

KEY ID
 A B C D

SCORING & PRINTING OPTIONS:
 RESCORE MULTIPLE ANSWER SCORING
 CORRECT ANSWER MARK X TOTAL ONLY
 MARK ONLY ONE

↑ FEED IN THIS DIRECTION ↓

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ANSWER KEY INFO.

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1	1
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PERFORMANCE ASSESSMENT

	% OF TOTAL SCORE		POINTS EARNED	
	00 = 100%			
E	0	0	0	0
O	1	1	1	1
T	2	2	2	2
A	3	3	3	3
L	4	4	4	4
P	5	5	5	5
V	6	6	6	6
A	7	7	7	7
L	8	8	8	8
E	9	9	9	9

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CERTIFICATION: I have reviewed all questions which were missed, have had an opportunity to ask questions, and understand the correct answer to each question. All work on this examination is my own, I have neither given or received help.

DATE

SIGNATURE

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NUMBER CORRECT	100
PERCENT CORRECT	100
ROSTER NUMBER	100
SCORE	
RESCORE	

COMBINED POINTS EARNED	
COMBINED PERCENT CORRECT	
LETTER GRADE	
SCORE	
RESCORE	

100
4/21/15

MARKING INSTRUCTIONS

Use a No. 2 Pencil or blue or black ink pen only.
 A B C D
 Fill oval completely

Eraser cleanly

ID/SSN

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NAME **DO KEY**

COURSE EXAM

DATE **4-21-2015**



KEY ID

(A) (B) (C) (D)

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PERFORMANCE ASSESSMENT	
% OF TOTAL SCORE	POINTS EARNED
100 = 100%	
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NUMBER CORRECT	MIN
PERCENT CORRECT	100
ROSTER NUMBER	NAME
SCORE	
RESCORE	

COMBINED POINTS EARNED	
COMBINED PERCENT CORRECT	
LETTER GRADE	
SCORE	
RESCORE	

*1000
4/21/15*

4/21/15

NAME **KEY SPO**
 COURSE EXAM
 DATE **4-21-2015**

MARKING INSTRUCTIONS

Use a No. 2 Pencil or blue or black ink pen only.
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 Fill oval completely
 (A) (B) (C) (D)
 Erase cleanly

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EXAMINATION ANSWER KEY

2015 RO

1

ID: Q44196

Points: 1.00

Given the following plant conditions:

- Unit 1 has tripped from 100% power due to a loss of condenser vacuum.
- Condenser vacuum is 14 inches HgA and degrading.
- RCP 2B tripped due to an electrical fault.
- 40EP-9EO02, Reactor Trip, has been implemented.
- SG levels are lowering.
- Feedwater flow to each SG is currently 0 gpm.
- The CRS has directed you to restore SG levels to 45% NR.

Which of the following is an available source and method to restore SG levels?

- A. Only Auxiliary Feedwater is available, SGs should be fed at the same rate to maintain equal SG levels.
- B. Only Auxiliary Feedwater is available, SG 1 must be fed at a higher flow rate than SG 2 to maintain equal SG levels.
- C. Either Auxiliary or Main Feedwater is available, SGs should be fed at the same rate to maintain equal SG levels.
- D. Either Auxiliary or Main Feedwater is available, SG 1 must be fed at a higher flow rate than SG 2 to maintain equal SG levels.

Answer: B

EXAMINATION ANSWER KEY

2015 RO

2

ID: Q44197

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 100% power.
- RCS pressure 2200 psia and slowly lowering.
- Reactor Drain Tank level and pressure are rising.
- Pressurizer level is 53.5% and stable.
- The CRS has entered 40OP-9ZZ02, Excessive RCS leakrate.
- ERFDADS calculated leakrate stabilizes at 42 gpm.

Subsequently

- A reactor trip occurs due to a CEA malfunction.
- SIAS/CIAS are manually initiated.

Which of the following describes Pressurizer Level response following the reactor trip?

Pressurizer level will...

- A. lower to 33% and stabilize.
- B. lower until HPSI injection stabilizes level.
- C. initially lower then rise to greater than indicating range.
- D. immediately rise from 53.5% to greater than indicating range.

Answer: C

EXAMINATION ANSWER KEY

2015 RO

3

ID: Q44263

Points: 1.00

Given the following conditions:

- Unit 1 was manually tripped from 50% power due to lowering SG levels.
- Non class instrument bus, NNN-D15, faulted and is de-energized.
- Main Feed pump "B" is OOS.
- Auxiliary Feed pump "B" is OOS.
- SGs are being fed at 350 gpm using Auxiliary Feed pump, AFN-P01.

During SPTAs the following conditions are observed:

- PZR level is 25% and slowly lowering.
- Pressurizer pressure is 1830 psia and slowly lowering.
- AFN-P01 has tripped.
- SG pressure is being maintained by the SBCS in remote/auto.
- RCS Tcold is 564°F and stable.
- Containment pressure is 0.4 psig and slowly rising.
- Containment humidity and temperature are slowly rising.
- SG levels 60% WR and lowering.

Based on these conditions the CRS shall enter...

- A. 40EP-9EO06, Loss of All Feedwater, and stop all 4 RCPs.
- B. 40EP-9EO03, Loss of Coolant Accident, and stop all 4 RCPs.
- C. 40EP-9EO06, Loss of All Feedwater, and stop 2 RCPs in opposite loops.
- D. 40EP-9EO03, Loss of Coolant Accident, and stop 2 RCPs in opposite loops.

Answer: D

EXAMINATION ANSWER KEY

2015 RO

4

ID: Q44198

Points: 1.00

Given the following conditions:

- Unit 1 automatically tripped 30 minutes ago.
- 40EP-9EO03, LOCA has been entered.
- Nuclear Cooling Water containment isolation valves have been closed
- RCS Loop 1 Thot is 587°F and stable.
- RCS Loop 1 Tcold is 565°F and stable.
- RCS Loop 2 Thot is 588°F and stable.
- RCS Loop 2 Tcold is 563°F and stable.
- PZR pressure is 1700 psia and slowly lowering.
- Maximum quadrant CET is 615°F and stable.

You have been directed to check natural circulation flow.

Natural circulation flow...

- A. can be verified, all requirements are met.
- B. can NOT be verified because the Loop delta T is too large.
- C. can NOT be verified because RCS subcooling limits are not met.
- D. can NOT be verified because the delta T between Thot RTDs and the maximum quadrant CET is too large.

Answer: C

EXAMINATION ANSWER KEY

2015 RO

5

ID: Q5798

Points: 1.00

Given the following plant conditions for RCP 1B:

- #1 seal inlet pressure 2250 psig.
- #2 seal inlet pressure 1120 psig.
- #2 seal outlet pressure 1100 psig.
- Seal bleedoff flow 4.8 gpm.

Which of the following would cause these indications?

- A. #1 seal has failed.
- B. #2 seal has failed.
- C. #3 seal has failed.
- D. #1 and #2 seals have failed.

Answer: B

EXAMINATION ANSWER KEY

2015 RO

6

ID: Q44273

Points: 1.00

Given the following plant conditions:

- Refueling pool level is 137' 6' (>23 ft above the vessel flange).
- Core re-load is in progress.
- SDC train B is operable but not in operation.
- SDC train A is operable and in operation with LPSI pump A providing SDC flow.

Subsequently

- SIA-P02, LPSI pump A breaker trips.

Which of the following is correct?

Alarm window 2B06A, SDC TRAIN A/B FLOW LO, __(1)__ and core reload must be suspended __(2)__.

- A. (1) will alarm (2) immediately
- B. (1) will **NOT** alarm (2) immediately
- C. (1) will alarm (2) within 1 hour
- D. (1) will **NOT** alarm (2) within 1 hour

Answer: B

EXAMINATION ANSWER KEY

2015 RO

7

ID: Q44200

Points: 1.00

Given the following conditions:

- Unit 1 is at 100% power.
- There was a leak in the Nuclear Cooling Water System (NCW).
- Train 'A' Essential Cooling Water has been cross-connected to NCW per 40AO-9ZZ03, Loss of Cooling Water.

(1) Which one of the following identifies the ESFAS signal that will automatically close EWA-UV-65 and EWA-UV-145, Cross-Tie Valves to/from Nuclear Cooling Water.

(2) What is the purpose of these valves closing?

- A. (1) SIAS (2) Ensures Containment Integrity is maintained during accident conditions.
- B. (1) SIAS (2) Ensures adequate cooling flow to SDCHX during accident conditions.
- C. (1) CSAS (2) Ensures Containment Integrity is maintained during accident conditions.
- D. (1) CSAS (2) Ensures adequate cooling flow to SDCHX during accident conditions.

Answer: B

EXAMINATION ANSWER KEY

2015 RO

8

ID: Q44275

Points: 1.00

Given the following conditions:

- Due to a major event Unit 1 tripped from 100% power.
- Pressurizer level went off scale low.
- HPSI throttle criteria has been met and fully throttled.
- Pressurizer level is now 30% and stable.
- RCS pressure is 1200 psia and stable.

Which of the following is correct?

- (1) Assuming no Operator action, what is the status of the Class pressurizer backup heaters?
 - (2) How will a pressure rise of 50 psia under these conditions compare to 50 psia pressure rise at 100% power operations?
- A. (1) Energized.
(2) Pressure recovery will take longer because the pressurizer is not at saturation conditions.
- B. (1) Energized.
(2) The pressure recovery will be approximately the same as long as all heaters are energized and the RCS is subcooled.
- C. (1) De-energized.
(2) Pressure recovery will take longer because the pressurizer is not at saturation conditions.
- D. (1) De-energized.
(2) The pressure recovery will be approximately the same as long as all heaters are energized and the RCS is subcooled.

Answer: C

EXAMINATION ANSWER KEY

2015 RO

9

ID: Q44037

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 100% power.
- RCP 1A has tripped.
- All 4 PPS channels SG-1 "LO FLOW" have actuated.
- Leg 1-3 phase current lights are extinguished.
- Leg 2-4 phase current lights are illuminated.

Which ONE of the following is correct regarding the status of the Reactor Trip Switchgear (RTSG) breakers and actions to trip the reactor?

- A. At least one RTSG breaker has opened and only NGN-L10 must be tripped to de-energize the CEDMCS bus.
- B. At least one RTSG breaker has opened and both NGN-L03 and L10 must be tripped to de-energize the CEDMCS bus.
- C. At least two RTSG breakers have opened and only NGN-L10 must be tripped to de-energize the CEDMCS bus.
- D. At least two RTSG breakers have opened and both NGN-L03 and L10 must be tripped to de-energize the CEDMCS bus.

Answer: B

EXAMINATION ANSWER KEY

2015 RO

10

ID: Q9047

Points: 1.00

Given the following conditions and steam tables:

- SG#1 has a tube rupture.
- Power is lost to the switchyard.
- Reactor Coolant Tcold is 515°F.
- Reactor Coolant Thot is 538°F.
- CET temperature is 544°F.
- SG#1 pressure is 1035 psia and stable.
- SG#1 level is 60% narrow range and slowly lowering.
- RCS pressure is 1000 psia and stable.
- Pressurizer level is 36% and slowly rising.
- HPSI pump A, SIA-P02, has been secured.
- HPSI pump B, SIB-P02, is running with two injection valves open.

