Cover Sheet

U. S. Nuclear Regulatory Commission Site-Specific SRO Written Examination	
Applicant Information	
Name:	
Date:	Facility / Unit BFN / U1,2,3
Region: I ☐ II ■ III ☐ IV ☐	Reactor Type: W ☐ CE ☐ BW ☐ GE ■
Start Time:	Finish Time:

Instructions

Use the answer sheets provided to document your answers. Staple this cover sheet on top of the answer sheets. To pass the examination you must achieve a final grade of at least 80 percent overall, with 70 percent or better on the SRO-only items if given in conjunction with the RO exam; SRO-only exams given alone require a final grade of 80 percent to pass. You have 8 hours to complete the combined examination, and 3 hours if you are only taking the SRO portion.

Applicant Certification

All work done on this examination is my own. I have neither given nor received aid.

_____
Applicant's Signature

Results	
RO/SRO-Only/Total Examination Values Points	_____ / _____ / _____
Applicant's Score Points	_____ / _____ / _____
Applicant's Grade Percent	_____ / _____ / _____

BFN ILT 1703 RO References

7. Power/Flow map attached to question

15. 2-AOI-74-1 Illustration 1 attached to question

19. EOI curve 3 attached to question

36. ICS IRM screen shoot attached to question

67. EOI-5 NPSH curve 1 and 2 attached to question

BFN ILT 1703 SRO References

76. Unit 2 TS 3.8.1 and TS 3.8.7
77. Unit 2 TRM 3.5.4
78. Unit 2 EOI curve 5
79. Unit 2 TS 3.7.1 and 3.7.2
82. EPIP-1 classification matrix only and NPG-SPP-03.5 Immediate Notification Criteria
87. EPIP-1 (see 82)
88. Unit 2 Tech Spec 3.3.1.1 and Table 3.3.1.1-1 with allowable values redacted.
92. Unit 3 TS 3.6.1.3
93. Unit 1 TS 3.3.1.1 and table 3.3.1.1-1 with allowable values redacted,
    ODCM 1/2.1.2 and table 1.1-2
98. Unit 2 TS 3.3.7.1 and table 3.3.7.1-1 with allowable values redacted and TS 3.7.3

Test: _____

Class: _____

Instructor: _____

LXR•TEST™ Response Form LXR-20020 Side 1

Name: _____

Signature: _____

Date: _____

READ CAREFULLY!

OK NOT OK

- Use black ink only.
- Mark responses darkly and fill completely.
- Erase unwanted marks clearly.
- Do NOT make any stray marks on the page.
- No credit will be given for improper marks.
- If Side 2 is used, fill in ID on both sides.

DOCKET NUMBER

Version

C 1 C 2 C 3 C 4 V

SECTION 1

	T	F			T	F		
1	A	B	●	D	51	A	●	C	D
2	A	●	C	D	52	A	●	C	D
3	●	B	C	D	53	●	B	C	D
4	A	●	C	D	54	A	B	●	D
5	A	●	C	D	55	A	B	C	●
6	A	B	●	D	56	●	B	C	D
7	A	B	●	D	57	A	B	●	D
8	A	●	C	D	58	A	B	C	●
9	A	B	●	D	59	●	B	C	D
10	A	●	C	D	60	A	B	C	●
11	A	B	C	●	61	●	B	C	D
12	A	B	C	●	62	A	●	C	D
13	●	B	C	D	63	●	B	C	D
14	A	B	●	D	64	●	B	C	D
15	A	●	C	D	65	A	B	●	D
16	●	B	C	D	66	A	B	C	●
17	A	B	●	D	67	●	B	C	D
18	A	B	C	●	68	A	●	C	D
19	A	B	●	D	69	A	B	C	●
20	A	●	C	D	70	A	B	C	●
21	A	B	●	D	71	●	B	C	D
22	A	B	C	●	72	A	B	●	D
23	A	●	C	D	73	●	B	C	D
24	●	B	C	D	74	A	●	C	D
25	A	B	C	●	75	A	B	●	D
26	A	●	C	D	76	●	B	C	D
27	●	B	C	D	77	A	B	●	D
28	●	B	C	D	78	●	B	C	D
29	A	B	C	●	79	A	●	C	D
30	A	B	●	D	80	A	B	C	●
31	A	B	●	D	81	A	B	●	D
32	A	B	C	●	82	●	B	C	D
33	A	B	●	D	83	●	B	C	D
34	A	B	C	●	84	A	●	C	D
35	●	B	C	D	85	A	●	C	D
36	A	B	●	D	86	A	●	C	D
37	A	B	●	D	87	A	B	C	●
38	A	●	C	D	88	A	B	●	D
39	A	●	C	D	89	A	●	C	D
40	●	B	C	D	90	●	B	C	D
41	A	B	●	D	91	A	B	C	●
42	●	B	C	D	92	●	B	C	D
43	A	B	●	D	93	A	B	C	●
44	A	B	●	D	94	●	B	C	D
45	A	●	C	D	95	A	B	●	D
46	A	B	●	D	96	●	B	C	D
47	A	B	C	●	97	A	B	●	D
48	A	●	C	D	98	A	●	C	D
49	●	B	C	D	99	A	●	C	D
50	●	B	C	D	100	●	B	C	D

