

**ANSWER KEY REPORT**  
for VOGTLE HL-18 NRC Exam 2013-301 Test Form: 0

					Answers
#	ID	Points	Type	0	
1	002K5.10 1	1.00	MCS	C	
2	003A2.05 1	1.00	MCS	A	
3	003AK1.07 1	1.00	MCS	C	
4	003K5.02 1	1.00	MCS	A	
5	004K5.27 1	1.00	MCS	D	
6	005K2.01 1	1.00	MCS	B	
7	006A3.08 1	1.00	MCS	B	
8	007A3.01 1	1.00	MCS	D	
9	007EK1.02 1	1.00	MCS	B	
10	008AG2.4.02 1	1.00	MCS	D	
11	008K4.09 1	1.00	MCS	B	
12	009EA1.04 1	1.00	MCS	C	
13	010K4.02 1	1.00	MCS	A	
14	011EK2.02 1	1.00	MCS	D	
15	011K2.02 1	1.00	MCS	B	
16	012A1.01 1	1.00	MCS	C	
17	012K6.02 1	1.00	MCS	D	
18	013G2.1.19 1	1.00	MCS	A	
19	013K3.03 1	1.00	MCS	B	
20	013K6.01 1	1.00	MCS	D	
21	015AK3.01 1	1.00	MCS	B	
22	015K6.01 1	1.00	MCS	D	
23	016K3.12 1	1.00	MCS	D	
24	022A1.03 1	1.00	MCS	B	
25	022AA2.01 1	1.00	MCS	A	
26	025AG2.4.21 1	1.00	MCS	D	
27	026A4.05 1	1.00	MCS	A	
28	026AA2.02 1	1.00	MCS	B	
29	029EK3.03 1	1.00	MCS	D	
30	034A2.03 1	1.00	MCS	C	
31	035A4.05 1	1.00	MCS	A	
32	036AA1.04 1	1.00	MCS	A	
33	037AA2.08 1	1.00	MCS	C	
34	038EK1.03 1	1.00	MCS	C	
35	039A2.04 1	1.00	MCS	B	
36	054AA1.04 1	1.00	MCS	B	
37	056AK3.02 1	1.00	MCS	B	
38	059G2.2.22 1	1.00	MCS	C	
39	061K6.01 1	1.00	MCS	A	
40	062AA1.02 1	1.00	MCS	B	
41	062K1.02 1	1.00	MCS	D	
42	063K1.03 1	1.00	MCS	C	
43	064A4.05 1	1.00	MCS	A	
44	064K1.03 1	1.00	MCS	D	
45	065AG2.4.46 1	1.00	MCS	A	
46	071K4.05 1	1.00	MCS	D	

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					Answers
#	ID	Points	Type	0	
47	072K1.03 1	1.00	MCS	A	
48	073A2.02 1	1.00	MCS	C	
49	076K2.04 1	1.00	MCS	D	
50	076K3.05 1	1.00	MCS	C	
51	077AA2.02 1	1.00	MCS	D	
52	078K4.02 1	1.00	MCS	B	
53	079G2.1.23 1	1.00	MCS	B	
54	086A3.03 1	1.00	MCS	A	
55	103A3.01 1	1.00	MCS	A	
56	103K3.01 1	1.00	MCS	A	
57	G2.1.15 1	1.00	MCS	C	
58	G2.1.29 1	1.00	MCS	A	
59	G2.1.43 1	1.00	MCS	D	
60	G2.2.42 1	1.00	MCS	D	
61	G2.2.44 1	1.00	MCS	B	
62	G2.3.11 1	1.00	MCS	C	
63	G2.3.12 1	1.00	MCS	C	
64	G2.4.09 1	1.00	MCS	B	
65	G2.4.27 1	1.00	MCS	D	
66	G2.4.39 1	1.00	MCS	C	
67	WE02EA2.1 1	1.00	MCS	A	
68	WE03EK3.2 1	1.00	MCS	D	
69	WE04EK2.1 1	1.00	MCS	B	
70	WE05EK2.1 1	1.00	MCS	C	
71	WE06EG2.4.20 1	1.00	MCS	C	
72	WE12EK1.1 1	1.00	MCS	A	
73	WE13EA1.2 1	1.00	MCS	A	
74	WE14EK2.1 1	1.00	MCS	D	
75	WE16EK3.2 1	1.00	MCS	C	
76	005AG2.1.07 1	1.00	MCS	D	
77	005G2.1.32 1	1.00	MCS	B	
78	008A2.02 1	1.00	MCS	D	
79	008AG2.4.30 1	1.00	MCS	C	
80	011EA2.07 1	1.00	MCS	C	
81	015A2.04 1	1.00	MCS	B	
82	025AA2.04 1	1.00	MCS	A	
83	029EG2.4.18 1	1.00	MCS	A	
84	034A1.02 1	1.00	MCS	B	
85	039G2.2.25 1	1.00	MCS	C	
86	056AG2.4.45 1	1.00	MCS	B	
87	062G2.2.44 1	1.00	MCS	D	
88	063A2.02 1	1.00	MCS	A	
89	065AA2.05 1	1.00	MCS	A	
90	076AG2.2.22 1	1.00	MCS	A	
91	086G2.2.37 1	1.00	MCS	A	
92	G2.1.05 1	1.00	MCS	A	

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				Answers
#	ID	Points	Type	0
93	G2.2.15 1	1.00	MCS	D
94	G2.2.20 1	1.00	MCS	B
95	G2.3.04 1	1.00	MCS	D
96	G2.3.07 1	1.00	MCS	C
97	G2.4.29 1	1.00	MCS	B
98	G2.4.40 1	1.00	MCS	A
99	WE03EA2.1 1	1.00	MCS	C
100	WE09EA2.2 1	1.00	MCS	A
<b>SECTION 1 ( 100 items)</b>		<b>100.00</b>		

1.

Given the following plant conditions:

- The plant is at 100% power.
- All control systems are in automatic.

A narrow range RTD fails on Unit 1 and the following alarms illuminate:

- ALB10-C03 OVERPOWER DELTA T ROD BLOCK AND RUNBACK ALERT
- ALB10-E03 OVERTEMP DELTA T ROD BLOCK AND RUNBACK ALERT
  
- ALB12-A03 RC LOOP DELTA T/AUCT DELTA T HI-LO- DEV
- ALB12-A04 RC LOOP TAVG/AUCT TAVG HI-LO DEV
- ALB12-A06 OVERTEMP DELTA T ALERT
- ALB12-B06 OVERPOWER DELTA T
- ALB12-C06 TERR (TAVG-TREF) LO

With no operator action, which one of the following answers the following statement?

Based on the given indications, a loop  $T_{cold}$  RTD failed \_\_\_\_ (1) \_\_\_\_,

and

indicated power level \_\_\_\_ (2) \_\_\_\_ exceed 100%.

A. (1) high

(2) will

B. (1) high

(2) will NOT

C. (1) low

(2) will

D. (1) low

(2) will NOT

2.

Initial conditions:

- Unit 1 is in Mode 4.
- RCS pressure is 230 psig.
- RCPs # 1 and # 3 are running.
- VCT pressure is 22 psig.
- LT-0112, VCT Level, fails low.

Current conditions:

- VCT pressure is 37 psig.

Which one of the following completes the following statement?

With NO operator action, RCP seal # 1 leakoff will \_\_\_\_ (1) \_\_\_\_, and per 13003-1, "Reactor Coolant Pump Operation", the RCPs \_\_\_\_ (2) \_\_\_\_ required to be stopped.

\_\_\_\_ (1) \_\_\_\_

\_\_\_\_ (2) \_\_\_\_

- |               |         |
|---------------|---------|
| A. decrease   | are     |
| B. increase   | are     |
| C. decrease   | are NOT |
| D. NOT change | are NOT |

3.

Initial conditions:

- Unit 1 is at 75% power.

Current conditions:

- A CBD rod has dropped to the bottom of the core.
- The reactor remains at power.

Which one of the following completes the following statement?

Based on the given conditions, shutdown margin will \_\_\_\_ (1) \_\_\_\_

and

the rod position at which ALB10-D04 ROD BANK LO-LO-LIMIT alarm will be received is now \_\_\_\_ (2) \_\_\_\_ .

A. (1) increase

(2) higher

B. (1) increase

(2) lower

C. (1) remain the same

(2) higher

D. (1) remain the same

(2) lower

4.

Initial conditions:

- Unit 1 is starting up following an outage.
- The crew is in 12004DF-1, "Power Operation (Mode 1)."
- Feedwater is being transferred from AFW to MFW.

Current conditions:

- After transfer of SG #1 and # 2 to MFW, RCP #2 trips.

Per 18005-C, "Partial Loss of Flow", which one of the following completes the following statement?

Following the RCP trip, the DNBR will \_\_\_\_ (1) \_\_\_\_

and

the crew will be procedurally directed to \_\_\_\_ (2) \_\_\_\_.

A. (1) decrease

(2) initiate a reactor shutdown per 12004DF-1

B. (1) decrease

(2) immediately trip the reactor per 18005-C

C. (1) increase

(2) initiate a reactor shutdown per 12004DF-1

D. (1) increase

(2) immediately trip the reactor per 18005-C

5.

Unit 1 is preparing for a refueling outage.

Which one of the following completes the following statement?

The VCT gas space will be purged with \_\_\_\_ (1) \_\_\_\_ in order to \_\_\_\_ (2) \_\_\_\_ in the 24 hour period preceding a reactor shutdown in accordance with 13007-1, "VCT Gas Control and RCS Chemical Control."

\_\_\_\_ (1) \_\_\_\_

\_\_\_\_ (2) \_\_\_\_

- |                   |   |
|-------------------|---|
| A. carbon dioxide | reduce oxygen to minimize corrosion         |
| B. carbon dioxide | allow partial removal of dissolved hydrogen |
| C. nitrogen       | reduce oxygen to minimize corrosion         |
| D. nitrogen       | allow partial removal of dissolved hydrogen |



6.

Initial Unit 1 conditions:

- RCS temperature is 340°F.
- 'B' RHR in service for RCS cooling.
- 'A' RHR is aligned for ECCS injection.
- The SAT is aligned to 1BA03.

Current conditions:

- An LOSP occurs to both RATs.
- DG1B does NOT start.
- Plant Wilson is unaffected.

Which one of the following is correct regarding the status of the RHR pumps' respective 4160V bus breakers?

<u>'A' RHR PUMP</u>	<u>'B' RHR PUMP</u>
A. open	open
B. open	closed
C. closed	open
D. closed	closed

7.

Given the following plant conditions:

- A large break LOCA is in progress on Unit 1.
- RWST SI TEST LIGHT 'A' white light is lit on the QMCB 'A' panel.
- RWST SI TEST LIGHT 'B' white light is NOT lit on the QMCB 'A' panel.

Current condition:

- RWST level is 26% on all channels and slowly lowering.

