

SL-2019-3

RO Written Answer Key

1	C	26	A	51	A
2	D	27	D	52	B
3	A	28	C	53	A
4	C	29	C	54	C
5	B	30	A	55	A
6	B	31	C	56	C
7	B	32	D	57	C
8	A	33	D	58	D
9	A	34	A	59	B
10	A	35	C	60	D
11	D	36	B	61	D
12	C	37	D	62	A
13	C	38	A	63	C
14	D	39	D	64	C
15	C	40	C	65	A
16	D	41	A	66	C
17	C	42	A	67	B
18	B	43	C	68	C
19	D	44	D	69	D
20	A	45	B	70	A
21	A	46	D	71	C
22	C	47	B	72	A
23	D	48	A	73	A
24	B	49	A	74	C
25	A	50	D	75	A

1.

Given the following conditions:

- Unit 1 is at 100% power
- PCV-8801, SBCS Control Valve is Out of Service

Subsequently:

- Pressurizer pressure is 1100 psia and LOWERING
- Subcooling is lost
- Pressurizer level is 59% and RISING
- Containment pressure is 3.0 psig and RISING slowly

Which ONE of the following completes the statements below?

Unit 1 is experiencing a ____ (1) ____ Leak.

In accordance with OPS-539, RCS Cooldown Guidance, the crew is required to operate the SBCS with PCV-8802 ____ (2) ____ during the subsequent cooldown.

- A. (1) RCS Cold Leg
(2) 50% open
- B. (1) RCS Cold Leg
(2) full open
- C. (1) Pressurizer Steam Space
(2) 50% open
- D. (1) Pressurizer Steam Space
(2) full open

2.

Given the following conditions:

- Unit 2 is at 100% power
- V1474, PORV Acoustic Monitor has 4 LEDs LIT
- RCS Pressure is 1920 psia and LOWERING
- Quench tank pressure is 40 psig and RISING

In accordance with 2-EOP-01, SPTAs the crew is required to ____ (1) ____.

As Quench Tank pressure RISES the rupture disc will blow at ____ (2) ____.

- A. (1) OVERRIDE V1474, PORV ONLY
(2) 70 psig
- B. (1) OVERRIDE V1474, PORV ONLY
(2) 85 psig
- C. (1) OVERRIDE V1474, PORV AND CLOSE V1476 PORV BLOCK VALVE
(2) 70 psig
- D. (1) OVERRIDE V1474, PORV AND CLOSE V1476 PORV BLOCK VALVE
(2) 85 psig

3.

Which ONE of the following completes the statement below?

1-EOP-03, Loss of Coolant Accident (LOCA), directs the operator to align for simultaneous Hot and Cold Leg Injection which realigns the ECCS flow to _____.

- A. prevent boron precipitation
- B. cool the reactor vessel upper guide structure
- C. pass through the SDC heat exchangers to remove decay heat
- D. lower Core Exit Thermocouple temperature to acceptable values

4.

Given the following conditions:

- Unit 1 is in Mode 2 performing a Reactor Startup
- Critical Rod Height Data is being taken
- Reactor Power is $5 \times 10^{-4}\%$
- The Board RCO notes:
 - RCP 1A1 amps are 160
 - RCP 1A2 amps are 425
 - RCP 1B1 amps are 415
 - RCP 1B2 amps are 420

Which ONE of the following completes the statements below?

The Reactor ____ (1) ____ AUTOMATICALLY TRIP.

In accordance with ADM-11.16, Transient Procedure Use and Adherence, IF the Reactor DOES trip, the crew is required to FIRST ____ (2) ____.

- A. (1) will
(2) trip the RCP
- B. (1) will NOT
(2) trip the RCP
- C. (1) will
(2) VERIFY the Reactor Trip
- D. (1) will NOT
(2) VERIFY the Reactor Trip

5.

Given the following conditions:

- Unit 2 is at 100% power
- The SNPO reports a Charging Line break in the flowpath before it reaches V2429, Charging Pump Disch at Penetr #27 Isol
- Letdown has automatically isolated
- The crew has entered 2-AOP-02.03, Charging and Letdown

Which ONE of the following completes the statements below?

In accordance with 2-AOP-02.03, a MINIMUM of ____ (1) ____ Charging pump(s) is/are AVAILABLE to be aligned to the “A” HPSI header.

In accordance with 2-AOP-02.03, AFTER charging has been restored via the “A” HPSI header, Letdown ____ (2) ____ be established.

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

6.

Given the following conditions:

- Unit 2 just entered Mode 4 on Shutdown Cooling (SDC) for a Refueling Outage
- 2A Shutdown Cooling Loop is in service
- 2B LPSI Pump is out of service under an ECO
- RCS cooldown is in progress per 2-GOP-305, Reactor Plan Cooldown – Hot Standby to Cold Shutdown

Subsequently:

- A tube leak occurs in the 2A SDC Heat Exchanger
- 2-AOP-14.01, CCW ABNORMAL OPERATIONS has been entered

Which ONE of the following completes the statements below?

CCW Surge Tank level will ____ (1) ____.

After the 2A SDC Heat Exchanger is isolated, a flow path from the 2A LPSI pump ____ (2) ____ available through the 2B SDC Heat Exchanger.

- A. (1) RISE
(2) IS
- B. (1) RISE
(2) IS NOT
- C. (1) LOWER
(2) IS
- D. (1) LOWER
(2) IS NOT

7.

Given the following conditions:

00:00:00	Unit 2 is at 100% power HVS-1A, 1B and 1C CNTMT Fan Coolers are running in FAST
00:01:00	Annunciator T-4, CNTMT Fan CLR HVS-1A CCW Flow Low, ALARMS SNPO Reports FIS-14-12A, HVS-1A CCW Flow indicates 1000 gpm
00:15:00	SNPO Reports FIS-14-12A, HVS-1A CCW Flow indicates 0 gpm

Which ONE of the following completes the statements below?

At time 00:01:00, Annunciator T-4, ____ (1) ____ valid.

At time 00:15:00, HVS-1D, CNTMT Fan Cooler will be started in FAST speed by placing the control switch in ____ (2) ____ in accordance with 2-ARP-01-T4.

- A. (1) is
(2) TEST
- B. (1) is
(2) START
- C. (1) is NOT
(2) TEST
- D. (1) is NOT
(2) START

8.

Given the following conditions:

- Unit 1 is at 100% power
- PIC-1110X, Pressurizer Pressure Controller is selected
- Pressurizer pressure is being maintained at 2250 psia with Pressurizer Backup Heaters B1, B2 and B5 ON with a 10% output to the Pressurizer Proportional Heaters

Subsequently:

- PIC-1110X, Pressurizer Pressure controller OUTPUT slowly drifts HIGH due to a PT-1110X malfunction

Which ONE of the following describes the response of the OUTPUT on HIC-1100, Main Spray controller AND the actions required?

HIC-1100, Main Spray Controller OUTPUT ____ (1) ____.

In accordance with 1-AOP-01.10, Pressurizer Pressure and Level, IMMEDIATE OPERATOR ACTIONS, the crew is required to ____ (2) ____.

- A. (1) RISES
(2) Place Pressure Control Channel selector switch to the "Y" position
- B. (1) RISES
(2) take manual control of PIC-1100X, Pressurizer Pressure and restore system pressure
- C. (1) LOWERS
(2) Place Pressure Control Channel selector switch to the "Y" position
- D. (1) LOWERS
(2) take manual control of PIC-1100X, Pressurizer Pressure and restore system pressure

9.

Which ONE of the following completes the statement below?

