RVUH <16%.

C. RCS <24 degrees subcooled and/or RVLMS indicates RVUH <16%.

D. Pressurizer level <10% RCS and lowering and RCS < 24 degrees subcooled.

Answer: C

Associated KA:
42008AA210 Ability to determine and interpret the following as they apply to the Pressurizer Vapor Space Accident: AA2.10 High-pressure injection valves and controllers 3.6 3.6

Reference Id: Q38127
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

A is incorrect, a LOCA would cause a loss of subcooling.
B & D is incorrect, on a PZR steam space LOCA, PZR level is expected to be high.

Reference: 40EP-9EO03, LOCA

Objective: L10451

RO Test

33

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 2	Group 2
K/A #	42054G2434	
Importance Rating:	3.80	3.60

Given the following plant conditions:

- Essential auxiliary feedwater pump AFA-P01 out of service.
- Unit trip due to loss of offsite power/loss of grid.
- PKA-M41 bus deenergized due to overcurrent on bus.
- Essential auxiliary feedwater pump AFB-P01 trips on ground fault.

Which one of the following identifies the correct method of feeding the steam generators for this condition?

A. Local start of AFN-P01.
B. Reset and restart a main feedwater pump.
C. Cross-tie another units condensate pumps.
D. Electrically jumper around the ground fault relay on AFB-P01.

Answer: A

Associated KA:
42054G2434 42054G 2.4.34 Generic for LOAF - AFAS operation - Knowledge of RO tasks performed outside the main control room during emergency operations including system geography and system implications. 3.8 3.6

Reference Id: Q38179
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: PV NRC 97 Exam
Comment:

Distracter B is incorrect, MFPs are not available based on LOOP.
Distracter C is incorrect, this would require an unnecessary depressurization of the plant while Aux Feed is still available and does not.
Distracter D is not allowed by procedure.

Reference: 40EP-9EO06, LOAF Step 6

Objective: L10502

RO Test

34

This Exam Level Appears on:	RO EXAM Tier 1 Group 2	SRO EXAM Tier 1 Group 2
K/A #	42061G217	
Importance Rating:	3.70	4.40

Given the following plant conditions:

- RU-1, Containment Atmosphere, gas channel is in ALERT.
- The CRS directs a reactor operator to perform 40ST-9RC02, RCS Water Inventory Balance.

Which one of the following is the reason for performing the RCS water inventory balance?

A. Quantify an increase in RCS leak rate to containment.

B. Determine the amount of primary to secondary leakage.

C. Identify radiation levels to keep personnel exposure ALARA.

D. Determine the difference between leakage to containment atmosphere and containment leakage to sumps.

Answer: A

Associated KA:
42061G217 42061G 2.1.7 Generic for Area Radiation Monitoring (ARM): System Alarms: Interpolate plant performance based upon multiple inputs. 3.7 4.4

Reference Id: Q38072
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: INPO Bank
Comment:

Distracter B is incorrect, the inventory balance is to determine a rate not a total.
Distracter C is incorrect, the rad levels are not determined by the inventory balance.
Distracter D is incorrect, the leakage into NC would be detected by RU-6.

Reference: 74RM-9EF41, Rad Monitoring System
40AO-9ZZ02, Excessive RCS Leakrate
40ST-9RC05, Manual Calculation of Water Inventory

Objective: L10166

RO Test

35

This Exam Level Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 3	Group 3
K/A #	42056AK101	
Importance Rating:	3.70	4.20

Given the following plant conditions:

- Unit 3 tripped from 100% Power.
- All equipment functioned as designed, with the exception of Fast Bus Transfer.
- NAN-S01 and NAN-S02 are deenergized.
- No other event is in progress.
- The SPTAs are complete.
- The CRS implements the appropriate ORP.

Based on the above status, how will the crew maintain the Core and RCS Heat Removal Safety Functions?

A. Two Phase Natural Circulation, Feeding with Aux Feed, Steaming with ADVs.

B. Single Phase Natural Circulation, Feeding with Main Feed, Steaming with SBCS.

C. Two Phase Natural Circulation, Feeding with Main Feed, Steaming with SBCS.

D. Single Phase Natural Circulation, Feeding with Aux Feed, Steaming with ADVs.

Answer: D

Associated KA:
42056AK101 Knowledge of the operational implications of the following concepts as they apply to Loss of Offsite Power: AK1.01 Principle of cooling by natural convection 3.7 4.2

Reference Id: Q27621
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Loss of power to NAN-S01 and NAN-S02 results in the total loss of forced circulation (no RCPs). With no other events in progress, the cooling mechanism is Natural Circulation and with no other complications, Single Phase Natural Circulation is designed to be maintained and enhanced by feeding with Aux Feed and Steaming with the ADVs.

Reference: LOOP/LOFC Technical Guideline 40DP-9AP12, revision 8, page 16 of 44.

Objective: L62291

RO Test

36

This Exam Level
Appears on: RO EXAM
Tier 1
Group 3
K/A # 42065AK308
Importance 3.70
Rating:

Given the following plant conditions:

- A Loss of Instrument Air has occurred.
- Nitrogen is supplying the Instrument Air Header.

Why are the operators directed to start a Fuel Building Essential AFU and align it to the Auxiliary Building?

A. Performing this action will eliminate the requirement of monitoring the lower levels of the Auxiliary Building for nitrogen.

B. This action will assist in reducing the nitrogen buildup in the lower levels of this building.

C. The Fuel Building Essential AFU suction valve may freeze up when you attempt to reposition it with nitrogen instead of air, rendering it inoperable.

D. This action is taken to ensure that at least one AFU has been aligned before there is not sufficient air (nitrogen) pressure to reposition the required valves.

Answer: B

Associated KA:
42065AK308 Knowledge of the reasons for the following responses as they apply to the Loss of Instrument Air:
AK3.08 Actions for loss of instrument air 3.7 3.9

Reference Id: Q38055
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: PV Bank Not Modified
Comment:

Distracter A is not correct because the requirement for monitoring Nitrogen is not eliminated.
Distracter C Fuel Bldg AFU suction valve would not freeze up due to location and required amount to cause this affect.
Distracter D is incorrect because the AFU could still be aligned if needed.
Reference: 40AO-9ZZ06, Loss of Instrument Air, Section 3, pg 7 of 125.

Objective: L10114

RO Test

37

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 3	Group 3
K/A #	42036AA104	
Importance Rating:	3.10	3.70

Given the following plant conditions:

- Unit 1 is in Mode 6.
- Refueling operations in progress.
- The refueling machine has withdrawn an irradiated fuel assembly from the core and has just started moving the fuel toward the transfer canal.
- The CRS notifies the SRO in charge of fuel movement that there is a rapidly lowering fuel pool level and has implemented the LMEOP.
- The CRS directs the SRO in charge of fuel movement to place the fuel in a safe condition.

Which of the following describes the required actions for the proper safe location of the fuel?

The SRO in charge of fuel movement should take action to place the fuel:

A. in the upender.

B. in the reactor vessel.

C. in the intermediate storage rack.

D. grappled at the uplimit on the Refueling Machine (RFM).

Answer: B

Associated KA:
42036AA104 Ability to operate and / or monitor the following as they apply to the Fuel Handling Incidents:
AA1.04 Fuel handling equipment during an incident 3.1 3.7

Reference Id: Q27619
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: Modified PV Bank
Comment:

The other Distracters are incorrect because they require the operator to take a longer period of time to move the fuel and the fuel is in an analyzed safe condition in the core.

Reference: 40EP-9EO11, LMEOP IC-4
40AO09ZZ23, Loss of SFP level or cooling

Objective: L64295

RO Test

38

This Exam Level Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 1	Group 1
K/A #	34003K110	
Importance Rating:	3.00	3.20

Describe the Influent and Effluent associated with the Reactor Coolant Pumps Seal Packages.

A. Influent: Seal Injection from Nuclear Cooling Water
Effluent: Controlled Bleed-off to the Equipment Drain Tank
Minor Vapor Leakage to the Reactor Drain Tank

B. Influent: Seal Injection from Nuclear Cooling Water
Effluent: Controlled Bleed-off to the Volume Control Tank
Minor Vapor Leakage to Gaseous RadWaste

C. Influent: Seal Injection from Charging Header
Effluent: Controlled Bleed-off to the Volume Control Tank
Minor Vapor Leakage to the Reactor Drain Tank

D. Influent: Seal Injection from the Charging Header
Effluent: Controlled Bleed-off to the Equipment Drain Tank
Minor Vapor Leakage to Gaseous Radwaste

Answer: C

Associated KA:
34003K110 Knowledge of the physical connections and/or cause-effect relationships between the RCPS and the following systems: K1.10 RCS 3 3.2

Reference Id: Q37996
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

The distracters have incorrect alignment paths for Seal Injection, Controlled Bleed-off, or Vapor Leakage.

Reference: RCP P&ID; 40AO-9ZZ04, RCP Emergencies

Objective: L65752

RO Test

39

This Exam Level
Appears on: RO EXAM
Tier 2
Group 1
K/A # 34056K103
Importance 2.60
Rating:

Given the following plant conditions:

- Unit 3 is operating normally at 100% power
- All Systems are aligned for normal, automatic operation
- No equipment is out of service

Describe the expected approximate values for the following plant parameters:

Conditions at the Inlet to the Low Pressure Feedwater Heaters are _____, and at the Exit from the High Pressure Heaters are _____.

A. 250-350 psig and 100-110^{0}F, 900-1000 psig and 200-300^{0}F

B. 350-450 psig and 110-120^{0}F, 1000-1100 psig and 300-400^{0}F

C. 450-550 psig and 120-130^{0}F, 1100-1200 psig and 400-500^{0}F

D. 550-650 psig and 130-140^{0}F, 1300-1400 psig and 500-600^{0}F

Answer: C

Associated KA:
34056K103 Knowledge of the physical connections and/or cause-effect relationships between the Condensate System and the following systems: K1.03 MFW . 2.6 2.6

Reference Id: Q38116
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because they do not have the correct combination of parameter values for Condensate pump exit and SG entry.

Reference: 40OP-9ZZ05, Power Operations

Objective: L10012

RO Test

40

This Exam Level
Appears on: RO EXAM
Tier 2
Group 1
K/A # 34003K201
Importance 3.10
Rating:

Given the following plant conditions:

- Unit 2 is operating at 100% Power
- All systems aligned for normal, automatic operation
- No equipment out of service
- Unit Aux Transformer in service
- A problem occurs on the Unit Aux Transformer and it deenergizes (Assume Main transformer 2-MAN-X01 is not affected).
- Unit 2 systems function as designed.

Which one of the following describes the impact to Unit 2, in the first few minutes after the fault occurs?

A. Reactor Trip, NAN-S01 and NAN-S02 are deenergized.

B. Reactor Trip, PBA-S03 and PBB-S04 are deenergized.

C. 100% Power, PBA-S03 and PBB-S04 Transfer to their Emergency DGs.

D. 100% Power, NAN-S01 and NAN-S02 transfer to NAN-S03 and NAN-S04.

Answer: D

Associated KA:
34003K201 Knowledge of bus power supplies to the following: K2.01 RCPS 3.1 3.1

Reference Id: Q38064
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters don't take credit for fast bus transfer of power to NAN-S01/S02. No busses are de-energized.

Reference: Simplified Diagrams and Drawings, revision 8/18/2000, page 66, (rev-4 10-15-98) and 40AO-9ZZ12 Degraded Electrical.

Objective: L73549, L73676

RO Test

41

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 1	Group 1
K/A #	34061K202	
Importance Rating:	3.70	3.70

Determine the combination of energized buses required to support the normal, Control Room operation of AFN-P01.

A. PBA-S03 and PKB-D22

B. PBBS04 and PKB-D22

C. PBB-S04 and PKA-D21

D. PBA-S03 and PKA-D21

Answer: D

Associated KA:
34061K202 Knowledge of bus power supplies to the following: K2.02 AFW electric drive pumps 3.7 3.7

Reference Id: Q27600
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

The other distracters are incorrect based on the AC and DC sources of Electrical Power to AFN-P01.

Reference: 40EP-9EO06, LOAF

Objective: L10502

RO Test

42

This Exam Level Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 1	Group 1
K/A #	37015K406	
Importance Rating:	3.90	4.20

During a Reactor Startup on a PVNGS Unit, the High Log Power Bypass Permissive enables which of the following?

A. Turning on the Control Channels.

B. Bypass of the High Log Power Trip.

C. Activation of the High Log Power Trip.

D. Bypassing one of the Log Power Channels.

Answer: B

Associated KA:
37015K406 Knowledge of NIS design feature(s) and/or interlock(s) provide for the following: K4.06 Reactor trip bypasses 3.9 4.2

Reference Id: Q38037
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: Modified INPO Bank
Comment:

The Distracters are incorrect based upon the function that Log power provides. Log power inputs to the other devices but does not provide the services mentioned.

Reference: 40OP-9ZZ02, Reactor Startup after Refueling

Objective: L11011

RO Test

43

This Exam Level
Appears on: RO EXAM
Tier 2
Group 1
K/A # 31001K413
Importance Rating: 3.40

The PVNGS CEDMCs System Hold Bus allows for which one of the following actions?

A. Transfer of any one Subgroup for testing.

B. Independent motion of a subgroup in the core.

C. Transfer of any one Regulating Group for testing.

D. Independent motion of a regulating group in the core.

Answer: A

Associated KA:
31001K413 Knowledge of CRDS design feature(s) and/or interlock(s) which provide for the following: K4.13 Operation of CRDS controls for withdrawing lingering rods and transferring rods and rod groups 3.4 3.4

Reference Id: Q38094
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracters B and D are wrong because there is no motion on the Hold bus. Answer C is wrong because the Hold bus can only handle a subgroup.

Reference: STM Volume 48, Control Element Drive Mechanism Control System. 40OP-9SF01, CEDMCS Operation.

Objective L80283

RO Test

44

This Exam Level
Appears on: RO EXAM
Tier 2
Group 1
K/A # 37017K402
Importance 3.10
Rating:

Given the following plant conditions:

- A LOCA Event has occurred and is not isolated.
- The Reactor is Tripped and all four RCPs are turned off.
- RCS Subcooling is lost (0 degrees subcooling).
- One Core Exit Thermocouple (CETs) is rising with RCS T-hot lowering.

Which of the following would provide the Control Room Crew with this indication.

A. Core uncovery.

B. Flow blockage up one fuel assembly.

C. Total loss of Natural Circulation flow.

D. Core damage resulting in flow blockage across the core.

Answer: B

Associated KA:
37017K402 Knowledge of ITM system design feature(s) and/or interlock(s) which provide for the following:
K4.02 Sensing and determination of location core hot spots 3.1 3.6

Reference Id: Q38042
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Analysis
Question Source: New
Comment:

Distracters are incorrect because only localized flow blockage causes a few CETs to rise with lowering T-hot. Distracters would result in T-hot and all CETs to rise.

Reference: GFES

Objective: L77356

RO Test

45

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 1	Group 1
K/A #	31001K584	
Importance Rating:	3.50	3.50

Given the following plant conditions:

Unit 2 is at 100% power, 240 EFPD
Group 5 CEAs are inserted to 120 inches
ASI is currently at 0.00
RCS Boron = 500 PPM
RCS T cold = 555°F

You are directed to hold power constant and withdraw the CEAs to fully withdrawn.

Which of the following identifies the number of gallons of boration is needed and the direction that ASI will change?

	Gallons of RW	ASI
A.	87	Negative
B.	174	Negative
C.	517	Positive
D.	1270	Positive

Answer: B

Associated KA:
31001K584 Knowledge of the following operational implications as they apply to the CRDS: K5.84 Significance of sign change (plus or minus) in reactivity due to change in boron concentration 3.3 3.5

Reference Id: Q38260
Difficulty: 4.00
Time to complete: 4
Cognitive Level: Analysis
Question Source: New
Comment:

Per U2 core data book page 69.
Group 5 @ 120 = - 67.2 pcm.
Boron worth = 7.7 pcm/ppm.
67.2/ 7.7 = 8.7 ppm change.
8.7 X 20 gals of RW to make a 1 PPM change in RCS = 174 gallons of RW.
ASI will move to the top as CEAs are withdrawn.

Objective: L55453

RO Test

46

This Exam Level
Appears on: RO EXAM
Tier 2
Group 1
K/A # 37015K502
Importance Rating: 2.70

What function does the Discriminator Circuit of the Startup Channels perform?

A. Provides indication of Startup Rate.

B. Selectively Filters for certain Energy Level inputs.

C. Selects the highest reading Startup Detector for display.

D. Smoothes the Startup Channel indications, using a rolling average.

Answer: B

Associated KA:
37015K502 Knowledge of the operational implications of the following concepts as they apply to the NIS: K5.02 Discriminator/compensation operation 2.7 2.9

Reference Id: Q38038
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracters A and C are wrong because the circuit does not provide indication, D is wrong because there is no rolling average.

Reference: Simplified Drawings and Diagrams, Revision 8/18/2000, page 85 (rev 0 7/13/92).

Objective: L75653

RO Test

47

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 1	Group 1
K/A #	37017K601	
Importance Rating:	2.70	3.00

Given the following plant conditions:

- Unit 3 is at 100% power and stable
- All systems aligned for normal, automatic operation
- The PO observes a Core Exit Thermocouple (CET) display on QSPS is displaying ?????? in Inverse Mode.

What does this indication mean?

A. The sensor was suspect and has been acknowledged.

B. The sensor is below its minimum setpoint and has been acknowledged.

C. The sensor is part of a multiple input alarm and has not been acknowledged.

D. The sensor is either out of range or has failed and has not been acknowledged.

Answer: D

Associated KA:
37017K601 Knowledge of the effect of a loss or malfunction of the following ITM system components: K6.01 Sensors and detectors 2.7 3

Reference Id: Q38078
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

The other distracters are incorrect based on a single input parameter failed out of range.

Reference: 40OP-9SH01, QSPD's User Guide

Objective: L76567

RO Test

48

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 1	Group 1
K/A #	35022A103	
Importance Rating:	3.10	3.40

Given the following plant conditions:

- A small steam leak is suspected in Unit 1 containment.
- An At-Power Containment Entry is about to be made by a maintenance crew.
- The Pre-Access AFU, HCN-F01A and HCN-F01B are running to support the Containment Entry.
- Radiation Protection and the Effluents Technician (based on samples) advise the Control Room that Fission Product Gas/Iodine Levels continue to be unacceptable even after several hours of Cleanup Operation.

Which Containment Atmosphere parameter is the likely contributor to the failure of the Containment Cleanup Units to function optimally?

A. High Humidity

B. High Radiation

C. High Temperature

D. High Contamination

Answer: A

Associated KA:
35022A103 Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the CCS controls including: A1.03 Containment humidity 3.1 3.4

Reference Id: Q38123
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Of the choices given, Charcoal is most affected by High Humidity.

Reference: NONE

Objective: 74459

RO Test

49

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 1	Group 1
K/A #	35022A204	
Importance Rating:	2.90	3.20

Given the following plant conditions:

- Unit 1 is at 100% power
- Plant Cooling Water Pump 'B' is OOS
- Plant Cooling Water Pump 'A' discharge pressure is 20 psig
- Containment Temperature = 114 degrees and slowly rising
- Turbine Lube Oil Temperature = 122 degrees and slowly rising

Which one of the following procedures is used to restore cooling to containment?

A. 40AO-9ZZ20, Loss of HVAC.

B. 40AO-9ZZ05, Loss of Letdown.

C. 40AO-9ZZ03, Loss of Cooling Water.

D. 40EP-9EO01, Standard Post Trip Actions.

Answer: C

Associated KA:
35022A204 Ability to (a) predict the impacts of the following malfunctions or operations on the (Containment Cooling Water System) CCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: A2.04 Loss of service water 2.9 3.2

Reference Id: Q38139
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because A, B, and D are directed from 40AO-9ZZ03 but under different conditions. Procedure 40AO-9ZZ03 mitigates cooling to containment by crosstieing EW to NC, since NC is cooled by PW.

Reference: 40AO-9ZZ03, sect 4.0, step 7

Objective: L10102

RO Test

50

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 1	Group 1
K/A #	34056A204	
Importance Rating:	2.60	2.80

Given the following plant conditions:

- Unit 1 is in Mode 3
- Condensate Long-Path Recirculation is in Progress
- CDN-P01B is in Operation with the suction valves from both Hotwell Sections Open. (NOTE: These valves remain open)
- Both suction valves remain open.
- CDN-P01A and CDN-P01C are available (miniflow headers filled)
- Hotwell Section 1 Level Transmitter LSLL-85 failure results in a CDN-P01B Trip on Low Hotwell Level. (Assume the Transmitter remains 'failed')

Which one of the following provides a lineup to restore Long-Path Recirculation?

A. CDN-P01B from Hotwell Section 2

B. CDN-P01A from Hotwell Section 1

C. CDN-P01C from Hotwell Section 2

D. CDN-P01A from Hotwell Section 2

Answer: D

Associated KA:
34056A204 Ability to (a) predict the impacts of the following malfunctions or operations on the Condensate System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those mal-functions or operations: A2.04 Loss of condensate pumps 2.6 2.8

Reference Id: Q38129
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

D is correct, A Condesate Pump draws from Hotwell Section 2
A is incorrect because B Condensate Pump can not draw off Hotwell Section 2 unless the suction valve from Hotwell Section 1 is closed as long as the low level trip is in
B is incorrect because A Condensate Pump can not draw from Hotwell Section 1
C is incorrect because C Condensate Pump can not draw from Hotwell Section 2

Tech Reference: CD STM Volume 19, CD Pump Controls
Logic P&ID

Objective: L67440

RO Test

51

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 1	Group 1
K/A #	39071A209	
Importance Rating:	3.00	3.50

Given the following plant conditions:

- Unit 1 is at 100% power
- 'A' WGDT is in service
- Radwaste AO reports that the relief valve on the Waste Gas Surge Tank is lifting

Which one of the following describes the control room staff response and why?

A. Notify RP because there is an unmonitored release in the radwaste building.

B. Notify the Effluent Technician because RU-14, Radwaste Building Ventilation Exhaust Monitor is in alarm.

C. Direct the Radwaste AO to place 'B' WGDT in service to reduce waste gas surge tank pressure.

D. Direct the Radwaste AO to stop the Waste Gas Air compressors to stop pumping gas into the Surge Tank.

Answer: B

Associated KA:
39071A209 Ability to (a) predict the impacts of the following malfunctions or operations on the Waste Gas Disposal System ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: A2.09 Stuck-open relief valve 3.0 3.5

Reference Id: Q38151
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because RU-14 alarm requires notification of chemistry and this relief valve discharges to the radwaste building exhaust system.

Reference: 74RM-9EF41, Radiation Monitor Alarm Response

Objective: L78940

RO Test

52

This Exam Level
Appears on: RO EXAM
Tier 2
Group 1
K/A # 37072A201
Importance Rating: 2.70

Upon loss of _____ , the Safety Related Radiation Monitors for that train will lose power and result in a CREFAS, CPIAS, and FBEVAS actuations.

A. PHA-M33

B. NNN-D11

C. PNA-D25

D. NQN-D01

Answer: C

Associated KA:
37072A201 Ability to (a) predict the impacts of the following malfunctions or operations on the ARM system- and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: A2.01 Erratic or failed power supply 2.7 2.9

Reference Id: Q38154
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

PNA-D25 powers RU-29,31,33,37,148,and 150 which input BOP ESFAS actuation.
PHA-M33 powers RMS Mini Computer and has no actuation effects.
NNN-D11 Will only cause RU-143/144 to stop taking samples.
NQN-D01 is the uninterruptable power supply to PMS.

Reference: 40AO-9ZZ13, Loss of Class Instrument Power

Objective: L66727

RO Test

53

This Exam Level
Appears on: RO EXAM
Tier 2
Group 1
K/A # 34059A302
Importance 2.90
Rating:

Given the following plant conditions:

- Unit 1 is operating at 100% power
- Both Unit 1 DFWCSs are in automatic
- The CRS directs the Secondary Operator to lower the Level Setpoint for DFWCS #1 on the Master Control Station from 50% to 40% NR

How should the DFWCS respond to this Operator Action?

A. DFWCS #1 Output decreases, DFWCS #1 Economizer closes down, MFP speed unaffected

B. DFWCS #1 output increases, DFWCS #1 Economizer closes down, DFWCS #1 Downcomer opens up.

C. DFWCS #1 output decreases, Both Main Feed Pumps slow down, Both Economizers open up.

D. DFWCS #1 output increases, Both Main Feed Pumps speed up, DFWCS #1 Economizer opens up, DFWCS #2 Economizer closes down.

Answer: A

Associated KA:
34059A302 Ability to monitor automatic operation of the MFW, including: A3.02 Programmed levels of the S/G 2.9 3.1

Reference Id: Q38039
Difficulty: 3.00
Time to complete: 3
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because DFWCS output must decrease, Economizer closes down with decreasing input, and there is no impact on the MFP speed.

Reference: Simplified Diagrams and Drawings, revision 8/18/2000, page 92.

Objective: L82495

RO Test

54

This Exam Level
Appears on: RO EXAM
Tier 2
Group 1
K/A # 34059A303
Importance 2.50
Rating:

Given the following plant conditions:

- Unit 2 is operating at 100% power.
- All systems in automatic and operating as designed.

Which one of the following should cause Main Feedwater Pump Suction Pressure to drop?

A. Performing a Pre-Service Rinse of a Demineralizer Bed.

B. Hotwell Make-up Valve opening to the CST on low level.

C. Bypassing the Condensate Demineralizers using CDN-UV-195.

D. Shifting from Abnormal Rate Blowdown to Normal Rate Blowdown.

Answer: A

Associated KA:
34059A303 Ability to monitor automatic operation of the MFW, including: A3.03 Feedwater pump suction flow pressure 2.5 2.6

Reference Id: Q38040
Difficulty: 3.00
Time to complete: 3
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracter B will improve Condensate discharge; D has no impact on MFP suction;Bypassing demins improves suction.