Assuming NO additional operator actions, which one of the following completes the following statement?

1-HV-8811A, CNMT SUMP TO RHR PMP-A SUCTION, will indicate \_\_\_\_ (1) \_\_\_\_,

and

1-HV-8811B, CNMT SUMP TO RHR PMP-B SUCTION, will indicate \_\_\_\_ (2) \_\_\_\_ on the main control board.

- A. (1) open  
(2) open
- B. (1) open  
(2) closed
- C. (1) closed  
(2) open
- D. (1) closed  
(2) closed

8.

Unit 1 is in Mode 5.

- RHR is in the shutdown cooling mode of operation.

The following alarm illuminates:

- ALB12-E02 PRZR REL TANK HI PRESS

Which one of the following completes the following statement?

The \_\_\_\_ (1) \_\_\_\_ Relief Valve lifting will cause the PRT High Pressure condition,  
and

with NO operator action to mitigate the condition, PI-469, PRT Pressure, on the QMCB  
will reach a MAXIMUM of \_\_\_\_ (2) \_\_\_\_ psig before the rupture disk fails.

A. (1) RHR pump discharge

(2) 115

B. (1) RHR pump suction

(2) 115

C. (1) RHR pump discharge

(2) 100

D. (1) RHR pump suction

(2) 100

9.

Given the following plant conditions:

- The reactor trips from 100% power.
- The crew is performing 19001-C, "Reactor Trip Response."
- CBD rod H-8 is stuck at 36 steps.

Which one of the following completes the following statement?

Per 19001-C, for the given plant conditions, the crew \_\_\_\_ (1) \_\_\_\_ required to verify adequate Shutdown Margin,

and

Emergency Boration of the RCS \_\_\_\_ (2) \_\_\_\_ required.

\_\_\_\_ (1) \_\_\_\_

\_\_\_\_ (2) \_\_\_\_

- |    |        |        |
|----|--------|--------|
| A. | is     | is     |
| B. | is     | is NOT |
| C. | is NOT | is     |
| D. | is NOT | is NOT |

10.

The following conditions exist:

- The unit is at 5% power following a start up.
- A reactor trip occurs.

With no operator action taken, which one of the following will FIRST require the crew to perform 19000-C, "Reactor Trip or Safety Injection?"

- A. Two Reactor Coolant Pumps tripping on Undervoltage.
- B. Two Reactor Coolant Pumps tripping on Underfrequency.
- C. Pressurizer Pressure at 1955 psig due to a PRZR Safety Valve sticking open.
- D. Pressurizer Pressure at 1865 psig due to a PRZR Safety Valve sticking open.

11.

Initial conditions:

- Unit 1 is at 100% power.
- CCW pumps # 1 and # 5 are running.
- CCW pump # 3 is in AUTO standby.

Current sequence of events:

- Safety Injection actuates.
- Two minutes later, a loss of RAT 'A' occurs.
- SI has NOT been reset.

Following the sequence of events . . .

- A. ONLY CCW pump # 3 is running.
- B. CCW pumps # 1 and # 3 are running.
- C. CCW pumps # 1 and # 5 are running.
- D. CCW pumps # 1, # 3, and # 5 are running.

12.

Valve list as follows:

- LV-112B, VCT Outlet Isolation
- LV-112C, VCT Outlet Isolation
- LV-112D, RWST to CCP A & B Suction

Initial conditions:

- A small break LOCA occurs.
- SI actuates.
- 19010-C, "Loss of Reactor or Secondary Coolant," is in effect.
- LV-112D will NOT open.
  
- All other ECCS components have operated as expected.

Which one of the following completes the following statement?

Based on the given conditions, the OATC will observe that \_\_ (1) \_\_ and stopping the CCPs is \_\_ (2) \_\_.

- A. (1) LV-112B is shut  
(2) NOT required
- B. (1) LV-112B is shut  
(2) required
- C. (1) LV-112C is shut  
(2) NOT required
- D. (1) LV-112C is shut  
(2) required

13.

Initial conditions:

- Unit 2 is at 25% power.
- All pressurizer backup heaters are in AUTO.
- Variable pressurizer heaters are in the ON position.
- Due to a pressurizer level control malfunction, pressurizer level lowers to 15% and pressurizer pressure lowers to 2100 psig.

Current conditions:

- Pressurizer level has returned to 20%.
- Pressurizer pressure has returned to 2215 psig.

Assuming NO operator actions, which one of the following describes the current status of the pressurizer heaters?

- A. Variable and backup heaters are off.
- B. Variable and backup heaters are on.
- C. Backup heaters are on; variable heaters are off.
- D. Variable heaters are on; backup heaters are off.



14.

Given the following:

- A DBA LOCA is in progress on Unit 2.
- Both trains of ECCS have been aligned for "Cold Leg Recirculation."
- 'B' RHR pump trips 5 minutes after completion of the recirculation alignment.
- Subsequent steps of 19013-C, "ES-1.3 Cold Leg Recirculation" are in progress.

Which one of the following completes the following statement.

For the given conditions, \_\_\_\_\_ have an adequate suction source and may continue to run in the recirculation alignment.

- A. ONLY the SIPs
- B. ONLY the CCPs
- C. ONLY 'A' CCP and 'A' SIP
- D. both CCPs and both SIPs

15.

Given the following:

- The Reactor is tripped after a loss of both RATs occurs.
- DG1A fails to start.

Which one of the following correctly identifies which Pressurizer heater bank(s) is/are available for RCS pressure control?

- A. All Back-up Heater Banks.
- B. Back-up Heater Bank 'B' only.
- C. Proportional Heater Banks only.
- D. Back-up Heater Banks 'B' and 'D' only.

16.

The plant is at 100% power.

- Rod control is in MANUAL.
- An inadvertent dilution occurs.

Based on the given conditions, what will be the effect on the Over-Temperature (OT) and Over-Power (OP) Differential Temperature (DT) Reactor Protection setpoints?

	<u>OTDT setpoint</u>	<u>OPDT setpoint</u>
A.	no change	no change
B.	no change	decrease
C.	decrease	decrease
D.	decrease	no change

17.

Initial conditions on Unit 2:

- Reactor power is at 74%.
- A loss of power to vital instrument bus, 2AY1A occurs.

Current conditions:

- A Safety Injection occurs.

Which one of the following will be the result of the instrument power loss?

- A. ONLY Reactor Trip Breaker 'B' opens and BOTH Train 'A' and 'B' ESFAS equipment realign.
- B. BOTH Reactor Trip Breaker 'A' and Reactor Trip Breaker 'B' open and BOTH Train 'A' and 'B' ESFAS equipment realign.
- C. ONLY Reactor Trip Breaker 'B' opens and ONLY Train 'B' ESFAS equipment realigns.
- D. BOTH Reactor Trip Breaker 'A' and Reactor Trip Breaker 'B' open and ONLY Train 'B' ESFAS equipment realigns.

18.

Which one of the following completes the following statement?

There \_\_\_\_ (1) \_\_\_\_ a group on the IPC computer where the OATC can determine the status of the CIA valves,

and

when CIA is RESET, the OATC \_\_\_\_ (2) \_\_\_\_ determine whether CIA has RESET on the top of the IPC computer screens.

\_\_\_\_ (1) \_\_\_\_

\_\_\_\_ (2) \_\_\_\_

A. is

can

B. is

can NOT

C. is NOT

can

D. is NOT

can NOT

19.

Given the following conditions:

- A large break LOCA has occurred.
- BOTH Containment Spray (CS) trains fail to actuate.
- ALL Containment Coolers fail to shift to the Safety Injection (SI) alignment.

Which one of the following will be the result of these failures on Containment temperature and atmosphere and the reasons?

- A. Containment Cooler fan motors tripping on overcurrent will result in higher Containment temperatures.

No CS pumps operating will result in Containment atmosphere explosive concentrations.

- B. Containment Cooler fan motors tripping on overcurrent will result in higher Containment temperatures.

No CS pumps operating will result in higher Containment pressure.

- C. Containment Coolers failing to shift to the SI alignment will exceed the NSCW cooling capacity resulting in higher Containment temperatures.

No CS pumps operating will result in Containment atmosphere explosive concentrations.

- D. Containment Coolers failing to shift to the SI alignment will exceed the NSCW cooling capacity resulting in higher Containment temperatures.

No CS pumps operating will result in higher Containment pressure.

20.

Given the following plant conditions:

- Unit 1 is at 100% power.
- The bistables for Containment Pressure Channel I (1PT-937) are de-energized.
- No Tech Spec actions have been taken.

Based on the given conditions, which one of the following indicates the MINIMUM number of ADDITIONAL channels required to actuate SI or Containment Spray on Containment Pressure?

	<u>SI</u>	<u>Containment Spray</u>
A.	1	1
B.	1	2
C.	2	1
D.	2	2

21.

Given the following:

- Unit 2 is in Mode 4.
- Two RCPs are running.

Per 12002-C, "Unit Heatup to Normal Operating Temperature and Pressure (Mode 4 to Mode 3)," the crew has been directed to start a third RCP.

Which one of the following describes an RCP failure mechanism that would occur if the RCP was started, could cause potential component damage and the reason?

A. The anti-reverse rotation device pawls are NOT engaged in the ratchet plate.

RCP radial bearing damage due to reverse flow through the RCP.

B. The anti-reverse rotation device pawls are NOT engaged in the ratchet plate.

RCP motor winding damage due to high starting currents.

C. The anti-reverse rotation device pawls ARE engaged in the ratchet plate.

RCP radial bearing damage due to reverse flow through the RCP.

D. The anti-reverse rotation device pawls ARE engaged in the ratchet plate.

RCP motor winding damage due to high starting currents.



22.

Given the following:

- Unit 1 is at 50% power with a power descent in progress.
- N43 power range channel fails LOW.

Per 12004DF-1, "Power Operation (Mode 1)," which one of the following is correct regarding when the "TURB TRIP/RX-TRIP BLOCKED P-9" light will FIRST illuminate on the BPLB as power is lowered?

- A. When any ONE of the remaining PR NIS are  $\leq 40\%$  power.
- B. When any TWO of the remaining PR NIS are  $\leq 40\%$  power.
- C. When any ONE of the remaining PR NIS are  $\leq 38\%$  power.
- D. When any TWO of the remaining PR NIS are  $\leq 38\%$  power.

23.

Unit 1 is at 100% power with all systems in normal alignment.

Which one of the following Secondary pressure transmitters failing HIGH will result in a physical change to Steam Generator(s) parameters?

- A. 1PT-505 (Turbine Impulse Pressure Channel I)
- B. 1PT-514 (SG #1 Channel 1 Steam Pressure)
- C. 1PT-507 (Main Steam Header Pressure)
- D. 1PT-3010 (Loop 2 ARV Pressure)

24.

Initial conditions:

- Unit 1 at 100% power.
- ALB01-E06 CNMT HI TEMP illuminates.