SECTION 2

1 2 3

4 5 6

7 8 9

10 11 12

Q 1

Which one of the following completes the statement below?

The EOI-2, Primary Containment Control, **Entry Condition** set point for Low Suppression Pool Level is _____ inches.

A. (-) 5.50

B. (-) 6.00

C. (-) 6.25

D. (-) 7.25

Q 2

HPCI has initiated on an invalid signal.

Which one of the following completes both statements with respect to high reactor water level and HPCI?

The HPCI high reactor water level trip set point is __ (1) __ inches.

In accordance with ODM 4.20, Strategies for Successful Transient Mitigation, if HPCI has a sealed in high water level trip when a high Drywell Pressure signal is received, then __ (2) __ the high water level trip.

A. (1) +51
   (2) reset

B. (1) +51
   (2) do **NOT** reset

C. (1) +55
   (2) reset

D. (1) +55
   (2) do **NOT** reset

Q 3

Unit 1 entered 1-AOI-1-1, Relief Valve Stuck Open, due to a partially open Main Steam Relief Valve.

The crew is placing Suppression Pool Cooling in service in accordance with 1-OI-74, Residual Heat Removal System.

Which one of the following completes both statements below?

In accordance with 1-OI-74, it is preferable to operate __ (1) __ while in Suppression Pool Cooling.

In accordance with 1-EOI-2, when Suppression Pool Temperature exceeds __ (2) __ °F, all available suppression pool cooling is required to be operated.

A. (1) 2 RHR Pumps in one loop
   (2) 95

B. (1) 2 RHR Pumps in one loop
   (2) 105

C. (1) 1 RHR Pump in each loop
   (2) 95

D. (1) 1 RHR Pump in each loop
   (2) 105

Q 4

In accordance with EOI-1, which one of the following rod configurations, after a scram, confirms that the reactor will remain shut down under all conditions without boron, and without a Reactor Engineering evaluation?

All Control Rods fully inserted to position 00 except…

A. two Control Rods at position 18.

B. ten Control Rods at position 02.

C. one Control Rod at position 02 **AND** one at 48.

D. one Control Rod at position 48 **AND** one Control Rod with **NO** indication (blank).

Q 5

Which one of the following completes both statements below in accordance with 2-EOI-3, Secondary Containment Control, Table SC-2, Secondary Containment Area Radiation?

The Table SC-2 area that corresponds to this Area Radiation Monitor (ARM) is __ (1) __.

The Max Normal radiation value __ (2) __ the same as this ARM's high alarm set point.

A. (1) RHR System I pumps
   (2) is

B. (1) RHR System II pumps
   (2) is

C. (1) RHR System I pumps
   (2) is **NOT**

D. (1) RHR System II pumps
   (2) is **NOT**

Q 6

Unit 3 RHR Loop I is in Shutdown Cooling.

What are the electrical power supplies to the associated RHR Pumps?

A. 4KV Shutdown Boards 3EB and 3ED

B. 4KV Shutdown Boards 3EA and 3EC

C. 4KV Shutdown Boards 3EA and 3EB

D. 4KV Shutdown Boards 3EB and 3EC

Q 7

At 1500, Unit 2 was operating at full power when RECIRC PUMP ‘2A’ tripped and the following occurred:

- OPRM TRIP ENABLED, (2-9-5A window 30) alarms
- OPRM PRE-TRIP CONDITION, (2-9-5A, WINDOW 18) alarms
- OPRM growth algorithm exceeds the pre-trip alarm set point
- LPRM upscale and downscale lights are illuminating and extinguishing

At 1505, the Unit Operator completed inserting the first group of Control Rods on the Emergency shove sheet and the following conditions exist:

- 2A Recirc Pump Discharge valve is closed
- 2B Recirc pump flow is 47,500 gpm
- Core flow and Reactor power displayed on the attached Power- to -Flow map (red asterisk)
- OPRM and LPRM conditions are the same as at 1500

Which one of the following identifies the required operator action?