Reference: 40OP-9SC03, Operating the Condensate Demineralizer System, 5.1.2

Objective: L74627

RO Test

55

This Exam Level Appears on:	RO EXAM Tier 2 Group 1	SRO EXAM Tier 2 Group 1
K/A #	31004A415	
Importance Rating:	3.60	3.70

Which of the following is correct with regards to monitoring Boron Concentration in the control room?

A. The boronometer reading is set by chemistry in the cold lab and provides a redundant display of the setting on control board BO3.

B. The boronometer reading is an averaged reading and the the low range alarm is a fixed value of 750 ppm, the high range alarm is a fixed value of 2100 ppm.

C. The boronometer reading is approximate and provides the Boron Dilution Alarm System (BDAS) alarm when value changes by more than 10%.

D. The boronometer reading is approximate and the low range alarm is set for $\pm$ 25 ppm from equilibruim, the high range alarm is set for $\pm$100 ppm from equilibruim.

Answer: D

Associated KA:
31004A415 Ability to manually operate and/or monitor in the control room: A4.15 Boron concentration 3.6 3.7

Reference Id: Q38141
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracter B is incorrect, the boronometer is not exact.
Distracter C is incorrect, the boronometer does not provide BDAS alarm input.
Distracter A is incorrect, the cold lab does not input the boronometer setting.

Reference: 41AL-1RK3A, LD Process Monitor Trouble

Objective: L67620

RO Test

56

This Exam Level Appears on:	RO EXAM Tier 2 Group 1	SRO EXAM Tier 2 Group 1
K/A #	32013A402	
Importance Rating:	4.30	4.40

Given the following plant conditions:

- The Control Room Crew is responding to an Inadvertent SIAS.
- The CRS directs the SO to reset the SIAS actuation.
- The SO correctly depresses the reset pushbuttons for the Actuation Path on the PPS Aux Relay Cabinets.

At this point, describe the indications in the Control Room for the Initiation Relays on B05 and leg 1-3 / leg 2-4 lamps for the Actuation Signals on PPS Status Panels above the PPS cabinets.

	Initiation Relays	1-3 / leg 2-4 lamps for the Actuation Signals
A.	ON	OFF
B.	ON	ON
C.	OFF	ON
D.	OFF	OFF

Answer: B

Associated KA:
32013A402 Ability to manually operate and/or monitor in the control room: A4.02 Reset of ESFAS channels 4.3 4.4

Reference Id: Q27603
Difficulty: 4.00
Time to complete: 3
Cognitive Level: Memory
Question Source: New
Comment:

Distracter A incorrect, actuation alarm windows would still be illuminated.
Distracter C & D are incorrect, the initiation relays would still be illuminated.

Reference: 40AO-9ZZ17, Inadvertent PPS-ESFA Actuation
Simplified Control System Drawings, Revision 8/18/2000, pages 26 and 27

Objective: 65032

RO Test

57

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 1	Group 1
K/A #	37072A402	
Importance Rating:	2.50	2.50

Given the following plant conditions:

- RU-31, Spent Fuel Pool Area is indicating erratically both locally and on the RMS Workstation Display.
- The RMS Technician requests that the Control Room assist him while the RU-31 monitor is taken off-line and then placed back online.

What precaution should the Reactor Operator take during this evolution?

A. Bypass FBEVAS 'B'.

B. Bypass FBEVAS 'A'.

C. Ensure RU-30 (Control Room Ventilation Intake, Train B) is online, Cycle the power to RU-31.

D. Ensure RU-145 (Fuel Building Ventilation, Low Range) is online, Cycle the power to RU-31.

Answer: B

Associated KA:
37072A402 Ability to manually operate and/or monitor in the control room: A4.02 (ARM) Major components 2.5 2.5

Reference Id: Q38135
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracter A is incorrect, RU-31 is Train A related.
Distracter C is incorrect, RU-30 will not prevent an input to FBEVAS Train 'A' trip signal.
Distracter D is incorrect, RU-145 is Train 'B' input to FBEVAS.

Reference: 40OP-9SA01, BOP ESFAS Modules Operation

Objective: 65041

RO Test

58

This Exam Level
Appears on: RO EXAM
Tier 2
Group 1
K/A # 39068A401
Importance 2.70
Rating:

Given the following plant conditions:

- The unit is at 100% power and stable.
- The Core is at Middle of Cycle.
- All Systems are aligned for normal, automatic operation.
- The controller for Nuclear Cooling Water flow to the Letdown Heat Exchanger fails, increasing flow by 50% over it's normal value.

What indications should the Primary Reactor Operator expect to observe as a result of this failure?

A. Letdown Temperature Lowers, RCS Boron Concentration Raises, RCS Temperature Lowers.

B. Letdown Temperature Raises, RCS Boron Concentration Lowers, RCS Temperature Lowers.

C. Letdown Temperature Lowers, RCS Boron Concentration Lowers, RCS Temperature Raises.

D. Letdown Temperature Raises, RCS Boron Concentration Raises, RCS Temperature Raises.

Answer: C

Associated KA:
39068A401 Ability to manually operate and/or monitor in the control room: A4.01 Control board for boron recovery 2.7 2.4

Reference Id: Q38108
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Analysis
Question Source: New
Comment:

Distracters are wrong because letdown temp must lower with increasing NCW flow, the effect of cooler water on the demin beds is to retain Boron, which adds positive reactivity.

Reference: 40OP-9CH02, Purification System 4.1.1.5

Objective: L67635

RO Test

59

This Exam Level
Appears on: RO EXAM
Tier 2
Group 1
K/A # 32004G2227
Importance 2.60
Rating:

Given the following plant conditions:

- Unit 1 is in Mode 6 Refueling
- PCN-V118 (Cross-Tie Between Spent Fuel Pool and Refueling Pool) is Closed.
- Refueling Pool Level is approximately 137' 5"
- Preparations in progress to begin Core Offload
- All Charging Pumps and Safety Injection Pumps Are Available.
- Both Pool Cooling and Both Pool Cleanup Pumps Are Available.
- A leak of approximately 75 gpm develops from the Refueling Pool.

Which Makeup Method should the Control Room crew use to mitigate this leak?

A. Pool Cooling Pumps from the Spent Fuel Pool.

B. Gravity Feed from the Spent Fuel Pool via PCN-V118.

C. Low Pressure Safety Injection from the Refueling Water Tank.

D. Charging Pumps alternate suction from the Refueling Water Tank.

Answer: D

Associated KA:
32004G2227 32004G FW Generic 2.2.27 Knowledge of Refueling Process 2.6 3.5

Reference Id: Q38117
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because B is not a makeup source, opening the pool xtie in C is not allowed, LPSI is not lined up capacity is much greater than needed. Answer A is procedurally directed.

Reference: 40OP-9CH01, CVCS Normal Operation

Objective: L68184

RO Test

60

This Exam Level Appears on:	RO EXAM Tier 2 Group 2	SRO EXAM Tier 2 Group 2
K/A #	38029K102	
Importance Rating:	3.30	3.60

Given the following plant conditions:

- Unit 3 has been shutdown for 80 hours.
- The Containment Purge is in Refueling Purge Mode.
- Mechanical Maintenance is removing the Pressurizer Manway.
- RU-37, Power Access Purge - Train A, radiation monitor goes to HIGH alarm.

Which of the following describes the ESFAS actuations that result, if any?

A. CPIAS only.

B. CPIAS with a cross trip to CREFAS.

C. CPIAS with a cross trip to FBEVAS.

D. No actuation until RU-38 (Power Access Purge - Train B) reaches its HIGH setpoint.

Answer: B

Associated KA:
38029K102 Knowledge of the physical connections and/or cause-effect relationships between the Containment Purge System and the following systems: K1.02 Containment radiation monitor 3.3 3.6

Reference Id: 38138
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distractor A incorrect because CPIAS will generate a cross trip to CREFAS.
Distractor C is incorrect - same reason as A
Distractor D is incorrect because RU-38 is for Train B only and separated from Train A (RU-37).

Reference 74RM-9EF41

Objective 65049

RO Test

61

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 2
K/A #	37073K101	
Importance Rating:	3.60	3.90

Given the following plant conditions:

- The Control Room Crew receives an actuation of both trains ('A' and 'B') of a 'CREFAS' Control Room Essential Filtration Actuation System. (No other BOP-ESFAS Actuations)

What parameters should the Control Room Crew investigate to determine the validity of this actuation?

A. Radiation Levels Sensed in the Fuel Building.

B. Contamination Levels sensed in the Plant Vent.

C. Radiation Levels sensed at the Control Room Air Intake.

D. Contamination Levels sensed in Containment Ventilation.

Answer: C

Associated KA:
37073K101 Knowledge of the physical connections and/or cause-effect relationships between the PRM system and thefollowing systems: K1.01 Those systems served by PRMs 3.6 3.9

Reference Id: Q27762
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters A, B, & D are incorrect, with no other BOP ESFAS signals received the only input listed to cause a CREFAS is from the air intake rad monitors, RU-29 (Train A) and RU-30 (Train B).

Reference: Simplified Diagrams and Drawings, Revision 8/18/2000.Page 51.

Objective: 65046

RO Test

62

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 2
K/A #	38079K101	
Importance Rating:	3.00	3.10

Describe the relationship between the Instrument Air System and the Service Breathing Air System.

A. Independent Air Compressors, Shared Dryers, Manual Cross-Connect Valve

B. Shared Air Compressors, Independent Dryers, No Cross-Connect Capability

C. Shared Air Compressors, Shared Dryers, Automatic Cross-Connect Valve

D. Independent Air Compressors, Independent Dryers, no Cross-Connect capability

Answer: D

Associated KA:
38079K101 Knowledge of the physical connections and/or cause-effect relationships between the SAS and the following systems: K1.01 IAS 3 3.1

Reference Id: Q27606
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Systems are independent. Piping Exists where Cross-Connect previously existed. Physically possible to make-up piping and cross-connect, but not normally configured as such.

Reference: Plant P&IDs.

Objective: L76589

RO Test

63

This Exam Level
Appears on: RO EXAM
Tier 2
Group 2
K/A # 34055K106
Importance 2.60
Rating:

A High Radiation Condition on RU-141, Condenser Vacuum/Seal Exhaust Monitor, results in which one of the following automatic actions?

A. Plant Vent Effluent isolated.

B. Condenser Vacuum Effluent isolated.

C. Plant Vent Effluent to 'Thru Filter Mode'.

D. Condenser Vacuum effluent to 'Thru-Filter Mode'.

Answer: D

Associated KA:
34055K106 Knowledge of the physical connections and/or cause effect relationships between the CARS and the following systems: K1.06 PRM system 2.6 2.6

Reference Id: Q38069
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracters A and C are wrong there is no action in the Plant Vent system; B because the vacuum effluent cannot be isolated. The vent goes through the filter.

Reference: Simplified Diagrams and Drawings, revision 8/18/2000, page 72.

Objective: L62447

RO Test

64

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 2
K/A #	34035K302	
Importance Rating:	4.00	4.30

Given the following plant conditions:

- Unit 2 was manually tripped due to lowering Pressurizer Pressure and Level.
- SIAS and CIAS have actuated.
- HPSI flow has been throttled.
- Containment temperature is 160 degrees.
- Both Steam Generator levels are at 38% NR.
- A slight RCS cooldown and depressurization is in progress.

Which one of the following requires the re-initiation of Safety Injection Flow?

A. Subcooling Margin is 26 degrees F.

B. Pressurizer Level is 21% and not changing.

C. 0 gpm Feedwater Flow to the Steam Generators.

D. Pressurizer Pressure is <1837 psia and lowering slowly.

Answer: C

Associated KA:
34035K302 Knowledge of the effect that a loss or malfunction of the S/GS will have on the following: K3.02 ECCS 4 4.3

Reference Id: Q38010
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracter A is incorrect, subcooled margin is adequate to throttle SI flow
Distracter B is incorrect, PZR level is not changing and therefore does not meet the criteria for reinjection of flow.
Distracter D is incorrect, PZR pressure is not a monitored parameter for SI throttle criteria.

Reference: EOP Standard Appendicies
SI Flow Delivery Curves and Throttle Criteria.
EOP Operations Expectations.

Objective: L10457

RO Test

65

This Exam Level
Appears on: RO EXAM
Tier 2
Group 2
K/A # 33010K302
Importance 4.00
Rating:

Given the following plant conditions:

- The Pressurizer Pressure Control System (PPCS) is functioning normally in automatic.
- The controlling Pressurizer Pressure channel instrument fails HIGH.

With no operator action, which response is correct?

A. No impact on the Reactor Protection or PPCS.

B. A high pressure trip input is received by Reactor Protection from one channel.

C. A RCS low pressure condition is produced by the PPCS causing a low pressure trip.

D. A RCS high pressure condition is produced by the PPCS causing a high pressure trip.

Answer: C

Associated KA:
33010K302 Knowledge of the effect that a loss or malfunction of the PZR PCS will have on the following: K3.02 RPS 4 4.1

Reference Id: Q38163
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because RPS and PPCS do not share instrument inputs, but the high pressure input to PPCS produces RCS depressurization due to spray, causing RPS trip.

Reference: Simplified Drawings and Diagrams, Revision 8/18/2000, pages 43 through 45 and 34.

Objective: L75344

RO Test

66

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 2
K/A #	38033K401	
Importance Rating:	2.90	3.20

Given the following plant conditions:

- Both Fuel Pool Cooling Pumps are operating on the Spent Fuel Pool (SFP).
- A large break occurs in the discharge of one of the pumps.

What design feature of the system ensures a miminum water level above irradiated fuel is maintained?

A. Both pumps will trip on high flow.

B. Anti-siphon holes drilled in the suction pipes that enter the pool.

C. Excess flow spring-check valves are installed in the pipes that enter the pool.

D. Water level is automatically maintained by a float switch from the Refueling Water Tank (RWT).

Answer: B

Associated KA:
38033K401 Knowledge of design feature(s) and/or interlock(s) which provide for the following: K4.01 Maintenance of spent fuel level 2.9 3.2

Reference Id: Q8296
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: PV Bank Not Modified
Comment:

A is incorrect, the pumps do not trip on high flow.
C is incorrect, the SFP level is not maintained via a float from the RWT.
D is incorrect, the SFP piping does not contain excess flow check valves.

Reference: UFSAR 9.1.3.3.1.1.1

Objective: L77405

RO Test

67

This Exam Level
Appears on: RO EXAM
Tier 2
Group 2
K/A # 36062K410
Importance 3.10
Rating:

Complete the following statement regarding the Plant Computer.

The Plant Computer Monitoring System (PMS) is normally powered from _____ and an uninterruptible backup supplied from _____, using a(n) _____.

A. Non-Class 480VAC, Non-Class 125VDC, Inverter.

B. Class 480 VAC, Class 125VDC, Voltage Regulator.

C. Class 480VAC, Class 120VAC, Voltage Regulator.

D. Non-Class 480VAC, Non-Class 120VAC, Inverter.

Answer: A

Associated KA:
36062K410 Knowledge of ac distribution system design feature(s) and/or interlock(s) which provide for the following: K4.10 Uninterruptable ac power sources 3.1 3.5

Reference Id: Q38058
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distractors are wrong because the backup is DC which requires an inverter, and normal supply is non-class because the computer is non-class. The PMS system is powered from NQN-D01, which is powered from NHN-M08 (480VAC) and NKN-M45 (125VDC) via an Inverter residing in NQN-N01C.

Reference: Simplified Diagrams and Drawings, Revision 8/18/2000, page 68, (Rev-7, 8/19/98).

Objective: L77136

RO Test

68

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 2
K/A #	32002K603	
Importance Rating:	3.10	3.60

Given the following plant conditions:

- A Loss of Coolant Accident in progress on Unit 2
- RVLMS 'A' and 'B' indicate the uppermost two detector locations are superheated
- The remaining six RVLMS 'A' and 'B' locations indicate subcooled

What can the Control Room Crew determine about the Level in the RCS at this point?

A. Partial Voiding in Upper Head.

B. Complete Voiding in Upper Head.

C. Partial Voiding in Outlet Plenum.

D. Complete Voiding in Outlet Plenum.

Answer: A

Associated KA:
32002K603 Knowledge of the effect or a loss or malfunction on the following RCS components: K6.03 Reactor vessel level indication 3.1 3.6

Reference Id: Q27615
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracters B, C, & D are incorrect, voiding in the other locations referenced would require more detectors than those listed to indicate superheated conditions.

Reference: 40OP-9SH01, QSPDS Users manual (procedure).

Objective: L76532

RO Test

69

This Exam Level
Appears on: RO EXAM
Tier 2
Group 2
K/A # 37012K608
Importance Rating: 3.60

Regarding the Reactor Protection System (RPS), Core Protection Calculators (CPCs), and the Core Operating Limit Supervisory System (COLSS);

Which of the following describes how they interrelate to protect the Core?

A. CPCs provide detailed monitoring, RPS and COLSS compare inputs and Trips the Reactor.

B. COLSS and CPCs provide conservative monitoring for LCOs, RPS provides all of the inputs for Reactor Trip criteria.

C. COLSS provides accuracy for monitoring, CPCs provide speed and conservatism, RPS receives CPC output to Trip the Reactor.

D. RPS provides accuracy for monitoring, COLSS provides speed of detection, CPCs receive COLSS outputs and Trips the Reactor.

Answer: C

Associated KA:
37012K608 Knowledge of the effect of a loss or malfunction of the following will have on the RPS: K6.08 COLSS 3.6 3.7

Reference Id: Q38043
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distractors are wrong because COLSS only monitors, CPCs provide trip output to RPS for trips.

Reference: 77OP-9RJ04, COLSS Functional Verification App. C

Objective: L77046

RO Test

70

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 2
K/A #	34039A105	
Importance Rating:	3.20	3.30

Given the following plant conditions:

- Unit 1 is at 100% power, 225 EFPD.
- Plant conditions are stable.
- Second stage reheat steam is NOT in service to the Moisture Separator Reheaters (MSR).

How does placing Second Stage reheat steam MSR in service (per procedure) impact Reactor Power and T-cold? Reactor Power ...

A. Increases, Increases RCS T-cold.

B. Decreases, Increases RCS T-cold.

C. Increases, Decreases RCS T-cold.

D. Decreases, Decreases RCS T-cold.

Answer: C

Associated KA:
34039A105 Ability to predict and/or monitor changes in parameters (to prevent xceeding design limits) associated with operating the MRSS controls including: A1.05 RCS T-ave 3.2 3.3

Reference Id: Q27616
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Placing 2nd stage reheat inservice will increase main steam flow by 5%, which will decrease Tc making distracters A and B incorrect. Reactor power will increase which makes distracters B and D incorrect.

Reference: Theory, 40DP-9MT01, Moisture Separator Reheater

Objective: L77384

RO Test

71

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 1
K/A #	31014A103	
Importance Rating:	3.60	3.80

Given the following plant conditions:

- Unit 2 is at 40% Reactor Power performing a Shutdown.
- Regulating Group 5 CEAs at 120 inches (ASI Control).
- CEDMCS in Auto Sequential.
- No equipment out of service.
- Both CEAC CRTs indicate a group 5 CEA inward deviation.
- No Rod Bottom lights are lit on the core mimic.
- CEDMCS remote operator module shows no LEL or UEL lamps lit.
- The Pulse Counter Group Display indicates all group 5 CEAs at 120 inches.
- PMS CEA position data indicates all group 5 CEAs at 120 inches.
- The PDIL annunciator is not in alarm.
- TLI is selected to TLI 1.

Which of the following describes the event?

A. TLI 1 has failed high.

B. A RPCB system actuation has occurred.

C. A single RSPT instrument string has failed for a group 5 CEA.

D. A Reg Group 5 CEA slipping but not reaching the bottom of the core.

Answer: D

Associated KA:
31014A103 Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the RPIS controls, including: A1.03 PDIL, PPDIL 3.6 3.8

Reference Id: Q38261
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters C is incorrect, Pulse Counter Group Display would not show CEA slippage.
Distracter B is incorrect, PMS CEA position would not show individual CEA slippage via the pulse counter.
Distracter A is incorrect, TLI 1 failure high would cause a CEA withdrawl signal vice an insertion signal.

References: B04 Alarm Responses, CEAC Display, CEAC 1 and 2 RSPT data display 40AO-9ZZ11, CEA Abnormal Operating Procedure. 40AO-9ZZ16, RRS Malfuncitons.

Objective: L80232, L78792

RO Test

72

This Exam Level Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 2
K/A #	36064A215	
Importance Rating:	2.60	3.10

Given the following plant conditions:

- Unit 1 Emergency Diesel Generator (EDG) 'B' has been running for 65 minutes during a 'Normal Run', per the Emergency Diesel Generator Normal Operating Procedure.
- The Area Operator assigned to the EDG Run fully opens DGN-V600 (Turbo Intercooler Condensate Drain) and observes a full stream of water with no air.

Under this condition the CRS should direct which of the following actions?

A. Shutdown EDG

B. Throttle the Intercooler drain

C. Throttle Cooling Water to Intercooler

D. No action required, this is expected for this evolution

Answer: A

Associated KA:
36064A215 Ability to (a) predict the impacts of the following malfunctions or operations on the ED/G system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: A2.15 Water buildup in cylinders 2.6 3.1

Reference Id: Q38122
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Any actions other than Shutdown of the EDG would be incorrect.

Reference: 40OP-9DG02, Revision 13, Section 6.5.5. 6.5.7

Objective: None

RO Test

73

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 2
K/A #	38075A203	
Importance Rating:	2.50	2.70

Given the following plant conditions:

- Unit 1 Reactor is at 100% power
- 'B' Circ Water pump trips
- Condenser shell 'A' has backpressure at 5.1 inches HgA and rising
- Condenser shell 'B' has backpressure at 5.6 inches HgA and rising
- Condenser shell 'C' has backpressure at 4.7 inches HgA and rising
- CRS is implementing 40AO-9ZZ07, Loss of Condenser Vacuum

Which one of the following states the next expected system response as backpressure continues to degrade in condenser shell 'A'?

A. Main Turbine trips.

B. Expansion duct "B-C" will blow out.

C. Auto make-up and draw-off to condenser isolate.

D. Steam Bypass Control System condenser interlock actuates.

Answer: D

Associated KA:
38075A203 Ability to (a) predict the impacts of the following malfunctions or operations on the circulating water system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: A2.03 Safety features and relationship between condenser vacuum, turbine trip, and steam dump 2.5 2.7

Reference Id: Q38143
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: PV NRC 98 Exam
Comment:

Distracters are wrong because turbine trip is at 7.5 inches, equalizing duct blowout is based on temperature, and make-up and draw-off valves do not isolate on low vacuum

Reference: 41AL-1RK6A, Panel B06 Alarm Response; 40AO-9ZZ07, Loss of Condenser Vacuum

Objective: L56169

RO Test

74

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 2
K/A #	37016A302	
Importance Rating:	2.90	2.90

Given the following plant conditions:

- Unit 2 is performing a mid-cycle startup
- Reactor power is being raised to 20%
- Current Reactor power is as follows:
  - 18.4% Control channel 1
  - 18.6% Control channel 2
  - 16.9% JSCALOR
  - 8.6% 'A' CPC Linear Upper Detector
  - 19.8% 'A' CPC Linear Middle Detector
  - 21.7% 'A' CPC Linear Lower Detector

Which ONE of the following describes expected system response when Reactor power is increased one percent from current values?

A. DFWCS will go through 'Swapover'.

B. COLSS CMC/PC overpower alarms become enabled.

C. CPC 'A' will swap from an actual ASI value to use a 'canned' ASI value.

D. CPC 'A' will swap from a 'canned' ASI value to use the actual ASI value.

Answer: D

Associated KA:
37016A302 Ability to monitor automatic operation of the NNIS, including: A3.02 Relationship between meter readings and actual parameter value 2.9 2.9

Reference Id: Q38147
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because ASI canned values are being used and will swap to actual values when CPC total linear power reaches 51%. DFWCS has already transitioned the unit through swapover (between 15 and 17%), and CMC/PC power alarms are not power dependent.

Reference: 40OP-9ZZ04, page 10.

Objective: L10002

RO Test

75

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 2
K/A #	38086A406	
Importance Rating:	3.20	3.20

Given the following plant condition:

- A fire alarm is received on the control room fire protection computer console for the computer room adjacent to the control room.

The Computer Room is expected to be flooded with...

A. CO_2.

B. Halon.

C. Fire Protection water.

D. Fire Suppressant foam.

Answer: B

Associated KA:
38086A406 Ability to manually operate and/or monitor in the control room: A4.06 Halon system 3.2 3.2

Reference Id: Q38153
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracters are wrong because CO_2 and water are not used in this area, and foam is not used.

Reference: Pre-Fire Strategies Manual, page I-121.

Objective: L75419

RO Test

76

This Exam Level
Appears on: RO EXAM
Tier 2
Group 2
K/A # 36063A403
Importance 3.00
Rating:

Given the following plant conditions:

- The 'A' Class Battery was initially fully charged, with normal cell readings.
- PKA-M41 was being powered from the associated 'A' Charger.
- The 'A' Charger Trips and is not supplying PKA-M41.
- An event occurs causing safeguards loading on PKA-M41.

Per design, how long is the 'A' Battery expected to be able to carry PKA-M41 within its voltage range?

A. 1 hour

B. 1.5 hours

C. 2 hours.

D. 4 hours

Answer: C

Associated KA:
36063A403 Ability to manually operate and/or monitor in the control room: A4.03 Battery discharge rate
3.0 3.1

Reference Id: Q38047
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are incorrect for design of battery capacity under design load (safeguards).

Reference: PVNGS Operating License (Bases) B 3.8.4, page 3.8.4-2

Objective: L89755

RO Test

77

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 2
K/A #	32006K506	
Importance Rating:	3.50	3.90

Given the following plant conditions:

- A Loss of Coolant Accident (LOCA) has occurred
- RCS pressure is at 600 psia and dropping slowly

The expected safety injection flow indications at this time would be:

A. constant HPSI and LPSI flow.

B. increasing HPSI and LPSI flow.

C. constant HPSI flow with no LPSI flow.

D. increasing HPSI flow with no LPSI flow.

Answer: D

Associated KA:
32006G242 32006G Generic ECCS 2.4.2 EOP Entry Condition

Reference Id: Q38025
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: INPO Bank
Comment:

Distractors A,B and C are incorrect because RCS pressure is above LPSI shutoff head pressure and since RCS is dropping HPSI flow would not be constant but would be increasing as stated in the answer D.