The Diverse Scram System (DSS) trips the reactor with a(n) ____ (1) ____ to actuate signal which OPENS the CEA Drive MG Set ____ (2) ____.

- A. (1) energize
(2) Output Contactor
- B. (1) energize
(2) Supply Breaker
- C. (1) de-energize
(2) Output Contactor
- D. (1) de-energize
(2) Supply Breaker

10.

Given the following conditions:

- Unit 1 has experienced a SGTR
- 1-EOP-04, SGTR, is in progress at step 10, INITIATE lowering RCS Temperature

Which ONE of following completes the statement below?

The RCS is cooled down to less than a ____ (1) ____ of ____ (2) ____ in accordance with 1-EOP-04, Step 10.

- A. (1) Thot
(2) 510 °F
- B. (1) Thot
(2) 500 °F
- C. (1) Rep CET
(2) 510 °F
- D. (1) Rep CET
(2) 500 °F

11.

Given the following conditions:

- Unit 2 is at 100% power
- 2A EDG is out of service for CMM

Subsequently:

- LOOP occurs
- 2B EDG is running output breaker is OPEN
- The following annunciators are LIT
 - A-14, 4.16KV SWGR 2B3 Δ CURRENT TRIP
 - A-28, 480V LC 2B2 UV/UV TEST/GROUND
 - A-35, 480V LC 2B5 UV/UV TEST/GROUND
 - A-46, 4.16KV EMERG SWGR 2B3 UV/UV TEST

Which ONE of the following completes the statement below?

In accordance with ADM-11.16, Transient Procedure Use and Adherence and 2-EOP-01, SPTAs, the RO ____ (1) ____ attempt to CLOSE the 2B EDG output breaker.

IF 2B3 remains de-energized, the RO will establish RCS Heat Removal by operating ADVs in ____ (2) ____.

- A. (1) will
(2) AUTO/MANUAL
- B. (1) will
(2) MANUAL/MANUAL
- C. (1) will NOT
(2) AUTO/MANUAL
- D. (1) will NOT
(2) MANUAL/MANUAL

12.

Given the following conditions:

- Unit 2 has experienced a LOOP
- 2-EOP-01, SPTAs is complete
- 2-EOP-09, LOFC/LOOP is in progress
- Pressurizer Pressure is 1825 psia
- Pressurizer Level is 40%
- Thot is 561 °F
- Tcold is 507 °F
- REP CET is 563 °F
- S/G A is 18% and RISING
- S/G B is 19% and slowly LOWERING

Which ONE of the following Safety Functions in 2-EOP-09, is NOT being met?

(REFERENCE PROVIDED)

- A. RCS Inventory Control
- B. RCS Pressure Control
- C. Core Heat Removal
- D. RCS Heat Removal

13.

Given the following conditions:

- Unit 2 is at 100% power

Subsequently:

- Annunciator, B-43, 120V AC INVTR 2A INSTR BUS 2MA/ 2MA-1 TROUBLE ALARMS
- The BRCO reports ALL lights on RPS channel "A" are OFF
- 2-AOP-49.02, 120V Instrument AC System has been entered

Which ONE of the following completes the statements below?

ONLY ____ (1) ____ Trip Circuit Breakers will OPEN.

In accordance with 2-AOP-49.02, the 2A Instrument bus will be re-energized from the Isolimiter operating components ____ (2) ____ .

- A. (1) TWO
(2) on the Instrument (Static) Inverter
- B. (1) TWO
(2) at the Maintenance Bypass Bus Cabinet
- C. (1) FOUR
(2) on the Instrument (Static) Inverter
- D. (1) FOUR
(2) at the Maintenance Bypass Bus Cabinet

14.

Given the following conditions:

- Unit 1 is at 100% power
- AB Busses are aligned to the “B” train
- 1AA Battery Charger is OOS

Subsequently:

- 1A Battery Charger trips
- 1-AOP-50.08, Loss of 125 VDC Station Battery Charger has been entered

Which ONE of the following completes the statements below?

The 1A DC Battery is rated to operate for a MAXIMUM of ____ (1) ____ hours without the assistance of a battery charger during emergency operations.

In accordance with 1-AOP-50.08, the operator is required to FIRST **CLOSE** ____ (2) ____ breakers to align the 1AB Charger to 1A DC bus.

- A. (1) 2
(2) 60135, TIE 1AB-1A (“inside”) THEN 60130, TIE 1A-1AB (“outside”)
- B. (1) 2
(2) 60130, TIE 1A-1AB (“outside”) THEN 60135, TIE 1AB-1A (“inside”)
- C. (1) 4
(2) 60135, TIE 1AB-1A (“inside”) THEN 60130, TIE 1A-1AB (“outside”)
- D. (1) 4
(2) 60130, TIE 1A-1AB (“outside”) THEN 60135, TIE 1AB-1A (“inside”)

15.

Given the following conditions:

- Unit 1 is at 100% power
- Unit 2 is at 100% power
- Switchyard voltage is 240 KV
- VARM-8881, Megavars indicates 0 MVARs

Subsequently,

- A grid disturbance occurs, resulting in the System Dispatch Operator requesting that Unit 1 LOWER Switchyard voltage 2 Kv

Which ONE of the following completes the statements below?

AFTER Unit 1 LOWERS Switchyard Voltage 2 Kv, VARM-8881 will indicate in the ____ (1) ____ direction.

In accordance with 1-NOP-99.07, Operations Hard Cards, Unit 1 ____ (2) ____ required to maintain contact with Unit 2 during the adjustment.

- A. (1) Lagging (VARs OUT)
(2) is
- B. (1) Lagging (VARs OUT)
(2) is NOT
- C. (1) Leading (VARs IN)
(2) is
- D. (1) Leading (VARs IN)
(2) is NOT

16.

Given the following conditions:

- Unit 2 is at 50% power
- 2A MFWP is out of service

Subsequently:

- 2B MFWP Trips
- 2-EOP-01, SPTAs are complete
- 2-EOP-02, Reactor Trip Recovery has been entered
- 2A S/G is 48% NR 2B S/G is 44% NR
- 2A AFW pump was started per 2-NOP-99.07, Hard Cards
- 2B AFW pump tripped when attempting to manually start

In accordance with 2-NOP-99.07, which ONE of the following completes the statements below?

Restore AFW to the 2B S/G from the 2C AFW Pump by ____ (1) ____.

When restoring AFW flow, the initial 5 minute feedwater flow limit ____ (2) ____ applicable.

- A. (1) opening MV-08-12, SG 2B STM TO AFW PP 2C ONLY
(2) is
- B. (1) opening MV-08-12, SG 2B STM TO AFW PP 2C ONLY
(2) is NOT
- C. (1) simultaneously opening MV-08-12, SG 2B STM TO AFW PP and MV-08-13, SG 2A STM TO AFW PP 2C
(2) is
- D. (1) simultaneously opening MV-08-12, SG 2B STM TO AFW PP and MV-08-13, SG 2A STM TO AFW PP 2C
(2) is NOT

17.

Given the following conditions:

- Unit 2 has experienced an ESDE inside containment
- 2A S/G pressure is 740 psia
- 2B S/G pressure is 850 psia
- Containment pressure is 3.1 psig

Which ONE of the following completes the statements below?

The Reactor AUTOMATICALLY tripped ON ____ (1) ____.

In accordance with 2-EOP-01, SPTAs, RCS Heat Removal, S/G Pressure ____ (2) ____ reached the value requiring manual closure of the MSIVs.

- A. (1) TM/LP
(2) HAS
- B. (1) TM/LP
(2) HAS NOT
- C. (1) Containment pressure
(2) HAS
- D. (1) Containment pressure
(2) HAS NOT

18.