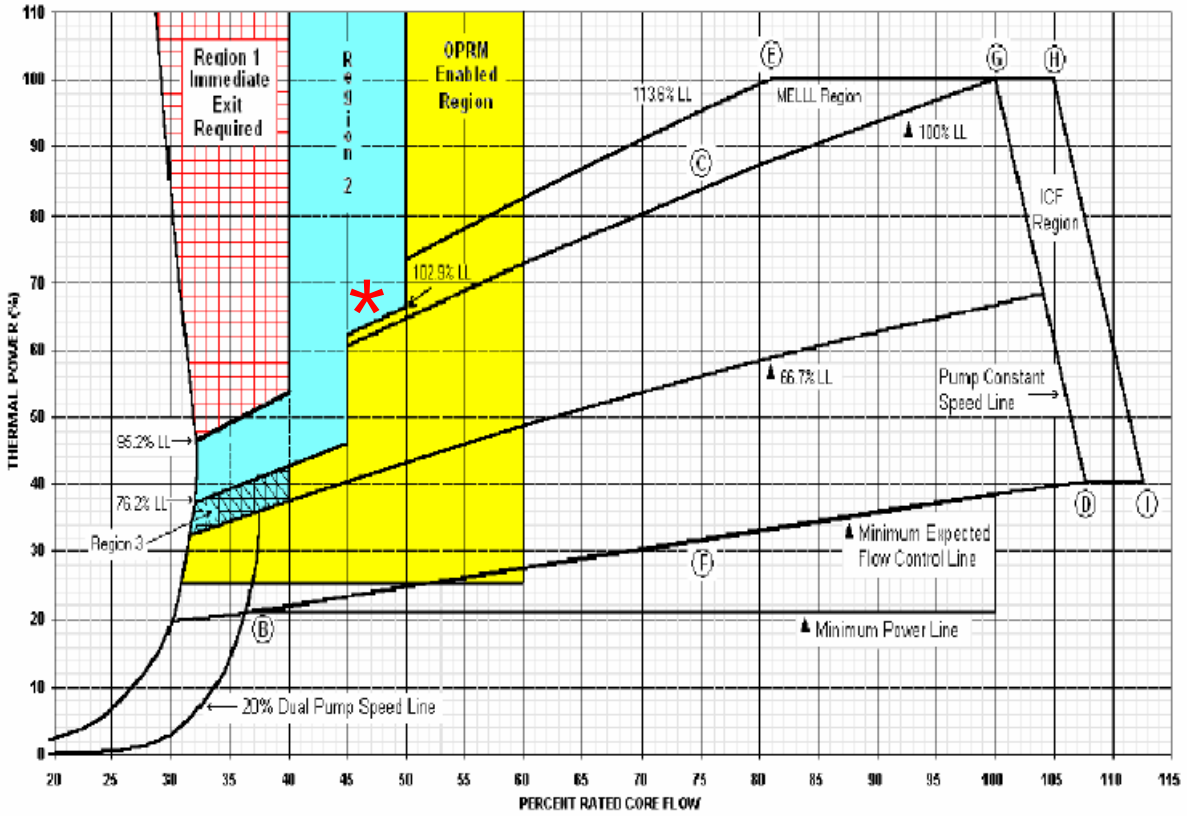
[REFERENCE PROVIDED]

A. Raise ‘B’ Recirc Flow

B. Lower ‘B’ Recirc Flow

C. Insert a Manual Reactor Scram

D. Insert Control Rods to the 74% Rod Line


Region 1
Immediate
Exit
Required
Region 2
OPRM
Enabled
Region
113.6% LL
MELLL Region
100% LL
ICF
Region
102.9% LL
66.7% LL
Pump Constant
Speed Line
95.2% LL
76.2% LL
Region 3
Minimum Expected
Flow Control Line
Minimum Power Line
20% Dual Pump Speed Line
THERMAL POWER (%)
PERCENT RATED CORE FLOW

Q 8

All three units are operating at 100% power when a Loss of Off-site Power occurs.

- 'B' D/G fails to start

Which one of the following completes the statement below, in accordance with 0-AOI-57-1A, Loss of Offsite Power (161 and 500 KV)/Station Blackout?

The minimum action(s) required to re-energize the affected 480V distribution board(s) is to transfer 480V Shutdown Board _____ to alternate.