Based on the above data, which of the following actions is required?

- A. Start any idle charging pumps.
- B. Increase HPSI flow to the RCS.
- C. Maintain HPSI flow at its present injection value.
- D. Commence an RCS cooldown to lower CET temperature to less than 540°F.

Answer: B

EXAMINATION ANSWER KEY

2015 RO

11

ID: Q44268

Points: 1.00

Given the following conditions:

- The reactor has tripped.
- PZR level is 25% and lowering.
- RCS pressure is 1700 psia and dropping.
- Containment pressure and temperature are rising.
- RCS subcooling is 75°F and rising.
- SG 1 level is 65% WR and lowering.
- Loop 1 Tcold is 555°F and lowering.
- SG 2 level is 45% WR and lowering.
- Loop 2 Tcold is 520°F and lowering.

(1) Which of the following is the relationship between the SG #1 and SG #2 steam flow transmitters?

(2) How will the steam flow detectors respond as a result of a subsequent MSIS?

- A. (1) SG #2 flow is less than SG #1 flow.
(2) Both SG #1 and SG #2 flow almost immediately go to 0.
- B. (1) SG #1 flow is less than SG #2 flow.
(2) Both SG #1 and SG #2 flow almost immediately go to 0.
- C. (1) SG #1 flow is less than SG #2 flow.
(2) SG #1 flow almost immediately goes to 0, SG #2 flow eventually decreases to 0.
- D. (1) SG #2 flow is less than SG #1 flow.
(2) SG #1 flow almost immediately goes to 0, SG #2 flow eventually decreases to 0.

Answer: C

EXAMINATION ANSWER KEY

2015 RO

12

ID: Q44202

Points: 1.00

Given the following conditions:

- A steam break in the turbine building has occurred and was isolated by an MSIS.
- AFA-P01 is OOS and under clearance for maintenance.

During SPTAs the following conditions are noted:

- Auxiliary Feedpump B, AFB-P01, trips on an 86 Lockout following a start attempt.
- Both SG levels are 10% NR and slowly lowering.
- Pressurizer level is 23% and slowly rising.
- Pressurizer pressure is 1900 psia and stable.
- ADVs are controlling SG pressure.
- Tcold is 552°F and stable.
- Thot is 555°F and stable

What is the status of the RCS Pressure Control and RCS Heat Removal Safety Functions?

(1) RCS Pressure Control criteria....

(2) RCS Heat Removal criteria...

- A. (1) **is** satisfied because PZR pressure is within the P/T limits per appendix 2.
(2) **is** satisfied because SG levels are > 25% WR.
- B. (1) **is** satisfied because PZR pressure is within the P/T limits per appendix 2.
(2) **is not** satisfied because SG levels are < 45% NR and not rising.
- C. (1) **is not** satisfied because no PZR heaters are available with level < 25%.
(2) **is not** satisfied because SG levels are < 45% NR and not rising.
- D. (1) **is not** satisfied because no PZR heaters are available with level < 25%.
(2) **is** satisfied because SG levels are > 25% WR.

Answer: B

EXAMINATION ANSWER KEY

2015 RO

13

ID: Q44277

Points: 1.00

Given the following conditions:

- Unit 1 tripped from 100% power.
- 40EP-9EO08, Blackout has been implemented.
- DG A has been started following a reset of an emergency trip.
- DG A Frequency meter, PEN-SI-G01 reads 58 hertz.
- PBA-S03, class 4160 AC bus is de-energized.

(1) What actions are required to raise DG A speed using DG A Speed HS, PEA-SC-G01?

(2) After the DG reaches rated speed, what will be the status of the DG A output breaker, PBB-S03B?

- A. (1) Place the DG A handswitch, DGA-HS-1 to "START" to override the DG and raise DG speed.
(2) Since the BOP-ESFAS sequencer changed modes the DG A output breaker will not automatically close.
- B. (1) Place PEA-SS-G01D, Diesel Generator A Speed Control Mode Select, to "Droop" raise DG speed.
(2) Since the BOP-ESFAS sequencer changed modes the DG A output breaker will not automatically close.
- C. (1) Place PEA-SS-G01D, Diesel Generator A Speed Control Mode Select, to "Droop" raise DG speed.
(2) DG output breaker will automatically close when DG speed reaches 59.9 hertz.
- D. (1) Place the DG A handswitch, DGA-HS-1 to "START" to override the DG and raise DG speed.
(2) DG output breaker will automatically close when DG speed reaches 59.9 hertz.

Answer: D

EXAMINATION ANSWER KEY

2015 RO

14

ID: Q44203

Points: 1.00

Given the following conditions:

- Unit 1 is operating 100% power.
- Loss of Offsite power occurs.

The LOP/LS module generates a 1 second Load Shed pulse followed by a...

- A. 10 second LOP signal after the class 4160 kV bus is energized to prevent a "double sequencing" condition.
- B. 10 second LOP signal after the class 4160 kV bus is energized to prevent overloading the DG during sequencing.
- C. 60 second LOP signal after the class 4160 kV bus is energized to prevent a "double sequencing" condition.
- D. 60 second LOP signal after the class 4160 kV bus is energized to prevent overloading the DG during sequencing.

Answer: D

EXAMINATION ANSWER KEY

2015 RO

15

ID: Q44204

Points: 1.00

Given the following plant conditions:

- Unit 1 is operating at 100% power.
- DG "A" running but is not currently paralleled to offsite power.

Subsequently

- PNA-D25, 125 vac Class Instrument bus, faults and is de-energized.

Which one of the following correctly describes the automatic actions that will occur?
(This is not an all inclusive list)

- A. (1) RTSG breakers A and C trip open. (2) DG "A" trips
- B. (1) RTSG breakers A and C trip open. (2) CREFAS, FBEVAS and CPIAS actuate.
- C. (1) Pulse counters will be zeroed for the channel A, B and C target CEAs with their associated rod bottom lights illuminated. (2) DG "A" trips
- D. (1) Pulse counters will be zeroed for the channel A, B and C target CEAs with their associated rod bottom lights illuminated. (2) CREFAS, FBEVAS and CPIAS actuate.

Answer: B

EXAMINATION ANSWER KEY

2015 RO

16

ID: Q44265

Points: 1.00

Given the following conditions:

- Unit 1 is at 100% power.
- Nuclear Cooling Water (NC) is lost and the crew has cross-connected "B" train Essential Cooling Water (EW) to NC per 40AO-9ZZ03, Loss of Cooling Water.
- The crew then receives a low level alarm on EW Surge Tank "B."

Which of the following describes (1) a possible location of the leak and (2) the action that mitigates the event?

- A. (1) Inlet to the EW heat exchanger
(2) must manually close EW to NC cross-connect valves
- B. (1) Inlet to the EW heat exchanger
(2) automatic closure of the EW to NC cross-connect valves
- C. (1) Inlet to the Letdown Heat Exchanger
(2) must manually close EW to NC cross-connect valves
- D. (1) Inlet to the Letdown Heat Exchanger
(2) automatic closure of the EW to NC cross-connect valves

Answer: A

EXAMINATION ANSWER KEY

2015 RO

17

ID: Q43742

Points: 1.00

Which of the following describes why 40AO-9ZZ06, Loss of Instrument Air, directs aligning a Fuel Building Essential Air Filtration Unit, AFU, to the auxiliary building during a complete loss of Instrument Air?

- A. The essential AFU is required to augment the normal AFUs, ensuring a negative pressure is maintained.
- B. Due to the number of additional heat loads (motors and piping), additional air movement is necessary.
- C. The essential AFU will circulate air below the 100' elevation, which may contain nitrogen from leaking air connections.
- D. Since the normal AHUs and AFUs trip on a loss of Instrument Air, the Fuel Building essential AFUs will ensure Aux Building ventilation is maintained.

Answer: C

EXAMINATION ANSWER KEY

2015 RO

18

ID: Q22496

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 100% power.
- A grid disturbance has occurred which has caused grid voltage to increase significantly.
- Grid frequency is stable at 60 Hz.
- The Main Generator is responding per design.

Which one of the following automatic actions is designed to protect the Main Generator under these degraded grid conditions?

- A. The Power System Stabilizer (PSS) will activate.
- B. The Maximum Excitation Limit (MEL) circuit will activate.
- C. The Main Generator will shift to the DC mode of regulation.
- D. The Underexcited Reactive Ampere Limit (URAL) will activate.

Answer: D

EXAMINATION ANSWER KEY

2015 RO

19

ID: Q44205

Points: 1.00

Given the following conditions:

- Unit 1 is at 80% power.
- Group 5 CEAs are at 120 inches withdrawn for ASI control.
- CEDMCS is in Auto Sequential.
- Reactor Operator reports indications of an inadvertent continuous CEA withdrawal.

CEA Malfunctions, 40AO-9ZZ11 directs the crew to place CEDMCS in __(1)__, CEA motion is expected to stop because in this mode of control __(2)__.

- A. (1) Standby (2) the CEDM lower gripper coils are energized.
- B. (1) Standby (2) CEDMCS does not respond to automatic signals.
- C. (1) Manual Sequential (2) the CEDM lower gripper coils are energized.
- D. (1) Manual Sequential (2) CEDMCS does not respond to automatic signals.

Answer: B

EXAMINATION ANSWER KEY

2015 RO

20

ID: Q44274

Points: 1.00

Given the following plant conditions:

- Unit 1 is operating at 85% power.
- A Group 5 CEA drops to the bottom of the core while the groups are at 135 inches.

(1) What is the effect of the dropped CEA on Shutdown Margin (SDM)?

(2) In accordance with 40AO-9ZZ11, CEA Malfunctions, what power level must be achieved within ONE (1) hour?

- A. (1) SDM was reduced.
(2) 65%.
- B. (1) SDM was reduced.
(2) 70%.
- C. (1) SDM was NOT affected.
(2) 65%.
- D. (1) SDM was NOT affected.
(2) 70%.

Answer: C

EXAMINATION ANSWER KEY

2015 RO

21

ID: Q44267

Points: 1.00

Given the following conditions:

- A Reactor trip has occurred.
- The CRS has implemented 40EP-9EO01, Standard Post Trip Actions.
- Pressurizer level is 59% and trending up due to a malfunction of the Pressurizer Level Control System (PLCS) in automatic control.
- The RO takes manual control of the PLCS and is directed to take the Contingency Action of 40EP-9EO01 for controlling Pressurizer level.

(1) Per 40EP-9EO01 Contingency Action, what is the desired Pressurizer level control band?

(2) What is the bases/reason for the UPPER limit of that band?

- A. (1) 33% to 53%
(2) to prevent the Pressurizer from going water-solid.
- B. (1) 10 to 65%
(2) to prevent the Pressurizer from going water-solid.
- C. (1) 33% to 53%
(2) Because this is the T.S. LCO 3.4.9 limit for Pressurizer water level.
- D. (1) 10% to 65%
(2) Because this is the T.S. LCO 3.4.9 limit for Pressurizer water level.