Given the following conditions:

- Unit 1 is at 45% power
- 1B AFW Pump is out of service
- 1A Main Feedwater pump is out of service
- Bkr 60316, 1AB 125VDC CROSSTIE 1AB-1B is out of service

Subsequently:

- Annunciator A-60, 125 VDC BUS 1AB UV ALARMS
- Bkrs 60135, TIE 1AB-1A and 60130, TIE 1A-1AB Trip OPEN
- The 1B Main Feedwater pump trips
- 1A/1B S/G Levels are 40% NR and SLOWLY LOWERING

Which ONE of the following actions is required in accordance with 1-EOP-01, SPTAs?

- A. Secure ALL RCPs
- B. Secure ONE RCP in EACH loop
- C. Align the 1AB DC bus to the 1C or 1D DC bus
- D. Align the 1AB Battery Charger to the 1AB DC bus

19.

Given the following conditions:

- Unit 1 is performing 1-AOP-22.01, Rapid Downpower
- Unit 1 is at 90% power
- Group 7 CEAs are at 126 inches

Subsequently:

- Annunciator L-20, Reactor Power Range Subchannel Deviation is LIT
- Annunciator K-9, CEA Motion Inhibit is LIT
- "A" RPS Channel Hi-Hi Deviation is LIT

Which ONE of the following completes the statements below?

This is an indication of a ____ (1) ____ CEA.

In accordance with 1-AOP-66.01, Dropped or Misaligned CEA Abnormal Operations, IF the issue is not corrected, a downpower is required to be commenced within a MAXIMUM of ____ (2) ____ minutes.

- A. (1) stuck
(2) 10
- B. (1) stuck
(2) 60
- C. (1) dropped
(2) 10
- D. (1) dropped
(2) 60

20.

Given the following conditions:

- Unit 1 is at 100% power
- 1-OSP-66.01, CEA Exercise is in progress
- While testing CEA #16, the crew determines the CEA is stuck/untrippable

Which ONE of the following completes the statements below?

IF the crew determines the SDM is inadequate, the crew is required to FIRST ____ (1) ____ in accordance with 1-AOP-02.02, Emergency Boration.

In accordance with TS 3.1.1.1, SHUTDOWN MARGIN - $T_{avg} > 200\text{ }^{\circ}\text{F}$ the crew is required to borate the RCS at a MINIMUM flowrate \geq ____ (2) ____ .

- A. (1) initiate emergency boration then trip the reactor
(2) 40 gpm
- B. (1) initiate emergency boration then trip the reactor
(2) 44 gpm
- C. (1) trip the reactor then initiate emergency boration
(2) 40 gpm
- D. (1) trip the reactor then initiate emergency boration
(2) 44 gpm

21.

Given the following conditions:

- 1B Steam Generator Tube Rupture has occurred
- 1 RCP in each loop is running
- 1B S/G pressure is 900 psia
- RCS Thot is 450 °F
- The crew is performing 1-EOP-04 Step 11. A, Depressurize the RCS in preparation for isolating the affected S/G

In accordance with 1-EOP-04, Steam Generator Tube Rupture, the RCS pressure band should be 850 psia to ____ (1) ____.

The reason for the UPPER pressure limit is to ____ (2) ____.

- A. (1) 930 psia
(2) prevent lifting a secondary safety valve
- B. (1) 930 psia
(2) allow control of ruptured S/G level to prevent overflow
- C. (1) 950 psia
(2) prevent lifting a secondary safety valve
- D. (1) 950 psia
(2) allow control of ruptured S/G level to prevent overflow

22.

Given the following conditions:

- Unit 1 is at 11% power
- The turbine is being rolled for a start up
- The condenser has developed a small vacuum leak
- Condenser back pressure is 2.7 inches of Hg. and slowly rising
- The crew has entered 1-AOP-12.01, Loss of Condenser Vacuum

Which ONE of the following describes the MINIMUM backpressure setpoint at which the Steam Bypass Control System (SBCS) becomes unavailable and the basis for this setpoint?

- A. 8" of Hg. absolute, protect main condenser from overpressure
- B. 8" of Hg. absolute, protect low pressure turbine blades from resonance cracking
- C. 12" of Hg. absolute, protect main condenser from overpressure
- D. 12" of Hg. absolute, protect low pressure turbine blades from resonance cracking

23.

Which ONE of the following Rad Monitor Signals FAILING HIGH will automatically actuate the Unit 1 Containment Evacuation alarm?

- A. Containment High Range Radiation Monitor
- B. Containment Post-LOCA Radiation Monitor
- C. Containment Atmosphere Radiation Monitor
- D. Containment Isolation Signal (CIS) Radiation Monitor

24.

Given the following conditions:

- Unit 2 has evacuated the Control Room due to the presence of toxic fumes
- All Operator actions in the Control Room were performed prior to evacuation
- Critical actions from Appendix A through D of 2-ONP-100.02, Control Room Inaccessibility have been completed
- RCO A is maintaining Hot Standby conditions at the Remote Shutdown Panel

Which ONE of the following describes how RCS pressure is controlled and how subcooling is monitored?

Control pressurizer pressure in accordance with 2-ONP-100.02, Figure 1. RCS Pressure/Temperature, by utilizing Pressurizer ____ (1) ____.

Determine subcooling margin using 2-ONP-100.02, Figure 1, using Reactor Coolant System ____ (2) ____ and Pressurizer pressure.

- A. (1) Backup Heaters ONLY
(2) T_{hot}
- B. (1) Backup Heaters ONLY
(2) $T_{cold} + 50\text{ }^{\circ}\text{F}$
- C. (1) Proportional and Backup Heaters
(2) T_{hot}
- D. (1) Proportional and Backup Heaters
(2) $T_{cold} + 50\text{ }^{\circ}\text{F}$

25.

Which ONE of the following completes the statements below?

During Severe Accidents, the Core becoming uncovered is indicated by ____ (1) ____.

The consequences of fuel clad failure, will result in increased RCS coolant radiation levels from the release of the isotopes ____ (2) ____.

- A. (1) CET Temperatures > 1200 °F
(2) Xenon and Iodine
- B. (1) CET Temperatures > 1200 °F
(2) Rubidium and Tellurium
- C. (1) RVLMS Sensors 1-8 are uncovered
(2) Xenon and Iodine
- D. (1) RVLMS Sensors 1-8 are uncovered
(2) Rubidium and Tellurium

26.

Given the following conditions:

- Unit 2 is at 100% power
- Loss of Off-Site Power occurs

Ten minutes later:

- AFW is feeding BOTH S/Gs
- 2A SG Pressure is 950 psia and STABLE
- 2B SG Pressure is 950 psia and STABLE
- PZR Pressure is 2200 psia and slowly LOWERING
- T-hot is approximately 565°F in BOTH loops and STABLE
- Rep CET is 582 °F and STABLE
- T-cold is approximately 550°F in BOTH loops and STABLE
- Reactor Vessel Level is 100%

In accordance with 2-EOP-99, which ONE of the following completes the statements below?

Natural Circulation ____ (1) ____ exist.

RCS Heat Removal is maintained / can be established by ____ (2) ____.

- A. (1) does
(2) ADVs
- B. (1) does
(2) SBCS
- C. (1) does NOT
(2) ADVs
- D. (1) does NOT
(2) SBCS

27.