A. 1B **ONLY**

B. 2A **ONLY**

C. 1B **AND** 480V RMOV Board 1B

D. 2A **AND** 480V RMOV Board 2A

Q 9

An accident has occurred and the crew has entered 1/ 2-AOI-57-1D, 480V Load Shed. The following conditions currently exist:

- 250V REACTOR MOV BD 2A UNDERVOLTAGE (2-9-8C Window 4) is in alarm
- The 480V Load Shed signal cannot be reset

Which one of the following completes both statements in accordance with 1/ 2-AOI-57-1D?

The 2A Main Bank Battery charger is required to be returned to service within __ (1) __ after loss of the charger to the battery.

The required operator action to place the battery charger back in service is to __ (2) __.

A. (1) 40 seconds
   (2) Place the Charger Power ON switch in EMERGENCY ON

B. (1) 40 seconds
   (2) Manually open and re- close the Charger Normal Feeder breaker

C. (1) 30 minutes
   (2) Place the Charger Power ON switch in EMERGENCY ON

D. (1) 30 minutes
   (2) Manually open and re- close the Charger Normal Feeder breaker

Q 10

Unit 2 is operating at 100% power when the following annunciator is received:

- GEN CONDITION MONITOR ABNORMAL, 2-9-8B Window 28

The crew has entered 2-AOI-35-1, Generator Condition Monitor Alarm, and determined that the alarm is valid.

The crew has reduced Generator load 30MWe and the alarm has not reset.

NOTE; 2-GOI-100-12A, Unit Shutdown from Power Operation to Cold Shutdown and Reductions in Power During Power Operations

Which one of the following completes the statement below?

2-AOI-35-1 directs Operators to __ (1) __ because __ (2) __.

A. (1) immediately SCRAM and trip the Main Turbine
(2) 2-H2I-35-12A, Hydrogen purity, is less than 90%

B. (1) immediately SCRAM and trip the Main Turbine
(2) the generator is overheating

C. (1) perform a shutdown in accordance with 2-GOI-100-12A
(2) 2-H2I-35-12A, Hydrogen purity, is less than 90%

D. (1) perform a shutdown in accordance with 2-GOI-100-12A
(2) the generator is overheating

Q 11

Unit 2 was operating at 100% when an automatic scram occurred due to a high reactor pressure signal.

Which one of the following completes both statements in accordance with the Immediate Actions of 2-AOI-100-1, Reactor Scram?

The Unit Operator __ (1) __ required to PAUSE for approximately 5 seconds with the REACTOR MODE SWITCH in the START & HOT STBY position.

IF REFUEL MODE ONE ROD PERMISSIVE light did not illuminate, the Unit Operator is allowed to report “All rods in”__ (2) __ on the full core display.

A. (1) is
   (2) **ONLY** if each rod indicates “00”

B. (1) is
   (2) if some rods indicate “- -“ and all others indicate “00”

C. (1) is **NOT**
   (2) **ONLY** if each rod indicates “00”

D. (1) is **NOT**
   (2) if some rods indicate “- -“ and all others indicate “00”

Q 12

2-AOI-100-2, Control Room Abandonment, was entered due to toxic gas in the main control room. All Immediate Operator Actions have been performed.

Which one of the following completes both statements below?

2-AOI-100-2 __ (2) __ direct starting the Main Turbine Lift pumps prior to leaving the Control Room.

The __ (2) __ valves were controlling Reactor Pressure at the time the operators left the Main Control Room.

A. (1) does
(2) Main Steam Relief

B. (1) does
(2) Main Turbine Bypass

C. (1) does **NOT**
(2) Main Steam Relief

D. (1) does **NOT**
(2) Main Turbine Bypass

Q 13

Unit 3 is operating at 100% power.

The Spare RBCCW Pump is disassembled for maintenance.

Subsequently:

- 3A RBCCW Pump trips and **CANNOT** be restarted
- 3-FCV-070-0048, RBCCW Sectionalizing Valve closes

Which one of the following completes the statements below?

A manual Reactor SCRAM __ (1) __ required in accordance with 3-AOI-70-1, Loss of Reactor Building Closed Cooling Water.

The temperature of the __ (2) __ is expected to rise for this condition.

A. (1) is **NOT**
   (2) Reactor Building Equipment Drain Sump

B. (1) is **NOT**
   (2) Drywell Equipment Drain Sump

C. (1) is
   (2) Reactor Building Equipment Drain Sump

D. (1) is
   (2) Drywell Equipment Drain Sump

Q 14

All three units are operating at 100% power when the “G” Air compressor trips.