Current conditions:

- A check of Containment parameters reveals the following:

<u>Temperature</u>	<u>Pressure</u>	<u>Relative Humidity</u>
T2501 = 117°F	PI-0935 = 0.6 psig	MTSH-2564 = 54.5%
T2502 = 123°F	PI-0937 = 0.8 psig	MTSH-2614 = 50.8%
T2503 = 119°F	PI-0934 = 0.7 psig	MTSH-2615 = 52.7%
UT2501(AVG) = 119.7°F	PI-0936 = 0.5 psig	

- Containment temperatures are rising very slowly.
- Containment pressures are stable.
- Containment relative humidity is stable.
- PRZR level, pressure, and RCS Tavg have remained stable.

Which one of the following completes the following statement?

Containment Temperature is currently \_\_\_\_ (1) \_\_\_\_ Tech Spec LCO limits

and

the crew is required to \_\_\_\_ (2) \_\_\_\_.

A. (1) within

(2) enter 18008-C, "Secondary Leakage", due to symptoms of a steam leak

B. (1) within

(2) start an additional pair of Containment Cooling Units to maintain temperature under the Tech Spec limit

C. (1) exceeding

(2) enter 18008-C, "Secondary Leakage", due to symptoms of a feedwater leak

D. (1) exceeding

(2) start an additional pair of Containment Cooling Units to return temperature within Tech Spec limits

25.

With Unit 1 at 100% power, the OATC observes the following:

- ALB07-A05, REGEN HX LTDN HI TEMP is in alarm.
- ALB07-B06, CHARGING LINE HI/LO FLOW is in alarm.
- RCP seal injection flow rates are lowering.

Which one of the following completes the following statement?

Using the above indications, the correct diagnosis is that \_\_\_\_\_.

- A. a line break just downstream of Charging Flow Control Valve, FV-0121
- B. the Seal Flow Control Valve, HV-182, has failed closed
- C. the Charging Flow Control Valve, FV-0121, has failed open
- D. a charging line break just downstream of the Regenerative Heat Exchanger

26.

- Unit 1 is at 100% power.

**At 1800:**

- DBA LOCA occurs on Unit 1.
- All RCPs are tripped.
- 1AA02 is de-energized.

**At 1842:**

- 'B' RHR pump trips.
- Core exit TCs are 723°F and rising.
- RVLIS Full Range is 46%.
- Loop 2 Tcold is to the left of Limit A line on Figure 1 of the Integrity CSFST status tree.
- RWST level is 34%.
- 19010-C, "E-1 Response to Loss of Reactor or Secondary Coolant," is in effect.

Which one of the following procedures is required to be performed at time 1842?

- A. 19111-C, "ECA-1.1 Loss of Emergency Coolant Recirculation"
- B. 19221-C, "FR-C.1 Response to Inadequate Core Cooling"
- C. 19222-C, "FR-C.1 Response to Degraded Core Cooling"
- D. 19241-C, "FR-P.1 Response to Imminent Pressurized Thermal Shock Condition"

27.

Initial conditions:

- DBA LOCA has occurred.
- Containment Spray has actuated.

Current conditions:

- Containment pressure is 23.8 psig.

Which one of the following completes the following statement?

Based on the current conditions, IF the OATC takes the Containment Spray reset switches to the "Reset" position, the Containment Spray actuation signal \_\_(1)\_\_ reset

and

per 19010-C, "Loss of Reactor or Secondary Coolant," the Containment Spray pumps must operate in the recirculation mode for AT LEAST \_\_(2)\_\_ hours.

- |    | __(1)__  | __(2)__ |
|----|----------|---------|
| A. | will     | 1.5     |
| B. | will     | 2.0     |
| C. | will NOT | 1.5     |
| D. | will NOT | 2.0     |

28.

Given the following:

- The unit is at 95% power.
- ACCW surge tank level is cycling between makeup start and stop levels.
- ACCW Surge Tank level lowers slowly each time the ACCW Surge Tank makeup valve shuts.

Which one of the following completes the following statement?

The cause of the surge tank level cycling is a leak in the \_\_\_\_\_ Heat Exchanger.

- A. RCP Thermal Barrier
- B. Seal Return
- C. Letdown
- D. ACCW

29.

During an ATWT event, the following conditions exist:

- Emergency Boration is in progress through HV-8801A and HV-8801B, BIT Outlet Isolation Valves.

Which one of the following completes the following statement?

For an adequate Emergency Boration flow path to exist, flow as read on BIT Flow Indicator (FI-917A), at a MINIMUM, must be greater than \_\_\_\_ (1) \_\_\_\_,

and

the reason for the minimum flow rate is to account for \_\_\_\_ (2) \_\_\_\_.

A. (1) 87.5 gpm

(2) the amount of CVCS Letdown that is in service

B. (1) 100 gpm

(2) the amount of CVCS Letdown that is in service

C. (1) 100 gpm

(2) RCP seal injection flow minus total seal return flow

D. (1) 87.5 gpm

(2) RCP seal injection flow minus total seal return flow



30.

Initial conditions:

- Unit 2 is in Mode 6, Refueling outage in progress.

Current conditions:

- A fuel assembly has been lowered into a wrong core location.
- SR counts are unexpectedly rising on NR-45.

Which one of the following completes the following statements per 93300-C, "Conduct of Refueling Operations".

The OATC (Reactor Operator) \_\_\_\_ (1) \_\_\_\_ have the authority to direct disengagement of fuel assemblies.

If the Fuel Handling Supervisor (FHS) requests permission to unlatch the assembly just lowered, the FHS \_\_\_\_ (2) \_\_\_\_ be directed to disengage the fuel assembly at the current location.

Consider each statement separately.

\_\_\_\_ (1) \_\_\_\_

\_\_\_\_ (2) \_\_\_\_

- |             |          |
|-------------|----------|
| A. does     | will     |
| B. does NOT | will     |
| C. does     | will NOT |
| D. does NOT | will NOT |

31.

Given the following:

- Unit 1 tripped due to a loss of offsite power.
- Natural circulation flow is currently developing in the Reactor Coolant System (RCS).

Which one of the following combinations describes the operator actions that will enhance RCS natural circulation flow per 19002-C, "Natural Circulation Cooldown?"

1. Maintain RCS Subcooling greater than 74°F.
  2. Maintain PRZR level greater than or equal to 25%.
  3. Maintain SG NR levels approximately 65%.
  4. Maintain steam flow for minimum loop delta T.
- A. 1, 2, and 3 ONLY
- B. 2 and 3 ONLY
- C. 2, 3, and 4 ONLY
- D. 1 and 3 ONLY

32.

Unit 2 is in a Refueling Outage:

- The Spent Fuel Pool level is lowering for unknown reasons.
- 18006-C, "Fuel Handling Event," is in progress.
- 18030-C, "Loss of Spent Fuel Pool Level or Cooling" is in progress.
- Attachment C of 18030-C, "Alternate Sources of Makeup to the Spent Fuel Pool During Emergency Conditions" has been initiated.

Which one of the following completes the following statement?

Per 18030-C, the Spent Fuel Pool Cooling pumps are directed to be tripped at \_\_\_\_ (1) \_\_\_\_ elevation

and

the PREFERRED alternate source of makeup is via the \_\_\_\_ (2) \_\_\_\_.

A. (1) 214 ft, 6 inches

(2) normal fire water system

B. (1) 214 ft, 6 inches

(2) Seismic Category I Standpipe

C. (1) 217 ft, 0 inches

(2) normal fire water system

D. (1) 217 ft, 0 inches

(2) Seismic Category I Standpipe

33.

Initial conditions:

- Following a 21 day refueling outage.
- Reactor power is 12%.

Current conditions:

- RE-12839C, SJAE - Wide Range Radiogas (Low Range), has failed.
- A 10 gpm SG tube leak develops on SG # 3.

Which one of the following radiation monitors will provide the EARLIEST valid indication of the SG tube leak?

- A. RE-0724, N16
- B. RE-13122, MSL Loop 3
- C. RE-0810, SJAE Exhaust
- D. RE-0019, SG Sample Liquid

34.

Given the following:

- A SGTR has occurred on Unit 1.
- 19030-C, "Steam Generator Tube Rupture", is in progress.
- ALL RCPs have been tripped.

Which one of the following could be a result of the step, "Depressurize RCS using a PRZR PORV to refill PRZR", per 19030-C?

- A. A rapid rise in containment pressure due to overpressurization of the PRT and subsequent rupture disc failure.
- B. A rapid drop in the cold leg temperature due to the loop being stagnant during the pressure reduction.
- C. A rapid rise in pressurizer level due to Reactor Vessel steam voiding.
- D. A rapid drop in core delta T as natural circulation flow is enhanced.

35.

Given the following conditions:

- Unit 1 is 100% power.
- A Steam Dump valve failed open and cannot be closed.

Which one of the following describes the correct plant response and the required operator action in accordance with 18008-C, "Secondary Coolant Leakage"?

- A. Turbine power increases. Withdraw control rods to match  $T_{avg}$  and  $T_{ref}$ .
- B. Reactor power increases. Reduce turbine load to stabilize power  $<100\%$ .
- C. Turbine power increases. Reduce turbine load to stabilize power  $<100\%$ .
- D. Reactor power increases. Insert control rods to match  $T_{avg}$  and  $T_{ref}$ .

36.

Initial conditions:

- 19231-C, "Response to Loss of Secondary Heat Sink," is in use.
- Bleed and Feed has been initiated.
- SIPs are NOT available.
- Both CCPs are running.
- PORV-455 is CLOSED.
- PORV-456 is OPEN.

Current conditions:

- ALB07-C06 CHARGING PUMP OVERLOAD TRIP illuminates.
- 'B' CCP handswitch green and amber lights are LIT.

Based on the current conditions, which one of the following completes the following statement?

Per 19231-C, the minimum requirement for the RCS Feed path \_\_\_\_ (1) \_\_\_\_ met,  
and

the minimum requirement for the RCS Bleed path \_\_\_\_ (2) \_\_\_\_ met.

\_\_\_\_ (1) \_\_\_\_

\_\_\_\_ (2) \_\_\_\_

- |           |        |
|-----------|--------|
| A. is     | is     |
| B. is     | is NOT |
| C. is NOT | is     |
| D. is NOT | is NOT |

37.

Given the following:

- A loss of all AC occurred and 19100-C, "Loss of All AC Power," is entered.
- A depressurization of all SGs at the maximum rate is in progress.

Which one of the following completes the following statement?

The reason for stopping the SG depressurization at 300 psig is to prevent \_\_\_\_\_.

- A. a steam bubble from forming in the Reactor Vessel Head
- B. N<sub>2</sub> injection into the RCS from the ECCS Accumulators
- C. a loss of secondary heat sink
- D. a rapid loss of pressurizer level



38.

Given the following:

- Unit 1 is in Mode 2.