Given the following conditions:

- Unit 2 has tripped due to the loss of the 2B Main Feedwater Pump
- A Steam Leak has occurred on the 2B Steam Generator
- A Steam Generator Tube leak on the 2A S/G was identified post trip
- The crew has entered 2-EOP-15, Functional Recovery, RCS and Core Heat Removal, HR-2
- The MSIVs are CLOSED
- 2A S/G pressure is 675 psia STABLE
- 2B S/G pressure is 625 psia LOWERING
- Containment Temperature is 208 °F

Which ONE of the following completes the statements below?

The ____ (1) ____ is the MOST affected S/G.

In accordance with 2-EOP-99, the crew is required to use ____ (2) ____ to perform the cooldown.

- A. (1) 2A S/G
(2) Figure 1A, RCS Pressure Temperature
- B. (1) 2A S/G
(2) Figure 1B, RCS Pressure Temperature
- C. (1) 2B S/G
(2) Figure 1A, RCS Pressure Temperature
- D. (1) 2B S/G
(2) Figure 1B, RCS Pressure Temperature

28.

Given the following conditions:

- Unit 1 is at 100% power

Subsequently:

- A Loss of Offsite Power (LOOP) occurs
- Safety Injection Actuation Signal (SIAS) actuates

Which ONE of the following describes response of the Reactor Coolant Pump (RCP) Oil Lift pumps?

- A. ALL RCP Oil Lift pumps will AUTOMATICALLY start
- B. NO RCP Oil Lift pumps will AUTOMATICALLY start, but ALL RCP Oil Lift pumps CAN be MANUALLY started
- C. ONE RCP Oil Lift pump on each RCP will AUTOMATICALLY start. The other RCP Oil Lift pumps CAN be MANUALLY started
- D. ONE RCP Oil Lift pump on each RCP will AUTOMATICALLY start. The other RCP Oil Lift pumps CANNOT be MANUALLY started

29.

Given the following conditions:

- Unit 1 tripped from 100% power
- 1B1 6.9 KV Bus did not automatically transfer to the Startup Transformer
- 1-EOP-01, SPTAs are in progress at Step 6, Core Heat Removal
- T_{hot} is 542 °F
- T_{cold} is 536 °F

Which ONE of the following completes the statements below?

The 1A1 and ____ (1) ____ RCPs are operating.

The Core Heat Removal Safety Function ____ (2) ____ MET.

- A. (1) 1A2
(2) is
- B. (1) 1A2
(2) is NOT
- C. (1) 1B2
(2) is
- D. (1) 1B2
(2) is NOT

30.

Given the following conditions:

- Unit 2 is at 100% power
- TIC-2223, Temp Indicating Controller for Letdown HX Outlet Temp OUTPUT FAILS LOW

Which ONE of the following completes the statements below?

CCW Flow to the Letdown Heat Exchanger will ____ (1) ____.

As a result of this failure **RCS Temperature** will ____ (2) ____.

- A. (1) RISE
(2) INCREASE
- B. (1) RISE
(2) DECREASE
- C. (1) LOWER
(2) INCREASE
- D. (1) LOWER
(2) DECREASE

31.

Given the following conditions:

- Unit 1 is at 100% power
- Regenerative HX outlet Temperature is 430 °F and RISING at 10 °F/min
- 1-AOP-02.03, Charging and Letdown has been entered

Which ONE of the following describes the system response and the impact on Pressurizer Level?

Letdown will automatically isolate at ____ (1) ____, AFTER the Immediate Operator Actions of 1-AOP-02.03, have been completed Pressurizer Level will ____ (2) ____.

- A. (1) 460 °F
(2) lower
- B. (1) 460 °F
(2) remain constant
- C. (1) 470 °F
(2) lower
- D. (1) 470 °F
(2) remain constant

32.

Given the following conditions:

- Unit 1 is in Mode 5
- Reduced Inventory Operations are in progress
- 1A LPSI pump is operating
- SDC flow was initially at 1800 GPM
- RCS level is 29 feet 10 inches

Subsequently:

- 1A LPSI pump discharge flow is oscillating between 50 and 800 GPM
- 1A LPSI pump motor amps are oscillating and discharge pressure is fluctuating
- RCS temperature is 110 °F and slowly RISING
- The crew enters 1-AOP-03.02, Shutdown Cooling Abnormal Operations

Which ONE of the following describes the action(s) required in accordance with 1-AOP-03.02 for the described event?

The crew is required to _____.

- A. START the 1B LPSI Pump
- B. STOP the 1A LPSI Pump then START the 1B LPSI Pump
- C. THROTTLE CLOSE HCV-3657, SDC Temperature Control
- D. THROTTLE CLOSED HCV-3615/3625, LPSI header injection valves

33.

Given the following conditions:

- Unit 1 is in a Forced Outage
- RCS is on Shutdown Cooling
- RCS Temp is 145 °F
- The crew is taking the RCS solid in accordance with 1-GOP-305, Reactor Plant Cooldown – Hot Standby to Cold Shutdown, Attachment 4
- 1A Charging Pump is running

Which ONE of the following completes the statements below?

In accordance with 1-GOP-305, ____ (1) ____ HPSI pump(s) have been removed from service AND/OR disabled.

In accordance with 1-GOP-305, Att. 4, ____ (2) ____ is the prescribed indication to be used to determine the pressurizer is solid.

- A. (1) One
(2) LI-1103, Level Cold Condition indicates 100%
- B. (1) One
(2) PIC-2201, Letdown Pressure output starts increasing
- C. (1) Two
(2) LI-1103, Level Cold Condition indicates 100%
- D. (1) Two
(2) PIC-2201, Letdown Pressure output starts increasing

34.

Given the following conditions:

- Unit 2 is at 100% power
- Annunciator H-32, Quench Tank Level High/Low is received due to minor in-leakage
- Quench Tank (QT) pressure is 3 psig and RISING slowly
- QT level is 70% and RISING slowly
- The crew is restoring the QT to the normal bands in accordance with 2-NOP-01.07, Quench Tank Operation

Which ONE of the following completes the statements below in accordance with 2-NOP-01.07?

The QT is drained to a level band of ____ (1) ____

During draining, the FIRST QT pressure that the draining MUST be secured to reduce the possibility of PORV leakage is ____ (2) ____.

- A. (1) 60 – 70 %
(2) 1.0 psig
- B. (1) 50 – 60 %
(2) 1.0 psig
- C. (1) 60 – 70 %
(2) 2.0 psig
- D. (1) 50 – 60 %
(2) 2.0 psig

35.

Given the following conditions:

- Unit 2 is at 100% power
- The 2A and 2B Component Cooling Water (CCW) pumps are running
- “AB” Electrics are aligned to the “A” side

Subsequently:

- The 2B CCW pump was secured due to rapidly rising amps
- The crew entered 2-AOP-14.01, Component Cooling Water Abnormal Operations

Which ONE of the following completes the statements below?

In accordance with 2-AOP-14.01, when the 2C CCW pump is started, the 2AB 4.16 Kv bus will be powered from the ____ (1) ____ 4.16 KV bus.

If a subsequent Loss of Off-site Power (LOOP) were to occur IMMEDIATELY following pump starting, the 2C CCW pump ____ (2) ____ AUTOMATICALLY start when the bus is energized.

- A. (1) 2A3
(2) will
- B. (1) 2A3
(2) will NOT
- C. (1) 2B3
(2) will
- D. (1) 2B3
(2) will NOT

36.

Given the following conditions:

- Unit 2 is at 100% power

Subsequently:

- Annunciator LA-10, CCW Surge Tank Compartment “**A**” Level Low ALARMS
- LG-14-2A, CCW Surge Tank Level indicates 29 inches and SLOWLY LOWERING
- LG-14-2B, CCW Surge Tank Level indicates 30 inches and STABLE
- The Crew enters 2-AOP-14.01, Component Cooling Water Abnormal Operations

Which ONE of the following completes the statements below?