AIR COMPRESSOR ABNORMAL, (1-9-20B window 29) has alarmed.

Conditions are as follows:

- ‘A’ and ‘B’ compressors are running
- ‘C’ and ‘D’ compressors failed to start.
- 1-PI-32-20, Control Air header pressure, is lowering

Which one of the following completes both statements in accordance with 0-AOI-32-1, Loss of Control and Service Air Compressors?

0-FCV-33-1, Service Air crosstie to Control Air valve, automatically opens when control air header pressure first lowers to __ (1) __ psig.

Reactor SCRAM on Unit 1 is required if Control and Service Air Compressors cannot maintain Control Air Header pressure above __ (2) __ psig.

A. (1) 70
   (2) 55

B. (1) 70
   (2) 66

C. (1) 85
   (2) 55

D. (1) 85
   (2) 66

Q 15

Unit 2 is in MODE 4, Cold Shutdown, when a Loss of Shutdown Cooling occurs at 00:00 on April 25.

The crew enters 2-AOI-74-1, Loss of Shutdown Cooling, and is tracking the heatup rate.

- The most limiting Reactor Coolant Temperature is 122° F
- Shutdown Cooling flow **CANNOT** be established

- It has been 4 days since the plant was shut down

What is the earliest time that Mode 3 will be entered due to rising Reactor Coolant Temperature?

[REFERENCE PROVIDED]

A. 02:36 on April 25

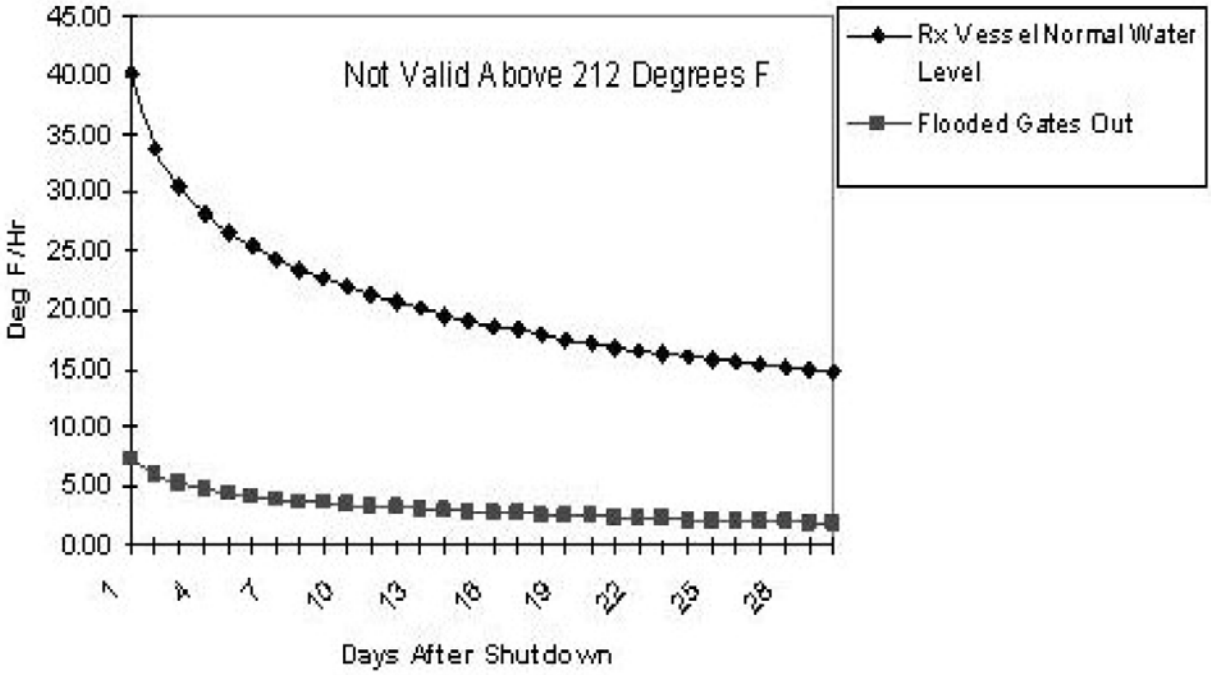
B. 03:00 on April 25

C. 15:36 on April 25

D. 18:00 on April 25

Illustration 1
(Page 1 of 1)

U2 Heatup Rate with Loss of Cooling



Graph represents Conservative Values for any Cycle

Q 16

Unit 1 is in a refueling outage with the fuel pool gates removed and the fuel pool cooling system in operation in accordance with 1-OI-78, Fuel Pool Cooling and Cleanup System.