Answer: A

EXAMINATION ANSWER KEY

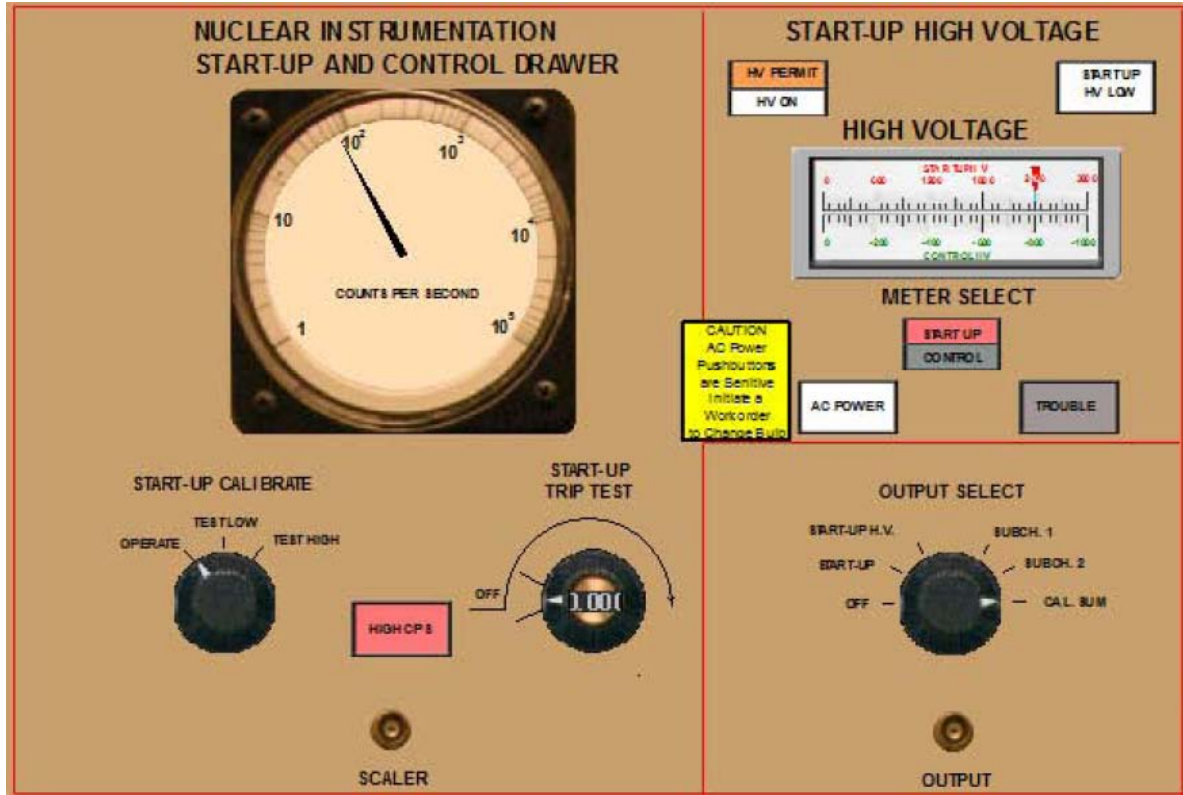
2015 RO

22

ID: Q43762

Points: 1.00

Which of the following conditions would BOTH de-energize Startup channel 1?



- A. A loss of NNN-D11 or de-pressing the HV PERMIT/HV ON pushbutton.
- B. A loss of PNA-D25 or de-pressing the HV PERMIT/HV ON pushbutton.
- C. A loss of NNN-D11 or de-pressing the START-UP/CONTROL pushbutton.
- D. A loss of PNA-D25 or de-pressing the START-UP/CONTROL pushbutton.

Answer: A

EXAMINATION ANSWER KEY

2015 RO

23

ID: Q44207

Points: 1.00

Which one of the following is the maximum value for primary to secondary leakage through any one steam generator (SG) as identified in LCO 3.4.14, RCS Operational LEAKAGE?

- A. 10 gallons per minute
- B. 25 gallons per minute
- C. 75 gallons per day
- D. 150 gallons per day

Answer: D

EXAMINATION ANSWER KEY

2015 RO

24

ID: Q43939

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 100% power.
- RU-8 (Auxiliary Building Ventilation Exhaust Filter Inlet) is in ALERT.
- RU-9 (Auxiliary Building Lower Level Exhaust) is in ALERT.
- RU-143 (Plant Vent) readings are rising.
- All other radiation monitors read background.

Which of the following describes the event that is occurring?

- A. Charging system leak.
- B. Steam Generator Tube leak.
- C. Waste Gas Decay Tank leak.
- D. Letdown Heat Exchanger tube leak.

Answer: A

EXAMINATION ANSWER KEY

2015 RO

25

ID: Q44208

Points: 1.00

Given the following conditions:

- Unit 1 has tripped from 100% power.
- Class 4160 kV bus, PBB-S04 has faulted and is de-energized.

Subsequently

- SIAS/CIAS/MSIS automatically initiate.
- WCA-UV-62, CHW RETURN HDR OUTSIDE CNTMT ISOL VLV, has a blue SEAS light illuminated.

(1) What is the expected status of the white SEIS and blue SEAS lights for CHW RETURN HDR INSIDE CNTMT ISOL VLV, WCB-UV-61 and CHW SUPPLY HDR OUTSIDE CNTMT ISOL VLV, WCB-UV-63?

(2) What are the available means to operate WCA-UV-62 to recover Containment Integrity?

- A. (1) Only the white SEIS lights are illuminated. (2) Manual valve operation only.
- B. (1) Only the white SEIS lights are illuminated. (2) Either manual operation or remote operation using WCA-HS-62.
- C. (1) Both the white SEIS and blue SEAS are illuminated. (2) Manual valve operation only
- D. (1) Both the white SEIS and blue SEAS are illuminated. (2) Either manual operation or remote operation using WCA-HS-62.

Answer: D

EXAMINATION ANSWER KEY

2015 RO

26

ID: Q44210

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 100% power.
- An RCS Overcooling event is in progress.
- PZR pressure is 2150 psia and lowering.
- Loop 1 and 2 Tcold is 552°F and lowering.
- The CRS directs a manual reactor trip.

How will this event affect the plant post trip?

The DFWCS will...

- A. over feed in RTO and the SBCS will not generate a quick open block signal.
- B. not feed in RTO and the SBCS will generate a quick open block signal.
- C. over feed in RTO and the SBCS will generate a quick open block signal.
- D. not feed in RTO and the SBCS will not generate a quick open block signal.

Answer: B

EXAMINATION ANSWER KEY

2015 RO

27

ID: Q44211

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 100% power.
- Pressurizer level is slowly lowering.
- RCS temperature is stable.
- The in-service letdown control valve CHN-110P is slowly closing.
- The CRS implements 40AO-9ZZ02, Excessive RCS Leakrate and has entered the AOP entry time and date.

(1) Which one of the following is the next action required by 40AO-9ZZ02?

(2) What is the Low Pressurizer water level value identified in Tech Spec 3.4.9?

- A. (1) Isolate letdown (2) $\geq 25\%$
- B. (1) Isolate letdown (2) $\geq 27\%$
- C. (1) Start an additional charging pump. (2) $\geq 25\%$
- D. (1) Start an additional charging pump. (2) $\geq 27\%$

Answer: D

EXAMINATION ANSWER KEY

2015 RO

28

ID: Q7243

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 100% power.
- 2A RCP Upper Thrust Bearing temperature is observed to be in alarm at 230°F and rising.

In accordance with 40AO-9ZZ94, RCP Emergencies, which of the following actions can be performed to slow the rate of temperature rise?

- A. Start the 2A hydraulic oil lift pump P02C.
- B. Start the standby Nuclear Cooling Water pump.
- C. Increase the output of CHN-FIC-243, Seal Injection Flow Controller.
- D. Stop all but one Normal Chiller, ensure that only one Nuclear Cooling Water outlet valve is open.

Answer: A

EXAMINATION ANSWER KEY

2015 RO

29

ID: Q44311

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 100% power

(1) What is the predicted effect on the RCS if a Purification ion exchanger that has been isolated for 5 days is placed in service without performing any pre-service flushes?

(2) What actions should be taken to offset the reactivity change?

- A. (1) RCS temperature will rise (2) RCS dilution
- B. (1) RCS temperature will rise (2) RCS boration
- C. (1) RCS temperature will lower (2) RCS dilution
- D. (1) RCS temperature will lower (2) RCS boration

Answer: D

EXAMINATION ANSWER KEY

2015 RO

30

ID: Q44212

Points: 1.00

Given the following conditions:

- The crew is preparing to place Shutdown Cooling in service.
- RCS temperature is 235°F
- Pressurizer pressure is 450 psia.
- The following Shutdown Cooling Suction valves are OPEN.

1. SIB-UV-652, Loop 2 to S/D CLG-LPSI Pump B Suct Vlv
2. SIB-UV-654, Loop 2 to S/D CLG-LPSI Pump B Suct Vlv
3. SIB-UV-656, Loop 2 to S/D CLG-LPSI Pump B Suct Vlv

Per 40OP-9SI01, Shutdown Cooling Initiation; prior to placing SIB-P03, Containment spray pump B, in service on Shutdown cooling, RCS temperature and pressure must be less than a maximum of __(1)__ and the Containment Spray pump suction path __(2)__.

- A. (1) 200°F and 250 psia
(2) is fully aligned, requiring no further valve manipulations.
- B. (1) 350°F and 385 psia
(2) is fully aligned, requiring no further valve manipulations.
- C. (1) 200°F and 250 psia.
(2) requires manual valve manipulations to complete the alignment.
- D. (1) 350°F and 385 psia
(2) requires manual valve manipulations to complete the alignment.

Answer: C

EXAMINATION ANSWER KEY

2015 RO

31

ID: Q10386

Points: 1.00

Given the following conditions:

- Unit 1 is in Mode 5.
- RCS pressure is 360 psia.
- RCS temperature is 190°F.

What automatic action occurs if RCS pressure were allowed to reach 410 psia?

- A. Low Temperature Over Pressure (LTOP) relief lifts
- B. Safety Injection Tank outlet valves receive an auto open signal
- C. Bypass for Pressurizer pressure low signal (SIAS) is automatically removed
- D. SI-UV-653, RC Loop 1 to SDC - LPSI pump A suction receives an auto close signal

Answer: B

EXAMINATION ANSWER KEY

2015 RO

32

ID: Q44213

Points: 1.00

Given the following conditions:

- A large break LOCA has occurred.
- SIAS/CIAS/MSIS have automatically initiated.
- Refueling Water Tank, RWT, level is lowering.

(1) Per Technical Specifications, what is the Recirculation Actuation Signal, RAS, setpoint?

(2) How will the Emergency Core Cooling System, ECCS, suction isolation valves respond to the RAS?

- A. (1) 7.4%
(2) Containment Sump to Safety Injection valves automatically open and the RWT to Safety Injection isolation valves will automatically close.
- B. (1) 7.4%
(2) Containment Sump to Safety Injection isolation valves will automatically open but the RWT to Safety Injection isolation valves must be closed by the operator.
- C. (1) 9.4%
(2) Containment Sump to Safety Injection valves automatically open and the RWT to Safety Injection isolation valves will automatically close.
- D. (1) 9.4%
(2) Containment Sump to Safety Injection isolation valves will automatically open but the RWT to Safety Injection isolation valves must be closed by the operator.