Reference: GFES Fundamentals

Objective: L65100, L65106

RO Test

78

This Exam Level Appears on:	RO EXAM Tier 2 Group 2	SRO EXAM Tier 2 Group 2
K/A #	32011G221	
Importance Rating:	3.70	3.60

Given the following plant conditions:

- Unit 2 is at 200 EFPD.
- The Reactor is at 1% Power in 40OP-9ZZ04, Plant Startup, Mode 2 to Mode 1.
- A boration of 20 ppm has just been completed to position CEAs for power increase.
- Pressurizer Level is at 51% (PLCS in Auto)
- A steam and feed misoperation results in an RCS temperature reduction of 20 degrees.

What is the effect on Pressurizer level and core reactivity.

A. Pressurizer In-Surge, Positive Reactivity Addition.

B. Pressurizer In-Surge, Negative Reactivity Addition.

C. Pressurizer Out-Surge, Positive Reactivity Addition.

D. Pressurizer Out-Surge, Negative Reactivity Addition.

Answer: C

Associated KA:
32011G221 32011G PZR LCS 2.2.1 Ability to perform pre-startup procedures for the facility, including operating those controls associated with plant equipment that could affect reactivity. 3.7 3.6

Reference Id: Q38015
Difficulty: 3.00
Time to complete: 3
Cognitive Level: Comprehension
Question Source: New
Comment:

The distracters A and B are wrong because the Pressurizer will out-surge due to the temperature reduction and subsequent contraction of the primary coolant Distracters B and D are incorrect because the core at 200 EFPD will have a negative moderator temperature coefficient which will cause positive reactivity on a temperature decrease.

Reference: Fundamentals - Reactor Theory, Fluids

Objective L67368

RO Test

79

This Exam Level
Appears on: RO EXAM
Tier 2
Group 2
K/A # 35026G232
Importance 2.50
Rating:

Given the following plant conditions:

- Unit 1 has experienced a Reactor Trip.
- LOCA in Containment.
- SIAS, CIAS, MSIS, and CSAS have actuated.
- A Recirculation Actuation Signal (RAS) actuates and the Control Room Crew completes the required RAS actions.

Which one of the following Rooms/Areas poses the greatest ALARA concern for Operators/ Technicians in the field?

A. Charging Pump Rooms.

B. Letdown Heat Exchanger Room.

C. Containment Spray Pump Rooms.

D. Low Pressure Safety Injection Pump Rooms.

Answer: C

Associated KA:
35026G232 35026G Generic CS 2.3.2 Knowledge of facility ALARA program. 2.5 2.9

Reference Id: Q38132
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because: on RAS, LPSIs auto stop. Charging Pumps are stopped. Letdown is isolated on SIAS/CIAS. CS shifts to Containment Sump Suction...High Rad Conditions.

Reference:40EP-9EO03, Loss of Coolant Accident

Objective: L76684, ELEP014

RO Test

80

This Exam Level
Appears on: RO EXAM
Tier 2
Group 3
K/A # 35027K101
Importance Rating: 3.40

Describe the primary method used at PVNGS to remove volatile Iodine in the Post-LOCA Containment atmosphere?

A. Containment Spray Flow washes the Iodine to the sumps, where Lithium Hydroxide maintains it in solution.

B. Hydrazine is injected into the Containment Spray Flow to chemically strip the Iodine from the atmosphere.

C. Containment Spray Flow washes the Iodine to the sumps, where Trisodium Phosphate (TSP) conditions the water to enhance its iodine removal solubility.

D. Lithium Hydroxide is injected into the Containment Spray Flow to chemically strip the Iodine from the atmosphere.

Answer: C

Associated KA:
35027K101 Knowledge of the physical connections and/or cause-effect relationships between the CIRS and the following systems: K1.01 CSS 3.4 3.7

Reference Id: Q38076
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracters are wrong because there is no chemical injected with spray flow and TSP, not Lithium Hydoxide, are used in the sumps.

References: PVNGS Operating License Bases, B 3.5.6 and B 3.6.6. Also, CE System 80 CESSAR FSAR, Volume 4, Appendix 6B, Iodine Removal System, page 6B-1.

Objective: L93808

RO Test

81

This Exam Level
Appears on: RO EXAM
Tier 2
Group 3
K/A # 38078K101
Importance Rating: 2.80

Regarding the Normal Level Control AOVs in the PVNGS Heater Drain System;

Describe the relationship between Instrument Air and the operation of the AOVs.

Level Controller air inlet pressure is normally _____, with the Controller air outlet pressure _____.

A. 20 psig, 5-15 psig

B. 60 psig, 15-20 psig

C. 100 psig, 5-15 psig

D. 100 psig, 60-80 psig

Answer: A

Associated KA:
38078K101 Knowledge of the physical connections and/or cause-effect relationships between the IAS and the following systems: K1.01 Sensor air 2.8 2.7

Reference Id: Q38126
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracters are wrong because inlet air pressure to controllers is too high for C and D and outlet pressure is too high for B.

Reference: 40OP-9ED02

Objective: L76645

RO Test

82

This Exam Level
Appears on: RO EXAM
Tier 2
Group 3
K/A # 38034K403
Importance 2.60
Rating:

Given the following plant conditions:

- A refueling outage is in progress.
- Fuel is being moved in the Containment.

Which one of the following describes the Bridge-Trolley-Hoist interlock?

A. If the Trolley is moving, the hoist will only be operable in the slow zones.

B. The Bridge-Trolley-Hoist interlock is the only one which can be bypassed.

C. If the Bridge is moving, the operation of the Trolley and Hoist is prevented.

D. The Bridge-Trolley-Hoist interlock is the only one which cannot be bypassed.

Answer: C

Associated KA:
38034K403 Knowledge of design feature(s) and/or interlock(s) which provide for the following: K4.03 Overload protection 2.6 3.3

Reference Id: Q38018
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: INPO Bank
Comment:

Distracters B and D are wrong because the Bridge-trolley-Hoist interlock is not the only one that can or cannot be bypassed; A - hoist operation is not limited in this case.

Reference: 78OP-9FX01, Appendix A

Objective: L76400

RO Test

83

This Exam Level
Appears on: RO EXAM
Tier 2
Group 3
K/A # 35007A301
Importance 2.70
Rating:

Given the following plant conditions:

- Unit 1 is at 100% power.
- Pressurizer safety valve, PSV-200 has seat leakage
- Reactor drain tank level is rising
- Reactor drain tank pressure is 9.8 psig and increasing slowly.

Which one of the following automatic actions will occur assuming no operator actions are taken?

A. The RDT vent to containment, CHN-HV-923, will open resulting in increasing containment pressure.

B. The RDT vent to waste gas header valve, CHN-UV-540, and the RDT outlet containment isolation valve, CHA-UV-560, will close.

C. The RDT vent to waste gas header valve, CHN-UV-540, will open and the RDT outlet containment isolation valve, CHA-UV-560, will close.

D. The RDT vent to waste gas header valve, CHN-UV-540, will open and the RDT rupture disk will rupture resulting in increasing containment pressure.

Answer: B

Associated KA:
35007A301 Ability to monitor automatic operation of the PRTS, including: A3.01 Components which discharge to the PRT 2.7 2.9

Reference Id: Q38017
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: PV NRC 97 Exam
Comment:

Distracters are wrong because the design of the system is to isolate the valved outlets on increasing pressure. The vent to the containment will not open.

References:41AL-1RK3A

Objective: NONE

RO Test

84

This Exam Level Appears on:	RO EXAM Tier 2 Group 3	SRO EXAM Tier 2 Group 3
K/A #	34041A302	
Importance Rating:	3.30	3.40

Given the following plant conditions:

- The Unit is at 7% Power
- The Steam Bypass System is in Automatic
- The Main Turbine Generator is Off-Line
- Regulating Group 5 CEAs are at 124 inches withdrawn
- The CRS directs the PO to Withdraw Regulating Group 5 CEAs to Raise RCS Tc, in support of the upcoming Main Turbine Generator Synchronization evolution
- T-cold is 565 °F.

The Primary Operator withdraws the Regulating Group 5 CEAs and then stops. Under steady state conditions, what is the result of this manipulation?

A. RCS Tc remains constant and Reactor Power remains constant

B. RCS Tc rises and Reactor Power remains constant

C. RCS Tc remains constant and Reactor Power rises.

D. RCS Tc rises and Reactor Power rises

Answer: C

Associated KA:
34041A302 Ability to monitor automatic operation of the SDS, including: A3.02 RCS pressure, RCS temperature, and reactor power 3.3 3.4

Reference Id: Q27610
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

The distracters are incorrect because: A -Reactor power will increase with CEAs being withdrawn, B and D-Tc will not rise with SBCS in Automatic with the Main Turbine Gen off line.

Reference: SBCS System description. Simplified Diagrams and Drawings, Revision 8/18/2000. GFES Reactor Theory

Objective: L10000

RO Test

85

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 3	Group 3
K/A #	34045A401	
Importance Rating:	3.10	2.90

Given the following plant conditions:

- Unit 2 Turbine Generator load control card fails
- The crew takes Standby Control of the Main Turbine.

Describe the process used for future Main Turbine Load changes.

A. Use the Load Set Motor Pushbuttons to adjust the Main Turbine Control Valves

B. Use the Load Selector Pushbuttons to adjust the Main Turbine Control Valves

C. Adjust the Load Limit Potentiometer to directly control Main Turbine Stop Valves

D. Adjust the Standby Load Potentiometer to directly control Main Turbine Control Valves

Answer: D

Associated KA:
34045A401 Ability to manually operate and/or monitor in the control room: A4.01 Turbine valve indicators (throttle, governor, control,stop, intercept),alarms, and annunciators 3.1 2.9

Reference Id: Q27612
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Standby Mode closes a contact downstream of the normal load control subsystem. The standby load potentiometer directly controls the Main Turbine Control Valves. In Standby all the controls stated in disctraters A,C,and D will not function.

Reference: Simplified Diagrams and Drawings, Revision 8/18/2000, page 87.

Objective:L65769

RO Test

86

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 3	Group 3
K/A #	34076A401	
Importance Rating:	2.90	2.90

Given the following plant conditions:

- Unit 1 is at 100% Power.
- No equipment out of service.
- Turbine Cooling Water pump 'A' is in service.
- An Auxiliary Operator incorrectly throttles closed on the 'A' Turbine Cooling Water pump discharge valve.

Which of the following describes the system response? (as observed from the Control Room)

A. The 'B' Turbine Cooling Water Pump will Auto-Start on Low TC Header Pressure.

B. The 'B' Turbine Cooling Water Pump will Auto-Start after the 'A' Turbine Cooling Water Pump Trip.

C. The 'B' Turbine Cooling Water pump will not Auto-Start with the 'A' TC Pump discharge valve closed.

D. The 'B' Turbine Cooling Water Pump will not Auto-Start until the 'A' TC Pump handswitch is taken to stop.

Answer: A

Associated KA:
34076A401 Ability to manually operate and/or monitor in the control room: A4.01 SWS pumps 2.9 2.9

Reference Id: Q27613
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters: B is incorrect because the "A" TC pump will not trip. C and D are incorrect because there is no interlocks between A and B TC pumps.

Reference: Turbine Cooling Water P&ID, and Loss Of Cooling Water AOP.

Objective: 82258

RO Test

87

This Exam Level
Appears on: RO EXAM
Tier 2
Group 3
K/A # 34005G2114
Importance 2.50
Rating:

Which of the following events or evolutions requires briefings of Operations personnel by the Operations Department Leader or Site Manager?

A. Closing Reactor Trip Breakers.

B. Fuel rod sipping operations during Refueling.

C. Preparations for entering RCS Midloop conditions.

D. A RCP motor bearing replacement forcing a Unit Shutdown.

Answer: C

Associated KA:
34005G2114 34005G Generic RHRS 2.1.14 Knowledge of system status criteria which require the notification of plant personnel. 2.5 3.3

Reference Id: Q38168
Difficulty: 3.00
Time to complete: 1
Cognitive Level: Memory
Question Source: New
Comment:

Distracters are wrong because by procedure only the entry of midloop conditions calls for briefing by personnel at that level. Answers B, C, and A do not call for such briefings when those evolutions occur in their procedures.

Reference: 40OP-9ZZ16, Appendix R and Sensitive Issues Manual

Objective: None

RO Test

88

This Exam Level Appears on:	RO EXAM Generic Cat 1	SRO EXAM Generic Cat 1
K/A #	2133	
Importance Rating:	3.40	4.00

Given the following plant conditions:

- Unit 1 is operating at 100% power, stable, with no evolutions or events in progress.

Describe the combination of Parameter Ranges that are within the limits of PVNGS Technical Specifications LCOs for the following parameters.

	Pzr Pressure	RCS Tc	RCS Total Flow

A. 1960-2275 psia, 552-570^{0}F, 156 - 160 E7 lbm/hr

B. 2125-2409 psia, 560-570^{0}F, 156 - 160 E4 lbm/hr

C. 2130-2295 psia, 550-560^{0}F, 156 - 160 E6 lbm/hr

D. 2225-2350 psia, 545-565^{0}F, 156 - 160 E5 lbm/hr

Answer: C

Associated KA:
2133 2.1.33 Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications. 3.4 4

Reference Id: Q38011
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracter A is wrong because of a low Pressure range, a high temperature range (use of old min temp criticality #) and a high flow range.
Distracter B is wrong because of a low and high pressure range (use of SPLA trip # 2409), a high temperature range (post trip #s), and a low flow.
Distracter D is wrong because of a high pressure range, a low and high temperature range (use of min temp crit #), and a low flow.

Reference: PVNGS Technical Specifications, LCO 3.4.1, Amendment 117.

Objective: 55206

RO Test

89

This Exam Level
Appears on: RO EXAM
Generic Cat 1
K/A # 2118
Importance Rating: 2.90

Regarding Control Room Log-Taking at PVNGS:

The Primary Reactor Operator has just completed a 50-gallon dilution to the RCS to control ASI.

Select the Control Room Log Entry that meets the minimum PVNGS Operations Management Expectations for what a log entry should contain.

A. Made-up to RCS from the RMWT, 50 gallons of Reactor MU Water, in Manual.

B. Added makeup water to Charging Pump Suction, 50 Gallons, 41OP-1CH01, CVCS Normal Operations.

C. Diluted 50 gallons from the RMWT to the RCS, for ASI Control, in accordance with 41OP-1CH01, Section 7.

D. Shot Reactor Makeup Water for ASI Control, per Power Operations procedure and CVCS Normal Operations.

Answer: C

Associated KA:
2118 2.1.18 Ability to make accurate, clear and concise logs, records, status boards, and reports.
2.9 3

Reference Id: Q38027
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because entries should be clear, concise and complete, accurately describing the events and reasons.

Reference: 40DP-9OP22, Operations Logkeeping

Objective: L83083

RO Test

90

This Exam Level
Appears on: RO EXAM
Generic Cat 1
K/A # 2124
Importance Rating: 2.80

Given the following plant conditions:

- Unit 1 is at 100% Power.
- All systems in Automatic and functioning properly.
- Auto Motion Inhibit (AMI) Demand on B04 is set at 55% power.
- The Main Turbine Trips.
- Reactor Power Cutback Actuates (Operates correctly).
- No Operator Actions.
- Given a Simplified Control System Drawing.

Which combination of parameters below must coexist to actuate an AMI?

A. ≤ 55% Reactor Power and > 55% Tubine Load Index.

B. < 15% Reactor Power and < 15% Turbine Load Index.

C. ≥ 55% Turbine Load Index and > 15% Reactor Power.

D. < 15% Turbine Load Index and ≤ 55% Reactor Power.

Answer: D

Associated KA:
2124 2.1.24 Ability to obtain and interpret station electrical and mechanical drawings. 2.8 3.1

Reference Id: Q38028
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Analysis
Question Source: New
Comment:

Distracter B and C are wrong because reactor power is not less than 15% and TLI is set for 15% not 55%. Given the conditions, A will not occur before D.

Reference: Simplified Control System Drawings, Revision 8/18/2000, page 39 (rev 4 2/16/99).

Objective: L75462

PROVIDE THE SIMPLIFIED DRAWING TO THE LICENSE CANDIDATES.

RO Test

91

This Exam Level
Appears on: RO EXAM
Generic Cat
2
K/A # 222
Importance 4.00
Rating:

Given the following plant conditions:

- Unit 1 Crew is performing a Power Ascension from 75% to 100% Power.
- The Secondary Operator (SO) is directed to raise load on the Main Turbine, using the Main Turbine Load Limit Potentiometer.
- As the SO raises load using the Load Limit Potentiometer, the Load Limiting Light goes out (extinguishes)
- Additional movement in the raise direction produces no additional load change.

Which one of the following must the SO perform in preparation to continue raising Main Turbine load with the Load Limit Potentiometer?

A. Select Standby Control to Allow the Load Limit Potentiometer to control load.

B. Depress the Decrease Load Pushbutton to Lower the Load Set Motor setpoint below the Load Limit Potentiometer setpoint.

C. Lower the Load Limit Potentiometer to pick up the Load Limit light. Select Speed Matching to Match the Load Limit Potentiometer to the Load Set Motor.

D. Lower the Load Limit Potentiometer to pick up the Load Limit light. Depress the Increase Load Pushbutton to Raise the Load Set Motor setpoint above the Load Limit Potentiometer setpoint.

Answer: D

Associated KA:
222 2.2.2 Ability to manipulate the console controls as required to operate the facility between shutdown and designated power levels. 4 3.5

Reference Id: Q38029
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Speed Matching does not impact the Load Limit Limiting Light at all. Lowering the Load Set Motor will further maintain the Load Set Motor as the Low Voltage input to the Low Voltage Gate that determines which input controls load changes.

Reference: Simplified Drawings and Diagrams, Revision 8/18/2000, page 87.

Objective: L65872

RO Test

92

This Exam Level Appears on:	RO EXAM Generic Cat 2	SRO EXAM Generic Cat 2
K/A #	2212	
Importance Rating:	3.00	3.40

40OP-9ZZ23, Outage GOP and 40ST-9RC01, RCS and Pressurizer Heatup and Cooldown Rates require logging spray valve usage under certain circumstances.

When is it necessary to log main and auxiliary spray valve usage?

A. Main spray each operation, Auxiliary spray each operation

B. Main spray less than 4 RCP's operating, Auxiliary spray each operation

C. Main spray each operation, Auxiliary spray less than 4 RCP's operating

D. Main spray less than 4 RCP's operating, Auxiliary spray less than 4 RCPs operating

Answer: B

Associated KA:

2212	2.2.12	Knowledge of surveillance procedures.	3	3.4

Reference Id: Q38258
Difficulty: 3.00
Time to complete: 3
Cognitive Level: Memory
Question Source: PV Bank Not Modified
Comment:

Distracters are incorrect, logging of cooldown only required for Main Spray when less than 4 RCPs running or whenever Aux Sprays used.

Reference: 40OP-9ZZ23, Outage GOP; 40ST-9RC01, RCS and Pressurizer Heatup and Cooldown Rates

Objective: L11074

RO Test

93

This Exam Level Appears on:	RO EXAM Generic Cat 2	SRO EXAM Generic Cat 2
K/A #	2223	
Importance Rating:	2.60	3.80

Given the following plant conditions:

- Unit 3 is operating at 100% power.
- Action statement 3.5.3.B states, " with one ECCS train inoperable, restore the inoperable train to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours".
- ECCS Train A becomes INOPERABLE at 1200 on 11/10.
- ECCS Train B becomes INOPERABLE at 1100 on 11/12.
- ECCS Train A becomes OPERABLE at 1130 on 11/12.

Which one of the following identifies the time and date for restoration of ECCS Train B before plant shutdown must be commenced?

A. 1200 on 11/12

B. 1200 on 11/13

C. 1100 on 11/15

D. 1130 on 11/15

Answer: B

Associated KA:

2223	2.2.23	Ability to track limiting conditions for operations.	2.6	3.8

Reference Id: Q38183
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Analysis
Question Source: INPO Bank
Comment:

B is correct usage of 72 hour timeline from first train being INOP. A, C, & D are incorrect useage of 72 hours added to the wrong component being declared INOP or being returned to OPERABLE status.

Reference: TS LCO 3.5.3.B

Objective: L58997

RO Test

94

This Exam Level
Appears on: RO EXAM
Generic Cat 3
K/A # 231
Importance Rating: 2.60

Given the following plant conditions:

- Unit 3 is in Mode 5 for a short outage.
- During a containment inspection, the Shift Manager notices some radiation barricade ropes in the area of RCP 2B.
- A radiation sign on the ropes reads "Caution; High Radiation Area, RWP Required For Entry" and indicates a MAXIMUM radiation level of 1.10 Rem/hr inside the ropes.

Which one of the following additional posting requirements and /or controls are required for this area?

A. The area should be posted as a Very High Radiation Area with continuous electronic surveillance used to control access.

B. The area requires a closed circuit TV monitor be installed to give radiation protection personnel continuous monitoring capability.

C. The area should be posted as a Locked High Radiation Area and requires a flashing light in the immediate area as a warning device.

D. The area is required to be fenced off and the containment door(s) shall be kept locked with the keys kept under the administrative control of the Shift Manager.

Answer: C

Associated KA:
231 2.3.1 Knowledge of 10 CFR: 20 and related facility radiation control requirements 2.6 3

Reference Id: Q37992
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: INPO Bank
Comment:

Distracters are wrong because the area meets requirements for LHRA. Actions in A, B and D are not correct for this area according to RP procedure.

Reference: 75RP-0RP01

Objective: Rad Worker Training

RO Test

95

This Exam Level Appears on:	RO EXAM Generic Cat 3	SRO EXAM Generic Cat 3
K/A #	232	
Importance Rating:	2.50	2.90

Regarding the use of Respirators in the RCA at PVNGS:

- A maintenance team (three mechanics) desires to work a valve in a room containing 1.0 DAC Airborne.
- The work normally takes 2 hours for the three workers with no respirators.
- It is estimated that it will take 3 hours in Respirators. (Work requires three mechanics)
- The radiation levels in the room are 25 mrem/hour general area and 75 mrem/hour on contact of the valve to be worked. (Two mechanics need to be in contact with the valve)
- The contamination levels are < 1000 dpm. (Not Contaminated)
- It will take 2 workers 2 hours to install additional temporary shielding around the valve. This reduces contact dose rate to 50 mrem/hour with no affect on General Area dose rates.

Select the ONE option that best supports the PVNGS ALARA program.

A. No Respirators, Minimize Stay Time

B. Mandatory Respirator use for all three workers.

C. Mandatory Respirators, Only two workers work at a time.

D. No Respirators, Install additional shielding before valve work.

Answer: A

Associated KA:

232	2.3.2	Knowledge of facility ALARA program.	2.5	2.9

Reference Id: Q38000
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Analysis
Question Source: New
Comment:

Distracters are wrong because respirators are not required, minimizing time and exposure, and installation of shielding causes more overall exposure than just the work exposure.

Reference: RWP Initial and Retraining Study Guides.

Objective: Radiation Worker Training

RO Test

96

This Exam Level Appears on:	RO EXAM Generic Cat 4	SRO EXAM Generic Cat 4
K/A #	2412	
Importance Rating:	3.40	3.90

When are Technical Specifications required to be addressed during Emergency Operating Procedure implementation?

A. Prior to exiting the Emergency Operating Procedures.

B. Selectively at the discretion of the Unit Department Leader.

C. Within 24 hours following the completion of the post-trip Operability Determination.

D. Immediately by the Shift Technical Advisor in parallel with the Safety Function Status Check.

Answer: A

Associated KA:
2412 2.4.12 Knowledge of general operating crew responsibilities during emergency operations.
3.4 3.9

Reference Id: Q37999
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: PV NRC 99 Exam
Comment:
Objective: L10337

RO Test

97

This Exam Level Appears on:	RO EXAM Generic Cat 4	SRO EXAM Generic Cat 4
K/A #	2420	
Importance Rating:	3.30	4.00

Given the following status of the Safety Functions:

- Reactivity Control (RC) is determined to be challenged.
- Pressure Control (PC) is jeopardized.
- Heat Removal (HR) is jeopardized.
- Inventory Control (IC) is determined to be challenged.
- All other Safety Functions are satisfied.

Which one of the following should the crew address first?

A. Heat Removal (HR)

B. Inventory Control (IC)

C. Pressure Control (PC)

D. Reactivity Control (RC)

Answer: C

Associated KA:

2420	2.4.20	Knowledge of operational implications of EOP warnings, cautions, and notes.	3.3 4

Reference Id: Q37998
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: INPO Bank
Comment:

Distracters are wrong because focus is placed on those Safety Functions which are jeopardized and in the highest priority. Since PC and HR are both jeopardized they should be addressed first, but PC is a higher priority.

Reference: 40DP-9AP16, EOP Users Guide

Objective: L10332

RO Test

98

This Exam Level Appears on:	RO EXAM	SRO EXAM
	Generic Cat 4	Generic Cat 4
K/A #	2421	
Importance Rating:	3.70	4.30

Values of RCS or CET Superheat in excess of 50 [62] degrees during a LOCA _____

A. indicate core uncovery.

B. make RVLMS inoperable.

C. enhances natural circulation.

D. indicate a loss of steam generators as a secondary heat sink.

Answer: A

Associated KA:
2421 2.4.21 Knowledge of the parameters and logic used to assess the status of safety functions including:1 Reactivity control 2. Core cooling and heat removal 3. Reactor coolant system integrity 4. Containment conditions 5. Radioactivity release control. 3.7 4.3

Reference Id: Q38180
Difficulty: 3.00
Time to complete: 3
Cognitive Level: Memory
Question Source: PV NRC 99 Exam
Comment:

Distracters are wrong because: B - CETs don't feed RVLMS; C - this would indicate problems with NC; D- this could not be infered directly with information given.

Reference: 40DP-9AP08, Tech Guide for LOCA, step 36.