Which one of the following conditions in the Main Feedwater System (MFW) will cause the MFW system to require entry into a Tech Spec LCO?

- A. A BFRV will NOT close; the BFRV has been isolated with a closed manual valve.
- B. The UO places a MFRV in LOCAL control on the Main Control Board (QMCB).
- C. Accumulator Gas pressures for Loop 1 MFIV are reading low (alarm illuminated).
- D. During AFW to MFW swapover, one MFPT is feeding forward, the other is tripped.

39.

Initial conditions:

- The Unit 1 TDAFW pump has received an auto start signal.

Current conditions and sequence of events:

- The UO was attempting to control TDAFW speed by reducing demand on 1PDIC-5180, TDAFW Pump Speed Controller.
- ALB16-F03 AFW TURB OVERSPEED MECH TRIP illuminates.
- The auto start signal is still present.

Which one of the following completes the following statement?

Based on the current conditions, the TDAFW Pump Trip and Throttle Valve (T&T) handswitch amber light \_\_\_\_ (1) \_\_\_\_ be lit,

and

per 13610-1, "Auxiliary Feedwater System," to reset the speed controller reset logic requires holding HV-5106, TDAFW Pump Steam Supply Valve, closed and then \_\_\_\_ (2) \_\_\_\_.

A. (1) will

(2) placing the Trip and Throttle Valve (T&T) handswitch to open

B. (1) will

(2) raising 1PDIC-5180 to 100% demand using the up arrow

C. (1) will NOT

(2) placing the Trip and Throttle Valve (T&T) handswitch to open

D. (1) will NOT

(2) raising 1PDIC-5180 to 100% demand using the up arrow

40.

Given the following:

- The plant is at 100% power.
- NSCW Train 'B' tagged out for piping repair.
- NSCW Train 'A' pump # 3 trips.
- NSCW Train 'A' pump # 5 cannot be started.
- 18021-C, "Loss of Nuclear Service Cooling Water," has been entered.
- No other operator actions have been taken.

Which one of the following is the required crew action(s) per 18021-C?

A. Place all Train 'A' NSCW pumps in PTL, Emergency Trip DG1A.

Within 7 hours, shutdown to Mode 3 per 12004-C, "Power Operation (Mode 1)."

B. Place all Train 'A' NSCW pumps in PTL, Emergency Trip DG1A.

Trip the Reactor, initiate 19000-C, "Reactor Trip or Safety Injection," align NSCW Train 'A' for single pump operation.

C. Allow NSCW Pump #1 to continue running, DG1A should be left in AUTO.

Within 7 hours, shutdown to Mode 3 per 12004-C, "Power Operation (Mode 1)."

D. Allow NSCW Pump #1 to continue running, DG1A should be left in AUTO.

Trip the Reactor, initiate 19000-C, "Reactor Trip or Safety Injection," align NSCW Train 'A' for single pump operation.

41.

Given the following:

- An SI occurred and has NOT been reset.
- An LOSP then occurs.
- 1AA02 is powered from **DG1A**.
- 1BA03 is powered from **DG1B**.

While the DGs are operating, an electrical perturbation results in the following:

- **DG1A** 186A lockout relay energizes (Generator Differential)
- **DG1B** 186B lockout relay energizes (Phase Overcurrent)

Which one of the following is correct with respect to the status of power to the 4160 VAC 1E Emergency Buses at this time?

- A. Both 1AA02 and 1BA03 are energized.
- B. Both 1AA02 and 1BA03 are de-energized.
- C. 1AA02 is energized; 1BA03 is de-energized.
- D. 1AA02 is de-energized; 1BA03 is energized.

42.

Given the following plant conditions:

- Unit 1 is at 100% power.
- Offsite power is lost.
- DG1A starts and loads.
- DG1B did NOT start.
- No operator action has been taken.

Which one of the following completes the following statement?

The effects of this failure will be the loss of \_\_\_\_ (1) \_\_\_\_,

and

per 18031-C, "Loss of Class 1E Electrical Systems," IF the 1E battery voltage drops to 105V DC, then \_\_\_\_ (2) \_\_\_\_.

- A. (1) both battery chargers for 1BD1 and both battery chargers for 1DD1  
(2) open the battery breaker ONLY
- B. (1) one battery charger each on 1AD1, 1BD1, 1CD1, and 1DD1  
(2) open the battery breaker ONLY
- C. (1) both battery chargers for 1BD1 and both battery chargers for 1DD1  
(2) shutdown the associated inverter, then open the battery breaker
- D. (1) one battery charger each on 1AD1, 1BD1, 1CD1, and 1DD1  
(2) shutdown the associated inverter, then open the battery breaker

43.

Given the following:

- Unit 1 is at 100% power.
- DG1B is to be started locally for a post-maintenance run.

Based on the given conditions, which one of the following identifies the alarm(s) received in the Control Room indicating diesel control has been transferred from remote to local?

1. ALB38-E01 DG1B GENERATOR TROUBLE
  2. ALB38-E05 DG1B DISABLED ENGINE CONTROL IN LOCAL
  3. ALB38-E10 DG1B DISABLED MAINTENANCE LOCK OUT
- A. 2 ONLY
- B. 1, 2, and 3
- C. 1 and 2 ONLY
- D. 2 and 3 ONLY

44.

An extended loss of offsite power to 1AA02 has resulted in depletion of the DG1A Fuel Oil Storage Tank (FOST). The Fuel Oil transfer trucks have not been able to reach the site due to severe weather conditions.

Which one of the following completes the following statement?

Unit 1, Train 'A' FOST **can** physically receive Diesel Fuel from \_\_\_\_\_.

- A. the Aux Boiler FOST or the Unit 1, Train 'B' FOST ONLY
- B. the Unit 1, Train 'B' FOST or the Unit 2, Train 'A' FOST ONLY
- C. the Unit 2, Train 'A' FOST or the Aux Boiler FOST ONLY
- D. the Unit 1, Train 'B' FOST or EITHER Unit 2 FOST

45.

Given the following Unit 1 conditions at 100% power:

- 18028-C, "Loss of Instrument Air," has been entered.
- Service Air Dryer Inlet Isolation Valve, 1-PV-9375, has closed.
- Procedural requirements for tripping the Reactor have been met.

Alarm windows are as follows:

- ALB01-B06 INSTR AIR EQUIP LO PRESS
- ALB01-C06 SERVICE AIR HDR LO PRESS

Which one the following identifies:

(1) which alarm(s) on ALB01 should be illuminated,

and

(2) where is the location of pressure switch 1-PSL-9375, which enables the re-opening of 1-PV-9375 after air pressure is recovered?

A. (1) B06 and C06

(2) Turbine Building, Level 1, near Powdex Vessels

B. (1) B06 ONLY

(2) Turbine Building, Level 1, near Powdex Vessels

C. (1) B06 and C06

(2) Turbine Building, Level A, on local PMEC panel

D. (1) C06 ONLY

(2) Turbine Building, Level A, on local PMEC panel



46.

Given the following:

- Waste Gas Decay Tank #10 relief valve is lifting and discharging to the Waste Gas Decay Tank Relief Valve Discharge Header.
- A-RV-0014, Waste Gas Discharge Valve, automatically closes.

Which one of the following completes the following statement?

A-RV-0014 closing \_\_(1)\_\_ isolate the release path and the Auxiliary Building Normal Ventilation System will \_\_(2)\_\_.

\_\_(1)\_\_

\_\_(2)\_\_

- |    |          |                |
|----|----------|----------------|
| A. | will     | trip           |
| B. | will     | remain running |
| C. | will NOT | trip           |
| D. | will NOT | remain running |

47.

A dropped spent fuel assembly in the Unit 1 Spent Fuel Pool has resulted in the following radiation monitor alarms:

- 1-RE-0008, FHB Area Monitor, indicates HIGH.
- A-RE-2532A FHB Effluent Monitor, indicates HIGH.
- A-RE-2532B, 2533A(B) FHB Effluent Monitors, indicate ALERT.
- The crew is implementing 18006-C, "Fuel Handling Event."

For the given conditions, which one of the following completes the following statement?

BOTH the FHB Post-Accident Filtration Units \_\_\_\_ (1) \_\_\_\_ automatically start,

and

1-RE-0008 \_\_\_\_ (2) \_\_\_\_ provide audible and visual indications of the alarm in the Unit 1 SFP area.

A. (1) will

(2) will

B. (1) will

(2) will NOT

C. (1) will NOT

(2) will

D. (1) will NOT

(2) will NOT

48.

List of Unit 1 radiation monitors and isolation valves:

- 1RE-0019, SG Sample Liquid
- 1RE-0021, SG Blowdown Liquid
  
- 1FV-1150, Blowdown Inlet Isolation Valve
- 1HV-7600, Blowdown Recycle Isolation Valve

Initial conditions:

- Steam Generator Blowdown (SGBD) is in service on Unit 1.

Current conditions:

- A SGBD system radiation detector has failed HIGH.

Which one of the following completes the following statements?

Radiation monitor \_\_\_\_ (1) \_\_\_\_ will initiate a SGBD isolation signal,

and

per 17100-C, "Annunciator Response Procedure for the Process and Effluent Radiation Monitoring System (RMS)," the operators will verify that blowdown isolation valve \_\_\_\_ (2) \_\_\_\_ has automatically closed to isolate the SGBD flow path.

\_\_\_\_ (1) \_\_\_\_

\_\_\_\_ (2) \_\_\_\_

- |             |          |
|-------------|----------|
| A. 1RE-0019 | 1FV-1150 |
| B. 1RE-0019 | 1HV-7600 |
| C. 1RE-0021 | 1FV-1150 |
| D. 1RE-0021 | 1HV-7600 |

49.

Initial conditions:

- NSCW pumps # 1 and # 5 are running.
- ACCW pump # 1 is running.

Current conditions:

- SI actuates.
- 2 minutes later an LOSP occurs to 4160 1E bus 1AA02.
- SI has NOT been reset.

Which one of the following correctly describes the pumps that will be supplying cooling water to the Containment Building after the load sequencing is complete?

A. NSCW pumps # 1, # 3, and # 5

Both ACCW pumps

B. NSCW pumps # 1, # 3, and # 5

Neither ACCW pump

C. NSCW pumps # 1 and # 3 ONLY

Both ACCW pumps

D. NSCW pumps # 1 and # 3 ONLY

Neither ACCW pump

50.

Given the following conditions / events:

- RCS is on solid-plant pressure control.
- 'A' RHR in service for RCS temperature control.
- RHR letdown is in service.
- All controls are in AUTOMATIC.
- All 'A' CCW pumps are stopped due to a system rupture.

With NO additional operator actions taken, which one of the following describes the expected INITIAL system response?

- A. PSV-8117 (low pressure letdown relief) opens.
- B. PSV-8708A (RHR pump suction relief) opens.
- C. PV-131 (low pressure letdown control valve) modulates open.
- D. FV-619 (RHR heat exchanger bypass valve) modulates closed.