Subsequently, an accident occurred in the spent fuel pool (SFSP) and the crew entered 1-AOI-79-1, Fuel Damage During Refueling.

Which one of the following completes both statements?

In accordance with 1-OI-78 maintaining the SFSP temperature below __ (1) __ °F minimizes the release of soluble activity.

In accordance with 1-AOI-79-1 if gas bubbles are identified at any time, ___ (2) ___ release should be assumed until RADCON determines otherwise.

A. (1) 100
   (2) Iodine

B. (1) 100
   (2) Krypton

C. (1) 150
   (2) Iodine

D. (1) 150
   (2) Krypton

Q 17

2-EOI-2, Primary Containment Control, has been entered due to high Drywell Pressure.

Which one of the following completes both statements in accordance with 2-EOI-2?

Operating all available Drywell cooling is required when Drywell Temperature cannot be maintained below __ (1) __ °F.

In accordance with the Primary Containment Pressure leg of 2-EOI-2 step PC/P-7, drywell blowers are required to be secured __ (2) __ Suppression Chamber Pressure exceeds 12 psig.

A. (1) 150
   (2) when

B. (1) 150
   (2) before

C. (1) 160
   (2) when

D. (1) 160
   (2) before

Q 18

Unit 3 is operating at 100% power.

RX VESSEL PRESSURE HIGH HALF SCRAM (3-9-4 window 9) alarms.

Which one of the following completes the statements below?

The setpoint for this alarm is __ (1) __ psig.

When the initiating condition is corrected and the US directs resetting the half SCRAM in accordance with 3-OI-99, Reactor Protection System, the OATC will position SCRAM RESET switch, 3-HS-99-5A/S5, to __ (2) __.

A. (1) 1058
   (2) Reset Group 1/4 (left) then Group 2/3 (right)

B. (1) 1058
   (2) Reset Group 2/3 (right) then Group 1/4 (left)

C. (1) 1073
   (2) Reset Group 1/4 (left) then Group 2/3 (right)

D. (1) 1073
   (2) Reset Group 2/3 (right) then Group 1/4 (left)

Q 19

A LOCA occurred on Unit 2 and the crew is implementing 2-EOI-2, Primary Containment Control, Suppression Pool Temperature leg.

Suppression Pool Temperature is 190° F.

Which one of the following completes the statement below?

Action is required if Reactor Pressure is __ (1) __ psig and Suppression Pool Level is __ (2) __ feet.