Objective: L10460

RO Test

99

This Exam Level
Appears on: RO EXAM
Generic Cat 4
K/A # 2419
Importance Rating: 2.70

Describe the implementation rule for Emergency Operating Procedure steps that are marked with an asterisk (*).

A. The CRS may elect to not perform those steps.

B. They are the only vital CE Mitigation Strategy steps.

C. These are steps which must be performed in sequence.

D. These are steps which may be performed out of sequence.

Answer: D

Associated KA:

2419	2.4.19	Knowledge of EOP layout, symbols, and icons.	2.7	3.7

Reference Id: Q38024
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracters are wrong because: A - the CRS alone cannot make this decision; B - These are continuously applicable steps may be performed in any sequence ; C - Asterisk steps do not have to be performed in sequence.

Reference: 40DP-9AP16, EOP Users Guide.

Objective: L10330

RO Test

100

This Exam Level
Appears on: RO EXAM
Generic Cat 4
K/A # 2427
Importance Rating: 3.00

Describe the Reactor Operator's responsibility regarding his initial response to the report of a Fire at PVNGS, by completing the following statement.

An Area Operator reports a small fire in the Turbine Building, in a trash can, in the Non-Class Switchgear Room. The Reactor Operator receiving the call must contact _____, and direct him/them to _____.

A. Fire Brigade, respond to the Turbine Building.

B. Security (x4444), Contact the Fire Department.

C. the Site Manager, Contact the Fire Department.

D. the Fire Department (X1612), Respond to the Turbine Building.

Answer: B

Associated KA:

2427	2.4.27	Knowledge of fire in the plant procedure.	3	3.5

Reference Id: Q38109
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracters are wrong because the Fire Dept is not contacted directly, the Fire Brigade assembles after the fire is reported, the Site Manager is not procedureally directed.

Reference: 14DP-0FP32 Revision 11, Page 9.

Objective: L11704

RO Test

Cognitive Level Summary

Number of questions linked:	100	Percentage
Memory	36	36
Comprehension	55	55
Analysis	9	9

Question Source Summary

Number of questions linked to source:	100	Percentage
New		
New	74	74
Modified		
INPO Bank Modified	3	
PV Bank Modified	1	
Total Modified	4	4
Bank		
INPO Bank Not Modified	7	
PV Bank Not Modified	9	
PV NRC Exam Question Not Modified	6	
Total BANK	22	22

SRO Test

1

This Exam Level Appears on:	RO EXAM Tier 2 Group 1	SRO EXAM Tier 2 Group 1
K/A #	32013K103	
Importance Rating:	3.80	4.10

Given the following plant conditions:

- The Unit 2 reactor has tripped.
- A feed line break has occurred inside containment.
- Containment pressure is 1.2 psig and rising slowly.
- There is an 86 Lockout on PBB-S04K, Normal Supply Breaker to PBB-SO4
- SIAS/CIAS were manually initiated.
- Train A SIAS load shed panels are re-energized.

Which one of the following components is NOT available due to these conditions?

A. Normal Chiller, WCN-E01C.

B. Condensate Pump, CDN-P01B.

C. CTMT Normal ACU Fan, HCN-A01D.

D. Non Essential Aux Feed Pump, AFN-P01.

Answer: C

Associated KA:
32013K103 Knowledge of the physical connections and/or cause effect relationships between the ESFAS and the following systems: K1.03 CCS 3.8 4.1

Reference Id: Q38148
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: PV Bank Not Modified
Comment:

CTMT Normal ACU Fan, HCN-A01D is not available because it is not reenergized by SIAS reset, its power supply is from PBB-S04.
Distracters A, B, & D are available following SIAS reset.

Reference: 40OP-9PB04, App. A Page 2 of 7

Objective: L74427

SRO Test

2

This Exam Level Appears on:	RO EXAM Tier 1 Group 2	SRO EXAM Tier 1 Group 1
K/A #	42059AK105	
Importance Rating:	2.60	3.60

Given the following plant conditions:

- Unit 3 experiences a Liquid Radwaste (LRS) Tank rupture, releasing the entire contents to the environment.

How does PVNGS FSAR limit the potential Off-Site Dose (at Site Boundary) from such a release?

A. All Liquid Radwaste Tanks are kept under a vacuum.

B. There must be at least 500 feet between each LRS Tank and Boundary.

C. Outdoor LRS Tanks are surrounded by a dike capable of preventing runoff.

D. Outdoor Liquid Radwaste Tanks are located in compartments to contain any leakage.

Answer: C

Associated KA:
42059AK105 42059AK1 Knowledge of the operational implications of the following concepts as they apply to Accidental Liquid Radwaste Release: AK1.05 The calculation of offsite doses due to a release from the power plant 2.6 3.6

Reference Id: Q38052
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

The FSAR list LRS design criteria. The LRS tanks are stated as not being pressurized however they are not under a vacuum. The Indoor LRS Tanks are contained by compartments not the Outdoor Tanks.

Reference: FSAR, Section 11.2

Objective L11726

SRO Test

3

This Exam Level Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 1	Group 1
K/A #	42040AK105	
Importance Rating:	4.10	4.40

Given the following plant conditions:

- Unit 1 Reactor Power is at 75% and is being raised per 40OP-9ZZ05, Power Operations.
- The CRS is directing a power ascension following a mid-cycle outage.
- #1 SG MSSV SGE-PSV-575 fails partially open.

Which one of the following describes the direct affect on reactor power and why? Reactor Power will...

A. decrease due to a RCS temperature increase.

B. increase due to a RCS temperature decrease.

C. increase due to the Turbine control valves opening due to lower SG pressure.

D. decrease due to the increased heat transfer efficiency across the SG tubes due to lower SG pressure.

Answer: B

Associated KA:
42040AK105 42040AK1 Knowledge of the operational implications of the following concepts as they apply to Steam Line Rupture: AK1.05 Reactivity effects of cooldown 4.1 4.4

Reference Id: Q27586
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Analysis
Question Source: New
Comment:

Distracter A is wrong because RCS cools down which adds positive reactivity from MTC during mid-cycle operations, C and D are wrong because lower SG pressure is not the cause of increased power.

Reference: GFES and Objective

Objective: L59498

SRO Test

4

This Exam Level Appears on:	RO EXAM Tier 1 Group 2	SRO EXAM Tier 1 Group 1
K/A #	42001AK201	
Importance Rating:	2.90	3.20

Given the following plant conditions:

- A Unit 3 Crew is performing a mid-cycle startup from an outage
- Reactor Power is 2%
- CEDMCS is in 'Manual Sequential'
- Group 4 CEAs are 108" with normal overlap
- "Continuous Gripper High Voltage" alarm was received
- An AO has just placed the affected Group 4 CEA Subgroup 22 on the hold bus
- Continuous outward CEA motion is observed on CEDMCS Groups 4 and 5
- The crew places CEDMCS in 'Standby' which stopped CEA motion

Which one of the following describes the CEAC and PMS CEA position indication response for the CEAs in Subgroup 22 during the outward motion demand?

	CEAC	PMS
A.	Stayed at 108"	Stayed at 108"
B.	Moved out	Stayed at 108"
C.	Stayed at 108"	Moved out
D.	Moved out	Moved out

Answer: C

Associated KA:
42001AK201 42001AK2 Knowledge of the interrelations between the Continuous Rod Withdrawal and the following: AK2.01 Rod bank step counters 2.9 3.2

Reference Id: Q38145
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because CEA motion in subgroup 22 is not possible while on the hold bus. Subgroup 22 CEAC indication (RSPT) will be constant and the PMS indication (Pulse Counter) will display outward movement.

Reference: 40OP-9SF01, pg. 18 of 37.

Objective: L80283, L80284

SRO Test

5

This Exam Level Appears on:	RO EXAM Tier 1 Group 1	SRO EXAM Tier 1 Group 1
K/A #	44A11AK21	
Importance Rating:	3.20	3.40

Given the following plant conditions:

- RRS is selected to LOOP 1 Tavg.
- The Tcold instrument which supplies this indication fails LOW.
- Before the Operating Crew can address this failure, a Reactor Trip occurs.

Which of the following identifies the response of the SBCS to this transient?

A. All eight valves quick open.

B. Quick open is blocked on all eight valves.

C. Only the group X valves (1001 ,1003, 1004 and 1006) quick open.

D. Only the group Y valves (1002 ,1005, 1007 and 1008) quick open.

Answer: B

Associated KA:
44A11AK21 Knowledge of the interrelations between the (RCS Overcooling) and the following: (CFR: 41.7 / 45.7) AK2.1 Components, and functions of control and safety systems, including instrumentation, signals, interlocks, failure modes, and automatic and manual features. 3.2 3.4

Reference Id: Q38170
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Analysis
Question Source: PV Bank Not Modified
Comment:

Distracter A, C and D are wrong because only Pressurizer pressure and TLI input the Quick Open circuit.

Reference SBCS Simplified Diagram pgs. 37 and 38

Objective L65649

SRO Test

6

This Exam Level Appears on:	RO EXAM Tier 1 Group 1	SRO EXAM Tier 1 Group 1
K/A #	42068AK207	
Importance Rating:	3.30	3.40

Given the following plant conditions for Unit 2:

- The CRS has directed a control room evacuation due to a fire
- The CRS is implementing 40AO-9ZZ19, Control Room Fire
- Required procedural actions were performed prior to evacuating the control room
- No plant system complications have occurred due to the fire
- The crew has just arrived at the remote shutdown panel

Which one of the following describes the expected response of the Diesel Generators to this event at this time?

	'A' DG	'B' DG
A.	STBY	STBY
B.	STBY	Running
C.	Running	STBY
D.	Running	Running

Answer: A

Associated KA:
42068AK207 Knowledge of the interrelations between the Control Room Evacuation and the following: AK2.07 ED/G 3.3 3.4

Reference Id: Q27593
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because offsite power has not been lost and the procedure has the crew stop the DG's if they are running.

Reference: 40AO-9ZZ19

Objective: L57142

SRO Test

7

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 1	Group 1
K/A #	42069AK203	
Importance Rating:	2.80	2.90

Which one of the following Containment Penetrations has an interlock between the inside and outside valve/door to prevent having both open at the same time?

A. Hydrogen Purge

B. Fuel Transfer Canal

C. Demineralized Water

D. 100' Containment Personal Air Lock

Answer: D

Associated KA:
42069AK203 Knowledge of the interrelations between the Loss of Containment Integrity and the following:
AK2.03 Personnel access hatch and emergency access hatch 2.8 2.9

Reference Id: Q27594
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: Modified INPO Bank
Comment:

Distracters are wrong because these penetrations are not interlocked to prevent having both sides open at the same time.

Reference: Technical Specification 3.6.2

Objective: L89786

SRO Test

8

This Exam Level Appears on:	RO EXAM Tier 1 Group 2	SRO EXAM Tier 1 Group 1
K/A #	41011EK301	
Importance Rating:	3.40	3.50

Following a Reactor Trip, the crew observes the following:

- Containment Pressure = 9 psig and rising.
- Pressurizer Pressure = 1300 psia and dropping.
- Steam Generator Pressures = 1090 psia and stable.
- RWT Level 17% and dropping.
- SG WR Level = 50% and rising in both SG's.
- SIAS, CIAS, MSIS, CSAS actuations.

Describe the reason for a Main Steam Isolation Signal (MSIS)?

A. Containment Pressure > 3 psig

B. Pressurizer Pressure < 1837 psia

C. Steam Generator WR Level > 45%

D. Steam Generator Pressure < 1100 psia

Answer: A

Associated KA:
41011EK301 Knowledge of the reasons for the following responses as the apply to the Large Break LOCA:
EK3.01 Verifying main steam isolation valve position 3.4 3.5

Reference Id: Q37989
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracters C is incorrect because MSIS signal come off NR instrument. Distracters B is not an input to the MSIS signal.
Distracter D is wrong because it is not at the correct setpoint.

Reference: Simplified Diagrams and Drawings, Revision 8/18/2000, pages 1 and 2.
40EP-9EO10, Appendix for SIAS, CIAS, CSAS, & MSIS.

Objective: L77170

SRO Test

9

This Exam Level Appears on:	RO EXAM Tier 1 Group 1	SRO EXAM Tier 1 Group 1
K/A #	42024AK301	
Importance Rating:	4.10	4.40

Which one of the following requires initiation of emergency boration?

A. Keff less than .95 while in Mode 6.

B. A twelve finger CEA stuck at 120" following a reactor trip from Mode 1.

C. Reactor critical with Group 3 at 51" while performing a reactor startup following a refueling outage.

D. Reactor critical with Group 4 at 15" while performing a reactor startup following a mid-cycle outage.

Answer: C

Associated KA:
42024AK301 Knowledge of the reasons for the following responses as they apply to the Emergency Boration:
AK3.01 When emergency boration is required 4.1 4.4

Reference Id: Q27583
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: Modified INPO Bank
Comment:

Distracter A is wrong because mode 6 is a boron concentration not a keff number, B would require two CEAs stuck, D requires manual insertion of reg groups if below -500 pcm position

Reference: 40OP-9ZZ02

Objective: L11017

SRO Test

10

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 1	Group 1
K/A #	42051AK301	
Importance Rating:	2.80	3.10

Given the following:

- Condenser Vacuum temporarily degraded due to a Vacuum leak that was detected and repaired.
- Condenser Interlock alarm (SBCS COND INTLK) is lit Amber.
- Vacuum has returned to normal in all condenser shells.

Concerning SBCS status, choose the correct statement?

A. No SBCVs will currently function until (SGN-HS-1010) EMEG OFF/RESET switch is cycled.

B. No SBCVs will currently function until the SBCS Master controller is placed in Local/Auto.

C. All SBCVs will function upon cycling the (SGN-HS-1010) EMERG OFF/ RESET switch.

D. All SBCVs will currently function with the individual valve controllers in MANUAL with a Manual Permissive.

Answer: C

Associated KA:
42051AK301

42051AK3 Knowledge of the reasons for the following responses as they apply to the Loss of Condenser Vacuum: AK3.01 Loss of steam dump capability upon loss of condenser vacuum
2.8 3.1

Reference Id: Q38182
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

SBCVs 1007 and 8 currently function and all the others will function after the EMERG OFF/RESET switch is cycled. The interlock takes away the control signal to SBCVs 1001 - 6 for all modes of controller position until the EMERG OFF/RESET switch is cycled.

Reference: 40AO-9ZZ07 Loss of Condenser Vacuum, Step 14.

Objective: L56169

SRO Test

11

This Exam Level Appears on: SRO EXAM Tier 1 Group 1
K/A # 42076AK305
Importance Rating: 3.60

Which one of the following is the basis for reducing RCS Tcold to < 500 degrees F if RCS activity limits are exceeded?

A. Minimize the fuel damage that occurred.

B. Reduce Iodine spiking phenomenon that occurs at Normal Operating Temperatures.

C. Lower the saturation pressure of the reactor coolant below the lift setpoint of the main steam safety valves.

D. Increases accuracy of chemistry samples allowing a more accurate determination of fuel damage.

Answer: C

Associated KA:
42076AK305 Knowledge of the reasons for the following responses as they apply to the High Reactor Coolant Activity : AK3.05 Corrective actions as a result of high fission-product radioactivity level in the RCS 2.9 3.6

Reference Id: Q38174
Difficulty: 4.00
Time to complete: 3
Cognitive Level: Memory
Question Source: PV NRC 99 Exam
Comment:

SRO Test

12

This Exam Level Appears on:	RO EXAM Tier 1 Group 1	SRO EXAM Tier 1 Group 1
K/A #	42005AA103	
Importance Rating:	3.40	3.40

Given the following plant conditions:

- Unit 3 is performing a Reactor Startup following Refueling.
- The RO begins withdrawing Shutdown Group 'A', per 40OP-9ZZ02, Initial Reactor Startup Following Refuelings.
- Shutdown Group 'A', CEA #80 remains fully inserted.
- The RO stops Shutdown Group 'A' outward motion.
- All other Shutdown Group 'A' CEAs indicate 4.5" withdrawn.

Describe the position indication of CEA #80 by Lower Electrical Limit (LEL) and Rod Bottom lights (i.e. Dropped rod contact, DRC). (As seen by the RO in the Control Room)

A. LEL Illuminated, DRC Illuminated

B. LEL Illuminated, DRC Extinguished

C. LEL Extinguished, DRC Illuminated

D. LEL Extinguished, DRC Extinguished

Answer: A

Associated KA:
42005AA103 Ability to operate and / or monitor the following as they apply to the Inoperable / Stuck Control Rod: AA1.03 Metroscope 3.4 3.4

Reference Id: Q27581
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters all have at least one light off

Reference: STM Volume 48, pg 9,10, 30-34

Objective: L78788

SRO Test

13

This Exam Level Appears on:	RO EXAM Tier 1 Group 1	SRO EXAM Tier 1 Group 1
K/A #	42026AA101	
Importance Rating:	3.10	3.10

Given the following plant conditions:

- Plant Cooling Water to Condenser Valve (CWN-HCV-23) is mispositioned to open.
- Alarm Window (7A05A) PW SYS TRBL is in alarm.

Which one of the following describes the expected response of the Turbine Cooling Water system temperature on the inlet and outlet side of the heat exchanger?

	Heat Exchanger Inlet	Heat Exchanger Outlet
A.	Decrease	Decrease
B.	Decrease	Increase
C.	Increase	Decrease
D.	Increase	Increase

Answer: D

Associated KA:
42026AA101 Ability to operate and / or monitor the following as they apply to the Loss of Component Cooling Water: AA1.01 CCW/nuclear service water temperature indications 3.1 3.1

Reference Id: Q27591
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because they include Tc temperature decreasing which is not correct for a loss of heat sink due to PW flow being diverted to Circ Water system via CWN-HCV-23. The Circ Water system is at a lower pressure than PW.

Reference: GFES

Objective: NONE

SRO Test

14

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 1	Group 1
K/A #	42067AA109	
Importance Rating:	3.00	3.30

Given the following PVNGS Fire Computer Alarm:

SEQ	IDENTITY	DESCRIPTION	TYPE	REASON
2226	337DLP01	QKNE06D Z37D AUX 77' NE	FIRE	LOP

Using the attached Pre-Fire Strategies sheets identify which one of the following best describes the APPROXIMATE location of the fire panel and the local DETECTION ZONE of the alarm?

A. 88' Aux Building Zone 37

B. 77' Aux Building Zone 37

C. 70' Aux Building Zone 38

D. 88' Aux Building Zone 38

Answer: C

Associated KA:
42067AA109 Ability to operate and / or monitor the following as they apply to the Plant Fire on Site: AA1.09 Plant fire zone panel (including detector location) 3 3.3

Reference Id: Q38118
Difficulty: 4.00
Time to complete: 4
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters A & B are incorrect because they are not the correct detection zone. Distracter D is incorrect because it is the incorrect location.

Reference: Pre-Fire Strategy

Objective: L75394

SRO Test

15

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 1	Group 1
K/A #	41074EA124	
Importance Rating:	3.60	3.80

Given the following plant conditions:

- Unit 2 tripped from 100% due to a plant transient
- Main Steam Common Header Pressure, SGN-PT-1024 failed low on the trip
- Tcold is 572 degrees
- RCPs are running

Which one of the following actions by itself would allow the operator to control SBCS valves?

A. Select MANUAL on Master Controller SGN-PIC-1010.

B. Lower pressure setpoint on Master Controller SGN-PIC-1010 to 950 psia.

C. Select LOCAL AUTO on Master Controller SGN-PIC-1010.

D. Place Emergency Off/Reset Handswitch, SGN-HS-1010, to RESET.

Answer: A

Associated KA:
41074EA124 Ability to operate and monitor the following as they apply to a Inadequate Core Cooling: EA1.24 Turbine bypass valve hand/automatic controls, indicators, and setpoints 3.6 3.8

Reference Id: Q27595
Difficulty: 4.00
Time to complete: 3
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because they will not overcome the effects of the loss of steam pressure input

Reference: simplified control system drawings, page 38

Objective: L65649

SRO Test

16

This Exam Level Appears on:	RO EXAM Tier 1 Group 2	SRO EXAM Tier 1 Group 1
K/A #	42003AA201	
Importance Rating:	3.70	3.90

Given the following plant conditions:

- Unit 1 is at 100% power
- PNC-D27 was lost due to a ground fault
- The CRS is implementing 40AO-9ZZ13, Loss of Class Instrument or Control Power

Which one of the following would accurately describe CEA 60, CPC 'A' target rod position, if it dropped or slipped partially into the core?

A. CEAC CRT

B. PMS Pulse Counter

C. Dropped Rod Contact

D. LEL, Lower Electrical Limit light

Answer: A

Associated KA:
42003AA201 Ability to determine and interpret the following as they apply to the Dropped Control Rod: AA2.01 Rod position indication to actual rod position 3.7 3.9

Reference Id: Q27598
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because the CEDMCS cabinet is deenergized causing false LEL and dropped rod contact lights, PMS (B) is wrong because false dropped rod contact zeros the pulse counter

Objective: L110888

Reference: 40AO-9ZZ13

SRO Test

17

This Exam Level Appears on: SRO EXAM Tier 1 Group 1
K/A # 41011EA201
Importance Rating: 4.70

Given the following plant conditions:

- The Unit 3 Reactor is manually tripped on rapidly lowering Pressurizer Level and Pressure.
- All four Reactor Coolant Pumps (RCPs) are stopped on inadequate subcooling margin.
- Steam Generators (SGs) are at 50% WR and 1000 psia
- SG Feed and Steaming is available
- RVLMS indicates Voiding halfway into the Outlet Plenum
- Abnormal Radiation Levels in Containment

Based on this information, describe the Emergency Procedure and Core Heat Removal mechanism appropriate for this event.

A. SGTR, Two Phase Natural Circulation

B. LOCA, Single Phase Natural Circulation

C. SGTR, Single Phase Natural Circulation

D. LOCA, Two Phase Natural Circulation

Answer: D

Associated KA:
41011EA201 Ability to determine or interpret the following as they apply to a Large Break LOCA: EA2.01 (10CFR55.43) Actions to be taken, based on RCS temperature and pressure - saturated and superheated 4.2 4.7

Reference Id: Q37991
Difficulty: 4.00
Time to complete: 4
10CFR Category: CFR5543 5 (5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.
Cognitive Level: Comprehension
Question Source: New
Comment:

SGTR is incorrect due to the lack of any Secondary Plant Abnormal Radiation Levels and the lack of adverse conditions in the SGs. Single Phase Natural Circulation is incorrect because we have Voiding in the outlet plenum, thus the Hot Leg.

Reference: Loss of Coolant Technical Guideline, 40DP-9AP08, Revision 9, pages 31 and 32.

Objective: L54754(Perform) and L10459 (More Detailed)

SRO Test

18

This Exam Level Appears on: SRO EXAM Tier 1 Group 1

K/A # 42015AA209

Importance Rating: 3.50

Given the following plant conditions:

- Unit 1 is at 100% power.
- All systems aligned for normal, automatic operation.
- Reactor Coolant Pump (RCP) 1A experiences a High Stator Temperature, above the Trip Setpoint.
- The condition is verified using B06 Recorder information.

Describe the procedure sequence of actions required.

A. Manually Trip the Reactor, Trip the 1A RCP.

B. Trip the 1A RCP, then Verify the Automatic Reactor Trip.

C. Manually Trip the Reactor, Trip all four RCPs, Isolate all Controlled Bleedoff.

D. Trip the 1A and 2A RCPs, verify the Automatic Reactor Trip, Isolate their Controlled Bleedoff.

Answer: A

Associated KA:
42015AA209 AA2.09 (10CFR55.43) When to secure RCPs on high stator temp.

Reference Id: Q38061
Difficulty: 3.00
Time to complete: 3
10CFR Category: CFR5543 5 (5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.
Cognitive Level: Comprehension
Question Source: New
Comment:

This question tests the SRO's ability to select and apply the correct PVNGS procedure for an Abnormal event.

Alarm Response procedures direct operators to Abnormal Operations Procedure, NOT Immediate Reactor or RCP Trip. AOP directs Operators to Trip the Reactor THEN the affected RCP.

Reference: 40A0-9ZZ04, Section 3.0, page 6, step 3.

LOIT Objective: 12076 (Knowledge) and 12075 (Actions)

SRO Test

19

This Exam Level Appears on:	RO EXAM Tier 1 Group 1	SRO EXAM Tier 1 Group 1
K/A #	44A13AA22	
Importance Rating:	2.90	3.80

Given the following sequence of events:

- Unit 2 experienced a Loss of Offsite Power (LOOP).
- #1 SG experienced a SGTR on the unit trip.
- The CRS implemented 40EP-9EO04, SGTR and #1 SG has been isolated.
- The current Thot is 520 degrees.
- The CRS has directed the SO to continue the cooldown at 70^0F /hour.

After 15 minutes, the SO observes that the #1 SG pressure and temperature are 'hanging up' (i.e. SG #1 temperature and pressure are not decreasing with RCS temp.), while the #2 SG is cooling down with the RCS.

What action should mitigate this heat removal anomaly?

A. Open ADVs to Lower #1 SG Pressure

B. Close ADVs to Raise #1 SG Pressure

C. Slow the Cooldown Rate to < 30^0F /hour

D. Raise the Cooldown Rate to > 70^0F /hour

Answer: C

Associated KA:
44A13AA22 Ability to determine and interpret the following as they apply to the (Natural Circulation Operations) AA2.2 Adherence to appropriate procedures and operation within the limitations in the facility's license and amendments. 2.9 3.8

Reference Id: Q27582
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracter A would cause an unwanted release, D is not directed as a cooldown limit, B would stop the cooldown.

Reference: 40EP-9EO04

Objective: L11239

SRO Test

20

This Exam Level Appears on:	RO EXAM Tier 1 Group 2	SRO EXAM Tier 1 Group 1
K/A #	41029EA201	
Importance Rating:	4.40	4.70

Given the following plant conditions:

- "A" , "C" and "D" RTSG Breakers are open
- Multiple CEAs are not fully inserted
- Log Power (all channels) indicate 4% and stable
- SUR (all channels) = 0
- One charging pump at 44 gpm with suction via CHE-UV-536
- Time since trip = 3 minutes
- The CRS is implementing 40EP-9EO09, Functional Recovery Procedure

The Reactor...