51.

Initial conditions:

- Unit 1 is at 100% power.
- The Main Generator is operating at 1215 MW and 40 MVARs lagging.
- Main Generator hydrogen pressure is 60 psig.

Current conditions:

- A grid disturbance causes the Main Generator to go to 1200 MW and 400 MVARs lagging.
- The crew is performing 18017-C, "Abnormal Grid Disturbances / Loss of Grid," Section A, "Degraded Grid Conditions."
- The UO is at the step to maintain the generator within the limits of the Reactive Capability Curve.

Per 18017-C, which one of the following is the action (if any) the UO will perform?

**REFERENCE PROVIDED**

- A. No action required.
- B. Establish 1215 MW using the INCREASE LOAD pushbutton on the Main Turbine Control Panel.
- C. Establish 200 MVARs lagging using the "Volts/VARs" RAISE button on EX2100 Excitation Control Screen.
- D. Establish 200 MVARs lagging using the "Volts/VARs" LOWER button on EX2100 Excitation Control Screen.

52.

Service Air to the Spent Fuel Pool gate seals is to be tagged out.

Which one of the following completes the following statement?

Per 13713-C, "Operation of the Spent Fuel Pool Gate Seals," INSTRUMENT AIR from \_\_\_(1)\_\_\_ will \_\_\_(2)\_\_\_ to supply an alternate source of air to the Spent Fuel Pool gate seals.

A. (1) Unit 1

(2) automatically align

B. (1) Unit 1

(2) have to be manually aligned

C. (1) Unit 2

(2) automatically align

D. (1) Unit 2

(2) have to be manually aligned

53.

Initial conditions:

- Unit 2 is in Mode 5.
- The RCS is on solid-plant pressure control preparing to draw a PRZR bubble.
- The NCP is in service.
- 'B' RHR is in service for RCS temperature control.
- 'A' RHR pump is in standby.

Current conditions:

- Unit 2 instrument air has been lost.
- The crew is implementing 18028-C, "Loss of Instrument Air," Attachment B, "Loss of Instrument Air in Modes 4, 5, or 6."
- RCS cooldown rate is 124°F per hour.

Given the conditions above, which one of the following completes the following statement?

Per 18028-C, the NCP \_\_\_\_ (1) \_\_\_\_ required to be tripped,

and

the method to limit / control the RCS cooldown is by \_\_\_\_ (2) \_\_\_\_.

A. (1) is

(2) stopping RHR pump "B"

B. (1) is

(2) locally throttling the Train "B" RHR heat exchanger inlet valve

C. (1) is NOT

(2) stopping RHR pump "B"

D. (1) is NOT

(2) locally throttling the Train "B" RHR heat exchanger inlet valve



54.

Given the following conditions:

- A confirmed fire has occurred the 1A DG building.

Which one of the following describes (1) the type of sprinkler system used, and (2) how the system actuation works?

A. (1) Preaction Sprinkler System

- (2) Deluge valve automatically actuates by the fire detection system to pressurize its fire water header; fusible links on each spray nozzle provide spray to affected areas.

B. (1) Preaction Sprinkler System

- (2) Deluge valve automatically actuates on high temperature to pressurize the fire header, providing spray flow to all areas.

C. (1) Wet Pipe Sprinkler System

- (2) Deluge valve automatically actuates on high temperature to pressurize the fire header, providing spray flow to all areas.

D. (1) Wet Pipe Sprinkler System

- (2) Deluge valve automatically actuates by the fire detection system to pressurize its fire water header; fusible links on each spray nozzle provide spray to affected areas.

55.

Given the following conditions:

- Unit 1 is at 100% power.
- CNMT Mini-Purge Supply and Exhaust fans are running for a batch release in accordance with 13125-1, "Containment Purge System."
- During replacement of a faulty MCB CIA/CVI Actuation handswitch, a MANUAL CIA/CVI signal is inadvertently generated.

Which one of the following predicts the plant response and completes the statements below?

The CIA/CVI signal \_\_\_(1)\_\_\_ DIRECTLY stop the CTMT Mini-Purge supply and exhaust fans,

and

the CIA/CVI signal \_\_\_(2)\_\_\_ DIRECTLY close ALL of the valves listed below.

Valve names

HV-9451, SG1 SGBD Sample Iso  
 HV-9452, SG2 SGBD Sample Iso  
 HV-9453, SG3 SGBD Sample Iso  
 HV-9454, SG4 SGBD Sample Iso

HV-2629B, CTB Mini Purge Exh ORC Iso Vlv-Mini  
 HV-2628B, Norm Purge Exh IRC Iso Vlv-Mini  
 HV-2627B, CTB Norm Purge Sply ORC Iso Vlv-Mini  
 HV-2626B, CTB Norm Purge Sply IRC Iso Vlv-Mini

- |    | ___(1)___ | ___(2)___ |
|----|-----------|-----------|
| A. | will NOT  | will NOT  |
| B. | will NOT  | will      |
| C. | will      | will      |
| D. | will      | will NOT  |

56.

Given the following:

- The unit is in Mode 6.
- Core off-load is in progress.

Which one of the following situations requires immediate suspension of the core off-load? (Consider each individually)

- A. Energized welding cables are run through the Emergency Escape Airlock doors.
- B. One SR NI has been placed on a non-1E temporary power supply.
- C. Inner Personnel Airlock door is open and mechanically bound.
- D. Containment Purge Supply Fan is declared inoperable.

57.

Which one of the following completes the following statement?

Temporary instructions issued to plant operating personnel addressing subjects not covered by existing plant operating procedures is the definition of a \_\_\_\_ (1) \_\_\_\_ Order,

and

\_\_\_\_ (2) \_\_\_\_ required to be reviewed by BOTH the oncoming OATC and UO every time a shift turnover is performed.

\_\_\_\_ (1) \_\_\_\_

\_\_\_\_ (2) \_\_\_\_

A. Night

are

B. Night

are NOT

C. Standing

are

D. Standing

are NOT

58.

Unit 1 is in Mode 5:

A lineup verification is being performed on valve 1-1206-U6-017, "Containment Spray Header Train A Isolation," located in Unit 1 Containment. The valve is currently in the LOCKED OPEN position and requires an Independent Verification (IV).

- The dose rate in the area of the valve is 116 mrem/hr.
- Expected dose to perform the task is 6 mrem.

Which one of the following completes the following statement?

Per NMP-OS-002, "Verification Policy," the IV for this valve \_\_\_\_\_ .

- A. is required to be performed
- B. may be waived due to radiation levels ONLY
- C. may be waived due to plant mode ONLY
- D. may be waived due to EITHER radiation levels OR plant mode

59.

Initial conditions:

- Unit 1 is at 100% power.
- 75 gpm letdown has been placed in service.
- RCS Boron Concentration is 920 ppm.
- The OATC inadvertently sets Letdown Temperature Controller, TIC-0130, potentiometer for 120 gpm letdown flow rate.

Current conditions:

- The UO performing his rounds finds the wrong potentiometer setting and corrects the setting per 13006-1, "Chemical Volume Control System."

Which one of the following completes the statement below?

In response to the initial potentiometer setting, an inadvertent RCS \_\_\_\_ (1) \_\_\_\_ will occur,

and

when the UO corrects the potentiometer setting, TV-0130 will \_\_\_\_ (2) \_\_\_\_ to control letdown temperature at the new setting.

\_\_\_\_ (1) \_\_\_\_

\_\_\_\_ (2) \_\_\_\_

- |             |       |
|-------------|-------|
| A. boration | open  |
| B. boration | close |
| C. dilution | open  |
| D. dilution | close |

60.

Unit 1 is at 100% power.

The following is the status of ECCS accumulator # 1:

- nitrogen pressure - 631 psig
- boron concentration - 1894 ppm
- water level - 30%

Which one of the following completes the following statement?

Per Tech Spec 3.5.1, "Accumulators," the ECCS accumulator parameters above are \_\_\_\_\_.

- A. ALL within Tech Spec limits
- B. NOT within Tech Spec limits due to level
- C. NOT within Tech Spec limits due to nitrogen pressure
- D. NOT within Tech Spec limits due to boron concentration

61.

Given the following:

- A reactor shutdown is in progress.
- IR NIS channel N-36 fails HIGH.

Based on the above failure, which one of the following describes the plant response as the reactor shutdown progresses? (Assuming no operator actions)

Power < P-10

Power < P-6

- |                          |  |
|--------------------------|--|
| A. Reactor trip occurs   | SR High flux trip automatically resets   |
| B. Reactor trip occurs   | SR High flux trip must be manually reset |
| C. Reactor does NOT trip | SR High flux trip automatically resets   |
| D. Reactor does NOT trip | SR High flux trip must be manually reset |



62.

Per 13216-1, "Liquid Waste Release," a release of Waste Monitor Tank (WMT) # 9 is in progress:

- 1-RX-0018 DPM TROUBLE light illuminates.
- 1-RE-0018 is reading downscale LOW.

Which one of the following are the actions to take per 13216-1 regarding the release of the WMT # 9?

- A. The release automatically isolates.  
WMT # 9 may still be released as long as Offsite Dose Calculation Manual (ODCM) requirements are met.
- B. The release automatically isolates.  
WMT # 9 may NOT be released until the radiation monitor is repaired.
- C. The release requires manual isolation.  
WMT # 9 may still be released as long as Offsite Dose Calculation Manual (ODCM) requirements are met.
- D. The release requires manual isolation.  
WMT # 9 may NOT be released until the radiation monitor is repaired.

63.

Given the following:

- The unit is in Mode 6 for a Refueling outage.
- The dummy fuel assembly is to be raised to the surface in the West (Unit 2) new fuel elevator.

Which one of the following completes the following statement?

Per 93210-C, "Fuel Elevator Operating Instructions," to raise the new fuel elevator, a \_\_\_\_ (1) \_\_\_\_ must be used to override the interlock,

and

permission must be obtained from \_\_\_\_ (2) \_\_\_\_.

A. (1) Bypass Interlock Pushbutton

(2) both the Fuel Handling Coordinator and the Shift Supervisor

B. (1) Bypass Interlock Pushbutton

(2) the Shift Supervisor ONLY

C. (1) Bypass Interlock Key for the Key Bypass Switch

(2) both the Fuel Handling Coordinator and the Shift Supervisor

D. (1) Bypass Interlock Key for the Key Bypass Switch

(2) the Shift Supervisor ONLY

64.

Given the following plant conditions:

- The unit is currently in Mode 4.
- RCS temperature is 220°F with RHR in the shutdown cooling mode of operation.
- PRT level has started to rise.
- RCS pressure indicates 285 psig.
- Pressurizer level has started to lower in an uncontrolled manner.
- Containment pressure and radiation levels are normal.

Which one of the following describes the mitigative action required by 18004-C, "Reactor Coolant System Leakage," for the given conditions?