Answer: D

EXAMINATION ANSWER KEY

2015 RO

33

ID: Q22433

Points: 1.00

Given the following conditions:

- Unit 1 is in Mode 5 preparing to form a steam bubble in the pressurizer.
- A nitrogen bubble exists on the pressurizer.
- Cold Shutdown to Hot Standby Mode 5 to Mode 3, 40OP-9ZZ01, is in progress.
- The CRS has implemented appendix H, Drawing a Steam Bubble in the Pressurizer.

Condition 1 - pressurizer at saturation with a steam bubble and nitrogen mixture.

Condition 2 - pressurizer at saturation, nitrogen has been vented.

As the pressurizer is vented and transitions from condition 1 to 2, which of the following is the expected pressure and level response of the Reactor Drain Tank?

- A. slower rate of pressure increases with larger level increases.
- B. greater rate of pressure increases with larger level increases.
- C. slower rate of pressure increases with smaller level increases.
- D. greater rate of pressure increases with smaller level increases.

Answer: A

EXAMINATION ANSWER KEY

2015 RO

34

ID: Q44293

Points: 1.00

Which of the following will automatically start the standby Nuclear Cooling Water pump when its setpoint is reached?

- A. CEDM Normal ACU High Temperature.
- B. Low flow to the Letdown Heat Exchanger.
- C. Low NC pump discharge header pressure.
- D. Low discharge flow on the running NC pump.

Answer: C

EXAMINATION ANSWER KEY

2015 RO

35

ID: Q44218

Points: 1.00

Given the following plant conditions:

- Unit 1 is at 100% power.
- Class 4.16 kVA bus PBB-S04 has faulted and is de-energized.

Subsequently

- Nuclear Cooling Water valve from the CEDM ACUs A02A/A02C, NCN-HV-485 fails closed.

Which one of the following is the appropriate action per 40AO-9ZZ20, Loss of HVAC?

- A. Start CEDM ACUs A02B/A02D to restore cooling.
- B. Trip the reactor and perform SPTAs within a maximum of 10 minutes from the loss of cooling.
- C. Limit CEA motion to that needed for ASI control and decrease power to shutdown the unit within 4 hours.
- D. Commence a rapid downpower within 10 minutes and have RTSG breakers opened within 40 minutes of the loss of cooling.

Answer: D

EXAMINATION ANSWER KEY

2015 RO

36

ID: Q44294

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 100% power.
- Pressurizer is in "Boron Equalization".
- Main spray valve RC-100E, both red and green position indicator lights are lit.
- Main spray valve RC-100F, both red and green position indicator lights are lit.
- RCS pressure is 2230 psia and stable.

Subsequently:

- Main spray valve RC-100E, red position indicator light is lit and green light is OFF.

What is the response of the Pressurizer Pressure Control system?

(1) Main spray valve RC-100F will...

(2) If pressure continues to lower the IE Class Backup heater banks will energize at...

- A. (1) close, only the green position light will be lit (2) 2200 psia.
- B. (1) close, only the green position light will be lit (2) 2225 psia.
- C. (1) remain throttled, both red and green position lights are lit (2) 2200 psia.
- D. (1) remain throttled, both red and green position lights are lit (2) 2225 psia.

Answer: A

EXAMINATION ANSWER KEY

2015 RO

37

ID: Q44219

Points: 1.00

Which one of the following identifies the correct power supplies to "AB" Reactor Protection System (RPS) Matrices and Initiation circuits?

- A. PNA-D25 and PNB-D26
- B. PNA-D25 and PKB-M42
- C. PKA-M41 and PNB-D26
- D. PKA-M41 and PKB-M42

Answer: A

EXAMINATION ANSWER KEY

2015 RO

38

ID: Q44220

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 100% power.
- Auxiliary Feedpump "A", AFA-P01, is OOS due to emergent issues.
- PNB-D26 faults and is de-energized; the CRS has entered the appropriate AOP.

Subsequently

- No corrective actions for the faulted instrument bus have been taken.
- Channel "D" SG 1, low SG pressure bistable faults and trips.

Which of the following is the impact and mitigating procedure for these conditions?

- A. MSIS initiates, implement 40EP-9EO02, Reactor Trip.
- B. MSIS initiates, implement 40EP-9EO06, Loss of All Feedwater.
- C. MSIS B, Leg 2-4 only, implement 40AL-1RK5B, B05B Alarm Response.
- D. MSIS B, Leg 2-4 only, implement 40AO-9ZZ17, Inadvertent PPS-ESFAS actuations.

Answer: A

EXAMINATION ANSWER KEY

2015 RO

39

ID: Q44310

Points: 1.00

Given the following conditions:

- Unit 1 has tripped from 100% power.
- SG 2 level is 60% WR and lowering rapidly.
- SG 2 pressure is lowering rapidly.
- SG-1 > SG-2 PRESS CH TRIP has annunciated.
- All 4 channels of SG-1 high delta P are tripped.
- MSIS has actuated

How does this Engineered Safety Function (ESF) alarm affect the Auxiliary Feedwater (AFW) and Diverse Auxiliary Feedwater (DAFAS) systems as SG-2 level continues to lower?

- A. AFAS / DAFAS initiation will be blocked for SG-2.
- B. AFAS will not initiate, but DAFAS will initiate if Pressurizer pressure reaches 2409 psia.
- C. AFAS / DAFAS will initiate but Auxiliary Feedwater pumps and valve operation will be blocked.
- D. AFAS will initiate, the crew is expected to secure AFW flow to a faulted SG.

Answer: A

EXAMINATION ANSWER KEY

2015 RO

40

ID: Q10509

Points: 1.00

The Containment Normal ACUs, HCN-A01A thru D are cooled by __(1)__ and will be isolated by a __(2)__ .

- A. (1) Normal Chilled Water (2) CIAS.
- B. (1) Normal Chilled Water (2) CSAS.
- C. (1) Nuclear Cooling Water (2) CIAS.
- D. (1) Nuclear Cooling Water (2) CSAS.

Answer: A

EXAMINATION ANSWER KEY

2015 RO

41

ID: Q44285

Points: 1.00

Given the following conditions:

- Unit 1 operating at 100% power.
- Containment pressure is -0.1 psig.
- A train "B" CSAS has inadvertently actuated.

(1) Based on these conditions, the design negative pressure for Containment _____ be exceeded.

(2) To stop any operating Containment Spray pumps, the RO will _____.

- A. (1) will
(2) override and stop the Containment Spray Pump
- B. (1) will NOT
(2) override and stop the Containment Spray Pump
- C. (1) will
(2) place the Containment Spray Pump hand switch in "STOP" to anti-pump the CS Pump.
- D. (1) will NOT
(2) place the Containment Spray Pump hand switch in "STOP" to anti-pump the CS Pump.

Answer: D

EXAMINATION ANSWER KEY

2015 RO

42

ID: Q44278

Points: 1.00

In order to reset a CSAS that was manually initiated from B05, the operator MUST...

- A. ONLY press either LOCKOUT RESET pushbutton at each Auxiliary Relay Cabinet.
- B. ONLY press both LOCKOUT RESET pushbuttons at each Auxiliary Relay Cabinet simultaneously.
- C. FIRST press the INITIATION PATH RESET pushbutton at the PPS cabinet; then press either LOCKOUT RESET pushbutton at each Auxiliary Relay Cabinet.
- D. FIRST press the INITIATION PATH RESET pushbutton at the PPS cabinet; then press both LOCKOUT RESET pushbuttons at each Auxiliary Relay Cabinet simultaneously.

Answer: C

EXAMINATION ANSWER KEY

2015 RO

43

ID: Q44289

Points: 1.00

- (1) In a steam system, what is likely to cause steam/water hammer?
- (2) One method used to prevent steam/water hammer when warming the Main Steam Lines in accordance with 40OP-9SG01, Main Steam, is...
- A. (1) Slowly opening the MSIV bypass valves manual isolation valves.
(2) Placing steam traps in a normal lineup prior to initiating the warmup.
 - B. (1) Slowly opening the MSIV bypass valves manual isolation valves.
(2) Draining Main Steam Lines using steam traps to a Turbine Building sump.
 - C. (1) Introducing water into a steam void.
(2) Placing steam traps in a normal lineup prior to initiating the warmup.
 - D. (1) Introducing water into a steam void.
(2) Draining Main Steam Lines using steam traps to a Turbine Building sump.

Answer: D

EXAMINATION ANSWER KEY

2015 RO

44

ID: Q44221

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 50% power.
- RCN-TT-111Y, Loop 1A Tcold, has failed high.

Which one of the following identifies __ (1) __ the impact on the Main Feedwater system and __ (2) __ the procedure and actions to mitigate these consequences?

- A. (1) No refill demand in Reactor Trip Override.
(2) Select the Loop 2 temperature instrument at the RRS Test Panel per 40AO-9ZZ16, RRS Malfunctions.
- B. (1) Maximum refill demand in Reactor Trip Override.
(2) Select the Loop 2 temperature instrument at the RRS Test Panel per 40AO-9ZZ16, RRS Malfunctions.
- C. (1) No refill demand in Reactor Trip Override.
(2) Place the faulty transmitter in maintenance mode per 40AL-9RK6A, B06 Alarm Response procedure.
- D. (1) Maximum refill demand in Reactor Trip Override.
(2) Place the faulty transmitter in maintenance mode per 40AL-9RK6A, B06 Alarm Response procedure.

Answer: B

EXAMINATION ANSWER KEY

2015 RO

45

ID: Q44222

Points: 1.00

Which one of the following is correct with regards to the Auxiliary Feed system?

The Auxiliary Feedpump emergency water source is from the __(1)__ and can be aligned to the __(2)__.

- A. (1) Recycle Monitor Tanks (2) AFB-P01 and AFA-P01 only.
- B. (1) Recycle Monitor Tanks (2) AFB-P01, AFA-P01 and AFN-P01.
- C. (1) Reactor Makeup Water Tank (2) AFB-P01 and AFA-P01 only.
- D. (1) Reactor Makeup Water Tank (2) AFB-P01, AFA-P01 and AFN-P01.

Answer: C

EXAMINATION ANSWER KEY

2015 RO

46

ID: Q44223

Points: 1.00

Which of the following identifies the bus power supplies to the electric driven Auxiliary Feedwater pumps?

- A. 4.16kV bus PBA-S03 and 4.16kV bus PBB-S04
- B. 4.16kV bus PBA-S03 and 4.16kV bus NBN-S02
- C. 4.16kV bus NBN-S01 and 4.16kV bus PBB-S04
- D. 4.16kV bus NBN-S01 and 4.16kV bus NBN-S02

Answer: A

EXAMINATION ANSWER KEY

2015 RO

47

ID: Q44224

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 100% power.
- An inadvertent A train SIAS Leg 1-3 and 2-4 has actuated.

How will the SIAS actuation affect the electric plant?

NHN-M19 and NHN-M71 are __(1)__ and DG A is operating in __(2)__.