A. is shutdown and reactivity safety function Acceptance Criteria is met.

B. is shutdown but reactivity safety function Acceptance Criteria is not met

C. is not shutdown but reactivity safety function Acceptance Criteria is met.

D. is not shutdown and reactivity safety function Acceptance Criteria is not met.

Answer: D

Associated KA:
41029EA201 Ability to determine or interpret the following as they apply to a ATWS: EA2.01 Reactor nuclear instrumentation 4.4 4.7

Reference Id: Q38114
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters A & B are incorrect because the Reactor is not shutdown.
Distracter C is not correct because the Reactivity Safety Function is not met.

Reference: 40EP-9EO01

Objective: L1043

SRO Test

21

This Exam Level Appears on:	RO EXAM Tier 1 Group 1	SRO EXAM Tier 1 Group 1
K/A #	42057AA203	
Importance Rating:	3.70	3.90

Given the following plant conditions:

- Unit 2 is at 100% power and stable
- All Systems are aligned for normal operation
- PNA-D25, 120VAC Instrument Power, deenergizes (Fault on PNA)

Which one of the following describes the expected impact on the RPS System.

A. All RTSG Breakers Open

B. Only RTSG Breaker C Opens

C. Only RTSG Breaker A Opens

D. Only RTSG Breakers A and C Open

Answer: D

Associated KA:
42057AA203 Ability to determine and interpret the following as they apply to the Loss of Vital AC Instrument Bus:
AA2 03 RPS panel alarm annunciators and trip indicators 3.7 3.9

Reference Id: Q38054
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are incorrect due to only A and C RSG Breakers opening on loss of PNA-D25.

Reference: 40AO-9ZZ13, Appendix A. Simplified Drawings and Diagrams, Revision 8/18/2000, page 28.

Objective: L11089 (Knowledge) and L55740 (Practical)

SRO Test

22

This Exam Level Appears on:	RO EXAM Tier 1 Group 1	SRO EXAM Tier 1 Group 1
K/A #	42062AA204	
Importance Rating:	2.50	2.90

Given the following plant conditions?

- Unit 1 is at 100% power
- Pressurizer Press is 1850 psia
- 'A' Charging Pump Trips due to a ground fault
- Regenerative heat exchanger outlet temperature is 450 degrees
- NC Flow to the Letdown Heat Exchanger is 42 gpm

Which one of the following valves will go closed?

A. Letdown control valves LV-11OP & Q.

B. Upstream containment isolation valve UV-515.

C. Downstream containment isolation valve UV-516.

D. Outside containment letdown isolation valve UV-523.

Answer: B

Associated KA:
42062AA204 Ability to determine and interpret the following as they apply to the Loss of Nuclear Service Water: AA2.04 The normal values and upper limits for the temperatures of the components cooled by SWS 2.5 2.9

Reference Id: Q38187
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: PV Bank Not Modified
Comment:

CH-UV-515 Closes on: • SIAS • Regen HX Out Temp HI - 450 °F (CHN-TSHH-221)(This can be caused by a letdown flow being greater than charging flow, such as when a charging pump trips)
CH-UV-516 Closes on: • SIAS • CIAS
CH-UV-523 Closes on: • CIAS • Low NC Flow to the Letdown Heat Exchanger - 39 gpm (NCN-FSL-613)
CHE-LV-110P/Q Fails closed on: • Loss of Air • Loss of Power to the PLCS (powered from NNN-D11)

Reference:40AO-9ZZ05, Appendix E

Objective: L65886

SRO Test

23

This Exam Level Appears on: SRO EXAM Tier 1 Group 1
K/A # 42068AA211
Importance Rating: 4.40

Given the following plant conditions:

- Unit 2 Control Room has been evacuated due to Fire
- The required Control Room actions have been completed
- A Loss of Offsite Power occurred just as the Crew exited the Control Room

As the CRS at the Remote Shutdown Panel, determine which of the following identifies Natural Circulation as the method of heat transfer in the reactor coolant system?

A. T-hot is 609°F and dropping
T-cold is 550°F and stable
Pressurizer Pressure is 1210 psia

B. T-hot is 609°F and stable
T-cold is 569°F and rising
Pressurizer Pressure is 1210 psia

C. T-hot is 609°F and dropping
T-cold is 569°F and stable
Pressurizer Pressure is 1210 psia

D. T-hot is 609°F and rising
T-cold is 569°F and stable
Pressurizer Pressure is 1400 psia

Answer: C

Associated KA:
42068AA211 Ability to determine and interpret the following as they apply to the Control Room Evacuation:
AA2.11 (10CFR55.43) Indications of natural circulation 4.3 4.4

Reference Id: Q38003
Difficulty: 3.00
Time to complete: 3
10CFR Category: CFR5543 5 (5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.
Cognitive Level: Comprehension
Question Source: New
Comment:

This question requires App.J to be attached as a reference.

A is incorrect because delta T is >57 °F.
B is incorrect because T-cold is rising.
D is incorrect because RCS is not subcooled per P/T curve.

Reference: 40AO-9ZZ19, Control Room Fire.

Objective: L11135 (Knowledge of Procedure Actions)

SRO Test

24

This Exam Level Appears on:		SRO EXAM Tier 1 Group 1
K/A #	42076AA202	
Importance Rating:		3.40

Given the following conditions:

- You are the relieving CRS.
- The shift-crew you are relieving commenced a shutdown 2 hours ago, from 100% Power due to the following RCS Activity sample values:
  - Gross Specific Activity: 115/E uci/gm
  - Dose Equivalent I-131: 70 uci/gm (SR 3.4.17.2 Complete)
- As you relieve the Crew, Reactor Power is 70%

Assuming the RCS Sample values remain the same, using provided Tech Spec sections, determine which Condition(s) and required Action(s) (Per LCO 3.4.17) still need to be performed.

A. B (B.1), C (C.1)

B. A (A.1 and A.2), C (C.2)

C. A (A.2), B (B.1), C (C.1)

D. B (B.1), C (C.1 and C.2)

Answer: B

Associated KA:
42076AA202 Ability to determine and interpret the following as they apply to the High Reactor Coolant Activity: AA2.02 (10CFR55.43) Corrective actions required for high fission product activity in RCS 2.8 3.4

Reference Id:	Q38157
Difficulty:	4.00
Time to complete:	3
10CFR Category:	CFR5543 1 (1) Conditions and limitations in the facility license.
Cognitive Level:	Analysis
Question Source:	New

Comment:

MUST PROVIDE CANDIDATE WITH LCO 3.4.17(entire)

Distracters A, C and D are wrong because I-131 is within limits of figure and within action time, so condition B does not apply.

Reference: PVNGS License, LCO 3.4.17

Objective: L67566

SRO Test

25

This Exam Level Appears on:	RO EXAM Tier 1 Group 1	SRO EXAM Tier 1 Group 1
K/A #	41055G212	
Importance Rating:	3.00	4.00

Given the following plant conditions:

- Unit 3 is operating at 100% power.
- A Loss of Offsite Power occurs.
- Both Diesel Generators have failed.
- The CRS is implementing 40EP-9EO08, Blackout.
- The crew is implementing Standard Appendix 80, Align GTG to PBA-S03 (BO).
- An AO reports that NAN-S03AB breaker cannot be closed.
- The Shift Manager is currently acting as the Emergency Coordinator (EC).

Can the Shift Manager perform a visual inspection of NAN-S03AB? Why or why not?

A. Yes, provided the CRS remains in the Control Room.

B. No, the Shift Manager shall remain in the Control Room.

C. No, the Shift Manager shall remain in the Control Room or OSC.

D. Yes, provided the Site Manager remains in the Control Room or STSC.

Answer: B

Associated KA:

41055G212	41055G 2.1.2 plant operation.	Generic Blackout : Knowledge of operator responsibilities during all modes of	3.0 4.0

Reference Id: Q27589
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracter A, C, & D are incorrect because the CRS can not leave the CR during Mode 1 operations.

Reference: 40DP-9OP02

Objective: none

SRO Test

26

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 2	Group 2
K/A #	42033AK302	
Importance Rating:	3.60	3.90

Given the following plant conditions:

- Reactor Trip.
- Functional Recovery Procedure has been entered by the CRS.
- CEA insertion can not be verified.
- Log power channel A is reading $6x10^{-6}$ and stable.
- Log power channel B is reading $6x10^{-6}$ and stable.
- Log power channel C is off scale low.
- Log power channel D is reading $4x10^{-3}$ and dropping.

The reactivity control safety function status check is:

A. not met due to inadequate channel indication.

B. not met due to channel A and B power levels remaining stable.

C. met because channel D level is dropping indicating the reactor has reached an adequate Shutdown Margin.

D. met because A and B channel indication meets the criteria and corresponds to the maximum expected sub-critical multiplication level.

Answer: D

Associated KA:
42033AK302 Knowledge of the reasons for the following responses as they apply to the Loss of Intermediate Range Nuclear Instrumentation: AK3.02 Guidance contained in EOP for loss of intermediate-range instrumentation 3.6 3.9

Reference Id: Q38087
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Analysis
Question Source: New
Comment:

Distracters A & B are incorrect because the reactivity safety function is met.
Distracter C is incorrect because channel D at 10^{-3} by itself is not enough to verify reactivity control or SDM (Shutdown Margin)

Reference: Functional Recovery Tech Guideline, 40DP-9AP14, pg 38.

Objective: 56296

SRO Test

27

This Exam Level Appears on: SRO EXAM Tier 1 Group 2

K/A # 42037AK305

Importance Rating: 4.00

Given the following plant conditions:

- A Steam Generator Tube Leak has occurred.
- The crew tripped the plant in accordance with 40AO-9ZZ02, "Excessive RCS Leakrate".
- The CRS is implementing 40EP-9EO04, "Steam Generator Tube Rupture".
- The CRS directs the Secondary Operator to maintain Pressurizer Pressure less than 1135 psia and approximately equal to the pressure of the Steam Generator with the tube rupture and within the P/T Limits.

The reason Pressurizer Pressure is maintained below 1135 psia is to ensure...

A. dilution of the RCS is minimized.

B. a source of borated makeup water.

C. no SG code safeties lift in the event the SG goes solid.

D. adequate SI flow is available in the event the SG tube leak becomes a rupture.

Answer: C

Associated KA:
42037AK305 Knowledge of the reasons for the following responses as they apply to the Steam Generator Tube Leak: AK3.05 Actions contained in procedures for radiation monitoring, RCS water inventory balance, S/G tube failure, and plant shutdown 3.7 4

Reference Id: Q38172
Difficulty: 3.00
Time to complete: 3
Cognitive Level: Comprehension
Question Source: PV Bank Not Modified
Comment:

Distracters are wrong because: D - SI is available regardless of pressure, A - dilution would be minimized if pressure were above, B - borated makeup water is not needed to SG.

Reference: 40DP-9AP09, step 11, page 16.

Objective: L11225

SRO Test

28

This Exam Level Appears on: SRO EXAM Tier 1 Group 2
K/A # 42058AK302
Importance Rating: 4.20

Given the following plant conditions:

- CRS is in the Functional Recovery Procedure (FRP) and Assessing Safety Functions
- PBB-S04 Deenergized
- PBA-S03 Energized from DG 'A'
- PKA-M41 Energized from Battery 'A' only
- PKC-M43 Energized from Battery 'C' only
- PNA-D25 is Energized
- PKB-M42 is Deenergized.
- PKD-M44 is Energized from Battery 'D' only
- PNB-D26 is Deenergized

Assess the Maintenance of Vital Auxiliaries (MVA) Safety Function.

A. MVAC is Met, MVDC is Challenged.

B. MVAC is Challenged, MVDC is Met.

C. MVAC is Challenged, MVDC is Challenged.

D. MVAC is Jeopardized, MVDC is Jeopardized.

Answer: A

Associated KA:
42058AK302 Knowledge of the reasons for the following responses as they apply to the Loss of DC Power:
AK3.02 Actions contained in EOP for loss of dc power 4 4.2

Reference Id: Q38023
Difficulty: 4.00
Time to complete: 4
Cognitive Level: Analysis
Question Source: New
Comment:

Distracters are wrong because MVAC is met with one train of vital AC energized (PBA-S03); MVDC is only challenged because the A train equipment is energized (1 full train available), satisfying the safety function even though B equip is de-energized.

Reference: 40EP-9EO09 FRP, Revision 10, pages 11-13.

Objective: L56272

SRO Test

29

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 2	Group 2
K/A #	41009EA113	
Importance Rating:	4.40	4.40

Given the following plant conditions:

- Unit 1 trip due to a small break LOCA
- RCS Pressure 1350 psia and slowly LOWERING
- #1 S/G Level 42% WR INCREASING
- #1 S/G Pressure 800 psia LOWERING
- #2 S/G Level 40% WR INCREASING
- #2 S/G Pressure 810 psia LOWERING
- Containment pressure 2.0 psig and slowly INCREASING
- RWT level 75% LOWERING

Based on current plant conditions, which one of the following identifies the ESFAS actuations that should have occurred?

A. SIAS, CIAS, CSAS

B. AFAS, RAS, MSIS

C. SIAS, CIAS, MSIS

D. AFAS, RAS, CSAS

Answer: C

Associated KA:
41009EA113 Ability to operate and monitor the following as they apply to a small break LOCA: EA1.13 ESFAS 4.4 4.4

Reference Id: Q38099
Difficulty: 2.00
Time to complete: 3
Cognitive Level: Comprehension
Question Source: PV NRC 99 Exam
Comment:
Objective: L76810

SRO Test

30

This Exam Level Appears on:	RO EXAM	SRO EXAM Tier 1 Group 2
K/A #	42027AA102	
Importance Rating:	3.10	3.00

Given the following plant conditions:

- Unit 2 is at 100% power
- Pressurizer Pressure Master Controller, RCN-PIC-100 fails causing pressure to lower to 2010 psia
- The PO places RCN-PIC-100 in MANUAL

Which one of the following describes the action required to increase the heat output of the proportional heaters?

A. INCREASE the controller output.

B. DECREASE the controller output.

C. RAISE the pressure setpoint adjustment.

D. LOWER the pressure setpoint adjustment.

Answer: B

Associated KA:
42027AA102 Ability to operate and / or monitor the following as they apply to the Pressurizer Pressure Control Malfunctions: AA1.02 SCR-controlled heaters in manual mode 3.1 3

Reference Id: Q27585
Difficulty: 3.00
Time to complete: 3
Cognitive Level: Comprehension
Question Source: INPO Bank
Comment:

Distracter A will reduce proportional heater output, C and D will have no effect because controller is in manual

Reference: Simplified Control System Drawings, PAGE 34

Objective: L75289, L75328

SRO Test

31

This Exam Level Appears on:	RO EXAM Tier 1 Group 2	SRO EXAM Tier 1 Group 2
K/A #	44E09EA13	
Importance Rating:	3.60	3.80

Given the following plant conditions:

- The CRS is implementing the Success Paths in the Functional Recovery Procedure (FRP)

What will the CRS use to determine whether the selected success paths are recovering or maintaining the Safety Functions?

A. Current Conditions versus SPTA Acceptance Criteria.

B. SPTA Conditions versus SPTA Acceptance Criteria.

C. SPTA Conditions versus FRP selected Success Path Acceptance Criteria.

D. Current Conditions versus FRP selected Success Path Acceptance Criteria.

Answer: D

Associated KA:
44E09EA13 Ability to operate and / or monitor the following as they apply to the (Functional Recovery) EA1.3 Desired operating results during abnormal and emergency situations. 3.6 3.8

Reference Id: Q38006
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracters A, B, & C are incorrect because the FRP is based upon current conditions not on conditions from exiting the SPTAs or checked against acceptance criteria in the SPTAs.

Reference: FRP EPTG and Emergency Operating Procedure User's Guide.

Objective: L56272

SRO Test

32

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 2	Group 2
K/A #	44E02EA22	
Importance Rating:	3.00	4.00

Given the following plant conditions:

- Unit 1 was operating at 75% power when 1B RCP tripped
- During SPTA's an Inadvertent SIAS occurred
- Water Reclamation Facility (WRF) deenergized when switchyard voltage momentarily dropped below low setpoint
- The CRS is implementing 40EP-9EO02, Reactor Trip

Which one of the following describes why this procedure directs restoring power to WRF?

A. Restoring power to the WRF enables the facility to shutdown the GTG's, saving a significant amount of fuel.

B. The loss of PVNGS to accept incoming effluents could result in the contamination of drinking water in several communities.

C. The loss of cooling tower makeup could jeopardize the availability of circulating water systems in all units within a few hours.

D. The batteries in the WRF are only rated for two hours. If these batteries discharge completely it will mean an extended outage for this facility.

Answer: C

Associated KA:
44E02EA22 Ability to determine and interpret the following as they apply to the (Reactor Trip Recovery) EA2.2 Adherence to appropriate procedures and operation within the limitations of the facility's license and amendments. 3 4

Reference Id: Q27599
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: PV Bank Not Modified
Comment:

Distracters A is wrong because GTG's are not started for this event, B is wrong because effluent can be diverted to the salt river, and D is wrong because this loss of battery would only prevent GTG starting

Reference: 40EP-9EO02, 40DP-9AP07

Objective: L10353, L10352

SRO Test

33

This Exam Level Appears on:		SRO EXAM Tier 1 Group 2
K/A #	42022AA204	
Importance Rating:		3.80

Given the following plant conditions:

- Unit 1 has lost letdown capability
- Charging has been secured per 40AO-9ZZ05, Loss Of Letdown, Appendix C, Extended Operations Without Letdown
- Power is 100% and stable
- Pressurizer level is 66% and slowly lowering
- Current RCP seal bleedoff is 3 gpm per pump
- L.C.O. 3.4.9, Pressurizer level Action A.1, has been entered
- Pressurizer volume = 67 gals/percent

Determine from the following the minimum time when Pressurizer level will be within Technical Specifications limits.

A. 15-25 minutes

B. 35-45 minutes

C. 55-65 minutes

D. 75-85 minutes

Answer: C

Associated KA:
42022AA204 Ability to determine and interpret the following as they apply to the Loss of Reactor Coolant Pump Makeup: AA2.04 (10CFR55.43) How long PZR level can be maintained within limits 2.9 3.8

Reference Id:	Q38071	
Difficulty:	4.00	
Time to complete:	3	
10CFR Category:	CFR5543 2	(2) Facility operating limitations in the technical specifications and their bases.
Cognitive Level:	Analysis	
Question Source:	PV NRC 99 Exam	
Comment:		
	Objective: L57131	

SRO Test

34

This Exam Level Appears on: SRO EXAM Tier 1 Group 2
K/A # 42025AA202
Importance Rating: 3.80

Given the following plant conditions:

- Unit is in Mode 5, Midloop operation.
- Shutdown Cooling is on Train A LPSI.
- SG Nozzle Dams are in place.
- Mechanics are working on RCP seals.
- Pressurizer heater well repairs are being performed.
- Fluctuations are occurring in LPSI pump A amps and discharge pressure and flow.
- Containment Sump Level is rising.
- RWLIS is indicating 101.5 and lowering slowly.

Which of the following is the appropriate procedure and guidance to resolve this condition?

A. LMFRP, Safety Function Set 2
Isolate the SDC loop

B. LMFRP, Safety Function Set 1
Start a HPSI pump

C. LMFRP, Safety Function Set 1
Throttle open SIT Outlet Valve to inject

D. LMFRP, Safety Function Set 3
Perform RCS Gravity Feed

Answer: A

Associated KA:
42025AA202 Ability to determine and interpret the following as they apply to the Loss of Residual Heat Removal System: AA2.02 (10CFR55.43) Leakage of reactor coolant from RHR into closed cooling water system or into reactor building atmosphere 3.4 3.8

Reference Id: Q38140
Difficulty: 3.00
Time to complete: 3
10CFR Category: CFR5543 5 (5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters B and C are wrong because the PZR Manway would be off in the given conditions, therefore set 1 would not be applicable. Distracter D is incorrect because gravity feed would not be available unless the Rx head was off.

Reference: RCS elevation drawings, NCW system drawing.

Objective: L93049

SRO Test

35

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 2	Group 2
K/A #	42032AA206	
Importance Rating:	3.90	4.10

Given the following plant conditions:

- A Reactor Trip has occurred on Unit 1
- The SUR Meters are not responding

Which one of the following conditions is checked to verify that the reactor has tripped during performance of the SPTAs?

A. All part length CEAs inserted.

B. Reactor Trip UV coil relay lights are lit.

C. Decreasing power on the log channels.

D. Reactor Trip indicated by the first out annunciator display.

Answer: C

Associated KA:
42032AA206 Ability to determine and interpret the following as they apply to the Loss of Source Range Nuclear Instrumentation: AA2.06 Confirmation of reactor trip 3.9 4.1

Reference Id: Q38137
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracter A requires all full length CEAs be inserted.
B & D provide indication but is not used per SPTAs.

Reference: EOP User's Guide; 40EP-9EO01, SPTAs

Objective: L10403

SRO Test

36

This Exam Level Appears on: SRO EXAM Tier 1 Group 2

K/A # 41038EA207

Importance Rating: 4.80

Given the following plant conditions:

- Unit 1 tripped due to a Main Turbine trip
- Pressurizer Pressure is 1900 psia
- Pressurizer Level is 30%
- T-cold is 562 °F and stable
- SG #1 Pressure is 1150 psia
- SG #2 Pressure is 1140 psia
- SG #1 Level is 45% NR and rising
- SG #2 Level is 41% NR and rising
- SG #1 Feed Flow is 3.1E5 lbm/hr
- SG #2 Feed Flow is 4.0E5 lbm/hr
- SG #1 Steam Flow is 3.2E5 lbm/hr
- SG #2 Steam Flow is 3.2E5 lbm/hr
- Assume the secondary operator has taken no actions to this point in time and all other parameters are normal

Which one of the following procedures would be appropriate for the CRS to enter following completion of the SPTAs?

A. ESD on SG #2

B. SGTR on # 1 SG

C. FRP due to a dual event

D. Reactor Trip, no event in progress

Answer: B

Associated KA:
41038EA207 Ability to determine or interpret the following as they apply to a SGTR: EA2.07 (10CFR55.43)
Plant conditions, from survey of control room indications 4.4 4.8

Reference Id: Q38177
Difficulty: 3.00
Time to complete: 3
10CFR Category: CFR5543 5 (5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.
Cognitive Level: Comprehension
Question Source: INPO Bank
Comment:

Distracter A is incorrect, an ESD is not indicated or Tcold would be decreasing.
Distracter C is incorrect, a dual event is not in progress.
Distracter D is incorrect, an event is indicated.

SRO Test

Reference: 40EP-9EO04, step 14, page 9

Objective: L11219

37

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 2	Group 2
K/A #	42060AA204	
Importance Rating:	2.60	3.40

A high alarm on the Waste Gas Decay Tank (WGDT) Monitor (RU-12) will cause:

A. a CREFAS/FBEVAS.

B. an auto closure of the WGDT inlet valves.

C. a trip of the running waste gas compressor.

D. an auto closure of the WGDT discharge valves.

Answer: D

Associated KA:
42060AA204 Ability to determine and interpret the following as they apply to the Accidental Gaseous Radwaste:
AA2.04 The effects on the power plant of isolating a given radioactive-gas leak 2.6 3.4

Reference Id: Q3580
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: PV Bank Not Modified
Comment:

Distracter C is incorrect because RU-12 High is not one of the WG Compressor trips.
Distracter A is incorrect because only RU-29, 30,31, and 145 initiate CREFAS/FBVAS.
Distracter B is incorrect since WGDT inlet valves do not auto close on RU-12 High alarm.

Reference: 74RM-9EF41

Objective: 66731

SRO Test

38

This Exam Level Appears on: SRO EXAM
Tier 1
Group 2
K/A # 42065AA208
Importance Rating: 3.30

Given the following plant conditions:

- Unit 3 is at 100% power
- Instrument air press has decreased to 70 psig due to an air leak
- Subsequently a SGTR occurs on SG #2
- The CRS directs a Reactor Trip due to degrading plant conditions

Which of the following procedures provides the most appropriate guidance for the CRS to direct isolation of SG #2?

A. The FRP EOP will provide guidance that informs the operator that the MSIVs will have to be manually closed.

B. The SGTR EOP will provide guidance that informs the operator that only slow closure of the MSIVs will be available.

C. The FRP EOP in conjunction with the Loss of Instrument Air Procedure will provide guidance on isolation of specific steam loads since the MSIVs can not be closed remotely.

D. The SGTR EOP in conjunction with the Loss of Instrument Air Procedure will provide guidance that informs the operator that only fast closure of the MSIVs will be available.

Answer: D

Associated KA:
42065AA208 Ability to determine and interpret the following as they apply to the Loss of Instrument Air: AA2.08 (10CFR55.43) Failure modes of air-operated equipment 2.9 3.3

Reference Id: Q38156
Difficulty: 3.00
Time to complete: 2
10CFR Category: CFR5543 5 (5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.
Cognitive Level: Memory
Question Source: PV Bank Not Modified
Comment:

Distracter A and C are incorrect, Loss of Instrument Air does not make this a dual event, and therefore FRP would not be appropriate.
Distracter B is incorrect, the SGTR does not provide contingencies for closure on loss of instrument air to the valve.

Reference: 40AO-9ZZ06, Appendix A, page 21

Objective: L56751

SRO Test

39

This Exam Level Appears on:	RO EXAM Tier 1 Group 2	SRO EXAM Tier 1 Group 2
K/A #	42008AA210	
Importance Rating:	3.60	3.60

Given the following plant conditions:

- A Pressurizer steam space LOCA in excess of charging pump capacity is in progress.
- HPSI injection Throttle criteria was satisfied.
- All the HPSI injection valves were fully closed.
- Assume no further operator action.

Which one of the following states the correct combination of parameters that would be expected to result and require re-injection of HPSI.