____(1)____ “N” Header Isolation Valves have AUTOMATICALLY CLOSED.

The CLOSED “N” Header Isolation Valves ____ (2) ____ be overridden OPEN.

- A. (1) TWO
(2) can
- B. (1) TWO
(2) can NOT
- C. (1) FOUR
(2) can
- D. (1) FOUR
(2) can NOT

37.

Given the following conditions:

- Unit 1 is at 100% power

Subsequently:

- TIA-1103, SPRAY LINE1B1 (Water Temperature), indicates 530 °F
- TIA-1104, SPRAYLINE 1B2 (Water Temperature), indicates 548 °F
- RCS pressure is 2190 psia
- The crew has entered 1-AOP-01.01, Pressurizer Pressure and Level

Which ONE of the following completes the statements below?

In accordance with 1-AOP-01.10, the crew is required place the Pressurizer Spray Valve selector switch to ____ (1) ____ .

IF RCS Pressure continues to LOWER, the crew is required to secure the ____ (2) ____.

- A. (1) 1100E, Spray Valve 1B2
(2) 1B1 RCP
- B. (1) 1100E, Spray Valve 1B2
(2) 1B2 RCP
- C. (1) 1100F, Spray Valve 1B1
(2) 1B1 RCP
- D. (1) 1100F, Spray Valve 1B1
(2) 1B2 RCP

38.

Given the following conditions:

- Unit 1 is at 100% power
- Channel X Pressurizer Pressure Controller is selected
- Proportional Heater Bank output is 50%
- Pressurizer Backup Heaters B2 and B5 are ON
- ALL other Pressurizer Backup Heaters are in AUTO

Subsequently:

- A Small Leak develops on the top of the Pressurizer

Which ONE of the following equipment responses will occur?

PIC-1110X, Pressurizer Pressure controller OUTPUT will ____ (1) ____.

The remaining Backup Heaters will automatically energize at ____ (2) ____.

- A. (1) lower to 0%
(2) 2200 psia
- B. (1) lower to 0%
(2) 2225 psia
- C. (1) rise to 100%
(2) 2200 psia
- D. (1) rise to 100%
(2) 2225 psia

39.

Given the following conditions:

- Unit 2 is at 50% power performing an up power per 2-GOP-201, Reactor Plant Startup - Mode 2 To Mode 1
- The Variable High Power Trip (VHPT) Reset 1 Light has just illuminated on RTGB-204
- The US directs resetting the VHPT

Which ONE of the following completes the statements below?

To prevent a Reactor Trip the VHPT Reset Pushbutton must be pressed prior to power reaching ____ (1) ____.

The VHPT Reset can be performed at ____ (2) ____.

- A. (1) 52%
(2) RPS Cabinet calibration and indication panel ONLY
- B. (1) 52%
(2) RTGB-204 or the RPS Cabinet calibration and indication panel
- C. (1) 54%
(2) RPS Cabinet calibration and indication panel ONLY
- D. (1) 54%
(2) RTGB-204 or the RPS Cabinet calibration and indication panel

40.

Which ONE of the following completes the statement below?

On Unit 2, manual initiation of AFAS-2 at RTGB-202 requires ____ (1) ____ of the four channels to actuate ____ (2) ____ **TRAIN**(s) of Auxiliary Feedwater flow.

- A. (1) any two
(2) one
- B. (1) any two
(2) two
- C. (1) two specific
(2) one
- D. (1) two specific
(2) two

41.

Given the following conditions:

- Unit 2 has experienced a LOCA
- On the trip, feeder breakers to MCC 2B9 tripped
- RCS pressure is 1580 psia and the crew has entered 2-EOP-03, LOCA

Which ONE of the following describes the RUNNING Containment Fan Coolers?

The _____ Containment Fan Coolers are RUNNING.

- A. "1A" and "1B"
- B. "1A" and "1C"
- C. "1B" and "1D"
- D. "1C" and "1D"

42.

Given the following conditions:

- Unit 2 is experiencing a large break LOCA
- 2-EOP-03, LOCA is in progress
- The 2A Containment Spray pump is out of service
- The 2A HPSI pump is out of service
- Containment Pressure is 9 psig
- RAS has occurred
- The 2B Containment Spray pump tripped and cannot be restarted
- ALL Containment Fan Coolers are running

Which ONE of the following describes the status of Core cooling AND Containment cooling Safety Functions?

Core cooling ____ (1) ____ be maintained.

Containment cooling ____ (2) ____ be maintained.

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

43.

Which ONE of the following describes the indications of a MECHANICAL overspeed trip on the 2C AFW Pump?

When Annunciator G-46, 2C AFW Pump Turbine Failure/Trip/SS Isol, alarm is acknowledged and RESET, the Alarm window will ____ (1) ____ and the indication for MV-08-3, Trip and Throttle valve will show ____ (2) ____.

- A. (1) CLEAR
(2) GREEN light ONLY
- B. (1) CLEAR
(2) BOTH RED and GREEN lights
- C. (1) remain LOCKED IN
(2) GREEN light ONLY
- D. (1) remain LOCKED IN
(2) BOTH RED and GREEN lights

44.

Given the following conditions:

- Unit 2 is at 75% power
- The 'B' Main Feedwater Regulating valve (MFRV) is out of service (isolated)
- 2B S/G level is being controlled with the 100% Bypass Valve throttled open and the Low Power Feed Regulating valve (15% Bypass) is in automatic

Subsequently:

- S/G level control fails resulting in the 2B S/G level RISING to a MAXIMUM level of 79% Narrow Range

Which ONE of the following describes the response of the Feedwater system?

(Assume NO operator action)

At the current level of 79 % Narrow Range, the 2B 100% Bypass valve ____ (1) ____ and BOTH Main Feedwater Pumps ____ (2) ____.

- A. (1) CLOSES
(2) trip
- B. (1) CLOSES
(2) continue operating
- C. (1) remains AS-IS
(2) trip
- D. (1) remains AS-IS
(2) continue operating

45.

Given the following conditions:

- Unit 2 performing 2-GOP-201, Reactor Plant Startup – Mode 2 to Mode 1
- Unit 2 is at 1% power

In accordance with 2-GOP-201, Which ONE of the following completes the statements below?

Reactor Power is limited to ____ (1) ____ while feeding with AFW.

WHEN total feedwater flow exceeds 10,000 gpm, THEN PLACE the running Main Feedwater Pump Control Switch in ____ (2) ____.

- A. (1) 3%
(2) RECIRC
- B. (1) 3%
(2) AUTO RECIRC
- C. (1) 7%
(2) RECIRC
- D. (1) 7%
(2) AUTO RECIRC

46.

Given the following conditions:

- Unit 1 is at 100% power

Subsequently:

- An automatic reactor trip occurs

Which ONE of the following completes the following statements below?

The automatic bus transfer signal which transfers power from the Aux Transformers to the Startup Transformers is generated from the ____ (1) ____ signal.

This automatic bus transfer is considered a ____ (2) ____ bus transfer.

- A. (1) Ovation Drops 2 and 52
(2) Live
- B. (1) Ovation Drops 2 and 52
(2) Dead
- C. (1) Generator Lockout
(2) Live
- D. (1) Generator Lockout
(2) Dead

47.

Given the following conditions:

- Unit 2 is at 100% power
- 2A EDG running loaded for its monthly surveillance

Subsequently:

- Annunciator B-56, 2A EMERG D/G Bkr Failure/ Start Inhibit/ SS ISOL ALARMS
- 2A EDG Output breaker indicating lamp is DARK

Which ONE of the following completes the statements below?