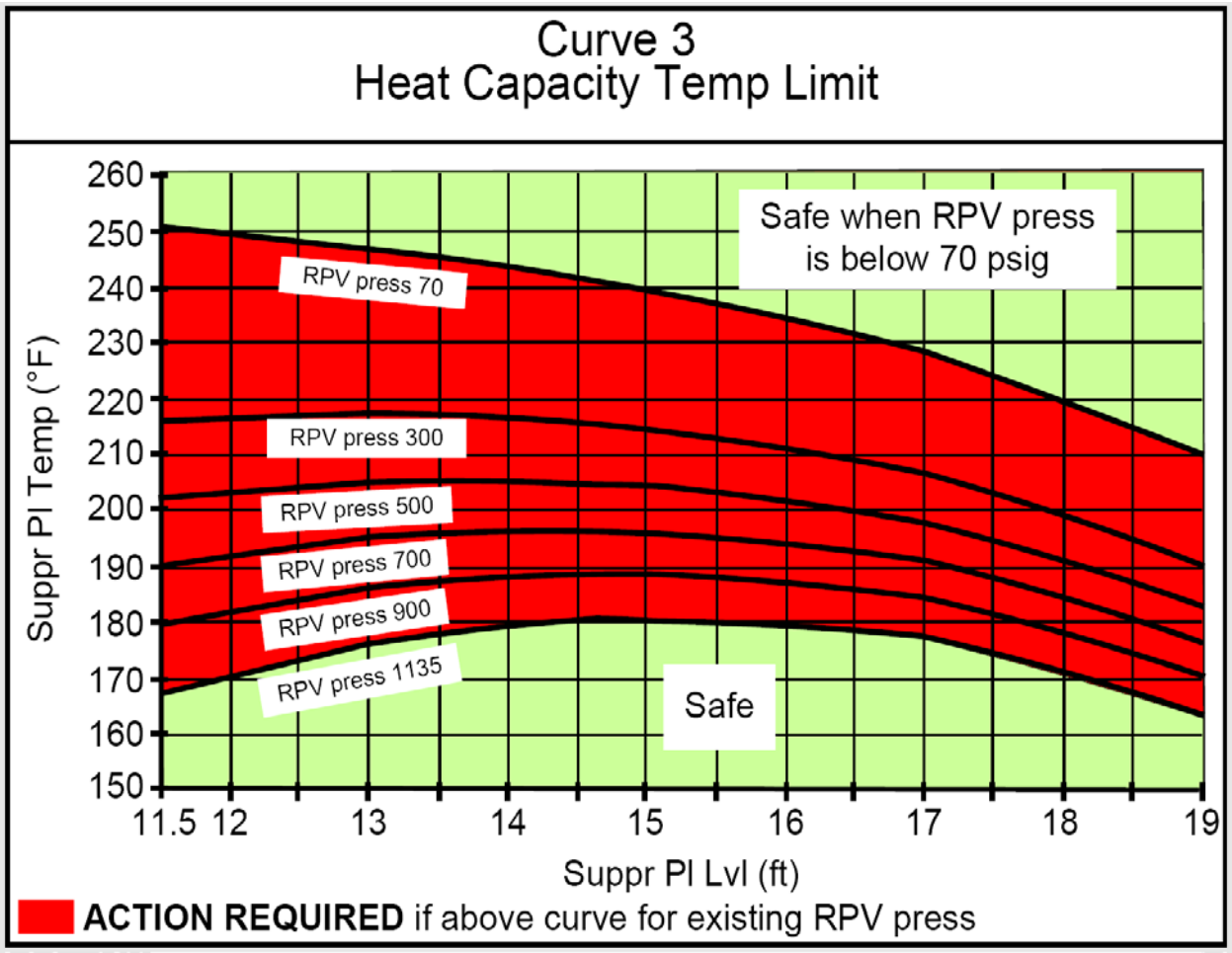
[REFERENCE PROVIDED]

A. (1) 700
   (2) 16

B. (1) 700
   (2) 17

C. (1) 900
   (2) 15

D. (1) 500
   (2) 18


Curve 3
Heat Capacity Temp Limit
Suppr Pl Temp (°F)
260
250
240
230
220
210
200
190
180
170
160
150
11.5
12
13
14
15
16
17
18
19
Suppr Pl Lvl (ft)
RPV press 70
RPV press 300
RPV press 500
RPV press 700
RPV press 900
RPV press 1135
Safe when RPV press is below 70 psig
Safe
ACTION REQUIRED if above curve for existing RPV press

Q 20

A steam line break inside the drywell occurred and the following conditions currently exist:

- Reactor Pressure is 125 psig
- LI-3-55, Reactor Water Level Flood-up Range, indicates above the Minimum Indicated Level (MIL) listed in EOI Caution 1.
- Drywell Temperature and Reactor Pressure are in the ACTION REQUIRED region of Curve 8, RPV Saturation Curve.

Which one of the following completes the statement below, in accordance with EOI Caution 1?

LI-3-55 __ (1) __ due to __ (2) __.

A. (1) may **NOT** be used
   (2) boiling in the instrument run

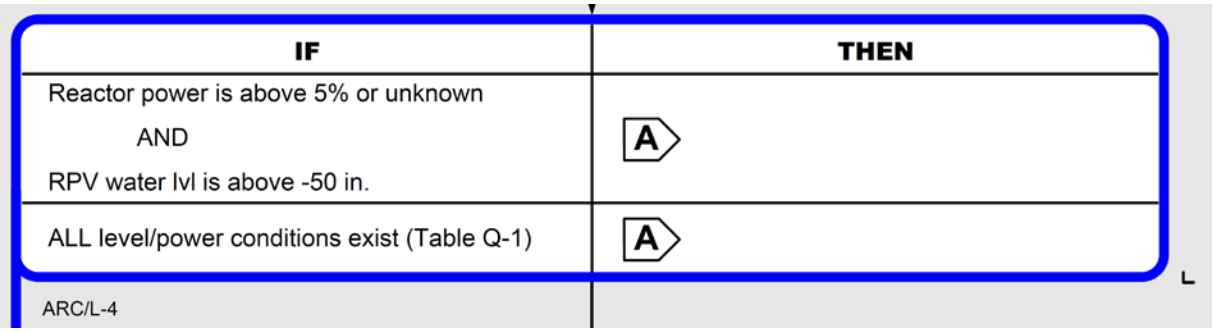
B. (1) may be unreliable
   (2) boiling in the instrument run

C. (1) may **NOT** be used
   (2) cold calibration conditions

D. (1) may be unreliable
   (2) cold calibration conditions

Q 21

The crew has determined that the FIRST override listed below (Step ARC/L-4 in 2-EOI-1A, ATWS RPV Control) is NOT met:



IF	THEN
Reactor power is above 5% or unknown AND RPV water lvl is above -50 in.	A
ALL level/power conditions exist (Table Q-1)	A

ARC/L-4

Which one of the following compete the statements below?