A. RCS >24 degrees subcooled and/or RVLMS RVUH >16%.

B. Pressurizer level <10% and lowering and RVLMS RVUH <16%.

C. RCS <24 degrees subcooled and/or RVLMS indicates RVUH <16%.

D. Pressurizer level <10% RCS and lowering and RCS < 24 degrees subcooled.

Answer: C

Associated KA:
42008AA210 Ability to determine and interpret the following as they apply to the Pressurizer Vapor Space Accident: AA2.10 High-pressure injection valves and controllers 3.6 3.6

Reference Id: Q38127
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

A is incorrect, a LOCA would cause a loss of subcooling.
B & D is incorrect, on a PZR steam space LOCA, PZR level is expected to be high.

Reference: 40EP-9EO03, LOCA

Objective: L10451

SRO Test

40

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 2	Group 2
K/A #	42054G2434	
Importance Rating:	3.80	3.60

Given the following plant conditions:

- Essential auxiliary feedwater pump AFA-P01 out of service.
- Unit trip due to loss of offsite power/loss of grid.
- PKA-M41 bus deenergized due to overcurrent on bus.
- Essential auxiliary feedwater pump AFB-P01 trips on ground fault.

Which one of the following identifies the correct method of feeding the steam generators for this condition?

A. Local start of AFN-P01.
B. Reset and restart a main feedwater pump.
C. Cross-tie another units condensate pumps.
D. Electrically jumper around the ground fault relay on AFB-P01.

Answer: A

Associated KA:
42054G2434 42054G 2.4.34 Generic for LOAF - AFAS operation - Knowledge of RO tasks performed outside the main control room during emergency operations including system geography and system implications. 3.8 3.6

Reference Id: Q38179
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: PV NRC 97 Exam
Comment:

Distracter B is incorrect, MFPs are not available based on LOOP.
Distracter C is incorrect, this would require an unnecessary depressurization of the plant while Aux Feed is still available and does not.
Distracter D is not allowed by procedure.

Reference: 40EP-9EO06, LOAF Step 6

Objective: L10502

SRO Test

41

This Exam Level Appears on:	RO EXAM Tier 1 Group 2	SRO EXAM Tier 1 Group 2
K/A #	42061G217	
Importance Rating:	3.70	4.40

Given the following plant conditions:

- RU-1, Containment Atmosphere gas channel is in ALERT.
- The CRS directs a reactor operator to perform 40ST-9RC02, RCS Water Inventory Balance.

Which one of the following is the reason for performing the RCS water inventory balance?

A. Quantify an increase in RCS leak rate to containment.

B. Determine the amount of primary to secondary leakage.

C. Identify radiation levels to keep personnel exposure ALARA.

D. Determine the difference between leakage to containment atmosphere and containment leakage to sumps.

Answer: A

Associated KA:
42061G217 42061G 2.1.7 Generic for Area Radiation Monitoring (ARM): System Alarms: Interpolate plant performance based upon multiple inputs. 3.7 4.4

Reference Id: Q38072
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: INPO Bank
Comment:

Distracter B is incorrect, the inventory balance is to determine a rate not a total.
Distracter C is incorrect, the rad levels are not determined by the inventory balance.
Distracter D is incorrect, the leakage into NC would be detected by RU-6.

Reference: 74RM-9EF41, Rad Monitoring System
40AO-9ZZ02, Excessive RCS Leakrate
40ST-9RC05, Manual Calculation of Water Inventory

Objective: L10166

SRO Test

42

This Exam Level Appears on:	RO EXAM Tier 1 Group 3	SRO EXAM Tier 1 Group 3
K/A #	42056AK101	
Importance Rating:	3.70	4.20

Given the following plant conditions:

- Unit 3 tripped from 100% Power.
- All equipment functioned as designed, with the exception of Fast Bus Transfer.
- NAN-S01 and NAN-S02 are deenergized.
- No other event is in progress.
- The SPTAs are complete.
- The CRS implements the appropriate ORP.

Based on the above status, how will the crew maintain the Core and RCS Heat Removal Safety Functions?

A. Two Phase Natural Circulation, Feeding with Aux Feed, Steaming with ADVs.

B. Single Phase Natural Circulation, Feeding with Main Feed, Steaming with SBCS.

C. Two Phase Natural Circulation, Feeding with Main Feed, Steaming with SBCS.

D. Single Phase Natural Circulation, Feeding with Aux Feed, Steaming with ADVs.

Answer: D

Associated KA:
42056AK101 Knowledge of the operational implications of the following concepts as they apply to Loss of Offsite Power: AK1.01 Principle of cooling by natural convection 3.7 4.2

Reference Id: Q27621
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Loss of power to NAN-S01 and NAN-S02 results in the total loss of forced circulation (no RCPs). With no other events in progress, the cooling mechanism is Natural Circulation and with no other complications, Single Phase Natural Circulation is designed to be maintained and enhanced by feeding with Aux Feed and Steaming with the ADVs.

Reference: LOOP/LOFC Technical Guideline 40DP-9AP12, revision 8, page 16 of 44.

Objective: L62291

SRO Test

43

This Exam Level Appears on: SRO EXAM
Tier 1
Group 3
K/A # 42028AA105
Importance Rating: 2.90

Given the following plant conditions:

- Unit 2 is at 2% Power
- Pressurizer Level Control System (PLCS) is in Remote Automatic
- Charging pump suction alignment is to the VCT
- RWT level is 95%
- A failure of NKN-M45 has occurred
- The charging pumps have been manually started

What procedure should the CRS utilize to ensure that charging capability is maintained?

A. 40AO-9ZZ05, Loss of Letdown
Appendix C provides for "Extended Operations Without Letdown"

B. 40AO-9ZZ14, Loss of Non-Class Instrument or Control Power
Direct the charging pump suction be aligned to the RWT

C. Standard Appendix 10
Provides an "Alternate Suction Path" to the charging pumps

D. 40AO-9ZZ12, Degraded Electrical Power
Aligns VCT suction path by manually aligning the valves and removing power

Answer: B

Associated KA:
42028AA105 Ability to operate and / or monitor the following as they apply to the Pressurizer Level Control Malfunctions: AA1.05 Initiation of excess letdown per the CVCS 2.8 2.9

Reference Id: Q38259
Difficulty: 3.00
Time to complete: 3
Cognitive Level: Comprehension
Question Source: New
Comment:

Loss of Non-Class Instrument or Control Power is the only procedure that correctly addresses both the CVCS system response to the failure and guidelines for restoration.

Reference: 40AO-9ZZ14, Loss of Non-Class Instrument or Control Power

Objective: L73413

SRO Test

44

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 1	Tier 1
	Group 3	Group 3
K/A #	42036AA104	
Importance Rating:	3.10	3.70

Given the following plant conditions:

- Unit 1 is in Mode 6.
- Refueling operations in progress.
- The refueling machine has withdrawn an irradiated fuel assembly from the core and has just started moving the fuel toward the transfer canal.
- The CRS notifies the SRO in charge of fuel movement that there is a rapidly lowering fuel pool level and has implemented the LMEOP.
- The CRS directs the SRO in charge of fuel movement to place the fuel in a safe condition.

Which of the following describes the required actions for the proper safe location of the fuel?

The SRO in charge of fuel movement should take action to place the fuel:

A. in the upender.

B. in the reactor vessel.

C. in the intermediate storage rack.

D. grappled at the uplimit on the Refueling Machine (RFM).

Answer: B

Associated KA:
42036AA104 Ability to operate and / or monitor the following as they apply to the Fuel Handling Incidents:
AA1.04 Fuel handling equipment during an incident 3.1 3.7

Reference Id: Q27619
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: Modified PV Bank
Comment:

The other Distracters are incorrect because they require the operator to take a longer period of time to move the fuel and the fuel is in an analyzed safe condition in the core.

Reference: 40EP-9EO11, LMEOP IC-4
40AO09ZZ23, Loss of SFP level or cooling

Objective: L64295

SRO Test

45

This Exam Level Appears on:	RO EXAM Tier 2 Group 1	SRO EXAM Tier 2 Group 1
K/A #	34003K110	
Importance Rating:	3.00	3.20

Describe the Influent and Effluent associated with the Reactor Coolant Pumps Seal Packages.

A. Influent: Seal Injection from Nuclear Cooling Water
Effluent: Controlled Bleed-off to the Equipment Drain Tank
Minor Vapor Leakage to the Reactor Drain Tank

B. Influent: Seal Injection from Nuclear Cooling Water
Effluent: Controlled Bleed-off to the Volume Control Tank
Minor Vapor Leakage to Gaseous RadWaste

C. Influent: Seal Injection from Charging Header
Effluent: Controlled Bleed-off to the Volume Control Tank
Minor Vapor Leakage to the Reactor Drain Tank

D. Influent: Seal Injection from the Charging Header
Effluent: Controlled Bleed-off to the Equipment Drain Tank
Minor Vapor Leakage to Gaseous Radwaste

Answer: C

Associated KA:
34003K110 Knowledge of the physical connections and/or cause-effect relationships between the RCPS and the following systems: K1.10 RCS 3 3.2

Reference Id: Q37996
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

The distracters have incorrect alignment paths for Seal Injection, Controlled Bleed-off, or Vapor Leakage.

Reference: RCP P&ID; 40AO-9ZZ04, RCP Emergencies

Objective: L65752

SRO Test

46

This Exam Level Appears on:	RO EXAM Tier 2 Group 1	SRO EXAM Tier 2 Group 1
K/A #	34061K202	
Importance Rating:	3.70	3.70

Determine the combination of energized buses required to support the normal, Control Room operation of AFN-P01.

A. PBA-S03 and PKB-D22

B. PBBS04 and PKB-D22

C. PBB-S04 and PKA-D21

D. PBA-S03 and PKA-D21

Answer: D

Associated KA:
34061K202 Knowledge of bus power supplies to the following: K2.02 AFW electric drive pumps 3.7 3.7

Reference Id: Q27600
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

The other distracters are incorrect based on the AC and DC sources of Electrical Power to AFN-P01.

Reference: 40EP-9EO06, LOAF

Objective: L10502

SRO Test

47

This Exam Level Appears on:	RO EXAM Tier 2 Group 1	SRO EXAM Tier 2 Group 1
K/A #	37015K406	
Importance Rating:	3.90	4.20

During a Reactor Startup on a PVNGS Unit, the High Log Power Bypass Permissive enables which of the following?

A. Turning on the Control Channels.

B. Bypass of the High Log Power Trip.

C. Activation of the High Log Power Trip.

D. Bypassing one of the Log Power Channels.

Answer: B

Associated KA:
37015K406 Knowledge of NIS design feature(s) and/or interlock(s) provide for the following: K4.06 Reactor trip bypasses 3.9 4.2

Reference Id: Q38037
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: Modified INPO Bank
Comment:

The Distracters are incorrect based upon the function that Log power provides. Log power inputs to the other devices but does not provide the services mentioned.

Reference: 40OP-9ZZ02, Reactor Startup after Refueling

Objective: L11011

SRO Test

48

This Exam Level Appears on:		SRO EXAM Tier 2 Group 1
K/A #	34061K502	
Importance Rating:		3.60

Given the following plant conditions:

- Initially all three units are currently at 100% power.
- Unit 1 trips following 3 days of operation after a refueling outage.
- Unit 2 trips following a RPCB (Reactor Power Cutback) with 2 months of full power operation.
- Unit 3 trips following 225 days of full power operation.

Which of the following relationships accurately describes the unit that requires the MOST feed flow to maintain Steam Generator level?

A. Unit 1 requires more feed flow than Unit 2.

B. Unit 2 requires more feed flow than Unit 3.

C. Unit 3 requires more feed flow than Unit 1.

D. Unit 1, 2, and 3 all require the same amount of feed flow.

Answer: C

Associated KA:
34061K502 Knowledge of the operational implications of the following concepts as the apply to the AFW: K5.02 Decay heat sources and magnitude 3.2 3.6

Reference Id:	Q38176
Difficulty:	2.00
Time to complete:	3
Cognitive Level:	Comprehension
Question Source:	New
Comment:	

Distracters are wrong because the decay heat of Units 1 and 2 is significantly less than Unit three due to time of operation. Decay heat will determine steaming, therefore feeding rate.

Reference: GFES applied to plant situation.

Objective: L93047

SRO Test

49

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 1	Group 1
K/A #	31001K584	
Importance Rating:	3.50	3.50

Given the following plant conditions:

Unit 2 is at 100% power, 240 EFPD
Group 5 CEAs are inserted to 120 inches
ASI is currently at 0.00
RCS Boron = 500 PPM
RCS T cold = 555°F

You are directed to hold power constant and withdraw the CEAs to fully withdrawn.

Which of the following identifies the number of gallons of boration is needed and the direction that ASI will change?

	Gallons of RW	ASI
A.	87	Negative
B.	174	Negative
C.	517	Positive
D.	1270	Positive

Answer: B

Associated KA:
31001K584 Knowledge of the following operational implications as they apply to the CRDS: K5.84 Significance of sign change (plus or minus) in reactivity due to change in boron concentration 3.3 3.5

Reference Id: Q38260
Difficulty: 4.00
Time to complete: 4
Cognitive Level: Analysis
Question Source: New
Comment:

Per U2 core data book page 69.
Group 5 @ 120 = - 67.2 pcm.
Boron worth = 7.7 pcm/ppm.
67.2/ 7.7 = 8.7 ppm change.
8.7 X 20 gals of RW to make a 1 PPM change in RCS = 174 gallons of RW.
ASI will move to the top as CEAs are withdrawn.

Objective: L55453

SRO Test

50

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 1	Group 1
K/A #	37017K601	
Importance Rating:	2.70	3.00

Given the following plant conditions:

- Unit 3 is at 100% power and stable
- All systems aligned for normal, automatic operation
- The PO observes a Core Exit Thermocouple (CET) display on QSPS is displaying ?????? in Inverse Mode.

What does this indication mean?

A. The sensor was suspect and has been acknowledged.

B. The sensor is below its minimum setpoint and has been acknowledged.

C. The sensor is part of a multple input alarm and has not been acknowledged.

D. The sensor is either out of range or has failed and has not been acknowledged.

Answer: D

Associated KA:
37017K601 Knowledge of the effect of a loss or malfunction of the following ITM system components: K6.01 Sensors and detectors 2.7 3

Reference Id: Q38078
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

The other distracters are incorrect based on a single input parameter failed out of range.

Reference: 40OP-9SH01, QSPD's User Guide

Objective: L76567

SRO Test

51

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 1	Group 1
K/A #	35022A103	
Importance Rating:	3.10	3.40

Given the following plant conditions:

- A small steam leak is suspected in Unit 1 containment.
- An At-Power Containment Entry is about to be made by a maintenance crew.
- The Pre-Access AFU, HCN-F01A and HCN-F01B are running to support the Containment Entry.
- Radiation Protection and the Effluents Technician (based on samples) advise the Control Room that Fission Product Gas/Iodine Levels continue to be unacceptable even after several hours of Cleanup Operation.

Which Containment Atmosphere parameter is the likely contributor to the failure of the Containment Cleanup Units to function optimally?

A. High Humidity

B. High Radiation

C. High Temperature

D. High Contamination

Answer: A

Associated KA:
35022A103 Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the CCS controls including: A1.03 Containment humidity 3.1 3.4

Reference Id: Q38123
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Of the choices given, Charcoal is most affected by High Humidity.

Reference: NONE

Objective: 74459

SRO Test

52

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 1
K/A #	31014A103	
Importance Rating:	3.60	3.80

Given the following plant conditions:

- Unit 2 is at 40% Reactor Power performing a Shutdown.
- Regulating Group 5 CEAs at 120 inches (ASI Control).
- CEDMCS in Auto Sequential.
- No equipment out of service.
- Both CEAC CRTs indicate a group 5 CEA inward deviation.
- No Rod Bottom lights are lit on the core mimic.
- CEDMCS remote operator module shows no LEL or UEL lamps lit.
- The Pulse Counter Group Display indicates all group 5 CEAs at 120 inches.
- PMS CEA position data indicates all group 5 CEAs at 120 inches.
- The PDIL annunciator is not in alarm.
- TLI is selected to TLI 1.

Which of the following describes the event?

A. TLI 1 has failed high.

B. A RPCB system actuation has occurred.

C. A single RSPT instrument string has failed for a group 5 CEA.

D. A Reg Group 5 CEA slipping but not reaching the bottom of the core.

Answer: D

Associated KA:
31014A103 Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the RPIS controls, including: A1.03 PDIL, PPDIL 3.6 3.8

Reference Id: Q38261
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters C is incorrect, Pulse Counter Group Display would not show CEA slippage.
Distracter B is incorrect, PMS CEA position would not show individual CEA slippage via the pulse counter.
Distracter A is incorrect, TLI 1 failure high would cause a CEA withdrawl signal vice an insertion signal.

References: B04 Alarm Responses, CEAC Display, CEAC 1 and 2 RSPT data display 40AO-9ZZ11, CEA Abnormal Operating Procedure. 40AO-9ZZ16, RRS Malfunctions.

Objective: L80232, L78792

SRO Test

53

This Exam Level Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 1	Group 1
K/A #	35022A204	
Importance Rating:	2.90	3.20

Given the following plant conditions:

- Unit 1 is at 100% power
- Plant Cooling Water Pump 'B' is OOS
- Plant Cooling Water Pump 'A' discharge pressure is 20 psig
- Containment Temperature = 114 degrees and slowly rising
- Turbine Lube Oil Temperature = 122 degrees and slowly rising

Which one of the following procedures is used to restore cooling to containment?

A. 40AO-9ZZ20, Loss of HVAC.

B. 40AO-9ZZ05, Loss of Letdown.

C. 40AO-9ZZ03, Loss of Cooling Water.

D. 40EP-9EO01, Standard Post Trip Actions.

Answer: C

Associated KA:
35022A204 Ability to (a) predict the impacts of the following malfunctions or operations on the (Containment Cooling Water System) CCS; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: A2.04 Loss of service water 2.9 3.2

Reference Id: Q38139
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because A, B, and D are directed from 40AO-9ZZ03 but under different conditions. Procedure 40AO-9ZZ03 mitigates cooling to containment by crosstieing EW to NC, since NC is cooled by PW.

Reference: 40AO-9ZZ03, sect 4.0, step 7

Objective: L10102

SRO Test

54

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 1	Group 1
K/A #	34056A204	
Importance Rating:	2.60	2.80

Given the following plant conditions:

- Unit 1 is in Mode 3
- Condensate Long-Path Recirculation is in Progress
- CDN-P01B is in Operation with the suction valves from both Hotwell Sections Open. (NOTE: These valves remain open)
- Both suction valves remain open.
- CDN-P01A and CDN-P01C are available (miniflow headers filled)
- Hotwell Section 1 Level Transmitter LSLL-85 failure results in a CDN-P01B Trip on Low Hotwell Level. (Assume the Transmitter remains 'failed')

Which one of the following provides a lineup to restore Long-Path Recirculation?

A. CDN-P01B from Hotwell Section 2

B. CDN-P01A from Hotwell Section 1

C. CDN-P01C from Hotwell Section 2

D. CDN-P01A from Hotwell Section 2

Answer: D

Associated KA:
34056A204 Ability to (a) predict the impacts of the following malfunctions or operations on the Condensate System; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those mal-functions or operations: A2.04 Loss of condensate pumps 2.6 2.8

Reference Id: Q38129
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

D is correct, A Condesate Pump draws from Hotwell Section 2
A is incorrect because B Condensate Pump can not draw off Hotwell Section 2 unless the suction valve from Hotwell Section 1 is closed as long as the low level trip is in
B is incorrect because A Condensate Pump can not draw from Hotwell Section 1
C is incorrect because C Condensate Pump can not draw from Hotwell Section 2

Tech Reference: CD STM Volume 19, CD Pump Controls
Logic P&ID

Objective: L67440

SRO Test

55

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 1	Group 1
K/A #	39071A209	
Importance Rating:	3.00	3.50

Given the following plant conditions:

- Unit 1 is at 100% power
- 'A' WGDT is in service
- Radwaste AO reports that the relief valve on the Waste Gas Surge Tank is lifting

Which one of the following describes the control room staff response and why?

A. Notify RP because there is an unmonitored release in the Radwaste Building.

B. Notify the Effluent Technician because RU-14, Radwaste Building Ventilation Exhaust Monitor is in alarm.

C. Direct the Radwaste AO to place 'B' WGDT in service to reduce waste gas surge tank pressure.

D. Direct the Radwaste AO to stop the Waste Gas Air compressors to stop pumping gas into the Surge Tank.

Answer: B

Associated KA:
39071A209 Ability to (a) predict the impacts of the following malfunctions or operations on the Waste Gas Disposal System ; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: A2.09 Stuck-open relief valve 3.0 3.5

Reference Id: Q38151
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because RU-14 alarm requires notification of chemistry and this relief valve discharges to the radwaste building exhaust system.

Reference: 74RM-9EF41, Radiation Monitor Alarm Response

Objective: L78940

SRO Test

56

This Exam Level Appears on:	RO EXAM Tier 2 Group 1	SRO EXAM Tier 2 Group 1
K/A #	31004A415	
Importance Rating:	3.60	3.70

Which of the following is correct with regards to monitoring Boron Concentration in the control room?

A. The boronometer reading is set by chemistry in the cold lab and provides a redundant display of the setting on control board BO3.

B. The boronometer reading is an averaged reading and the the low range alarm is a fixed value of 750 ppm, the high range alarm is a fixed value of 2100 ppm.

C. The boronometer reading is approximate and provides the Boron Dilution Alarm System (BDAS) alarm when value changes by more than 10%.

D. The boronometer reading is approximate and the low range alarm is set for $\pm$ 25 ppm from equilibruim, the high range alarm is set for $\pm$100 ppm from equilibruim.

Answer: D

Associated KA:
31004A415 Ability to manually operate and/or monitor in the control room: A4.15 Boron concentration 3.6 3.7

Reference Id: Q38141
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracter B is incorrect, the boronometer is not exact.
Distracter C is incorrect, the boronometer does not provide BDAS alarm input.
Distracter A is incorrect, the cold lab does not input the boronometer setting.

Reference: 41AL-1RK3A, LD Process Monitor Trouble

Objective: L67620

SRO Test

57

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 1	Group 1
K/A #	32013A402	
Importance Rating:	4.30	4.40

Given the following plant conditions:

- The Control Room Crew is responding to an Inadvertent SIAS.
- The CRS directs the SO to reset the SIAS actuation.
- The SO correctly depresses the reset pushbuttons for the Actuation Path on the PPS Aux Relay Cabinets.

At this point, describe the indications in the Control Room for the Initiation Relays on B05 and leg 1-3 / leg 2-4 lamps for the Actuation Signals on PPS Status Panels above the PPS cabinets.

	Initiation Relays	1-3 / leg 2-4 lamps for the Actuation Signals
A.	ON	OFF
B.	ON	ON
C.	OFF	ON
D.	OFF	OFF

Answer: B

Associated KA:
32013A402 Ability to manually operate and/or monitor in the control room: A4.02 Reset of ESFAS channels 4.3 4.4

Reference Id: Q27603
Difficulty: 4.00
Time to complete: 3
Cognitive Level: Memory
Question Source: New
Comment:

Distracter A incorrect, actuation alarm windows would still be illuminated.
Distracter C & D are incorrect, the initiation relays would still be illuminated.

Reference: 40AO-9ZZ17, Inadvertent PPS-ESFA Actuation
Simplified Control System Drawings, Revision 8/18/2000, pages 26 and 27

Objective: 65032

SRO Test

58

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 1	Group 1
K/A #	37072A402	
Importance Rating:	2.50	2.50

Given the following plant conditions:

- RU-31, Spent Fuel Pool Area is indicating erratically both locally and on the RMS Workstation Display.
- The RMS Technician requests that the Control Room assist him while the RU-31 monitor is taken off-line and then placed back online.

What precaution should the Reactor Operator take during this evolution?

A. Bypass FBEVAS 'B'.

B. Bypass FBEVAS 'A'.

C. Ensure RU-30 (Control Room Ventilation Intake, Train B) is online, Cycle the power to RU-31.

D. Ensure RU-145 (Fuel Building Ventilation, Low Range) is online, Cycle the power to RU-31.

Answer: B

Associated KA:
37072A402 Ability to manually operate and/or monitor in the control room: A4.02 (ARM) Major components 2.5 2.5

Reference Id: Q38135
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracter A is incorrect, RU-31 is Train A related.
Distracter C is incorrect, RU-30 will not prevent an input to FBEVAS Train 'A' trip signal.
Distracter D is incorrect, RU-145 is Train 'B' input to FBEVAS.

Reference: 40OP-9SA01, BOP ESFAS Modules Operation

Objective: 65041

SRO Test

59

This Exam Level Appears on: SRO EXAM Tier 2 Group 1
K/A # 35026G2120
Importance Rating: 4.20

Given the following plant conditions:

- Unit 1 has experienced a large break LOCA
- Containment temperature is 241°F and increasing slowly
- Containment pressure is 27 psig and increasing slowly
- Containment Spray flow is 3975 gpm

The Containment Temperature and Pressure control Safety Function is...

A. met.

B. not met due to spray flow.

C. not met due to Containment pressure.

D. not met due to Containment temperature.

Answer: B

Associated KA:
35026G2120 35026G (10CFR55.43) CS Generic 2.1.20 CS procedure usage in EOP

Reference Id: Q38167
Difficulty: 3.00
Time to complete: 2
10CFR Category: CFR5543 5 (5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because the required flow is 4100 gpm and this is not impacted by harsh containment conditions or pressure.

Reference: 40EP-9EO03, LOCA, step 15 (CSAS actuation)

Objective: 56305

SRO Test

60

This Exam Level Appears on: SRO EXAM Tier 2 Group 1
K/A # 34059G2222
Importance Rating: 4.10

Given the following plant conditions:

- Unit 3 has just finished a refueling outage and is currently in Mode 3.
- SG 2 Economizer Feedwater Isolation, SGA-UV-177 is inoperable and maintenance is in progress.
- The AO in the field reports a hydraulic leak to SG 1 Econimizer Feedwater Isolation Valve, SGA-UV-174.
- The SO acknowledges "SG ISOL VLV TRBL" alarm on Board 06 and informs the CRS that the alarm is for SG 1 FWIV UV-174 Hydraulic Accum 1 or 2 Pressure Low at 5000 psig.