The 2A EDG Output Breaker will ____ (1) ____ and ____ (2) ____ be operated from the Control Room.

- A. (1) remain CLOSED
(2) can
- B. (1) remain CLOSED
(2) can NOT
- C. (1) immediately trip OPEN
(2) can
- D. (1) immediately trip OPEN
(2) can NOT

48.

Given the following conditions:

- Unit 1 is at 100% power
- 1AA Battery Charger is out of service
- 1A DC Bus voltage is 135 Vdc

Subsequently:

- The 1A Battery Charger is lost

Which ONE of the following completes the statements below?

1A DC Bus Voltage ____ (1) ____ lower IMMEDIATELY following the 1A battery charger trip.

The ____ (2) ____ can be aligned to the 1A Battery to maintain compliance with TS 3.8.2.3, D.C. Distribution Operating?

- A. (1) will
(2) 1AB battery charger ONLY
- B. (1) will
(2) 1AB, 1C or 1D battery chargers
- C. (1) will NOT
(2) 1AB battery charger ONLY
- D. (1) will NOT
(2) 1AB, 1C or 1D battery chargers

49.

Given the following conditions:

- Unit 2 SNPO Reports the following local alarm on the 2A Emergency Diesel Generator (EDG), Annunciator 5-1, Starting Air Pressure Low
- A relief valve failed open and reseated on the two Air Receiver Tanks with the following pressures being reported

2A1	2A2	2A3	2A4
100 psig	105 psig	75 psig	80 psig

Which ONE of the following completes the statements below?

The 2A EDG ____ (1) ____ start if required.

To restore the 2A EDG to an OPERABLE status, ____ (2) ____ of the 4 air receivers must be above the MINIMUM air pressure for EDG OPERABILITY.

- A. (1) will
(2) 2
- B. (1) will
(2) 4
- C. (1) will NOT
(2) 2
- D. (1) will NOT
(2) 4

50.

Given the following conditions:

- BOTH Units are at 100% power

Subsequently:

- The Unit 2 in-service waste gas decay tank ruptures during a gas release
- RC-26-61, Control Room Outside Air Int (North OAI Radiation Monitor) high alarm actuates

Which ONE of the following completes the statements below?

____(1)____ control room ventilation system(s) will transfer to recirculation mode.

____(2)____ CROAI intake duct(s) isolate(s).

- A. (1) BOTH Units
(2) ONLY the NORTH
- B. (1) BOTH Units
(2) BOTH the NORTH and SOUTH
- C. (1) ONLY the Unit 2
(2) ONLY the NORTH
- D. (1) ONLY the Unit 2
(2) BOTH the NORTH and SOUTH

51.

Given the following conditions:

- Unit 2 is at 100% power
- A S/G Tube Leak develops on the 2A S/G

Subsequently:

- A S/G Tube Rupture occurs resulting in a SIAS

Which ONE of the following completes the statements below?

When the S/G Blowdown (SGBD) Rad Monitor RS-26-5, goes into HIGH alarm, flow is isolated from ____ (1) ____.

The SGBD containment isolation valve(s) ____ (2) ____ be overridden OPEN.

- A. (1) the 2A S/G ONLY
(2) can
- B. (1) the 2A S/G ONLY
(2) can NOT
- C. (1) BOTH the 2A and 2B S/Gs
(2) can
- D. (1) BOTH the 2A and 2B S/Gs
(2) can NOT

52.

Given the following conditions:

- Unit 2 is at 100% power

Subsequently:

- SIAS occurs

Which ONE of the following completes the statements below?

MV-21-2, Header “B” Isolation Valve (ICW) and MV-21-3, Header “A” Isolation Valve (ICW), ____ (1) ____ be operated from the Control Room.

To restore Instrument Air with A and B Instrument Air Compressors, MV-21-2 and MV-21-3 ____ (2) ____.

- A. (1) can
(2) must be OPENED
- B. (1) can
(2) can remain CLOSED
- C. (1) can NOT
(2) must be OPENED
- D. (1) can NOT
(2) can remain CLOSED

53.

Given the following conditions:

- Unit 1 is at 100% power
- The 1A Intake Cooling Water (ICW) pump was secured due to mechanical problems and placed in the "Pull-To-Lock" position
- The crew entered 1-AOP-21.03A, Intake Cooling Water System Header and has mechanically and electrically aligned the 1C ICW pump to the "A" ICW header and 1A3 4.16kV bus
- The 1C ICW pump was started
- Prior to completing the remaining electrical re-alignment, a Loss of Offsite Power (LOOP) followed by a SIAS occurs

Which ONE of the following describes the ICW system response 10 SECONDS after the Emergency Diesel Generators loaded onto the vital 4.16 kV busses?

- A. BOTH the 1B and 1C ICW pumps would be running
- B. The 1B ICW pump would be the only running ICW pump
- C. No ICW pumps would be running until the time delay is complete
- D. The 1B ICW pump would be the only running ICW pump however the 1C ICW pump will auto start following a time delay

54.

Given the following conditions:

- Unit 2 is at 100% power
- The 2C Instrument Air Compressor is Running
- The 2B Instrument Air Compressor is Out of Service
- The 2A and 2D Instrument Air Compressors are in Standby

Subsequently:

- The 2C Instrument Air Compressor Trips
- Instrument Air (IA) pressure is 110 psig and LOWERING

Which ONE of the following completes the statements below?

The ____ (1) ____ Instrument Air Compressor will be the FIRST to START

If IA pressure continues to lower, the IA cross-tie valve will OPEN at ____ (2) ____.

- A. (1) 2A
(2) 85 psig
- B. (1) 2A
(2) 75 psig
- C. (1) 2D
(2) 85 psig
- D. (1) 2D
(2) 75 psig

55.

Given the following conditions:

- Unit 1 is operating at 100% power
- PT-07-2A, Containment Pressure transmitter failed HIGH and has yet to be bypassed

Subsequently:

- A loss of the MD instrument bus occurs

Which ONE of the following describes **ALL** the ESFAS signals that will actuate?

- A. CIS and SIAS ONLY
- B. CSAS and SIAS ONLY
- C. CIS, MSIS and SIAS ONLY
- D. CIS, CSAS, MSIS and SIAS

56.

Given the following conditions:

- Unit 2 tripped from 100% power due to a ESDE inside containment
- 2-EOP-05, ESDE is in progress at step 28, Verify Letdown in service
- RCS Pressure is 2200 psia and being controlled by aux spray
- Pressurizer Level is 80% and slowly RISING
- Pressurizer Water Temp on TIA-1101 is 570 °F
- SIAS has been RESET per 2-EOP-99 Appendix P, Restoration of Components Actuated by ESFAS

Which ONE of the following completes the statement below?

IF letdown is established and Pressurizer Level is lowered to 65%, RCS pressure _____.

- A. can be controlled at its current value by controlling aux spray
- B. can be controlled at its current value by the operation of PZR heaters
- C. will drop uncontrollably to < 1300 psia and SIAS will automatically actuate
- D. will drop uncontrollably to < 1300 psia but SIAS will NOT automatically actuate

57.

Given the following conditions:

- Unit 1 is at 100% power
- Pressurizer Level LOWERS to 61% due to a transient

Which ONE of the following completes the statements below?

____(1)____ backup charging pump(s) will automatically start.

Charging flow will increase to the design capacity flow rate ____ (2) ____.