- A. Manually actuate Safety Injection using the QMCB handswitches.
- B. Stop RHR pumps and place in PTL as soon as pressurizer level is less than 9%.
- C. Open an RWST suction to the running RHR pumps to increase PZR level.
- D. Stop RHR pumps and place in PTL as soon as RCS subcooling is less than 38°F.

65.

Following a Control Room Evacuation due to a fire, 18038-1, "Operation From Remote Shutdown Panels," is in progress.

The crew will perform 18038-1, Attachment 'G' for Fire Emergency Operation of SG ARVs.

Which one of the following completes the following statement?

This operation will be performed locally \_\_\_\_\_.

- A. in the North Main Steam Valve Room
- B. in the South Main Steam Valve Room
- C. inside Remote Shutdown Panel 'A'
- D. inside Remote Shutdown Panel 'B'

66.

Given the following conditions on Unit 1:

- A Site Area emergency has been declared.
- The initial page announcement has been performed.
- Site assembly and accountability is in progress in accordance with 91401-C, "Assembly and Accountability."

Which one of the following completes the following statement?

In accordance with NMP-EP-111, "Emergency Notifications," the plant page announcement for the Site Area emergency shall be REPEATED every \_\_\_\_ (1) \_\_\_\_ minutes during the first two hours of the declared emergency,

and

follow-up emergency messages using the Emergency Notification form must be completed and transmitted to State, Local, and Federal authorities \_\_\_\_ (2) \_\_\_\_ .

A. (1) 15

(2) as a minimum, every hour

B. (1) 15

(2) only when significant changes to plant conditions occur

C. (1) 30

(2) as a minimum, every hour

D. (1) 30

(2) only when significant changes to plant conditions occur

67.

The following conditions exist on Unit 1:

- A LOCA is in progress.
- Containment pressure is 17.8 psig.
- 19010-C, "Loss of Reactor or Secondary Coolant," is in progress.

The crew is at the step to, "Check if ECCS flow should be reduced," with plant parameters as follows:

- RCS pressure is 1725 psig and stable.
- CETCs indicate 570°F.
- Total available AFW flow is 580 gpm.
- SG NR levels are all between 12 - 15%.
- PZR level is 30% and slowly rising.

Based on the current conditions, which one of the following actions are the operators required to take at this time?

- A. Continue in 19010-C.
- B. Transition to 19011-C, "SI Termination."
- C. Transition to 19012-C, "Post-LOCA Cooldown and Depressurization."
- D. Transition to 19231-C, "Response to Loss of Secondary Heat Sink."

68.

Given the following plant conditions:

- A LOCA has occurred.
- Crew is performing 19012-C, "Post-LOCA Cooldown and Depressurization."
- RCS pressure is 2100 psig and lowering.

Which one of the following completes the following statement?

When pressure drops below 2000 psig, the UO blocks the low steam line pressure SI/SLI signal to \_\_ (1) \_\_,

and

this \_\_ (2) \_\_ block the high steam pressure rate steam line isolation.

- A. (1) prevent SI from re-actuating, which would cause the cooldown rate to be exceeded  
(2) will
- B. (1) allow the MSIVs to remain open to allow cooldown using Steam Dumps  
(2) will
- C. (1) prevent SI from re-actuating, which would cause the cooldown rate to be exceeded  
(2) will NOT
- D. (1) allow the MSIVs to remain open to allow cooldown using Steam Dumps  
(2) will NOT

69.

Initial conditions:

- The crew is performing 19112-C, "LOCA Outside Containment."

Current conditions:

- RCS pressure is 1500 psig.

Which one of the following completes the following statement?

The FIRST system to be isolated from the RCS to attempt leak isolation is \_\_ (1) \_\_,

and

the instrument that will be used to determine isolation of the leak is \_\_ (2) \_\_.

A. (1) SI

(2) PRZR pressure

B. (1) RHR

(2) RCS WR pressure

C. (1) SI

(2) RCS WR pressure

D. (1) RHR

(2) PRZR pressure



70.

The following plant conditions exist on Unit 1:

- 19231-C, "Response To Loss of Secondary Heat Sink" is in progress.
- Reactor Trip Breaker "A" is closed.
- Reactor Trip Breaker "B" is open.
  
- RCS Tavg is 558°F
- PRZR pressure has lowered to 1885 psig.
- Main Steam Line pressures are 1100 psig.
- SG levels are 15% WR.

Which one of the following completes the following statement?

Per 19231-C, in order to open the Bypass Feed Isolation Valves (BFIVs) from the Main Control Room, the operators will be required to \_\_\_\_\_.

- A. reset Safety Injection ONLY
- B. cycle Reactor Trip Breaker "B" ONLY AND reset the Feedwater Isolation signal
- C. reset the Feedwater Isolation signal ONLY
- D. cycle both Reactor Trip Breakers AND reset the Feedwater Isolation signal

71.

Procedures list:

19222-C, "Response to Degraded Core Cooling."

19241-C, "Response to Imminent Pressurized Thermal Shock Condition."

Given the following plant conditions:

- Large break LOCA is in progress.
- RCPs are STOPPED.
- RCS subcooling is 15°F.
- CETCs are 744°F.
- Containment pressure is 1.2 psig.
- RVLIS is 68%.

Crew determines that an ORANGE path on Core Cooling exists and transitions to 19222-C. Upon initiating SG depressurization to 200 psig, they receive a RED path on Integrity.

Which one of the following completes the following statement?

Based on the above conditions, the crew is required to \_\_\_\_\_ .

- A. immediately transition to 19241-C
- B. initiate 19241-C while continuing with 19222-C
- C. complete 19222-C before transitioning to 19241-C
- D. complete 19222-C, a transition to 19241-C is not required, return to procedure step in effect

72.

During the performance of 19121-C, "Uncontrolled Depressurization of All Steam Generators," the following conditions exist:

- RCS cooldown rate is determined to be 125°F/hr.
- All SG NR levels are off-scale low.

The crew is performing step 4 "**Control feed flow to minimize RCS cooldown.**"

Which one of the following completes the following statements?

Total flow is reduced to 30 gpm to \_\_\_\_ (1) \_\_\_\_ SG.

Following flow reduction, \_\_\_\_ (2) \_\_\_\_ .

A. (1) EACH

(2) WR **Hot** Leg temperatures are monitored to identify conditions that may result in steam generator dryout

B. (1) EACH

(2) WR **Cold** Leg temperatures are monitored to identify conditions that may result in Pressurized Thermal shock

C. (1) ONLY ONE

(2) WR **Hot** Leg temperatures are monitored to identify conditions that may result in steam generator dryout

D. (1) ONLY ONE

(2) WR **Cold** Leg temperatures are monitored to identify conditions that may result in Pressurized Thermal shock

73.

Given the following plant conditions:

- A Reactor trip concurrent with a Loss of Offsite Power (LOSP) has occurred.
- The crew has entered 19232-C, "Response to Steam Generator Overpressure," based on YELLOW condition on the Heat Sink CSF Status Tree.
- SG # 3 pressure is 1245 psig.
- SG # 1, # 2, and # 4 pressures are at 1210 psig.
- SG # 3 NR level is 78% and slowly rising.
- SG # 1, # 2, and # 4 NR levels are 65% and slowly rising.

Per 19232-C, which one of the following is an action to mitigate the plant conditions above?

- A. Locally open the ARV for SG #3.
- B. Open the steam supply to the TDAFW pump.
- C. Stop RCP # 3 to reduce the heat input to SG # 3.
- D. Open the steam dumps in Steam Pressure Mode.

74.

Given the following conditions:

- Containment Spray actuation is required, but did not automatically occur.

Which one of the following completes the following statement?

The OATC will manually actuate Containment Spray using \_\_\_(1)\_\_\_ on 1 of 2 QMCB locations

and

as a result of the manual action, \_\_\_(2)\_\_\_ will receive actuation signal(s).

- A. (1) 1 of 2 handswitches  
(2) Containment Spray ONLY
- B. (1) 2 of 2 handswitches  
(2) Containment Spray ONLY
- C. (1) 1 of 2 handswitches  
(2) BOTH Containment Spray and CVI
- D. (1) 2 of 2 handswitches  
(2) BOTH Containment Spray and CVI

75.

Given the following plant conditions:

- The unit is in Mode 3.
- An RCS leak has occurred in Containment.
- The crew has entered 19253-C, "Response to High Containment Radiation Level," YELLOW path.

Which one of the following describes the reason for operating the Containment Pre-access Filter Units in 19253-C?

- A. To reduce ONLY the iodine activity level inside Containment.
- B. To reduce ONLY the particulate activity level inside Containment.
- C. To reduce the iodine and particulate activity levels inside Containment.
- D. To prevent the release of airborne activity from Containment to the Aux Building.

76.

Initial conditions:

- Time = 0900.
- Unit 1 is at 60% power following a refueling outage.
- The OATC is withdrawing rods when one DRPI is seen not moving with its group.
- The OATC immediately stops withdrawing rods, and all rod motion stops.
- CBD, Group 2, Rod H-8 DRPI indicates 198 steps.
- CBD, Group 2, step counters indicate 209 steps.

Current conditions:

- Time = 0945.
- No rod motion has occurred since 0900.
- I&C has verified no faults on the DRPI system.
- I&C has verified that the rod lift coil for Control Rod H-8 is failed.

Which one of the following completes the below statements?

Based on the initial conditions, at 0900 Control Rod H-8 was \_\_\_\_\_ in accordance with the Bases of Tech Spec 3.1.4, Rod Group Alignment Limits.

Based on the current conditions, at 0945 Control Rod H-8 was \_\_\_\_\_ in accordance with the Bases of Tech Spec 3.1.4, Rod Group Alignment Limits.

	Rod H-8 status <u>at 0900</u>	Rod H-8 Status <u>at 0945</u>
A.	OPERABLE	inoperable
B.	inoperable	inoperable
C.	OPERABLE	OPERABLE
D.	inoperable	OPERABLE

77.

Given the following plant conditions:

- Unit 1 is in Mode 5.
- 'A' RHR in service for Shutdown Cooling.

Which one of the following completes the following statement?

To comply with Tech Spec 3.4.7, "RCS Loops - Mode 5, Loops Filled," an RCP can be started if the MAXIMUM allowable Secondary side water temperature of each SG is \_\_\_(1)\_\_\_ above each of the RCS Cold Leg temperatures,

and

the basis for this temperature is to \_\_\_(2)\_\_\_.

A. (1) < 50°F

(2) prevent a vapor bubble forming and possibly causing a natural circulation flow obstruction

B. (1) < 50°F

(2) prevent a low temperature overpressure event due to a thermal transient when an RCP is started

C. (1) < 25°F

(2) prevent a vapor bubble forming and possibly causing a natural circulation flow obstruction

D. (1) < 25°F

(2) prevent a low temperature overpressure event due to a thermal transient when an RCP is started



78.