- A. (1) Energized (2) Test Run Mode
- B. (1) De-energized (2) Test Run Mode
- C. (1) Energized (2) Emergency Run Mode
- D. (1) De-energized (2) Emergency Run Mode

Answer: D

EXAMINATION ANSWER KEY

2015 RO

48

ID: Q44225

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 100% power.
- While shifting NNN-D12, 120 vac non class bus, to its alternate source there is a transfer switch malfunction causing NNN-D12 to be de-energized.

(1) RCN-HS-100, Pressurizer Level Heater Trip Channel must be verified in the ____ to ensure proper pressurizer heater control.

20 minutes later

- Power is restored to NNN-D12 using 40AO-9ZZ14, Loss Of Non-Class Control Power.
- Prior to any further Operator actions the Main Turbine trips.

Which of the following would be a result of these conditions?

(2) The Steam Bypass Control system Quick Open and Modulate will...

- A. (1) "X" position (2) function normally, no reactor trip should occur.
- B. (1) "Y" position (2) function normally, no reactor trip should occur.
- C. (1) "X" position (2) **NOT** function, the reactor will trip on high Pressurizer pressure.
- D. (1) "Y" position (2) **NOT** function, the reactor will trip on high Pressurizer pressure.

Answer: D

EXAMINATION ANSWER KEY

2015 RO

49

ID: Q13050

Points: 1.00

Given the following plant conditions:

- Unit 2 is operating at rated power.
- DG (Diesel Generator) B is running and paralleled to offsite power.
- A loss of PKB-M42 occurs due to a bus fault.

Which ONE of the following describes the impact this has on DG B?

DG B...

- A. trips, but its output breaker opens.
- B. trips but its output breaker remains closed.
- C. continues to run but its output breaker opens.
- D. continues to run, but electrical protection control power is lost.

Answer: B

EXAMINATION ANSWER KEY

2015 RO

50

ID: Q13142

Points: 1.00

Given the following conditions:

- NBN-X03, ESF transformer faulted.
- Diesel Generator (DG) A is running and energized PBA-S03 following the LOP.

Which one of the following sets of conditions will **ALL** trip DG A in the current mode of operation?

- A. Low lube oil pressure, Overspeed and Generator Differential.
- B. Overspeed, Crankcase high pressure and Generator Differential.
- C. Crankcase High Pressure, Low lube oil pressure and Overspeed.
- D. Generator Differential, Crankcase high pressure and Low lube oil pressure.

Answer: A

EXAMINATION ANSWER KEY

2015 RO

51

ID: Q44226

Points: 1.00

Given the following list of conditions:

- Unit 1 is operating at 100% power.
- DG A left bank air receiver is at 250 psig.
- DG A left bank compressor is Out of Service.
- DG A right air bank receiver has been isolated due to a leak.

- (1) The "A" DG's air start system will provide how many starts under these conditions?
- (2) What is the Air Receiver pressure below which DG "A" would be declared inoperable IMMEDIATELY?

- A. (1) Only 1 start (2) 185 psig
- B. (1) Only 1 start (2) 230 psig
- C. (1) Up to 5 starts (2) 185 psig
- D. (1) Up to 5 starts (2) 230 psig

Answer: C

EXAMINATION ANSWER KEY

2015 RO

52

ID: Q44227

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 100% power.
- RCP 2B has developed a leak in the high pressure seal cooler.
- 40AO-9ZZ03, Loss of Cooling Water, has been implemented.
- Essential Cooling Water train "A" has been cross-tied to the Nuclear Cooling Water system.

Which of the following alarms and/or actions will the crew observe from the control room?

- A. RU-6, Nuclear Cooling Water, ONLY.
- B. RU-2, "A" Essential Cooling Water, ONLY.
- C. RU-2, "A" Essential Cooling Water, AND RU-6, Nuclear Cooling Water.
- D. RU-2, "A" Essential Cooling Water, ONLY and auto closing of the EW-NC cross-tie valves.

Answer: B

EXAMINATION ANSWER KEY

2015 RO

53

ID: Q44228

Points: 1.00

Which one of the following is the correct bus power supply for the Essential Cooling Water - Nuclear Cooling Water Cross Tie valves, EWA-UV-65 and EWA-UV-165?

- A. PK, 125 Vdc Bus
- B. PN, 125 Vac Panel
- C. PG, 480 Vac Load Centers
- D. PH, 480 Vac Motor Control Centers

Answer: D

EXAMINATION ANSWER KEY

2015 RO

54

ID: Q44230

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 100% power.
- Containment Instrument Air isolation valve, IAA-UV-002, has failed closed.
- 40AO-9ZZ06, Loss of Instrument Air, has been entered.

Subsequently

- CHA-UV-506, RCP Bleedoff to VCT Containment Isol Vlv, has failed closed.
- Instrument Air to containment has not been restored.

(1) Reactor Drain Tank level...

(2) What major actions are directed by 40AO-9ZZ06, Loss of Instrument Air?

- A. (1) rises because CHA-HV-507, RCP CONTROLLED BLEED-OFF RELIEF VLV ISOL, fails OPEN.
(2) Trip the reactor, trip all 4 RCPs and isolate RCP Controlled Bleedoff.
- B. (1) rises because CHA-HV-507, RCP CONTROLLED BLEED-OFF RELIEF VLV ISOL, fails OPEN.
(2) Trip the reactor, verify adequate Seal Injection and Nuclear Cooling Water to the RCPs.
- C. (1) stabilizes because CHA-HV-507, RCP CONTROLLED BLEED-OFF RELIEF VLV ISOL, fails CLOSED.
(2) Trip the reactor, trip all 4 RCPs and isolate RCP Controlled Bleedoff.
- D. (1) stabilizes because CHA-HV-507, RCP CONTROLLED BLEED-OFF RELIEF VLV ISOL, fails CLOSED.
(2) Trip the reactor, verify adequate Seal Injection and Nuclear Cooling Water to the RCPs.

Answer: A

EXAMINATION ANSWER KEY

2015 RO

55

ID: Q44233

Points: 1.00

Given the following plant conditions:

- Containment pressure (NR) Channel A 3.2 psig.
- Containment pressure (NR) Channel B 2.8 psig.
- Containment pressure (NR) Channel C 3.1 psig.
- Containment pressure (NR) Channel D 2.6 psig.

What is the effect on the Containment Isolation System?

- A. No CIAS actuation.
- B. Full CIAS actuation.
- C. "A" train CIAS actuation only.
- D. "A" train 1-3 Half Leg CIAS actuation only.

Answer: B

EXAMINATION ANSWER KEY

2015 RO

56

ID: Q10373

Points: 1.00

Given the following conditions:

- Unit 1 had been operating at rated power.
- The Main Turbine tripped one hour ago.
- Steam Bypass Control system is maintaining reactor power at 50% in Remote/Auto.
- CRS is taking actions per 40AO-9ZZ08, Load Rejection.

Subsequently

- Reactor power is rising.
- Tcold is stable

Which one of the following events could be in progress?

- A. Continuous CEA withdrawal
- B. Expected xenon reactivity transient.
- C. Turbine Load Index (TLI) signal has failed high.
- D. SGN-PT-1024, Main Steam Header Pressure, has failed low.

Answer: A

EXAMINATION ANSWER KEY

2015 RO

57

ID: Q44234

Points: 1.00

Which one of the following describes the physical connections and operation of the Reactor Vessel Monitoring System (RVLMS)?

- A. Two strings of 8 thermocouples. Reactor Vessel Upper Head and Outlet Plenum void formation is identified by the thermocouple reaching saturated/superheated conditions at each level.
- B. Two strings of 8 heated and unheated thermocouples. Reactor Vessel Upper Head and Outlet Plenum void formation is identified by a large temperature difference between the heated and unheated thermocouples at each level.
- C. Four strings of 8 thermocouples. Reactor Vessel Upper Head and Outlet Plenum void formation is identified by a thermocouple reaching saturated/superheated conditions at each level.
- D. Four strings of 8 heated and unheated thermocouples. Reactor Vessel Upper Head and Outlet Plenum void formation is identified by a large temperature difference between the heated and unheated thermocouples at each level.

Answer: B

EXAMINATION ANSWER KEY

2015 RO

58

ID: Q44235

Points: 1.00

Which one of the following identifies the CEA position requirements of 40ST-9ZZ23, CEA Position Data Log?

- (1) The indicated position for all full and part strength CEAs is within a maximum of _____ inches of ALL other CEAs in the group.
- (2) All shutdown CEAs must remain above _____ inches by pulse counter indication.
- A. (1) 6.6 (2) 142.50
 - B. (1) 6.6 (2) 147.75
 - C. (1) 9.9 (2) 142.50
 - D. (1) 9.9 (2) 147.75

Answer: B

EXAMINATION ANSWER KEY

2015 RO

59

ID: Q44291

Points: 1.00

Given the following plant conditions:

- Unit 1 is operating at 100% power.
- PNB-N12 (Inverter for 1-E-PNB-D26) fails to zero output.

Which of the following describes the effect on the Nuclear Instrumentation system?

- A. Control Channel 2 loses power until power is manually shifted to the Voltage Regulator.
- B. Control Channel 2 momentarily loses power until the PN bus shifts to the Voltage Regulator.
- C. B train Safety channel is Inoperable until power is manually shifted to the Voltage Regulator.
- D. ALL Safety channels remain Operable because "B" PN bus automatically shifts to the Voltage Regulator.

Answer: C

EXAMINATION ANSWER KEY

2015 RO

60

ID: Q44238

Points: 1.00

A "HIGH" alarm on __(1)__ will cause the Air Removal post filter blower system __(2)__ ...

- A. (1) RU-141, Condenser Vacuum/Gland Seal Exhaust (channel 1)
(2) bypass valve, inlet valve and outlet valve all to close.
- B. (1) RU-141, Condenser Vacuum/Gland Seal Exhaust (channel 1)
(2) bypass valve to close, inlet valve to open and start the Post Filter Blower.
- C. (1) RU-143, Plant Vent (Low Range Gas)
(2) bypass valve, inlet valve and outlet valve all to close.
- D. (1) RU-143, Plant Vent (Low Range Gas)
(2) bypass valve to close, inlet valve to open and start the Post Filter Blower.

Answer: B

EXAMINATION ANSWER KEY

2015 RO

61

ID: Q44292

Points: 1.00

Given the following conditions:

- Unit 1 automatically tripped from 100% power.
- A large steam line break in the Turbine Building has occurred.
- Both SGs dropped to 15% WR level.
- Both SGs dropped to 800 psig.
- Pressurizer pressure dropped to 1780 psia.
- Containment pressure is 0.3 psig.
- All appropriate ESFAS signals have actuated.

Subsequently:

- SG levels are 55% WR and rising.
- SG pressures are 1100 psig and stable.
- Pressurizer is 2000 psia and rising.

Which of the actuated ESFAS signals would have to be manually reset at **both** the Initiation Reset panels and Aux Relay cabinets to allow opening the SG blowdown and sample isolation valves without going to Override?

- A. CIAS and AFAS
- B. MSIS and SIAS
- C. AFAS and MSIS
- D. SIAS and CIAS

Answer: B

EXAMINATION ANSWER KEY

2015 RO

62

ID: Q22457

Points: 1.00

Given the following conditions:

- Reactor power is 52% and stable following a main turbine trip 30 minutes ago
- The Reactor Power Cutback system responded as designed
- The Steam Bypass Control system (SBCS) responded as designed
- The SBCS is in auto control with auto setpoint
- The RO now reports that SBCVs 3 and 6 are slowly going closed
- Tcold has remained constant
- Reactor power has remained at 52%

Which of the following events or malfunctions are in progress?