- A. (1) ONE
(2) immediately
- B. (1) ONE
(2) after 170 seconds
- C. (1) TWO
(2) immediately
- D. (1) TWO
(2) after 170 seconds

58.

Given the following conditions:

- Unit 1 is at 100% power
- The following RPS indications are observed:
 - Two (2) K relays K1 and K2 are de-energized
 - Channel "A" Wide Range Nuclear channel indicating '0'
 - Channel "A" Linear Range Nuclear channel indicating '0'

Which ONE of the following describes the failure that has caused the above condition and the status of the RPS Trip Circuit Breakers (TCBs)?

A loss of the _____.

- A. 'A' CEA MG set. ONLY Four (4) TCBs are open
- B. 'A' 125V DC bus. ONLY Eight (8) TCBs are open
- C. 'A' Instrument bus. ONLY Two (2) TCBs are open
- D. 'A' Instrument bus. ONLY Four (4) TCBs are open

59.

Which ONE of the following provides input to the Qualified Safety Parameter Display System (QSPDS) Subcooled Margin Monitor (SMM)?

- A. MAXIMUM HJTC temperature
- B. Representative CET temperature
- C. Auctioneered HIGH Thot temperature
- D. Safety Channel LOW Pressurizer pressure

60.

Given the following conditions:

- Unit 2 has experienced a LOCA
- 2-EOP-03, LOCA is in progress
- Hydrogen Purge is in progress in accordance with 2-EOP-99, Appendix N, Hydrogen Purge System Operation
- Annunciator X-1, Cont Cntmt/H2 Purge Adsorber Temp High Alarms
- H2 Purge Flow Exhaust indicates 50 cfm

Which ONE of the following completes the statements below?

In accordance with 2-EOP-99, Appendix N, the crew is required to____(1)_____.

In accordance with 2-ARP-01-X1, Iodine Desorption occurs at approximately ____ (2) ____.

- A. (1) secure the hydrogen purge
 (2) 200 °F
- B. (1) secure the hydrogen purge
 (2) 300 °F
- C. (1) throttle open FCV-25-28, Continuous Containment / Hydrogen Purge Control Valve Bypass to raise flow
 (2) 200 °F
- D. (1) throttle open FCV-25-28, Continuous Containment / Hydrogen Purge Control Valve Bypass to raise flow
 (2) 300 °F

61.

Given the following conditions:

- Unit 2 experienced a LOCA
- 2-EOP-03, LOCA is in progress
- Pressurizer pressure is 1580 psia

Which ONE of the following completes the statement below?

Spent fuel pool temperature will continue to rise until _____.

- A. SIAS is reset AND the CCW 'N' header isolation valves are taken to CLOSE and then OPEN
- B. CCW 'N' header isolation valves are taken to CLOSE and then OPEN. SIAS reset NOT required
- C. the CCW MOVs to / from the Fuel Pool heat exchangers are opened from the 'A' or 'B' essential headers by taking the switches to SIAS OVERRIDE OPEN
- D. SIAS is reset and the CCW MOVs to / from the Fuel Pool heat exchangers are opened from the 'A' OR 'B' essential headers by taking the switches to LOCKED CLOSED and return to OPEN

62.

Given the following conditions:

- Unit 2 is in refueling operations performing a full core offload

Which ONE of the following radiation monitors, if it were to fail HIGH, would IMMEDIATELY require fuel handling operations to STOP?

- A. CIAS area monitor RR-26-3
- B. Spent Fuel area monitor RIM-26-7
- C. Spent Fuel process monitor RR-26-2
- D. Containment Process Particulate and Gas monitor RC-26-25

63.

Given the following conditions:

- Unit 1 is experiencing a Steam Generator Tube Rupture
- 1-EOP-04, Steam Generator Tube Rupture (SGTR) has been entered
- The crew is at step 10, Initiate lowering RCS Temperature

Which ONE of the following completes the statements below?

In accordance with OPS-539, RCS Cooldown Guidance, the DRCO will initiate the cooldown by operating ____ (1) ____ in manual.

If the Steam Bypass Control System (SBCS) permissive switch remained in "AUTO" during the cooldown, the SBCS valves will CLOSE at a S/G pressure of ____ (2) ____.

- A. (1) PIC-8010, Master Controller
 (2) 806 psia

- B. (1) PIC-8010, Master Controller
 (2) 837 psia

- C. (1) HIC-8801, PCV-8801 M/A Control Station
 (2) 806 psia

- D. (1) HIC-8801, PCV-8801 M/A Control Station
 (2) 837 psia

64.

Given the following conditions:

- Unit 2 is at 100% power
- 2C Gas Decay Tank (GDT) is in service

	GDT 2A	GDT 2B	GDT 2C
00:00:00	160 psig	155 psig	37 psig
00:30:00	92 psig	150 psig	39 psig

The Crew is performing a **NORMAL** 2A GDT release in accordance with 2-NOP-06.20, Controlled Gaseous Batch Release to Atmosphere

In accordance with 2-NOP-06.20, which ONE of the following completes the statements below?

The 2A GDT release is required to be terminated when 2A GDT pressure is ____ (1) ____.

At time 00:30:00, the 2A GDT release ____ (2) ____ required to be terminated.

- A. (1) 0 – 2 psig
(2) is
- B. (1) 0 – 2 psig
(2) is NOT
- C. (1) 10 – 12 psig
(2) is
- D. (1) 10 – 12 psig
(2) is NOT

65.

Given the following conditions:

- Unit 1 is at 85% power
- 1A1, 1B1 and 1B2 Circulating Water Pumps (CWP) running
- In preparation to raise power to 100%, the crew starts the 1A2 CWP

Three (3) minutes after starting the 1A2 CWP

- 1B2 CWP trips

Which ONE of the following describes ALL the CWPs that will be running?

- A. 1A1 and 1B1 CWPs
- B. 1A1 and 1A2 CWPs
- C. 1A2 and 1B1 CWPs
- D. 1A1, 1A2, and 1B1 CWPs

66.

Given the following conditions:

- Unit 1 is at 100% power
- An equipment clearance order (ECO) is being developed for a system with the following parameters: pressure is 650 psia and temperature is 130°F
- Due to an equipment deficiency, ONLY a SINGLE MANUAL valve is available as an isolation boundary

Which ONE of the following describes the Energy classification and whose APPROVAL is required, at a MINIMUM, for the clearance to allow use of a SINGLE MANUAL valve as an isolation boundary in accordance with OP-AA-101-1000, Clearance and Tagging?

The system is designated as a ____ (1) ____ energy system.

____ (2) ____ permission is required.

- A. (1) LOW
(2) Shift Manager
- B. (1) LOW
(2) ORG Review and Site Director
- C. (1) HIGH
(2) Shift Manager
- D. (1) HIGH
(2) ORG Review and Site Director

67.

In accordance with ADM-11.16, Transient Procedure Use and Adherence, during performance of EOPs, when a Control Room Operator initiates a crew update, the remaining crew members are required to acknowledge their awareness for the update by stating ____ (1) ____.

At the conclusion of the update, the recipients ____ (2) ____ required to repeat back "End of update."

- A. (1) ready
(2) are
- B. (1) ready
(2) are NOT
- C. (1) update
(2) are
- D. (1) update
(2) are NOT

68.

Given the following conditions:

- Unit 2 is performing core alterations

Which ONE of the following completes the statements below?

In accordance with Unit 2 TS 3.9.2, Instrumentation, ____ (1) ____ Startup Range Nuclear Instrument channel(s) is/are required to be OPERABLE to perform core alterations.

In accordance with 0-NOP-67.05, Refueling Operation, Appendix R Nuclear Instrument channels ____ (2) ____ be substituted for a required Startup Range Nuclear Instrument?