Initial conditions:

- CCW pump #5 is Danger Tagged out for maintenance.
- 1-LSLL-1854, CCW Surge Tank level switch for CCW pump #3, has failed.
- ALB02-A05, CCW TRAIN A SURGE TK LO-LO LVL illuminates.

Current conditions:

- ALB02-A06, CCW TRAIN A LO HDR PRESS illuminates.
- ALB02-B06, CCW TRAIN A LO FLOW illuminates.

Which one of the following completes the following statement?

Demin Water Makeup Valve to the CCW Train A Surge Tank \_\_ (1) \_\_ automatically open

and

per Tech Spec 3.7.7, "Component Cooling Water (CCW) System," Train A CCW is to be declared \_\_ (2) \_\_.

A. (1) will

(2) OPERABLE

B. (1) will

(2) inoperable

C. (1) will NOT

(2) OPERABLE

D. (1) will NOT

(2) inoperable

79.

Which one of the following events will require the EARLIEST notification to the NRC in accordance with 00152-C, "Federal and State Reporting Requirements?"

- A. RCS confirmed presence of loose parts.
- B. Initiation of a plant shutdown in accordance with Tech Spec 3.0.3.
- C. A Pressurizer Safety Valve sticks open resulting in a Safety Injection actuation.
- D. A confirmed violation of Fitness for Duty requirements by a licensed operator.

80.

Initial conditions on Unit 2:

- A Large Break LOCA and Safety Injection occurred.
- All RCPs are stopped.
- 2AA02 is deenergized due to a fault.

Current conditions / events:

- The crew is implementing 19221-C, "FR-C.1 Response to Inadequate Core Cooling."
- ACCW Pump # 2 trips due to a locked rotor.
- Containment pressure is 12 psig and slowly rising.
- Core exit thermocouples are 1220°F and rising.
- SG NR levels are as follows:

SG # 1 = 30%      SG # 2 = 21%      SG # 3 = 34%      SG # 4 = 26%

Based on the given conditions, which one of the following completes the following statement?

Per 19221-C, the Shift Supervisor \_\_\_\_ (1) \_\_\_\_ direct the start of at least one RCP,

and

will transition to 19010-C, "E-1 Loss of Reactor or Secondary Coolant," if at least two RCS WR Hot Leg temperatures indicate less than a MAXIMUM of \_\_\_\_ (2) \_\_\_\_.

A. (1) will NOT

(2) 350°F

B. (1) will NOT

(2) 450°F

C. (1) will

(2) 350°F

D. (1) will

(2) 450°F

81.

Initial conditions:

- Unit 1 is at 100% power.
- At **1600 on 5-13-2013**, it was discovered the 7 day surveillance for Tech Spec 3.2.3, Axial Flux Difference (AFD) (Relaxed Axial Offset Control (RAOC) Methodology) was missed.

Current conditions:

- A Xenon oscillation is in progress causing AFD to rise toward the target value.
- The crew is performing 12004DF-1, "Power Operation (Mode 1)," Section 4.3.2 for AFD Control.

Which one of the following completes the following statement?

To delay declaring the LCO NOT met, the surveillance is required to be performed satisfactorily no later than \_\_\_\_ (1) \_\_\_\_, (Assume a Risk Evaluation has been performed)

and

to properly dampen the xenon oscillation, the crew will insert CBD \_\_\_\_ (2) \_\_\_\_,

A. (1) 1600 on 5-20-2013

(2) when Delta I reaches the right side of the doghouse to force Delta I down to target

B. (1) 1600 on 5-20-2013

(2) as Delta I is rising to keep Delta I on target

C. (1) 1600 on 5-14-2013

(2) when Delta I reaches the right side of the doghouse to force Delta I down to target

D. (1) 1600 on 5-14-2013

(2) as Delta I is rising to keep Delta I on target

82.

Initial conditions:

- Unit 1 RCS is in Mode 5.

Current conditions:

- ALB11-B06, PRZR LO LEVEL HTR CNTL OFF LTDN SECURED, illuminates.
- All actions to restore level have been taken per 18004-C, "Reactor Coolant System Leakage".
- PRZR level is slowly lowering for UNKNOWN reasons.

Which one of the following completes the following statements?

Based on the current conditions, an Emergency Action Level (EAL) threshold \_\_\_\_ (1) \_\_\_\_ been exceeded.

IF the RHR Test Recirculation Valves (1-1205-U6-027 and 1-1205-U4-226) were mispositioned OPEN, closing HV-8716A/B, "RHR Train A(B) Hot Leg Crossover Iso Vlvs," on the QMCB \_\_\_\_ (2) \_\_\_\_ isolate the leak.

**REFERENCE PROVIDED**

- A. (1) has  
(2) will
- B. (1) has NOT  
(2) will
- C. (1) has  
(2) will NOT
- D. (1) has NOT  
(2) will NOT

83.

Initial conditions:

- Unit 1 is at 100% power at EOL.
- A total loss of feedwater occurs.
- The reactor can NOT be tripped.
- The crew enters 19211-C, "Response to Nuclear Power Generation/ATWT."
- The UO manually trips the Turbine.

Current conditions:

- The Shift Supervisor is performing the step to "Check Core Exit TCs - LESS THAN 1200°F."
- Core Exit TCs are 1208°F and lowering.

Which one of the following completes the following statement?

The EOP bases for tripping the main turbine during the event is to \_\_\_\_ (1) \_\_\_\_,

and

the Shift Supervisor is required to \_\_\_\_ (2) \_\_\_\_.

A. (1) maintain Steam Generator inventory

(2) continue performing the actions of 19211-C

B. (1) maintain Steam Generator inventory

(2) Go to SACRG-1, "Severe Accident Control Room Guideline Initial Response"

C. (1) allow the RCS to heatup adding negative reactivity from MTC

(2) continue performing the actions of 19211-C

D. (1) allow the RCS to heatup adding negative reactivity from MTC

(2) Go to SACRG-1, "Severe Accident Control Room Guideline Initial Response"

84.

Unit 1 is in a Refueling Outage:

- Core off-load is in progress.
- ALB05-E02 SPENT FUEL PIT LO LEVEL alarms in the Control Room.
- SFP level lowers to 22' 10" above the fuel due to a leak.

For the given conditions, which one of the following completes the following statement?

Per Tech Spec 3.9.7, "Refueling Cavity Water Level," immediate suspension of core off-load \_\_\_\_ (1) \_\_\_\_ required,

and

the Safety Analysis for the Bases of Tech Spec 3.9.7 limit is to ensure \_\_\_\_ (2) \_\_\_\_.

A. (1) is

(2) during all phases of spent fuel transfer the gamma dose rate at the surface of the water is 2.5 mrem or less

B. (1) is

(2) the radiological consequences of a fuel handling accident are within acceptable limits of 10 CFR 100

C. (1) is NOT

(2) during all phases of spent fuel transfer the gamma dose rate at the surface of the water is 2.5 mrem or less

D. (1) is NOT

(2) the radiological consequences of a fuel handling accident are within acceptable limits of 10 CFR 100

85.

Unit 1 is at 100% power.

Maintenance testing of the Main Steam Safety valves is in progress.

The following test results are obtained for the valve lift settings:

1PSV-3002 1205 psig

1PSV-3011 1210 psig

1PSV-3022 1160 psig

NO valve lift setting adjustments have been made.

Which one of the following completes the following statement?

The MAXIMUM Allowable Power Range Neutron Flux High Trip Setpoint per Tech Spec 3.7.1, "Main Steam Safety Valves (MSSVs)," is \_\_ (1) \_\_

and

per the Tech Spec bases, the Main Steam Safety valves are designed to limit \_\_ (2) \_\_ during a full power Reactor/Turbine trip without steam dump?

**REFERENCE PROVIDED**

A. (1) 71%

(2) reactor coolant pressure boundary Safety Limit to 110% of design pressure

B. (1) 51%

(2) reactor coolant pressure boundary Safety Limit to 110% of design pressure

C. (1) 71%

(2) secondary pressure to  $\leq$  110% design pressure

D. (1) 51%

(2) secondary pressure to  $\leq$  110% design pressure



86.

**At 10:00:**

- Unit 1 is in Mode 4.

**At 10:05 the following alarms illuminate:**

- ALB32-D02, RESV AUX XFMR 1NXRA HI SIDE PHOC LOR TRIP
- ALB32-E02, RESV AUX XFMR 1NXRB HI SIDE PHOC LOR TRIP
- ALB35-A10, DG1A TRIP OVERSPEED
- ALB35-F10, DG1A EMERGENCY START
- ALB36-A01, 4160V SWGR 1AA02 TROUBLE
- ALB37-A01, 4160V SWGR 1BA03 TROUBLE alarms, then subsequently clears.
- ALB38-F10, DG1B EMERGENCY START

**Current time is 10:25:**

Based on the current time, which one of the following is the correct Emergency Classification required to be declared?

**REFERENCE PROVIDED**

- A. Alert Emergency (CA3)
- B. Alert Emergency (SA5)
- C. Notification of Unusual Event (SU1)
- D. Notification of Unusual Event (CU3)

87.

Given the following plant alarms and indications:

- All Channel 1 Trip Status lights are illuminated.
- ALB34-E02, INVERTERS 1AD1I1 1AD1I11 TROUBLE
- ALB34-E03, 120V AC PANELS 1AY1A 1AY2A TROUBLE

Which one of the following answers the following questions?

(1) The given indications were caused by the loss of which electrical equipment,  
and

(2) when restored to service, when would the associated 120V AC Panel be  
considered OPERABLE per Tech Spec 3.8.9, "Distribution Systems - Operating?"

A. (1) 1AD1I11 and 1AY2A

(2) 1AY2A - The bus is energized at its proper voltage from the associated inverter  
ONLY.

B. (1) 1AD1I11 and 1AY2A

(2) 1AY2A - The bus is energized at its proper voltage from the associated inverter  
or regulating transformer.

C. (1) 1AD1I1 and 1AY1A

(2) 1AY1A - The bus is energized at its proper voltage from the associated inverter  
ONLY.

D. (1) 1AD1I1 and 1AY1A

(2) 1AY1A - The bus is energized at its proper voltage from the associated inverter  
or regulating transformer.

88.

Given the following plant conditions:

- Battery 1AD1B has been placed on Equalize Charge per 13405-1, "125 VDC 1E Electrical Distribution System."
- ALB50-A07 BAT RM TRN A SPLY FAN LO AIR FLOW illuminates.
- No additional operator action has been performed.

Based on the given conditions, which one of the following is the primary impact on the Battery charging operation, and the correct action(s) to perform to mitigate the consequences of the condition?

A. Explosive Hydrogen gas could accumulate in the Battery Room.

Battery room doors must be propped open. A "Repositioned Door Form" must be posted per 00310-C, "Standard For Use of Doors."