- A. A slipped CEA
- B. A small steam leak downstream of the MSIVs
- C. Steam flow detector SGN-FT-1012 has failed high
- D. Pressurizer pressure instrument RCN-PT-100Y has failed high

Answer: B

EXAMINATION ANSWER KEY

2015 RO

63

ID: Q44282

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 80% power.
- Hydraulic Fluid pump CON-P01A is under clearance for maintenance.
- Hydraulic Fluid pump CON-P01B trips on electrical protection.

(1) What automatic actions occur if the Hydraulic Fluid (EHC) Lo pressure setpoint is reached?

(2) What procedure will the crew implement for these conditions?

- A. (1) Main Turbine trips immediately
(2) 40AO-9ZZ08, Load Rejection
- B. (1) Main Turbine trips after a 70 second time delay
(2) 40AO-9ZZ08, Load Rejection
- C. (1) Main Turbine trips immediately
(2) 40EP-9EO02, Reactor Trip
- D. (1) Main Turbine trips after a 70 second time delay
(2) 40EP-9EO02, Reactor Trip

Answer: A

EXAMINATION ANSWER KEY

2015 RO

64

ID: Q44237

Points: 1.00

Given the following conditions:

- Unit 1 automatically tripped from 100% power.
- 40EP-9EO03, LOCA has been entered.
- Hydrogen Analyzers are in service.
- Containment pressure is 4.4 psig and lowering.
- Containment Spray flow has been secured.

(1) What is the minimum hydrogen concentration that can be detected by the Hydrogen Analyzers?

(2) If both Hydrogen Recombiners malfunction what actions can be taken to control hydrogen concentration?

- A. (1) 0.7 % (2) Operate the Containment Spray system.
- B. (1) 0.7 % (2) Operate the Hydrogen Purge Exhaust unit.
- C. (1) 4.0 % (2) Operate the Containment Spray system.
- D. (1) 4.0 % (2) Operate the Hydrogen Purge Exhaust unit.

Answer: B

EXAMINATION ANSWER KEY

2015 RO

65

ID: Q5534

Points: 1.00

Given the following conditions:

- An attempt to start a Circulating Water pump has been made and the pump failed to start.

Which of the following describes the interlock that is preventing the pump from starting?

The Circulating Water...

- A. intake canal level is too low.
- B. pump's discharge valve is closed.
- C. loop's condenser outlet valve is closed.
- D. loop's cross-tie valve (CW-HV-11) is closed.

Answer: C

EXAMINATION ANSWER KEY

2015 RO

66

ID: Q44245

Points: 1.00

Given the following plant conditions:

- The Unit is at 100% power.
- All rods are fully withdrawn (ARO).

Subsequently,

- 0100 - a 4 finger CEA slips to 60" withdrawn.
- 0145 - The operating crew is ready to realign the CEA with its group.

Determine which ONE of the following is the SHORTEST time, allowed by the procedure, to withdraw the CEA?

40AO-9ZZ11, Appendix C, CEA Withdrawal Time Limits is provided

- A. 6 minutes
- B. 10 minutes
- C. 18 minutes
- D. 30 minutes

Answer: A

EXAMINATION ANSWER KEY

2015 RO

67

ID: Q44249

Points: 1.00

The Technical Specification for RCS Activity, LCO 3.4.17, is Applicable in __ (1) __ and is based on a(an) __ (2) __ accident.

- A. (1) MODES 1 through 4
(2) Excess Steam Demand
- B. (1) MODES 1 and 2 ONLY
(2) Excess Steam Demand
- C. (1) MODES 1 through 4
(2) Steam Generator Tube Rupture
- D. (1) MODES 1 and 2 ONLY
(2) Steam Generator Tube Rupture

Answer: C

EXAMINATION ANSWER KEY

2015 RO

68

ID: Q44250

Points: 1.00

After a SIAS and a Loss of Offsite Power, and assuming NO operator actions, NNN-D16 is energized on...

- A. Unit 2 ONLY
- B. Unit 3 ONLY
- C. Units 2 and 3 ONLY
- D. Units 1 and 2 ONLY

Answer: B

EXAMINATION ANSWER KEY

2015 RO

69

ID: Q44252

Points: 1.00

The **required** method used to track an INOPERABLE Boron Dilution Alarm channel is via the/a...

- A. Operations Concerns database.
- B. Equipment Status Tag (EST) Log.
- C. CORA (Control Room Automated) Timer.
- D. Technical Specification Component Condition Record (TSCCR).

Answer: D

EXAMINATION ANSWER KEY

2015 RO

70

ID: Q44264

Points: 1.00

According to 40DP-9OP29, Power Block Clearance and Tagging, which ONE of the following defines a **MINIMUM** value, or a condition, that requires two valve protection, when possible?

- A. System temperature of 210°F
- B. System pressure of 500 psig.
- C. When any caustic chemical system is tagged.
- D. When a vent/drain path CANNOT be established within the clearance boundary.

Answer: B

EXAMINATION ANSWER KEY

2015 RO

71

ID: Q44261

Points: 1.00

Given the following conditions:

- Unit 1 is in Mode 6.
- Refueling operations are on-going.
- LSRO is stationed in containment.

(1) Reactor Operator monitors Spent Fuel Pool level to ensure it is maintained above the T.S. LCO 3.7.14, Fuel Storage Pool Water Level, MINIMUM of ____ feet over the top of irradiated fuel assemblies seated in the storage racks.

(2) As stated in 40DP-9OP02, Conduct of Shift Operations, the individual designated to maintain the Control Room command function will normally be the CRS but may be.....

- A. (1) 22.5
(2) only another qualified SRO.
- B. (1) 22.5
(2) either a qualified RO or SRO.
- C. (1) 23
(2) only another qualified SRO.
- D. (1) 23
(2) either a qualified RO or SRO.

Answer: D

EXAMINATION ANSWER KEY

2015 RO

72

ID: Q44260

Points: 1.00

Which of the following monitors are considered part of the RCS Leakage Detection System in accordance with T.S. LCO 3.4.16, RCS Leakage Detection Instrumentation?

- A. RU-16, Operating Level Area.
- B. RU-17, Incore Instrument Area.
- C. RU-1, Containment Atmosphere.
- D. RU-149, High Range in Containment Area.

Answer: C

EXAMINATION ANSWER KEY

2015 RO

73

ID: Q22415

Points: 1.00

The Palo Verde Fire Response Team includes a Fire Team Advisor (FTA) who at a MINIMUM must be a qualified __(1)__ and ONE is required for __(2)__.

- A. (1) Reactor Operator (2) the site.
- B. (1) Reactor Operator (2) each unit.
- C. (1) Senior Reactor Operator (2) the site.
- D. (1) Senior Reactor Operator (2) each unit.

Answer: A

EXAMINATION ANSWER KEY

2015 RO

74

ID: Q44298

Points: 1.00

Given the following conditions:

- Unit 2 tripped due to a Loss of Offsite Power.
- 40EP-9EO07, LOOP/LOFC has been entered.
- Standard Appendix 62, NKN-M46 Load Reduction and Main Generator Venting has been sent to the field.

(1) The Auxiliary Operator will perform actions to de-energize DC lube oil pumps and aligns NKN-U45 and NKN-U46, transfer switches to

(2) These actions ensure DC power is available for switchyard breaker control and...

- A. (1) NKN-M45, non-class 125vdc bus
(2) emergency seal oil pump operation to prevent hydrogen leakage out of the main generator seals.
- B. (1) NKN-M46, non-class 125vdc bus
(2) emergency seal oil pump operation to prevent hydrogen leakage out of the main generator seals.
- C. (1) NKN-M45, non-class 125vdc bus
(2) emergency oil pumps are available for the main feedpump and main turbine to prevent shaft bowing.
- D. (1) NKN-M46, non-class 125vdc bus
(2) emergency oil pumps are available for the main feedpump and main turbine to prevent shaft bowing.

Answer: B

EXAMINATION ANSWER KEY

2015 RO

75

ID: Q44215

Points: 1.00

Given the following conditions:

- Unit 1 has declared an Emergency Action Level.
- Command and Control has been transferred to the EOF.

Under these conditions, the NRC Operations Center shall be notified using the __ (1) __ and they must be notified __ (2) __ following notifications to the state and local agencies.

- A. (1) NAN Phone
(2) within 15 minutes
- B. (1) Emergency Notification System (ENS) telephone
(2) within 15 minutes
- C. (1) NAN Phone
(2) immediately, but no later than 1 hour after the declaration
- D. (1) Emergency Notification System (ENS) telephone
(2) immediately, but no later than 1 hour after the declaration

Answer: D

EXAMINATION ANSWER KEY

2015 SRO

76

ID: Q44240

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 100% power.
- An inadvertent "A" train CSAS has occurred.
- NCA-UV-402, NCW Containment Downstream Return Isolation Valve, is closed.

Which of the following is correct?

- (1) NCA-UV-402 must be OPENED within a maximum of _____ or trip the reactor and stop all RCPs.
- (2) If NCA-UV-402 is over-ridden and opened then the penetration must be isolated within to satisfy the conditions of LCO 3.6.3
- A. (1) 3 minutes (2) 4 hours
- B. (1) 3 minutes (2) 24 hours
- C. (1) 10 minutes (2) 4 hours
- D. (1) 10 minutes (2) 24 hours

Answer: C

EXAMINATION ANSWER KEY

2015 SRO

77

ID: Q44172

Points: 1.00

Given the following conditions:

- Unit 1 is in a refueling outage.
- Tcold is 180°F.
- RCS pressure is 150 psia.
- LPSI A is providing Shutdown Cooling flow at 4500 gpm.
- Shutdown Cooling Train B is in standby.

Subsequently:

- RCS level is slowly lowering.
 - Containment sump alarms are annunciating.
 - Makeup sources to the RCS are being aligned.
 - LPSI A is now exhibiting flow and amp oscillations every 30 seconds.
1. Which of the following is the correct mitigating procedure?
 2. What is the first directed action in response to the LPSI pump oscillations?
 - A. (1) Functional Recovery (2) Reduce SDC flow to 3780 gpm.
 - B. (1) Functional Recovery (2) Close the B train SDC suction valves.
 - C. (1) Lower Mode Functional Recovery (2) Reduce SDC flow to 3780 gpm.
 - D. (1) Lower Mode Functional Recovery (2) Close the B train SDC suction valves.

Answer: C

EXAMINATION ANSWER KEY

2015 SRO

78

ID: Q44174

Points: 1.00

Given the following conditions:

- Unit 1 was manually tripped from 100% power due to a tube leak on SG #1.
- 13.8 kV bus NAN-S01 tripped due to electrical fault.
- 13.8 kV bus NAN-S02 is energized.
- The CRS is performing steps in 40EP-9EO04, SGTR.
- SG #1 has been isolated.
- RCS hot leg is 522°F.
- RCS cold leg is 520°F.
- RCS pressure is 1200 psia.
- Preparations are being made to cool down the RCS to Mode 5.