Using the provided Tech Spec sheet, identify which of the following is the required action?

A. Isolate the affected flow path within 8 hours.

B. Twenty-four hours are available to repair SGA-UV-174 before any action needs to be taken.

C. Restore SGA-UV-174 within 72 hours or be in Mode 3 in 6 hours and Mode 5 in 42 hours.

D. Close or isolate SGA-UV-174 within 72 hours and verify the inoperable MFIV is closed or isolated once per 7 days.

Answer: D

Associated KA:
34059G222 34059G (10CFR55.43) FW Generic 2.2.22 Knowledge of LCO and Safety Limits

Reference Id: Q38178
Difficulty: 3.00
Time to complete: 2
10CFR Category: CFR5543 2 (2) Facility operating limitations in the technical specifications and their bases.
Cognitive Level: Comprehension
Question Source: Modified INPO Bank
Comment:

D is correct based on proper interpretation of TS LCO 3.7.3
A is not correct because the valves are in separate flow paths
B is not correct because this is not for an ST and no extension times are allowed
C is not correct because the plant is already in Mode 3 and the times are incorrect based on this

Reference: 41AL-1RK6A, TS LCO 3.7.3

Objective: L82938

SRO Test

61

This Exam Level Appears on: SRO EXAM Tier 2 Group 1
K/A # 36063G2112
Importance Rating: 4.00

Given the following plant conditions:

- Unit 1 is in Mode 1
- 125v DC Bus PKA-M41 is powered from the 'A' / 'C' 'Swing' Battery Charger.
- 125v DC Bus PKC-M43 is powered from the 'C' Battery Charger.
- The 'C' Battery Charger fails and it's DC output breaker trips open.
- The 'C' Battery is powering the bus at 125v DC.

Apply the provided PVNGS Technical Specification LCO to determine the required action(s) associated with PKC-M43. The crew ...

A. must declare the 'C' Battery INOPERABLE immediately.

B. has 2 hours to restore DC electrical power subsystem to OPERABLE status.

C. must be in MODE 3 in 6 hrs and MODE 5 in 36 hrs if the Battery Charger can not be restored.

D. has 1 Hour to Verify the 'C' Battery Cell Parameters and 24 hours to restore the battery charger.

Answer: D

Associated KA:
36063G2112 36063G (10CFR55.43) Generic DC Electrical Distribution 2.1.12 Interpret Tech Spec LCO

Reference Id: Q38008
Difficulty: 3.00
Time to complete: 4
10CFR Category: CFR5543 2 (2) Facility operating limitations in the technical specifications and their bases.
Cognitive Level: Analysis
Question Source: New
Comment:

PROVIDE LCO 3.8.4, 3.8.5, and 3.8.6 with Bases for each.

Correct Answer found in LCO 3.8.4 Condition C, Actions C.1 and C.2.

Reference: PVNGS Technical Specifications, LCO 3.8.4

Objective: L74232

SRO Test

62

This Exam Level Appears on: SRO EXAM Tier 2 Group 1
K/A # 39068G2132
Importance Rating: 3.80

Given the following plant conditions:

- An inadvertent CIAS 'A' occurs.
- The CIAS is not reset.

Which of the following describes the manual action and the Tech Spec requirement needed to pump the Containment Radwaste Sumps?

Take the handswitch RDA-HS-23 to …

A. open. No entry into Tech Specs is required for this valve or sumps.

B. open. Enter Tech Spec 3.4.16, RCS Leak Detection Instrumentation for RDA-UV-23 being INOPERABLE.

C. close to pick up the override, then take to open. Enter Tech Spec 3.6.3, Containment Isolation Valve INOPERABLE.

D. close to pick up the override, then take to open. The sump pumps need to be placed to start to pick up the override and then take to start. Enter Tech Spec 3.0.3 for both containment radwaste sump pumps INOPERABLE.

Answer: C

Associated KA:
39068G2132 39068G (10CFR55.43) Generic LR 2.1.32 Limits and Precautions

Reference Id: Q38264
Difficulty: 3.00
Time to complete: 3
10CFR Category: CFR5543 2 (2) Facility operating limitations in the technical specifications and their bases.
Cognitive Level: Comprehension
Question Source: New
Comment:

CIV RDA-UV-23 needs to be overridden to open with a CIAS actuation and it is INOPERABLE for TS 3.6.3 in this condition. 'A' is incorrect because the valve has not been taken to close to pick up the override and TS entry is required. 'B' is incorrect because the valve has not been taken to close to pick up the override and TS 3.4.16 is not applicable to this valve when open. 'D' is incorrect because the sump pumps do not have a CIAS actuation and an override capability, and TS 3.0.3 is not entered when both containment radwaste sumps are OOS.

Reference: 40OP-9RD01 Limits and Precautions, 40AO-9ZZ17 Inadvertent ESFAS, Tech Specs.

Objective: L77167

SRO Test

63

This Exam Level Appears on:	RO EXAM Tier 2 Group 2	SRO EXAM Tier 2 Group 2
K/A #	38029K102	
Importance Rating:	3.30	3.60

Given the following plant conditions:

- Unit 3 has been shutdown for 80 hours.
- The Containment Purge is in Refueling Purge Mode.
- Mechanical Maintenance is removing the Pressurizer Manway.
- RU-37, Power Access Purge - Train A, radiation monitor goes to HIGH alarm.

Which of the following describes the ESFAS actuations that result, if any?

A. CPIAS only.

B. CPIAS with a cross trip to CREFAS.

C. CPIAS with a cross trip to FBEVAS.

D. No actuation until RU-38 (Power Access Purge - Train B) reaches its HIGH setpoint.

Answer: B

Associated KA:
38029K102 Knowledge of the physical connections and/or cause-effect relationships between the Containment Purge System and the following systems: K1.02 Containment radiation monitor 3.3 3.6

Reference Id: 38138
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracter A incorrect because CPIAS will generate a cross trip to CREFAS.
Distracter C is incorrect - same reason as A
Distracter D is incorrect because RU-38 is for Train B only and separated from Train A (RU-37).

Reference 74RM-9EF41

Objective 65049

SRO Test

64

This Exam Level Appears on:	RO EXAM Tier 2 Group 2	SRO EXAM Tier 2 Group 2
K/A #	37073K101	
Importance Rating:	3.60	3.90

Given the following plant conditions:

- The Control Room Crew receives an actuation of both trains ('A' and 'B') of a 'CREFAS' Control Room Essential Filtration Actuation System. (No other BOP-ESFAS Actuations)

What parameters should the Control Room Crew investigate to determine the validity of this actuation?

A. Radiation Levels Sensed in the Fuel Building.

B. Contamination Levels sensed in the Plant Vent.

C. Radiation Levels sensed at the Control Room Air Intake.

D. Contamination Levels sensed in Containment Ventilation.

Answer: C

Associated KA:
37073K101 Knowledge of the physical connections and/or cause-effect relationships between the PRM system and thefollowing systems: K1.01 Those systems served by PRMs 3.6 3.9

Reference Id: Q27762
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters A, C, & D are incorrect, with no other BOP ESFAS signals received the only input listed to cause a CREFAS is from the air intake rad monitors, RU-29 (Train A) and RU-30 (Train B).

Reference: Simplified Diagrams and Drawings, Revision 8/18/2000.Page 51.

Objective: 65046

SRO Test

65

This Exam Level Appears on:	RO EXAM Tier 2 Group 2	SRO EXAM Tier 2 Group 2
K/A #	38079K101	
Importance Rating:	3.00	3.10

Describe the relationship between the Instrument Air System and the Service Breathing Air System.

A. Independent Air Compressors, Shared Dryers, Manual Cross-Connect Valve

B. Shared Air Compressors, Independent Dryers, No Cross-Connect Capability

C. Shared Air Compressors, Shared Dryers, Automatic Cross-Connect Valve

D. Independent Air Compressors, Independent Dryers, no Cross-Connect capability

Answer: D

Associated KA:
38079K101 Knowledge of the physical connections and/or cause-effect relationships between the SAS and the following systems: K1.01 IAS 3 3.1

Reference Id: Q27606
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Systems are independent. Piping Exists where Cross-Connect previously existed. Physically possible to make-up piping and cross-connect, but not normally configured as such.

Reference: Plant P&IDs.

Objective: L76589

SRO Test

66

This Exam Level Appears on: SRO EXAM Tier 2 Group 2

K/A # 33010K201

Importance Rating: 3.40

Given the following plant conditions:

- Unit 1 has the following Pressurizer Heater capacity:
  300 kW Proportional Heaters
  1500 kW Backup Heaters
- Unit 1 experiences a Loss of Offsite Power (LOOP) and the Emergency Diesel Generators are supplying the Class 4160 volt buses.
- Unit 1 is stable in Mode 3 with Pressurizer level at 33% and rising slowly.

Describe the remaining Pressurizer Heater capacity available to energize from its normal source and the Tech Spec requirement for Pressurizer Operability?

A. 600 kW of Backup Heaters; Pressurizer is OPERABLE.

B. 300 kW of Backup Heaters; Pressurizer is OPERABLE.

C. 300 kW of Proportional Heaters; Pressurizer is INOPERABLE.

D. 150 kW of Proportional Heaters; Pressurizer heater Tech Spec is not applicable in current mode.

Answer: B

Associated KA:
33010K201 Knowledge of bus power supplies to the following: K2.01 PZR heaters 3 3.4

Reference Id: Q27607
Difficulty: 4.00
Time to complete: 3
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because Proportional heaters and 1200 kW of backup heaters are on non-class power, which was lost. There is 150 kW per class bus and only the two class buses remain.

Reference: Simplified Control System Drawings, Pzr Press Control System, pg. 34.

Objective: L75241

SRO Test

67

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 2
K/A #	34035K302	
Importance Rating:	4.00	4.30

Given the following plant conditions:

- Unit 2 was manually tripped due to lowering Pressurizer Pressure and Level.
- SIAS and CIAS have actuated.
- HPSI flow has been throttled.
- Containment temperature is 160 degrees.
- Both Steam Generator levels are at 38% NR.
- A slight RCS cooldown and depressurization is in progress.

Which one of the following requires the re-initiation of Safety Injection Flow?

A. Subcooling Margin is 26 degrees F.

B. Pressurizer Level is 21% and not changing.

C. 0 gpm Feedwater Flow to the Steam Generators.

D. Pressurizer Pressure is <1837 psia and lowering slowly.

Answer: C

Associated KA:
34035K302 Knowledge of the effect that a loss or malfunction of the S/GS will have on the following: K3.02 ECCS 4 4.3

Reference Id: Q38010
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracter A is incorrect, subcooled margin is adequate to throttle SI flow
Distracter B is incorrect, PZR level is not changing and therefore does not meet the criteria for reinjection of flow.
Distracter D is incorrect, PZR pressure is not a monitored parameter for SI throttle criteria.

Reference: EOP Standard Appendicies
SI Flow Delivery Curves and Throttle Criteria.
EOP Operations Expectations.

Objective: L10457

SRO Test

68

This Exam Level Appears on: SRO EXAM Tier 2 Group 2

K/A # 36062K301

Importance Rating: 3.90

Given the following plant conditions:

- Unit 2 is in Mode 1, 100% Power
- Unit Aux Transformer supplying NAN-S01 and NAN-S02
- No Equipment is out of service
- The CRS directs the SO to manually trip the Main Turbine Generator due to high turbine vibrations.
- The Fast Bus Transfer for NAN-S01 fails to function
- All other systems function as designed.

What procedure(s) is entered to mitigate this event?

A. 40EP-9EO07 LOOP/LOFC

B. 40EP-9EO02 Reactor Trip and 40AO-9ZZ12 Degraded Electrical.

C. 40AO-9ZZ08 Load Rejection and 40AO-9ZZ07 Loss of Condenser Vacuum

D. 40AO-9ZZ09 Reactor Power Cutback, 40AO-9ZZ07 Degraded Condenser Vacuum AND 40 AO-9ZZ12 Degraded Electrical

Answer: B

Associated KA:
36062K301 Knowledge of the effect that a loss or malfunction of the ac distribution system will have on the following: K3.01 Major system loads 3.5 3.9

Reference Id: Q27608
Difficulty: 4.00
Time to complete: 4
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because the conditions produce a loss of NAN-S01, which supplies 2 RCPs. This produces a reactor trip and leaves 2 RCPs running off of NAN-S02. Degraded vacuum because of loss of NAN-S01.

Reference: Simplified Diagrams and Drawings, Revision 8/18/2000, pages 65,66,67

Objective: L73616

SRO Test

69

This Exam Level Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 2
K/A #	38033K401	
Importance Rating:	2.90	3.20

Given the following plant conditions:

- Both Fuel Pool Cooling Pumps are operating on the Spent Fuel Pool (SFP).
- A large break occurs in the discharge of one of the pumps.

What design feature of the system ensures a minimum water level above irradiated fuel is maintained?

A. Both pumps will trip on high flow.

B. Anti-siphon holes drilled in the suction pipes that enter the pool.

C. Water level is automatically maintained by a float switch from the Refueling Water Tank (RWT).

D. Excess flow spring-check valves are installed in the pipes that enter the pool.

Answer: B

Associated KA:
38033K401 Knowledge of design feature(s) and/or interlock(s) which provide for the following: K4.01 Maintenance of spent fuel level 2.9 3.2

Reference Id: Q8296
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: PV Bank Not Modified
Comment:

A is incorrect, the pumps do not trip on high flow.
C is incorrect, the SFP level is not maintained via a float from the RWT.
D is incorrect, the SFP piping does not contain excess flow check valves.

Reference: UFSAR 9.1.3.3.1.1.1

Objective: L77405

SRO Test

70

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 2
K/A #	32002K603	
Importance Rating:	3.10	3.60

Given the following plant conditions:

- A Loss of Coolant Accident in progress on Unit 2
- RVLMS 'A' and 'B' indicate the uppermost two detector locations are superheated
- The remaining six RVLMS 'A' and 'B' locations indicate subcooled

What can the Control Room Crew determine about the Level in the RCS at this point?

A. Partial Voiding in Upper Head.

B. Complete Voiding in Upper Head.

C. Partial Voiding in Outlet Plenum.

D. Complete Voiding in Outlet Plenum.

Answer: A

Associated KA:
32002K603 Knowledge of the effect or a loss or malfunction on the following RCS components: K6.03 Reactor vessel level indication 3.1 3.6

Reference Id: Q27615
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracters B, C, & D are incorrect, voiding in the other locations referenced would require more detectors than those listed to indicate superheated conditions.

Reference: 40OP-9SH01, QSPDS Users manual (procedure).

Objective: L76532

SRO Test

71

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 2
K/A #	34039A105	
Importance Rating:	3.20	3.30

Given the following plant conditions:

- Unit 1 is at 100% power, 225 EFPD.
- Plant conditions are stable.
- Second stage reheat steam is NOT in service to the Moisture Separator Reheaters (MSR).

How does placing Second Stage reheat steam MSR in service (per procedure) impact Reactor Power and T-cold? Reactor Power ...

A. Increases, Increases RCS T-cold.

B. Decreases, Increases RCS T-cold.

C. Increases, Decreases RCS T-cold.

D. Decreases, Decreases RCS T-cold.

Answer: C

Associated KA:
34039A105 Ability to predict and/or monitor changes in parameters (to prevent exceeding design limits) associated with operating the MRSS controls including: A1.05 RCS T-ave 3.2 3.3

Reference Id: Q27616
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Placing 2nd stage reheat inservice will increase main steam flow by 5%, which will decrease Tc making distracters A and B incorrect. Reactor power will increase which makes distracters B and D incorrect.

Reference: Theory, 40DP-9MT01, Moisture Separator Reheater

Objective: L77384

SRO Test

72

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 2
K/A #	36064A215	
Importance Rating:	2.60	3.10

Given the following plant conditions:

- Unit 1 Emergency Diesel Generator (EDG) 'B' has been running for 65 minutes during a 'Normal Run', per the Emergency Diesel Generator Normal Operating Procedure.
- The Area Operator assigned to the EDG Run fully opens DGN-V600 (Turbo Intercooler Condensate Drain) and observes a full stream of water with no air.

Under this condition the CRS should direct which of the following actions?

A. Shutdown EDG

B. Throttle the Intercooler drain

C. Throttle Cooling Water to Intercooler

D. No action required, this is expected for this evolution

Answer: A

Associated KA:
36064A215 Ability to (a) predict the impacts of the following malfunctions or operations on the ED/G system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: A2.15 Water buildup in cylinders 2.6 3.1

Reference Id: Q38122
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Any actions other than Shutdown of the EDG would be incorrect.

Reference: 40OP-9DG02, Revision 13, Section 6.5.5. 6.5.7

Objective: None

SRO Test

73

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 2
K/A #	38075A203	
Importance Rating:	2.50	2.70

Given the following plant conditions:

- Unit 1 Reactor is at 100% power
- 'B' Circ Water pump trips
- Condenser shell 'A' has backpressure at 5.1 inches HgA and rising
- Condenser shell 'B' has backpressure at 5.6 inches HgA and rising
- Condenser shell 'C' has backpressure at 4.7 inches HgA and rising
- CRS is implementing 40AO-9ZZ07, Loss of Condenser Vacuum

Which one of the following states the next expected system response as backpressure continues to degrade in condenser shell 'A'?

A. Main Turbine trips.

B. Expansion duct "B-C" will blow out.

C. Auto make-up and draw-off to condenser isolate.

D. Steam Bypass Control System condenser interlock actuates.

Answer: D

Associated KA:
38075A203 Ability to (a) predict the impacts of the following malfunctions or operations on the circulating water system; and (b) based on those predictions, use procedures to correct, control, or mitigate the consequences of those malfunctions or operations: A2.03 Safety features and relationship between condenser vacuum, turbine trip, and steam dump 2.5 2.7

Reference Id: Q38143
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: PV NRC 98 Exam
Comment:

Distracters are wrong because turbine trip is at 7.5 inches, equalizing duct blowout is based on temperature, and make-up and draw-off valves do not isolate on low vacuum

Reference: 41AL-1RK6A, Panel B06 Alarm Response; 40AO-9ZZ07, Loss of Condenser Vacuum

Objective: L56169

SRO Test

74

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 2
K/A #	37016A302	
Importance Rating:	2.90	2.90

Given the following plant conditions:

- Unit 2 is performing a mid-cycle startup
- Reactor power is being raised to 20%
- Current Reactor power is as follows:
  - 18.4% Control channel 1
  - 18.6% Control channel 2
  - 16.9% JSCALOR
  - 8.6% 'A' CPC Linear Upper Detector
  - 19.8% 'A' CPC Linear Middle Detector
  - 21.7% 'A' CPC Linear Lower Detector

Which one of the following describes expected system response when Reactor power is increased one percent from current values?

A. DFWCS will go through 'Swapover'.

B. COLSS CMC/PC overpower alarms become enabled.

C. CPC 'A' will swap from an actual ASI value to use a 'canned' ASI value.

D. CPC 'A' will swap from a 'canned' ASI value to use the actual ASI value.

Answer: D

Associated KA:
37016A302 Ability to monitor automatic operation of the NNIS, including: A3.02 Relationship between meter readings and actual parameter value 2.9 2.9

Reference Id: Q38147
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters are wrong because ASI canned values are being used and will swap to actual values when CPC total linear power reaches 51%. DFWCS has already transitioned the unit through swapover (between 15 and 17%), and CMC/PC power alarms are not power dependent.

Reference: 40OP-9ZZ04, page 10.

Objective: L10002

SRO Test

75

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 2
K/A #	38086A406	
Importance Rating:	3.20	3.20

Given the following plant condition:

- A fire alarm is received on the control room fire protection computer console for the computer room adjacent to the control room.

The Computer Room is expected to be flooded with...

A. CO_2.

B. Halon.

C. Fire Protection water.

D. Fire Suppressant foam.

Answer: B

Associated KA:
38086A406 Ability to manually operate and/or monitor in the control room: A4.06 Halon system 3.2 3.2

Reference Id: Q38153
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracters are wrong because CO_2 and water are not used in this area, and foam is not used.

Reference: Pre-Fire Strategies Manual, page I-121.

Objective: L75419

SRO Test

76

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 2	Group 2
K/A #	32006K506	
Importance Rating:	3.50	3.90

Given the following plant conditions:

- A Loss of Coolant Accident (LOCA) has occurred
- RCS pressure is at 600 psia and dropping slowly

The expected safety injection flow indications at this time would be:

A. constant HPSI and LPSI flow.

B. increasing HPSI and LPSI flow.

B. constant HPSI flow with no LPSI flow.

D. increasing HPSI flow with no LPSI flow.

Answer: D

Associated KA:
32006G242 32006G Generic ECCS 2.4.2 EOP Entry Condition

Reference Id: Q38025
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: INPO Bank
Comment:

Distracters A, B and C are incorrect because RCS pressure is above LPSI shutoff head pressure and since RCS is dropping HPSI flow would not be constant but would be increasing as stated in the answer D.

Reference: GFES Fundamentals

Objective: L65100, L65106

SRO Test

77

This Exam Level Appears on:	RO EXAM Tier 2 Group 2	SRO EXAM Tier 2 Group 2
K/A #	32011G221	
Importance Rating:	3.70	3.60

Given the following plant conditions:

- Unit 2 is at 200 EFPD.
- The Reactor is at 1% Power in 40OP-9ZZ04, Plant Startup, Mode 2 to Mode 1.
- A boration of 20 ppm has just been completed to position CEAs for power increase.
- Pressurizer Level is at 51% (PLCS in Auto)
- A steam and feed misoperation results in an RCS temperature reduction of 20 degrees.

What is the effect on Pressurizer level and core reactivity.

A. Pressurizer In-Surge, Positive Reactivity Addition.

B. Pressurizer In-Surge, Negative Reactivity Addition.

C. Pressurizer Out-Surge, Positive Reactivity Addition.

D. Pressurizer Out-Surge, Negative Reactivity Addition.

Answer: C

Associated KA:
32011G221 32011G PZR LCS 2.2.1 Ability to perform pre-startup procedures for the facility, including operating those controls associated with plant equipment that could affect reactivity. 3.7 3.6

Reference Id: Q38015
Difficulty: 3.00
Time to complete: 3
Cognitive Level: Comprehension
Question Source: New
Comment:

The distracters A and B are wrong because the Pressurizer will out-surge due to the temperature reduction and subsequent contraction of the primary coolant. Distracters B and D are incorrect because the core at 200 EFPD will have a negative moderator temperature coefficient which will cause positive reactivity on a temperature decrease.

Reference: Fundamentals - Reactor Theory, Fluids

Objective L67368

SRO Test

78

This Exam Level Appears on:		SRO EXAM Tier 2 Group 2
K/A #	37012G2438	
Importance Rating:		4.00

Given the following plant conditions:

- Valid low DNBR Trips are actuated on all 4 PPS channels with the Reactor failing to trip automatically.
- The SO pushes all 4 manual trip pushbuttons on B05 and the reactor does not trip.
- The PO attempts to open breakers to de-energize L03 and L10.
- Only L03 opens.
- No voiding is indicated on RVLMS.
- Main Feedwater is maintaining SG levels.

Using the provided STSC Actions procedure, determine what is the minimum Protective Action Recommendation associated with this event?

A. NONE

B. SHELTER within a 2-mile radius

C. EVACUATION for a 2-mile radius and 5 miles in potentially affected sectors

D. EVACUATION for a 5-mile radius and 10 miles in potentially affected sectors

Answer: B

Associated KA:
37012G2438 37012G (10CFR55.43.5) Generic RPS 2.4.38 Ability to take actions called for in the emergency plan including acting as the Emergency Coordinator.

Reference Id:	Q38159	
Difficulty:	3.00	
Time to complete:	5	
10CFR Category:	CFR5543 5	(5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.
Cognitive Level:	Comprehension	
Question Source:	INPO Bank	

Comment:

MUST PROVIDE APPENDIX B PAR TABLE.

Distracters are wrong because the unsuccessful manual trip PAR guidelines for an SAE are to shelter w/i a 2-mile radius.

Reference: EPIP-01, Appendix B

Objective: L92708

SRO Test

79

This Exam Level Appears on: SRO EXAM Tier 2 Group 2

K/A # 38034G2227

Importance Rating: 3.50

Given the following plant conditions:

- Unit 3 is conducting Reactor Core Re-Load with Irradiated Fuel Assemblies.

Determine the approximate minimum acceptable Refueling Water Level associated with this evolution.

A. 101 feet

B. 113 feet

C. 125 feet

D. 137 feet

Answer: D

Associated KA:
38034G2227 38034G (10CFR55.43) Generic Fuel Handling 2.2.27 Knowledge of the refueling process

Reference Id: Q38026
Difficulty: 3.00
Time to complete: 3
10CFR Category: CFR5543 2 (2) Facility operating limitations in the technical specifications and their bases.
Cognitive Level: Memory
Question Source: New
Comment:

Distracters are wrong because Tech Specs requires the level in the correct answer.

Reference: PVNGS Technical Specifications, Amendment 117, LCO 3.9.6.

Objective: L97324

SRO Test

80

This Exam Level Appears on:	RO EXAM Tier 2 Group 3	SRO EXAM Tier 2 Group 3
K/A #	34041A302	
Importance Rating:	3.30	3.40

Given the following plant conditions:

- The Unit is at 7% Power
- The Steam Bypass System is in Automatic
- The Main Turbine Generator is Off-Line
- Regulating Group 5 CEAs are at 124 inches withdrawn
- The CRS directs the PO to Withdraw Regulating Group 5 CEAs to Raise RCS Tc, in support of the upcoming Main Turbine Generator Synchronization evolution
- T-cold is 565 °F.

The Primary Operator withdraws the Regulating Group 5 CEAs and then stops. Under steady state conditions, what is the result of this manipulation?