B. Explosive Hydrogen gas could accumulate in the Battery Room.

Control Building Temperature Monitoring must be established per 14915-1, "Special Conditions Surveillance Logs."

C. Battery Room temperature exceeding Tech Spec limits.

Battery room doors must be propped open. A "Repositioned Door Form" must be posted per 00310-C, "Standard For Use of Doors."

D. Battery Room temperature exceeding Tech Spec limits.

Control Building Temperature Monitoring must be established per 14915-1, "Special Conditions Surveillance Logs."

89.

Initial conditions:

- Unit 2 is at 100% power.
- TPCCW cooling to the air compressors is reduced due to a small pipe break.
- The Shift Supervisor is implementing 18023-C, "Loss of Turbine Plant Cooling and Closed Cooling Water Systems," Section B, for loss of TPCCW.
- Instrument air pressure is degrading.

Given the conditions above, which one of the following completes the following statement?

Per 13710-2, "Service Air System," align \_\_\_\_ (1) \_\_\_\_ water to the air compressors,

and

if air compressor cooling is NOT adequate, the Shift Supervisor will initiate \_\_\_\_ (2) \_\_\_\_ per 18023-C.

A. (1) utility

(2) 18028-C, "Loss of Instrument Air"

B. (1) utility

(2) 18013-C, "Rapid Power Reduction"

C. (1) demin

(2) 18028-C, "Loss of Instrument Air"

D. (1) demin

(2) 18013-C, "Rapid Power Reduction"

90.

Given the following conditions:

- Unit 2 is at 80% power and holding for NIS Calorimetric.
- Chemistry reports that RCS Dose Equivalent I-131 is reading 125 microCi/gram.

Which one of the following completes the following statement?

Per Tech Spec 3.4.16, "RCS Specific Activity," Dose Equivalent I-131 falls in the \_\_\_(1)\_\_\_ operation region,

and

the Bases for the Tech Spec 3.4.16 limit ensures that \_\_\_(2)\_\_\_.

**REFERENCE PROVIDED**

A. (1) unacceptable

- (2) the resulting 2 hour doses at the site boundary will not exceed a small fraction of the 10 CFR 100 dose guideline limits following a SGTR accident

B. (1) unacceptable

- (2) leakage to the Containment atmosphere will not interfere with RCS leak detection assuming a 1 GPM increase in unidentified leakage

C. (1) acceptable

- (2) the resulting 2 hour doses at the site boundary will not exceed a small fraction of the 10 CFR 100 dose guideline limits following a SGTR accident

D. (1) acceptable

- (2) leakage to the Containment atmosphere will not interfere with RCS leak detection assuming a 1 GPM increase in unidentified leakage

91.

Given the following:

- Unit 1 is operating at 100% power.
- A fire occurs in the Control Building level B.
- 17103A-C, Annunciator Response for the Fire Alarm Computer, Table 3 Operator Actions for a Confirmed Fire in a Safety Related Area directs closing PRZR PORV Block Valve, 1HV-8000A. The Block Valve remains energized.
- The Fire Team is currently at the Primary Fire Brigade Locker.

Which one of the following completes the following statement?

Per 92005-C, "Fire Response Procedure," initially, the affected HVAC system in the area of the fire will be \_\_\_\_ (1) \_\_\_\_

and

in accordance with Tech Spec 3.4.11 (Pressurizer PORVs) Bases ONLY, after the PRZR PORV Block valve is closed, the PRZR PORV is \_\_\_\_ (2) \_\_\_\_ .

- A. (1) secured  
(2) OPERABLE
- B. (1) secured  
(2) inoperable
- C. (1) placed in the Smoke Purge Mode  
(2) OPERABLE
- D. (1) placed in the Smoke Purge Mode  
(2) inoperable

92.

Which one of the following completes the following statement?

Per NMP-AD-016, "Fatigue Management Program," if someone is performing duties of a Fire Brigade Leader, this is considered \_\_ (1) \_\_,

and

if deviations occur from the 10 CFR 26 work hour limits, individuals are considered "reset" from the deviation if they have had at least \_\_ (2) \_\_ off since last at work.

A. (1) Covered Work

(2) 10 hours

B. (1) Covered Work

(2) 12 hours

C. (1) Incidental Duties

(2) 10 hours

D. (1) Incidental Duties

(2) 12 hours

93.

During a system tagout, 1LV-112D, RWST to CCP A & B Suction, was manually closed (locally at the valve) and its breaker was turned OFF. (Both the handwheel and the breaker were included on the tagout).

The Tagout was subsequently cleared with the following conditions existing:

- 1LV-112D is closed.
- No work was performed on the valve.
- The breaker for the valve has been closed and the GREEN valve position light is illuminated on the Main Control Board.

Which one of the following completes the following statement?

1LV-112D is currently \_\_\_\_ (1) \_\_\_\_

and

the MINIMUM post maintenance testing requirements in accordance with 10000-C, "Operations Administrative Controls" is \_\_\_\_ (2) \_\_\_\_ .

A. (1) OPERABLE

(2) perform a LOCAL observation of the valve stroking prior to return to service

B. (1) OPERABLE

(2) perform a REMOTE observation of the valve stroking prior to return to service

C. (1) inoperable

(2) stroke time the valve in the open direction to demonstrate operability prior to return to service

D. (1) inoperable

(2) manually unseated and stroke the valve using the motor operator before returning to remote control and return to service



94.

Given the following:

- A local Heat Tracing Panel has some indicating lights that are not lit.
- This is a known problem and light bulbs have been replaced several times in the past.

It has been decided that a Troubleshooting Plan will be established per NMP-AD-002, "Problem Solving and Troubleshooting Guidelines."

As part of the plan, Electrical Maintenance will lift leads to measure voltage across some relay contacts in the Heat Tracing Panel.

Which one of the following completes the following statement?

This type of Troubleshooting Monitoring is called \_\_ (1) \_\_ and the \_\_ (2) \_\_ is responsible for maintaining SYSTEM status of the panel during the Troubleshooting activities.

- A. (1) Intrusive  
(2) Maintenance Manager
- B. (1) Intrusive  
(2) Operations Manager
- C. (1) Non-Intrusive  
(2) Maintenance Manager
- D. (1) Non-Intrusive  
(2) Operations Manager

95.

Which one of the following completes the statements below in accordance with 91301-C, "Emergency Exposure Guidelines"?

The emergency exposure limit for a life-saving activity during a declared emergency is \_\_\_\_ (1) \_\_\_\_ REM TEDE.

The minimum level of authority Emergency exposure limits can be authorized by is the \_\_\_\_ (2) \_\_\_\_.

\_\_\_\_ (1) \_\_\_\_

\_\_\_\_ (2) \_\_\_\_

- |    |    |                                |
|----|----|--------------------------------|
| A. | 10 | Health Physics (HP) Supervisor |
| B. | 10 | Emergency Director (ED)        |
| C. | 25 | Health Physics (HP) Supervisor |
| D. | 25 | Emergency Director (ED)        |

96.

Given the following:

- A Fuel Handling Coordinator (FHC) is entering the Spent Fuel Pool area.
- The FHC is reviewing his RWP prior to beginning work and notices an ALARA briefing is required.
- The dose rate is 900 mrem/hr due to damaged fuel assemblies.
- The FHC will also exceed 2000 mrem Annual TEDE limits while in the area.

Which one of the following completes the following statement?

Based on the area dose rate, the FHC will be required to receive an ALARA briefing prior to \_\_\_\_ (1) \_\_\_\_ entry

and

Per NMP-HP-001, "Radiation Protection Standard Practices," the \_\_\_\_ (2) \_\_\_\_ is the MINIMUM authority level required to exceed the limit.

- A. (1) each  
(2) HP Manager
- B. (1) each  
(2) Plant General Manager
- C. (1) ONLY the first  
(2) HP Manager
- D. (1) ONLY the first  
(2) Plant General Manager

97.

Per NMP-EP-110, "Emergency Classification Determination and Initial Action," which one of the following identifies a duty that **CAN** be delegated by the Emergency Director?

- A. The decision to request federal assistance.
- B. Coordinating and directing emergency operations.
- C. The decision to recommend protective actions to offsite authorities.
- D. Authorizing use of potassium iodide (KI) tablets during a declared emergency.

98.

Given the following:

- An event on Unit 1 requires an ALERT emergency declaration.
- The Shift Manager is incapacitated due to a medical problem.

Which one of the following identifies both the individual who will initially serve as the alternate for the Emergency Director position in accordance with 91101-C, "Emergency Response Organization,"

and

the requirement for conducting Assembly and Accountability in accordance with 91401-C, "Assembly and Accountability"?

<u>Alternate for ED</u>	<u>Assembly and Accountability</u>
A. Shift Supervisor (SS)	required
B. Shift Supervisor (SS)	NOT required
C. Shift Technical Advisor (STA)	required
D. Shift Technical Advisor (STA)	NOT required

99.

Given the following conditions:

- The crew is performing 19010-C, "Loss of Reactor or Secondary Coolant."
- RCS pressure is 450 psig and stable.
- RHR flow is reading 0 gpm on both trains, suctions aligned to the RWST.
- RWST level is 36%.

The crew is at step # 22:

"Check if RCS cooldown and depressurization is required."

Which one of the following procedural actions is the Shift Supervisor required to perform to mitigate the given plant conditions?

- A. Remain in 19010-C, reset SI and stop both RHR pumps.
- B. Go to 19111-C, "Loss of Emergency Coolant Recirculation."
- C. Go to 19012-C, "Post-LOCA Cooldown and Depressurization."
- D. Return to step 17 of 19010-C, "Check for Cold Leg Recirculation capability."

100.

Cooldown per 19002-C, "Natural Circulation Cooldown," is in progress.

The Shift Supervisor is at the step in 19002-C to check that a steam void in Reactor Vessel does NOT exist.

The following data is noted:

<u>Time</u>	<u>RVLIS Upper Range</u>	<u>PRZR Level</u>
10:00	100	25
10:15	100	25
10:30	98	28
10:45	84	58

Which one of the following completes the following statement?

Based on the given conditions, the NEXT action required by 19002-C is to \_\_\_\_ (1) \_\_\_\_

and

the cooldown rate allowed for the procedure to be implemented is \_\_\_\_ (2) \_\_\_\_ .

A. (1) repressurize RCS within limits of Tech Spec LCO 3.4.3 to collapse potential voids in system and continue with 19002-C

(2) < 50°F per hour

B. (1) repressurize RCS within limits of Tech Spec LCO 3.4.3 to collapse potential voids in system and continue with 19002-C

(2) < 100°F per hour

C. (1) Go to 19003-C, "Natural Circulation Cooldown With Void In Vessel (With RVLIS)"

(2) < 50°F per hour

D. (1) Go to 19003-C, "Natural Circulation Cooldown With Void In Vessel (With RVLIS)"

(2) < 100°F per hour

**You have completed the test!**