The cooldown rate is limited to a maximum of...

- A. 30°F/hr to prevent the non ductile failure of the Reactor Coolant Pressure Boundary.
- B. 30°F/hr to ensure that the two SGs remain thermodynamically coupled and cooled together.
- C. 100°F/hr to prevent the non ductile failure of the Reactor Coolant Pressure Boundary.
- D. 100°F/hr to ensure that the two SGs remain thermodynamically coupled and cooled together.

Answer: C

EXAMINATION ANSWER KEY

2015 SRO

79

ID: Q44194

Points: 1.00

Given the following conditions:

- Unit 1 automatically tripped from 100% power.
- 525kV East Bus, MAN-EI-001, has no indication.
- 525kV West Bus, MAN-EI-002, has no indication.
- DG B started but tripped on low lube oil pressure.
- PBA-S03, 4160 class bus, is being powered by DG A.
- AFA-P01, Auxiliary feed pump A, is under clearance and OOS.
- SG levels are 52% WR and lowering.

Which one of the following is correct?

- A. Implement 40EP-9EO02, Reactor Trip , NO MSIS initiation required, restore SG levels using AFN-P01.
- B. Implement 40EP-9EO07, LOOP/LOFC, NO MSIS initiation required, restore SG levels using AFN-P01.
- C. Implement 40EP-9EO02, Reactor Trip, initiate an MSIS then restore SG levels using AFN-P01 by overriding the downcomer Isolation valves.
- D. Implement 40EP-9EO07, LOOP/LOFC, initiate an MSIS then restore SG levels using AFN-P01 by overriding the downcomer Isolation valves.

Answer: D

EXAMINATION ANSWER KEY

2015 SRO

80

ID: Q44280

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 100% power.
- Group 5 CEAs are at 120 inches withdrawn for ASI control.
- Class instrument bus, PKC-M43, has faulted and is de-energized.

(1) What is the correct Tech Spec as it applies to CEA alignment?

(2) What is the impact on the CEDMCS system and the ability to position CEAs.

LCO 3.1.5 is provided as a reference

- A. (1) Enter LCO 3.0.3, because the conditions of 3.1.5 B are not satisfied.
(2) Subgroup logic **prevents** the positioning of the group 5 CEAs in Manual Sequential.
- B. (1) Enter LCO 3.1.5, Condition B.
(2) Subgroup logic **allows** the positioning of the group 5 CEAs in Manual Sequential.
- C. (1) Enter LCO 3.1.5, Condition B.
(2) Subgroup logic **prevents** the positioning of the group 5 CEAs in Manual Sequential.
- D. (1) Enter LCO 3.0.3, because the conditions of 3.1.5 B are not satisfied.
(2) Subgroup logic **allows** the positioning of the group 5 CEAs in Manual Sequential.

Answer: A

EXAMINATION ANSWER KEY

2015 SRO

81

ID: Q44175

Points: 1.00

Given the following conditions:

- Unit 1 automatically tripped from 100% power.
 - Loop 1 Tcold is is 520°F and lowering.
 - Loop 2 Tcold is is 540°F and slowly lowering.
 - RCS pressure is 1800 psia and lowering.
 - Containment pressure is 4 psig and rising.
 - Containment humidity and temperatures are increasing.
 - Reactor operator reports no activity in the steam plant or containment.
 - PBA-S03, 4.16kV bus faulted and is de-energized.
1. After completion of the SPTAs, which EOP should the CRS implement?
 2. In addition to any Emergency Plan notifications, the first notification to the NRC of current plant conditions must be initiated within a maximum of _____.

Event Reporting Manual "Quick Reference table" is provided

- A. (1) 40EP-9EO03, LOCA (2) 4 hours
- B. (1) 40EP-9EO03, LOCA (2) 8 hours
- C. (1) 40EP-9EO05, ESD (2) 4 hours
- D. (1) 40EP-9EO05, ESD (2) 8 hours

Answer: C

EXAMINATION ANSWER KEY

2015 SRO

82

ID: Q44286

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 90% power.
- Group 5 CEAs are 85 inches withdrawn.
- Group 5 CEAs are currently below the Transient Insertion Limits
- To comply with the conditions of LCO 3.1.7 (CEA Insertion Limits) group 5 CEAs are being withdrawn to 95 inches.
- On the first step out CEA 15 slips to 65 inches withdrawn.

(1) If the CEA position switch is held in the outward motion position, CEA motion will stop due to...

(2) What actions are directed by 40AO-9ZZ11, CEA Malfunctions?

- A. (1) a CEA Withdrawl Prohibit (CWP) being generated. (2) Trip the reactor and enter 40EP-9EO01, SPTAs
- B. (1) a CEA Withdrawl Prohibit (CWP) being generated. (2) start a power reduction within 10 minutes of the initial CEA deviation:
- C. (1) the Automatic CEDM Timer Module (ACTM) stopping group motion. (2) Trip the reactor and enter 40EP-9EO01, SPTAs
- D. (1) the Automatic CEDM Timer Module (ACTM) stopping group motion. (2) start a power reduction within 10 minutes of the initial CEA deviation:

Answer: A

EXAMINATION ANSWER KEY

2015 SRO

83

ID: Q43783

Points: 1.00

Given the following conditions:

- Unit 1 was manually tripped due to lowering pressurizer level and pressure.
- Containment Atmosphere monitor, RU-1 is alarming.
- A Loss of Offsite Power (LOOP) has occurred.
- PBB-S04, Class 4.16 Kva bus is de-energized due to a fault on DG B.
- SIAS, CIAS, MSIS and CSAS have initiated.
- SPTAs are complete and the CRS has entered the 40EP-9EO03, LOCA.

Subsequently

- Nuclear Cooling Water monitor, RU-6 is alarming.
- Nuclear Cooling water surge tank pressure and level alarms are occurring.
- RCP 2A has rising seal and bearing temperature.
- All attempts to close NCA-UV-402, NC Return CTMT Isolation valve, have failed.

Which ONE of the following describes the appropriate response?

- A. Stay in 40EP-9EO03, LOCA and close NCB-UV-401/403, NCW CTMT Isolation valves.
- B. Stay in 40EP-9EO03, LOCA and close RCN-HV-448/452, RCP 2A HPSC Isolation Valves.
- C. Go to 40EP-9EO09, FRP and take required actions to close NCB-UV-401/403, NCW CTMT Isolation valves.
- D. Go to 40EP-9EO09, FRP and take required actions to close RCN-HV-448/452, RCP 2A HPSC Isolation Valves.

Answer: C

EXAMINATION ANSWER KEY

2015 SRO

84

ID: Q44177

Points: 1.00

Given the following conditions:

- Unit 1 is in a refueling outage.
- Spent fuel is being moved in the SFP.
- A seismic event alarm occurs, with readings $< 0.1g$.
- The event is NOT felt in the plant.
- The SFP LEVEL HI-LO (EO0204A) on PCN-E02 alarm actuates.
- RU-31, Spent Fuel Pool Area monitor is in HIGH Alarm.
- The LSRO reports an incident with the fuel being moved in the SFP.
- RU-145, Fuel Building Ventilation Low Range monitor, and RU-146, Fuel Building Ventilation High Range monitor, readings are stable below the ALERTsetpoint.

Which of the following is the current classification level and highest applicable EAL and would be reported to state and federal agencies?

EAL tables are provided

- A. Notification of Unusual Event, HU1.1
- B. Alert, HA1.1
- C. Alert, RA2.2
- D. Notification of Unusual Event, RU2.1

Answer: D

EXAMINATION ANSWER KEY

2015 SRO

85

ID: Q44242

Points: 1.00

Given the following conditions:

- Unit 1 has been manually tripped from 100% power.
- A fire has been confirmed in the basement of the Control building.
- Fire Analysis Area 02B is the affected location.
- 25 minutes have elapsed since the fire was confirmed.
- FTA reports visible charring and burning to Essential Chiller A, ECA-P01.
- A cooldown to mode 5 has been directed.

(1) Which Auxiliary Feed pump should be used during the cooldown?

(2) What is the Emergency Classification for this event?

40DP-9ZZ19, Operational Considerations due to Plant Fire and EAL tables are provided

- A. (1) AFA-P01, Aux Feedpump A (2) Unusual Event
- B. (1) AFA-P01, Aux Feedpump A (2) Alert
- C. (1) AFB-P01, Aux Feedpump B (2) Unusual Event
- D. (1) AFB-P01, Aux Feedpump B (2) Alert

Answer: B

EXAMINATION ANSWER KEY

2015 SRO

86

ID: Q44288

Points: 1.00

Given the following conditions:

- Unit 1 is in Mode 6.
- RCS temperature is 125 degrees
- Shutdown Cooling is in service with LPSI "A" in service.
- RCS level is currently in a reduced inventory condition.

Subsequently

- Seismic event greater than Operating Basis Earthquake has been confirmed.
- Several AOs report feeling an earthquake.
- The event caused damage to the Refueling Water Level Indicating System (RWLIS).
- RCS level indication has not been available for 35 minutes.
- An unexplained rise in CVCS Holdup tank level is occurring.
- All containment penetrations have at least one means of isolation established.

The current classification is a/an __(1)__ and accountability is __(2)__.

EAL tables are provided

- A. (1) Alert (2) required
- B. (1) Alert (2) recommended
- C. (1) Site Area Emergency (2) required
- D. (1) Site Area Emergency (2) recommended

Answer: C

EXAMINATION ANSWER KEY

2015 SRO

87

ID: Q43920

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 100% power.
- PZR pressure was reported as 2230 psia and lowering.
- Main spray valves 100E & 100F indicate full open.
- All attempts to close Main Spray valves have failed.
- Pressurizer pressure is 2050 psia and continuing to lower.

This will cause the RCN-PIC-100 (PPCS master controller) output to go to ___(1)___ and the CRS should trip the reactor, ___(2)___.

- A. (1) minimum, (2) close IAA-UV-2 and enter 40EP-9EO02 (Reactor Trip).
- B. (1) minimum, (2) stop all 4 RCPs and enter 40EP-9EO07 (LOOP/LOFC).
- C. (1) maximum, (2) close IAA-UV-2 and enter 40EP-9EO02 (Reactor Trip).
- D. (1) maximum, (2) stop all 4 RCPs and enter 40EP-9EO07 (LOOP/LOFC).

Answer: B

EXAMINATION ANSWER KEY

2015 SRO

88

ID: Q44186

Points: 1.00

Given the following conditions:

- Unit 1 tripped from 100% power.
- Class 4160 vac bus, PBB-S04 has faulted and is de-energized.
- A large break has occurred on the RCS 1A cold leg.
- 40EP-9EO03, LOCA has been implemented.
- RAS has actuated, all automatic and manual actions are complete.
- Containment level is on scale and has been stable for 20 minutes.

(1) What would be the indications of RAS sump blockage?

(2) Assuming that CS pump A has been stopped and HPSI A flow stabilized the CRS...