- A. (1) 1
(2) can
- B. (1) 1
(2) can NOT
- C. (1) 2
(2) can
- D. (1) 2
(2) can NOT

69.

Given the following conditions for BOTH Unit 1 and Unit 2:

- A Reactor trip from 100% power has just occurred due to a Loss of Coolant Accident.
- SIAS has actuated

Which ONE of the following describes the response of the Charging pumps for the given conditions?

IF low lube oil pressure is sensed, the Charging pumps will:

- A. Trip on BOTH Units
- B. NOT trip on either Unit
- C. Trip on Unit 1 and NOT trip on Unit 2
- D. Trip on Unit 2 and NOT trip on Unit 1

70.

Which ONE of the following completes the statements below?

In accordance with AD-AA-100-1006, Procedure and Work Instruction Use and Adherence, the ____ (1) ____ shall be used to verify the current revision.

Given CWD 8770-B-326 Sheet 174, if the 1A Boric Acid Makeup Pump thermal overload actuates, the Green Indicating Light ____ (2) ____ be LIT.

Note: NAMS – Nuclear Asset Management System

(REFERENCE PROVIDED)

- A. (1) NAMS Asset Suite
(2) will
- B. (1) NAMS Asset Suite
(2) will NOT
- C. (1) NAMS Documentum Search
(2) will
- D. (1) NAMS Documentum Search
(2) will NOT

71.

A Reactor Operator is performing a Safety Related operations procedure step (Non-Conditional) that can NOT be performed due to known plant conditions

Which ONE of the following describes the required approval (if any) to N/A the step in accordance with AD-AA-100-1006, Procedure and Work Instruction Use and Adherence?

- A. Reactor Operator ONLY
- B. Reactor Operator and a Senior Reactor Operator
- C. 2 Senior Reactor Operators
- D. Shift Manager

72.

On **UNIT 1**, which ONE of the following completes the statements below?

RIS-26-3-1, CIS Monitor, BLUE Fail Light is LIT which indicates the monitor is ____ (1) ____.

The Containment Evacuation Alarm ____ (2) ____ be BYPASSED.

- A. (1) operable
(2) can
- B. (1) operable
(2) can NOT
- C. (1) inoperable
(2) can
- D. (1) inoperable
(2) can NOT

73.

Given the following conditions:

- Unit 1 AUTOMATICALLY tripped
- Pressurizer Pressure = 2050 psia
- Containment Pressure = 3.0 psig
- 1A S/G NR Level = 34%
- 1B S/G NR Level = 38%
- 1A S/G Pressure = 830 psia
- 1B S/G Pressure = 940 psia

Which ONE of the following describes the parameter that resulted in the Automatic Reactor Trip and entry into 1-EOP-01, SPTAs?

- A. 1A S/G NR Level
- B. Pressurizer Pressure
- C. Containment Pressure
- D. S/G Differential Pressure (ASGT)

74.

Given the following conditions:

- A Fire has occurred in the Unit 1 RAB
- 1-AOP-100.01, Response to Fire is in progress

Which ONE of the following completes the statements below?

A Reactor Trip is required for a Fire in classification Zone Mode ____ (1) ____.

If the Reactor is tripped, the ____ (2) ____ Desk RCO will **DIRECT** the implementation of 1-AOP-100.01.

- A. (1) M1
 (2) Unit 1
- B. (1) M1
 (2) Unit 2
- C. (1) M3
 (2) Unit 1
- D. (1) M3
 (2) Unit 2

75.

Given the following conditions:

- The plant has just declared an Emergency Classification of an ALERT
- NO radioactive release has occurred

Which ONE of the following completes the statements below?

The **EXTRA** LICENSED operators will report to the ____ (1) ____.

The **EXTRA** NON-LICENSED operators will report to the ____ (2) ____.

A. (1) Control Room

(2) OSC

B. (1) Control Room

(2) TSC

C. (1) TSC

(2) OSC

D. (1) TSC

(2) TSC

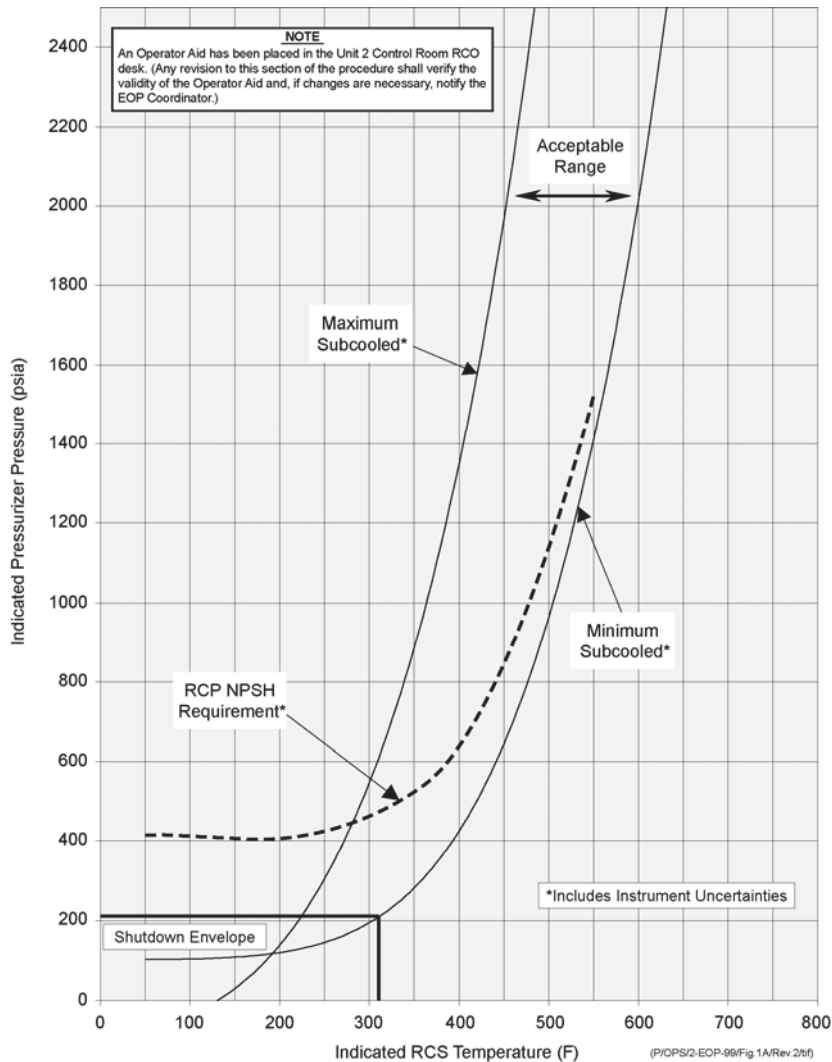
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FIGURE 1A
RCS PRESSURE TEMPERATURE
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CAUTION

The RCP NPSH curve assumes one pump is operating in each loop. RCP instrumentation should be monitored for seal and pump performance in accordance with 2-EOP-99, Table 13.



RCS Pressure Range	Required QSPDS Subcooled Margin Reading (Rep CET)
2250 psia to 1000 psia	40 to 180°F
1000 psia to 500 psia	50 to 170°F
Less than 500 psia	80 to 160°F

#12R REFERENCE

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FIGURE 1B
RCS PRESSURE TEMPERATURE
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CAUTION

The RCP NPSH curve assumes one pump is operating in each loop. RCP instrumentation should be monitored for seal and pump performance in accordance with 2-EOP-99, Table 13.