A. RCS Tc remains constant and Reactor Power remains constant

B. RCS Tc rises and Reactor Power remains constant

C. RCS Tc remains constant and Reactor Power rises.

D. RCS Tc rises and Reactor Power rises

Answer: C

Associated KA:
34041A302 Ability to monitor automatic operation of the SDS, including: A3.02 RCS pressure, RCS temperature, and reactor power 3.3 3.4

Reference Id: Q27610
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

The distracters are incorrect because: A -Reactor power will increase with CEAs being withdrawn, B and D-Tc will not rise with SBCS in Automatic with the Main Turbine Gen off line.

Reference: SBCS System description. Simplified Diagrams and Drawings, Revision 8/18/2000. GFES Reactor Theory

Objective: L10000

SRO Test

81

This Exam Level Appears on:	RO EXAM Tier 2 Group 3	SRO EXAM Tier 2 Group 3
K/A #	34045A401	
Importance Rating:	3.10	2.90

Given the following plant conditions:

- Unit 2 Turbine Generator load control card fails
- The crew takes Standby Control of the Main Turbine.

Describe the process used for future Main Turbine Load changes.

A. Use the Load Set Motor Pushbuttons to adjust the Main Turbine Control Valves

B. Use the Load Selector Pushbuttons to adjust the Main Turbine Control Valves

C. Adjust the Load Limit Potentiometer to directly control Main Turbine Stop Valves

D. Adjust the Standby Load Potentiometer to directly control Main Turbine Control Valves

Answer: D

Associated KA:
34045A401 Ability to manually operate and/or monitor in the control room: A4.01 Turbine valve indicators (throttle, governor, control, stop, intercept),alarms, and annunciators 3.1 2.9

Reference Id: Q27612
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Standby Mode closes a contact downstream of the normal load control subsystem. The standby load potentiometer directly controls the Main Turbine Control Valves. In Standby all the controls stated in distracters A, C, and D will not function.

Reference: Simplified Diagrams and Drawings, Revision 8/18/2000, page 87.

Objective: L65769

SRO Test

82

This Exam Level		
Appears on:	RO EXAM	SRO EXAM
	Tier 2	Tier 2
	Group 3	Group 3
K/A #	34076A401	
Importance Rating:	2.90	2.90

Given the following plant conditions:

- Unit 1 is at 100% Power.
- No equipment out of service.
- Turbine Cooling Water pump 'A' is in service.
- An Auxiliary Operator incorrectly throttles closed on the 'A' Turbine Cooling Water pump discharge valve.

Which of the following describes the system response? (as observed from the Control Room)

A. The 'B' Turbine Cooling Water Pump will Auto-Start on Low TC Header Pressure.

B. The 'B' Turbine Cooling Water Pump will Auto-Start after the 'A' Turbine Cooling Water Pump Trip.

C. The 'B' Turbine Cooling Water pump will not Auto-Start with the 'A' TC Pump discharge valve closed.

D. The 'B' Turbine Cooling Water Pump will not Auto-Start until the 'A' TC Pump handswitch is taken to stop.

Answer: A

Associated KA:
34076A401 Ability to manually operate and/or monitor in the control room: A4.01 SWS pumps 2.9 2.9

Reference Id: Q27613
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters: B is incorrect because the "A" TC pump will not trip. C and D are incorrect because there is no interlocks between A and B TC pumps.

Reference: Turbine Cooling Water P&ID, and Loss of Cooling Water AOP.

Objective: 82258

SRO Test

83

This Exam Level Appears on: SRO EXAM Tier 2 Group 3

K/A # 34005G2114

Importance Rating: 3.30

Given the following plant conditions:

- Unit in Mode 5 at 175^0F, 150 psia.
- Shutdown Cooling 'A' in service
- A break in the SDC piping in the SDCHX Room results in a loss of SDC.
- RCS Temperature rises to 211^0F and continues to rise.
- SDC is restored after 25 minutes at 215^0F, 110 psia.

Given the EAL (Emergency Action Level) Tables, which ONE of the following identifies the Emergency Plan Classification and reason that applies?

A. ALERT, for inability to maintain plant in Cold Shutdown.

B. SAE, (Site Area Emergency) for exceeding 15 minutes without SDC.

C. NUE, (Notification of Unusual Event) for Identified leakage > 25 gpm.

D. ALERT, for RCS leak rate > available makeup capacity as indicated by a loss of RCS subcooling.

Answer: A

Associated KA:
34005G2114 34005G (10CFR5.43) Generic RHRS 2.1.14 System Status Control requiring notification.

Reference Id: Q38077
Difficulty: 4.00
Time to complete: 3
10CFR Category: CFR5543 5 (5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.
Cognitive Level: Comprehension
Question Source: New
Comment:

Distracters D is wrong because subcooling was not lost: C because a leak > 25 gpm is superseded by loss of shutdown cooling; B because there is no SAE category for shutdown cooling loss.

Reference: EPIP-01, EAL Tables 1, 4 and 5.

Objective: L58622

SRO Test

84

This Exam Level Appears on:		SRO EXAM Generic Cat 1
K/A #	214	
Importance Rating:		3.40

When operating in Mode 1, the Conduct of Shift Operations procedure states that ____ RO(s) or SRO(s) will be "at the controls" with an SRO _____.

A. 2, in the command function.

B. 1, continuously in the horseshoe area.

C. 1, in the command function

D. 2, continuously in the horseshoe area.

Answer: C

Associated KA:

214	2.1.4	(10CFR55.43) Knowledge of shift staffing requirements.	2.3	3.4

Reference Id:	Q38166
Difficulty:	2.00
Time to complete:	2
10CFR Category:	CFR5543 1 (1) Conditions and limitations in the facility license.
Cognitive Level:	Memory
Question Source:	PV Bank Not Modified
Comment:	Distracters are incorrect, only one RO or SRO is required "at the controls" with an SRO at the command function. Reference: 40DP-9OP02, Conduct of Shift Operations, Section 3.2.1, pg 12 of 40. Objective: L12034

SRO Test

85

This Exam Level Appears on:		SRO EXAM Generic Cat 1
K/A #	2110	
Importance Rating:		3.90

Which ONE of the following describes the bases and requirements for Condensate Storage Tank Volume during Mode 1 operations?

A. >=225,000 gallons, ensuring Mode 3 for 8 hours, followed by a Cooldown to SDC in 6 hours.

B. >=225,000 gallons, ensuring Mode 3 for 12 hours, followed by a Cooldown to SDC in 6 hours.

C. >=300,000 gallons, ensuring Mode 3 for 8 hours, followed by a Cooldown to SDC entry conditions.

D. >=300,000 gallons, ensuring Mode 3 for 12 hours, followed by a Cooldown to SDC in 6 hours.

Answer: C

Associated KA:

2110	2.1.10	(10CFR55.43) Knowledge of conditions and limitations in the facility license.	2.7 3.9

Reference Id:	Q38086	
Difficulty:	3.00	
Time to complete:	3	
10CFR Category:	CFR5543 1	(1) Conditions and limitations in the facility license.
Cognitive Level:	Memory	
Question Source:	New	

Comment:

Distracters are wrong because only answer C has the correct combination of volume, time in Hot Standby, and cooldown to SDC.

Reference: PVNGS Operating License Bases, B 3.7.6 Condensate Storage Tank.

Objective: L78728

SRO Test

86

This Exam Level Appears on:	RO EXAM Generic Cat 1	SRO EXAM Generic Cat 1
K/A #	2133	
Importance Rating:	3.40	4.00

Given the following plant conditions:

- Unit 1 is operating at 100% power, stable, with no evolutions or events in progress.

Describe the combination of Parameter Ranges that are within the limits of PVNGS Technical Specifications LCOs for the following parameters.

	Pzr Pressure	RCS Tc	RCS Total Flow

A. 1960-2275 psia, 552-570^{0}F, 156 - 160 E7 lbm/hr

B. 2125-2409 psia, 560-570^{0}F, 156 - 160 E4 lbm/hr

C. 2130-2295 psia, 550-560^{0}F, 156 - 160 E6 lbm/hr

D. 2225-2350 psia, 545-565^{0}F, 156 - 160 E5 lbm/hr

Answer: C

Associated KA:
2133 2.1.33 Ability to recognize indications for system operating parameters which are entry-level conditions for technical specifications. 3.4 4

Reference Id: Q38011
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: New
Comment:

Distracter A is wrong because of a low Pressure range, a high temperature range (use of old min temp criticality #) and a high flow range.
Distracter B is wrong because of a low and high-pressure range (use of SPLA trip # 2409), a high temperature range (post trip #s), and a low flow.
Distracter D is wrong because of a high-pressure range, a low and high temperature range (use of min temp crit #), and a low flow.

Reference: PVNGS Technical Specifications, LCO 3.4.1, Amendment 117.

Objective: 55206

SRO Test

87

This Exam Level Appears on:		SRO EXAM Generic Cat 2
K/A #	226	
Importance Rating:		3.30

Given the following plant condition:

- The Water Treatment Section Leader has initiated a Temporary Approved Procedure Action (TAPA), re-ordering steps to support the new method of Demin Charge Regeneration.
- 4 hours later the TAPA Package has been routed to the Shift Manager/Control Room Supervisor for Review and Temporary Approval.

Which one of the following describes what the SM/CRS is responsible to Review prior to Temporary Approval?

A. TAPA impact to Plant Operations.

B. TAPA System Design Change Impact.

C. New Demin Charge Regeneration method Safety Analysis Impact.

D. New Demin Charge Regeneration methods Chemistry Control Program Impact.

Answer: A

Associated KA:
226 2.2.6 (10CFR55.43) Knowledge of the process for making changes in procedures as described in the safety analysis report. 2.3 3.3

Reference Id:	Q27756	
Difficulty:	4.00	
Time to complete:	4	
10CFR Category:	CFR5543 3	(3) Facility licensee procedures required to obtain authority for design and operating changes in the facility.
Cognitive Level:	Memory	
Question Source:	New	

Comment:

Distracters are wrong because SM/CRS is responsible for plant operations only and not system or method design.

Reference: Procedure Process 01DP-0AP01, Revision 10, page 63. NOTE: This procedure is on Administrative Hold, pending a Pilot Program completion.

Objective: L57431

SRO Test

88

This Exam Level Appears on:		SRO EXAM Generic Cat 2
K/A #	2211	
Importance Rating:		3.40

Which one of the following is a Temporary Modification?

A. A blank flange is installed on a line while rerouting the line under an approved Work Order.

B. Maintenance technicians installing a temporary drain hose to support changing oil in a pump.

C. Connecting cables from a 480v Motor Control Center (MCC) to a power panel for outage maintenance support only.

D. Performing a channel calibration procedure, which requires installing jumpers to electrically bypass automatic actuation.

Answer: C

Associated KA:

2211	2.2.11	(10CFR55.43) Knowledge of the process for controlling temporary changes.	2.5 3.4

Reference Id:	Q38165	
Difficulty:	2.00	
Time to complete:	2	
10CFR Category:	CFR5543 3	(3) Facility licensee procedures required to obtain authority for design and operating changes in the facility.
Cognitive Level:	Memory	
Question Source:	INPO Bank	

Comment:

Distracters are wrong because they are either part of an approved procedure, work order or practice.

Reference: 81DP-0DC17

Objective: L57327

SRO Test

89

This Exam Level Appears on:	RO EXAM Generic Cat 2	SRO EXAM Generic Cat 2
K/A #	2212	
Importance Rating:	3.00	3.40

40OP-9ZZ23, Outage GOP and 40ST-9RC01, RCS and Pressurizer Heatup and Cooldown Rates require logging spray valve usage under certain circumstances.

When is it necessary to log main and auxiliary spray valve usage?

A. Main spray each operation, Auxiliary spray each operation

B. Main spray less than 4 RCP's operating, Auxiliary spray each operation

C. Main spray each operation, Auxiliary spray less than 4 RCP's operating

D. Main spray less than 4 RCP's operating, Auxiliary spray less than 4 RCPs operating

Answer: B

Associated KA:

2212	2.2.12	Knowledge of surveillance procedures.	3	3.4

Reference Id: Q38258
Difficulty: 3.00
Time to complete: 3
Cognitive Level: Memory
Question Source: PV Bank Not Modified
Comment:

Distracters are incorrect, logging of cooldown only required for Main Spray when less than 4 RCPs running or whenever Aux Sprays used.

Reference: 40OP-9ZZ23, Outage GOP; 40ST-9RC01, RCS and Pressurizer Heatup and Cooldown Rates

Objective: L11074

SRO Test

90

This Exam Level Appears on:	RO EXAM Generic Cat 2	SRO EXAM Generic Cat 2
K/A #	2223	
Importance Rating:	2.60	3.80

Given the following plant conditions:

- Unit 3 is operating at 100% power.
- Action statement 3.5.3.B states, " with one ECCS train inoperable, restore the inoperable train to OPERABLE status within 72 hours or be in at least HOT STANDBY within the next 6 hours".
- ECCS Train A becomes INOPERABLE at 1200 on 11/10.
- ECCS Train B becomes INOPERABLE at 1100 on 11/12.
- ECCS Train A becomes OPERABLE at 1130 on 11/12.

Which one of the following identifies the time and date for restoration of ECCS Train B before plant shutdown must be commenced?

A. 1200 on 11/12

B. 1200 on 11/13

C. 1100 on 11/15

D. 1130 on 11/15.

Answer: B

Associated KA:

2223	2.2.23	Ability to track limiting conditions for operations.	2.6	3.8

Reference Id: Q38183
Difficulty: 4.00
Time to complete: 2
Cognitive Level: Analysis
Question Source: INPO Bank
Comment:

B is correct usage of 72-hour timeline from first train being INOP. A, C, & D are incorrect usage of 72 hours added to the wrong component being declared INOP or being returned to OPERABLE status.

Reference: TS LCO 3.5.3.B

Objective: L58997

SRO Test

91

This Exam Level Appears on:		SRO EXAM Generic Cat 2
K/A #	2225	
Importance Rating:		3.70

Which one of the following describes the bases for meeting the Limiting Condition for Operation (LCO) on DNBR?

A. The hot fuel rod in the core will be < 21kw/ft during a LOCA.

B. It ensures that the licensed power operating limit will not be exceeded during normal operation.

C. The core will not experience DNB during Normal Operations and Anticipated Operational Occurrences.

D. It ensures that COLSS Calculated DNBR will not exceed the COLSS POL based on linear heat rate during an overpower transient.

Answer: C

Associated KA:
2225 2.2.25 (10CFR55.43) Knowledge of bases in technical specifications for limiting conditions for operations and safety limits. 2.5 3.7

Reference Id:	Q27622
Difficulty:	2.00
Time to complete:	2
10CFR Category:	CFR5543 2 (2) Facility operating limitations in the technical specifications and their bases.
Cognitive Level:	Memory
Question Source:	PV Bank Not Modified

Comment:

Distracters wrong because they do not impact DNBR bases but power related bases.

Reference: Technical Specifications, Basis. Section 3.2 Power Distribution Limits.

Objective: L77203

SRO Test

92

This Exam Level Appears on:		SRO EXAM Generic Cat 2
K/A #	2231	
Importance Rating:		2.90

The Refueling Machine operator suggests altering the sequence of Core Offload to save time and dose. Who, at a minimum, must authorize this action?

A. Refueling SRO and Containment Coordinator.

B. Reactor Engineer, Refueling SRO, and Shift Manager.

C. Reactor Engineer, Outage Coordinator, and Shift Manager.

D. Reactor Engineer, Outage Coordinator, and Refueling SRO.

Answer: B

Associated KA:
2231 2.2.31 (10CFR55.43) Knowledge of procedures and limitations involved in initial core loading.
2.2 2.9

Reference Id: Q27748
Difficulty: 3.00
Time to complete: 3
10CFR Category: CFR5543 7 (7) Fuel handling facilities and procedures.
Cognitive Level: Memory
Question Source: PV NRC 98 Exam
Comment:
Objective: L97316

SRO Test

93

This Exam Level Appears on:		SRO EXAM Generic Cat 3
K/A #	231	
Importance Rating:		3.00

Given the following plant conditions:

- A General Emergency has been declared.
- You are acting as Emergency Coordinator (EC).
- A radioactive release is occurring from the Auxiliary Building.
- A radiochemist has injured her leg and cannot exit the Auxiliary Building.
- An Emergency Plan Dose Authorization form (EP-0300) has been completed.

Which of the following best describes the requirement for assigning an emergency worker to rescue the radiochemist:

The emergency worker must volunteer and ...

A. have his or her dose limited to 75 rem TEDE.

B. be a male and have his dose limited to 75 rem TEDE.

C. be male or female and have his or her dose limited to 25 rem TEDE.

D. be male or female and his or her exposure may not exceed the annual 10CFR20 exposure limit.

Answer: C

Associated KA:
231 2.3.1 (10CFR55.43) Knowledge of 10 CFR: 20 and related facility radiation control requirements 2.6 3

Reference Id:	Q38171	
Difficulty:	2.00	
Time to complete:	2	
10CFR Category:	CFR5543 4	(4) Radiation hazards that may arise during normal and abnormal situations, including maintenance activities and various contamination conditions.
Cognitive Level:	Memory	
Question Source:	INPO Bank	

Comment:

Distracters are wrong because the limit is 25 rem under the given conditions, and the volunteer can be either gender.

Reference: EPIP-01 App. K, page 3 of 8

Objective: L59736

SRO Test

94

This Exam Level Appears on:	RO EXAM Generic Cat 3	SRO EXAM Generic Cat 3
K/A #	232	
Importance Rating:	2.50	2.90

Regarding the use of Respirators in the RCA at PVNGS:

- A maintenance team (three mechanics) desires to work a valve in a room containing 1.0 DAC Airborne.
- The work normally takes 2 hours for the three workers with no respirators.
- It is estimated that it will take 3 hours in Respirators. (Work requires three mechanics)
- The radiation levels in the room are 25 mrem/hour general area and 75 mrem/hour on contact of the valve to be worked. (Two mechanics need to be in contact with the valve)
- The contamination levels are < 1000 dpm. (Not Contaminated)
- It will take 2 workers 2 hours to install additional temporary shielding around the valve. This reduces contact dose rate to 50 mrem/hour with no affect on General Area dose rates.

Select the one option that best supports the PVNGS ALARA program.

A. No Respirators, Minimize Stay Time

B. Mandatory Respirator use for all three workers.

C. Mandatory Respirators, Only two workers work at a time.

D. No Respirators, Install additional shielding before valve work.

Answer: A

Associated KA:

232	2.3.2	Knowledge of facility ALARA program.	2.5	2.9

Reference Id: Q38000
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Analysis
Question Source: New
Comment:

Distracters are wrong because respirators are not required, minimizing time and exposure, and installation of shielding causes more overall exposure than just the work exposure.

Reference: RWP Initial and Retraining Study Guides.

Objective: Radiation Worker Training

SRO Test

95

This Exam Level Appears on:	RO EXAM Generic Cat 4	SRO EXAM Generic Cat 4
K/A #	2412	
Importance Rating:	3.40	3.90

When are Technical Specifications required to be addressed during Emergency Operating Procedure implementation?

A. Prior to exiting the Emergency Operating Procedures.

B. Selectively at the discretion of the Unit Department Leader.

C. Within 24 hours following the completion of the post-trip Operability Determination.

D. Immediately by the Shift Technical Advisor in parallel with the Safety Function Status Check.

Answer: A

Associated KA:
2412 2.4.12 Knowledge of general operating crew responsibilities during emergency operations.
3.4 3.9

Reference Id: Q37999
Difficulty: 3.00
Time to complete: 2
Cognitive Level: Memory
Question Source: PV NRC 99 Exam
Comment:
Objective: L10337

SRO Test

96

This Exam Level Appears on: SRO EXAM Generic Cat 4

K/A # 2416

Importance Rating: 4.00

Given the following plant conditions:

- A Loss of All Feedwater Event (LOAF) occurred.
- The Reactor was manually tripped.
- The CRS is in the LOAF EOP, with a success path of locally closing the AFN breaker.
- NAN-S01 de-energizes.
- All other equipment functioned as expected.

As the CRS, determine the correct application of the EOPs and AOPs (per the EOP User's Guide) to reenergize NAN-S01.

A. Remain in LOAF EOP and implement the Degraded Electrical AOP to recover NAN-S01.

B. Remain in LOAF EOP and refer to the Loss of Offsite Power/ Loss of Forced Circulation ORP to recover NAN-S01.

C. Transition to the Loss of Offsite Power/Loss of Forced Circulation EOP to recover NAN-S01.

D. Transition to the Functional Recovery EOP to recover NAN-S01.

Answer: A

Associated KA:
2416 2.4.16 (10CFR55.43) Knowledge of EOP implementation hierarchy and coordination with other support procedures. 3.0 4.0

Reference Id: Q27624
Difficulty: 4.00
Time to complete: 4
Cognitive Level: Comprehension
Question Source: New
Comment:

Use of AOPs and OPs is allowed in coordination with EOPs (as directed by the CRS). Distracters are incorrect because B-Use of two ORPs together is not allowed.
C- Loss of only NAN-S01 does not require the CRS to transition to the FRP (though it is allowed). D- LOOP/LOFC does not address loss of feed.

Reference: Emergency Operating Procedure User's Guide, 40DP-9AP16, Revision 3, page 24.

Objective: L10343

SRO Test

97

This Exam Level Appears on:	RO EXAM Generic Cat 4	SRO EXAM Generic Cat 4
K/A #	2420	
Importance Rating:	3.30	4.00

Given the following status of the Safety Functions:

- Reactivity Control (RC) is determined to be challenged.
- Pressure Control (PC) is jeopardized.
- Heat Removal (HR) is jeopardized.
- Inventory Control (IC) is determined to be challenged.
- All other Safety Functions are satisfied.

Which one of the following should the crew address first?

A. Heat Removal (HR)

B. Inventory Control (IC)

C. Pressure Control (PC)

D. Reactivity Control (RC)

Answer: C

Associated KA:

2420	2.4.20	Knowledge of operational implications of EOP warnings, cautions, and notes.	3.3 4

Reference Id: Q37998
Difficulty: 2.00
Time to complete: 2
Cognitive Level: Comprehension
Question Source: INPO Bank
Comment:

Distracters are wrong because focus is placed on those Safety Functions which are jeopardized and in the highest priority. Since PC and HR are both jeopardized they should be addressed first, but PC is a higher priority.

Reference: 40DP-9AP16, EOP Users Guide

Objective: L10332

SRO Test

98

This Exam Level Appears on:	RO EXAM	SRO EXAM
	Generic Cat 4	Generic Cat 4
K/A #	2421	
Importance Rating:	3.70	4.30

Values of RCS or CET Superheat in excess of 50 [62] degrees during a LOCA _____

A. indicate core uncovery.

B. make RVLMS inoperable.

C. enhances natural circulation.

D. indicate a loss of steam generators as a secondary heat sink.

Answer: A

Associated KA:
2421 2.4.21 Knowledge of the parameters and logic used to assess the status of safety functions including:1 Reactivity control 2. Core cooling and heat removal 3. Reactor coolant system integrity 4. Containment conditions 5. Radioactivity release control. 3.7 4.3

Reference Id: Q38180
Difficulty: 3.00
Time to complete: 3
Cognitive Level: Memory
Question Source: PV NRC 99 Exam
Comment:

Distracters are wrong because: B - CETs don't feed RVLMS; C - this would indicate problems with NC; D- this could not be inferred directly with information given.

Reference: 40DP-9AP08, Tech Guide for LOCA, step 36.

Objective: L10460

SRO Test

99

This Exam Level Appears on:		SRO EXAM Generic Cat 4
K/A #	2422	
Importance Rating:		4.00

Concerning Safety Functions, choose the correct statement.

During EOP execution, Safety Functions are conditions or actions ....

A. addressed equally in any sequence and supersede UFSAR design basis criteria.

B. addressed equally in any sequence to prevent fuel damage and minimize release to the public.

C. addressed in a systematic hierarchy to prevent core damage and minimize release to the public.

D. addressed in a systematic hierarchy with preference given to Technical Specification Limiting Conditions for Operation (LCO's).

Answer: C

Associated KA:
2422 2.4.22 (10CFR55.43) Knowledge of the bases for prioritizing safety functions during abnormal/emergency operations. 3.0 4.0

Reference Id:	Q38164	
Difficulty:	2.00	
Time to complete:	3	
10CFR Category:	CFR5543 5	(5) Assessment of facility conditions and selection of appropriate procedures during normal, abnormal, and emergency situations.
Cognitive Level:	Comprehension	
Question Source:	PV Bank Not Modified	

Comment:

The distracters are wrong because: B they are addressed in as systematic hierarchy. D- No preference to Tech Specs is made during EOPs. A - same as B.

Reference: 40DP-9AP16, EOP Users Guide

Obj. L10332

SRO Test

100

This Exam Level Appears on:		SRO EXAM Generic Cat 4
K/A #	2427	
Importance Rating:		3.50

Given the following plant conditions:

- A fire in the Auxiliary Building.
- The CRS is implementing 40DP-9ZZ19, Operational Considerations Due To Plant Fire.
- Some alarms occur from equipment in the affected zone.

Which describes the implementation of this procedure by the CRS?

A. Determine the affected fire zone and deenergize all 10CFR50 Appendix R equipment listed for that zone.

B. Determine the affected fire zone and perform those actions, if any, to take in response to the fire in conjunction with other procedures.

C. This procedure is implemented by the CRS after the Fire Team Advisor arrives on the scene.

D. This procedure should only be implemented after any alarm response or AOPs are addressed to determine the impact on safe shutdown capability.

Answer: B

Associated KA:

2427	2.4.27	(10CFR55.43) Knowledge of fire in the plant procedure.	3.0	3.5

Reference Id: Q27753
Difficulty: 2.00
Time to complete: 3
Cognitive Level: Comprehension
Question Source: PV NRC 98 Exam
Comment:

SRO Test

Cognitive Level Summary

Number of questions linked:	100	Percentage
Memory	35	35
Comprehension	55	55
Analysis	10	10

Question Source Summary

Number of questions linked to source:	100	Percentage
New		
New	65	65
Modified		
INPO Bank Modified	4	
PV Bank Modified	1	
Total Modified	5	5
Bank		
INPO Bank Not Modified	9	
PV Bank Not Modified	12	
PV NRC Exam Question Not Modified	9	
Total BANK	30	30