- A. (1) Unstable or changing containment water level
(2) may remain in 40EP-9EO03, LOCA.
- B. (1) Unstable or changing containment water level
(2) is required to transition to 40EP-9EO09, FRP.
- C. (1) Unstable flow and discharge pressure on running SI pumps
(2) may remain in 40EP-9EO03, LOCA.
- D. (1) Unstable flow and discharge pressure on running SI pumps
(2) is required to transition to 40EP-9EO09, FRP.

Answer: D

EXAMINATION ANSWER KEY

2015 SRO

89

ID: Q44241

Points: 1.00

Given the following conditions:

- Unit 1 has entered a refueling outage.
- Tcold is 425°F and lowering.
- During an inspection maintenance discovered a fault on the connections between the "A" battery and PKA-M41, 125 vdc class DC bus.
- Electrical reports that PKA-M41 needs to be de-energized.

De-energizing PKA-M41 would require entry into LCO 3.7.5 Conditions(s)...

LCO 3.7.5, Auxiliary Feedwater System is provided

- A. A only
- B. C only
- C. A and B only
- D. A, B and C

Answer: D

EXAMINATION ANSWER KEY

2015 SRO

90

ID: Q44187

Points: 1.00

Given the following conditions:

- Unit 1 is operating in Mode 4 coming out of a refueling outage
- RU-1 (Containment Atmosphere) is declared inoperable

Which ONE of the following describes the required action (if any) per Technical Specification 3.4.16 (RCS Leakage Detection Instrumentation)?

- A. Perform RCS water inventory balance once per 72 hours.
- B. Analyze grab samples of the containment atmosphere once per 24 hours.
- C. No action required as long as containment sump monitor remains operable.
- D. No action required as long as RU-16 (Containment Operating Level) remains operable.

Answer: B

EXAMINATION ANSWER KEY

2015 SRO

91

ID: Q44243

Points: 1.00

Given the following conditions:

- Unit 1 is operating at 100% power.
- RCA-LI-110X was declared Inoperable 3 shifts ago due to erratic readings.
- I & C has completed all scheduled maintenance/rework activities.

In order to restore Operability a deviation check between pressurizer level instruments RCA-LI-110X and __(1)__ as identified in __(2)__ must be performed.

- A. (1) RCB-LI-110Y only
(2) 40ST-9ZZ10, Post Accident Monitoring Instrumentation Channel Checks only
- B. (1) RCB-LI-110Y and RCN-LI-103
(2) 40ST-9ZZ10, Post Accident Monitoring Instrumentation Channel Checks only
- C. (1) RCB-LI-110Y only
(2) 40ST-9ZZ22, Remote Shutdown Instrumentation Channel Checks and
40ST-9ZZ10, Post Accident Monitoring Instrumentation Channel Checks
- D. (1) RCB-LI-110Y and RCN-LI-103
(2) 40ST-9ZZ22, Remote Shutdown Instrumentation Channel Checks and
40ST-9ZZ10, Post Accident Monitoring Instrumentation Channel Checks

Answer: C

EXAMINATION ANSWER KEY

2015 SRO

92

ID: Q44297

Points: 1.00

Given the following conditions:

- A Dry Cask is being loaded then transported from Unit 3 to the Independent Spent Fuel Storage Installation, ISFSI.

Which of the following identifies who has responsibility and ownership for the Dry Cask....

(1) when it is being loaded?

(2) during transport to the ISFSI?

- A. (1) Unit 3 Shift Manager (2) Unit 1 Shift Manager
- B. (1) Unit 3 Shift Manager (2) Unit 3 Shift Manager
- C. (1) Dry Cask Loading Coordinator (2) Unit 1 Shift Manager
- D. (1) Dry Cask Loading Coordinator (2) Unit 3 Shift Manager

Answer: B

EXAMINATION ANSWER KEY

2015 SRO

93

ID: Q44188

Points: 1.00

Given the following conditions:

- Unit 1 was manually tripped due to a SGTL on SG 1.
- On the trip, offsite power was lost.
- Alarm PBYS2, SWGR PBA-S03 Sply Breaker Lockout Trip is alarming.
- Window 1A06A, 4.16KV IE TR A Sply Bkr LKO Trip is lit

The following conditions were reported during SPTAs.

- PZR press is 1700 psia and lowering.
- RCS temperature is 490°F and lowering.
- SG 1 pressure is 600 psia and rapidly lowering.
- SG 2 pressure is 800 psia and slowly lowering.
- SG #1 level is 20% WR and lowering.
- SG #2 level is 42% WR and stable.
- Feedrate is 0 gpm to both SGs.
- Containment pressure is 0.3 psig and stable.
- Valid radiation monitor alarms are reported in the steam plant.

Which of the following is the correct strategy per 40EP-9EO09, FRP?

- A. Raise SG 2 level to 45% -60% NR using either AFB-P01 or AFN-P01. Do not feed SG 1.
- B. Raise SG 2 level to 45% -60% NR using either AFB-P01 or AFA-P01. Do not feed SG 1.
- C. Raise SG 1 level to 45% - 60% NR at 1360 - 1600 gpm using both AFB-P01 and AFN-P01. Slowly recover SG 2 level to 45% - 60% NR.
- D. Raise SG 1 level to 45% - 60% NR at 1360 - 1600 gpm using both AFB-P01 and AFA-P01. Slowly recover SG 2 level to 45% - 60% NR.

Answer: D

EXAMINATION ANSWER KEY

2015 SRO

94

ID: Q44269

Points: 1.00

In order to comply with the minimum staffing requirements as defined in the Technical Specifications, 40DP-9OP02, Conduct of Shift Operations, requires that an SRO meet which of the following requirements to maintain an **active** SRO license?

The Senior License holder must stand a minimum of....

- A. 40 hours and all must be in an SRO-only supervisory position.
- B. 40 hours with a minimum of one complete shift in an SRO-only supervisory position.
- C. five 12 hour shifts and all must be in an SRO-only supervisory position.
- D. five 12 hour shifts with a minimum of one complete shift in an SRO-only supervisory position.

Answer: D

EXAMINATION ANSWER KEY

2015 SRO

95

ID: Q22659

Points: 1.00

Given the following conditions:

- The Site Control Rooms are presently staffed by the following personnel.

UNIT 1	UNIT 2	UNIT 3
1 Shift Manager	1 Shift Manager	1 Shift Manager
1 STA (Unlicensed)	1 STA (Unlicensed)	1 STA (Unlicensed)
1 CRS	1 CRS	1 CRS
2 ROs	2 ROs	3 ROs

- The Fire Team Advisor is being supplied by the Unit 3 third RO.
- One of the Unit 1 ROs becomes ill and has to leave the site immediately.
- It is three hours until the end of the shift.

Which ONE of the following describes the appropriate response?

The Unit 1 Operating Crew...

- A. can continue to operate with the reduced manning for the remainder of the shift per 40DP-9OP02, Conduct of Shift Operations.
- B. must enter LCO 3.0.3 immediately and make preparations to be in MODE 5 within 37 hours due to failure to meet Technical Specification 5.2.2, Unit Organization Staff.
- C. can continue to operate with the reduced manning, provided that the FTA from Unit 3 assumes the 2nd RO in Unit 1 to comply with Technical Specification 5.2.2, Unit Organization Staff.
- D. can continue to operate with the reduced manning for up to 2 hours, provided immediate action is taken to restore crew manning to the minimum requirements per 40DP-9OP02, Conduct of Shift Operations.

Answer: D

EXAMINATION ANSWER KEY

2015 SRO

96

ID: Q44190

Points: 1.00

Given the following conditions:

- Unit 1 is in Mode 1.
- High Pressure Safety Injection (HPSI) Pump B, SIB-P02, unexpectedly tripped during surveillance testing.

(1) Restore SIB-P02 to Operable status within _____ or enter LCO 3.5.3 Condition C, be in Mode 3 in 6 hrs AND reduce pressurizer pressure < 1837 psia in 12 hrs AND reduce RCS Tc < 485°F in 12 hrs.

(2) Who determines the level of troubleshooting per 01DP-9ZZ01, Systematic Troubleshooting?

- A. (1) 7 days (2) Shift Technical Advisor
- B. (1) 72 hours (2) Shift Technical Advisor
- C. (1) 7 days (2) Shift Manager
- D. (1) 72 hours (2) Shift Manager

Answer: D

EXAMINATION ANSWER KEY

2015 SRO

97

ID: Q44270

Points: 1.00

Given the following conditions:

- Unit 1 is in a refueling outage.
- Pressurizer manway has been removed.
- Maintenance has requested permission to open the Equipment Hatch

In regards to opening the Equipment Hatch ...

(1) Provided that personnel are inside containment, in close proximity and available to close the equipment hatch then the equipment hatch may be opened if the time to boil is greater than a minimum of

(2) The decision to allow equipment hatch closure personnel to perform other duties resides solely with the.....

- A. (1) 30 minutes (2) Shift Manager
- B. (1) 30 minutes (2) Containment Coordinator
- C. (1) 60 minutes (2) Shift Manager
- D. (1) 60 minutes (2) Containment Coordinator

Answer: A

EXAMINATION ANSWER KEY

2015 SRO

98

ID: Q44191

Points: 1.00

Given the following conditions:

- Unit 1 is in Mode 6.
- Core off-load is in progress.
- LPSI Pump A is in service providing SDC flow at 4100 gpm.
- LSRO reports that a fuel assembly has been dropped in the Refueling Pool.
- Bubbles can be seen emerging from the dropped assembly.
- Power Access Purge monitors, RU-37 and RU-38, are trending up.
- Operating Level Area monitor, RU-16, is trending up.

The CRS is required to enter (1) and ensure (2) .

- A. (1) 40EP-9EO11, LMFRP
(2) CPIAS and CREFAS are initiated
- B. (1) 40EP-9EO11, LMFRP
(2) an equal number of Auxiliary Building normal and exhaust fans are running
- C. (1) 40AO-9ZZ22, Fuel Damage
(2) CPIAS and CREFAS are initiated
- D. (1) 40AO-9ZZ22, Fuel Damage
(2) an equal number of Auxiliary Building normal and exhaust fans are running

Answer: C

EXAMINATION ANSWER KEY

2015 SRO

99

ID: Q44181

Points: 1.00

During an Emergency Plan event involving a radiological release, the (1) is responsible for exposure limit authorization up to a **MAXIMUM** of (2) in order to "protect valuable property" of the station.

- A. (1) Emergency Coordinator
(2) 10 REM TEDE per event
- B. (1) Emergency Coordinator
(2) 25 REM TEDE per event
- C. (1) Emergency Operations Director
(2) 10 REM TEDE per event
- D. (1) Emergency Operations Director
(2) 25 REM TEDE per event

Answer: A

EXAMINATION ANSWER KEY

2015 SRO

100

ID: Q44193

Points: 1.00

Determine the first priority safety function to be addressed and the bases for that choice.

Safety Function Tracking Sheet from 40EP-9EO09, FRP provided.

- A. RC-2 should be addressed first because it is the highest priority safety function in use.
- B. IC-2 should be addressed first because it is the highest priority safety function whose acceptance criteria is not being met.
- C. MVAC-2 must be addressed first to ensure that the "Bus Plus" criteria is available to support all of the other safety functions.
- D. MVDC-1 should be addressed first because it is the highest priority safety function that requires actions be taken to ensure that the criteria continue to be met.

Answer: B