The reason step ARC/L-10 directs the crew STOP and PREVENT all injection into the RPV Except from … is to ___ (1) ___.

RCIC ___ (2) ___ allowed to continue injecting to the RPV.

A. (1) Promote Boron mixing
   (2) is

B. (1) Promote Boron mixing
   (2) is **NOT**

C. (1) Reduce core inlet Subcooling
   (2) is

D. (1) Reduce core inlet Subcooling
   (2) is **NOT**

Q 22

An ATWS has occurred on Unit 3.

The OATC initiated ARI in accordance with the OATC Hard Card.

(No other operator actions have been taken)

Subsequently:

- Reactor Water Level has lowered to (-) 50 inches
- Reactor Pressure peaked at 1130 psig
- 2 MSRVs are currently open
- Reactor Pressure is 900 psig and slowly rising
- Suppression Pool Temperature is 112°F

Which one of the following completes the statements below?

As Reactor Water level lowered the Recirc Pumps __ (1) __ trip automatically.

EOI-1A, ATWS RPV Control directs Operators to __ (2) __ Reactor Water level.

A. (1) did
   (2) stop lowering

B. (1) did
   (2) continue lowering

C. (1) did **NOT**
   (2) stop lowering

D. (1) did **NOT**
   (2) continue lowering

Q 23

Which one of the following completes the statements below?

Stack Release Rate __ (1) __ displayed on the Safety Parameter Display System‘s SPDS OVERVIEW screen.

The ICS/SPDS __ (2) __ to make decisions for the execution of the EOIs.

A. (1) is
(2) can be relied upon as the sole source

B. (1) is
(2) shall only be used in conjunction with the qualified plant instrumentation

C. (1) is **NOT**
(2) can be relied upon as the sole source

D. (1) is **NOT**
(2) shall only be used in conjunction with the qualified plant instrumentation

Q 24

Fire OPS has responded to a fire in the U3 Aux Instrument Room.

The Incident Commander has requested securing ventilation.

Which one of the following completes both statements below in accordance with 0-AOI-26-1, Fire Response?

If the ventilation cannot be secured from the control switch listed in 0-AOI-26-1 Attachment 1, Ventilation Controls, an Auxiliary Unit Operator (AUO) will be dispatched to __ (1) __.

Performing this action will support the __ (2) __.

A. (1) trip the breaker for the Air Handling Unit
(2) closure of fire dampers

B. (1) trip the breaker for the Air Handling Unit (2)
automatic initiation of the CO_2 system

C. (1) isolate ventilation by manually closing Aux Instr Rm 3 supply damper 3-31-727
(2) closure of fire dampers

D. (1) isolate ventilation by manually closing Aux Instr Rm 3 supply damper 3-31-727
(2) automatic initiation of the CO_2 system

Q 25

Unit 2 is at 50% power.

Subsequently:

- 0-AOI-57-1E, Grid Instability, was entered due to 500KV system instability

Current parameters are:

- System voltage is 505 KV
- System frequency is 59.97 Hz
- U2 Reactive load is +150 MVAR

In accordance with 0-AOI-57-1E, Grid Instability, using the current values, which one of the following describes the required Unit 2 operator action?

A. Lower Reactor Power

B. Raise Reactor Power

C. Lower Reactive Power

D. Raise Reactive Power

Q 26

In accordance with EOI-1, Table L-1, Preferred Injection Systems, what is the highest Reactor Pressure at which LPCI will inject during the performance of 2-EOI-Appendix-6B, Injection Subsystems Lineup RHR System I LPCI Mode?

A. 450 psig

B. 320 psig

C. 230 psig

D. 160 psig

Q 27

Unit 2 is starting up with Reactor Pressure at 950 psig.

- The 2A CRD Pump trips
- CRD ACCUM PRESS LOW/LEVEL HIGH (2-9-5A, Window 29) is in alarm
- CRD Charging Water Header Pressure is 1000 psig and slowly lowering
- Four CRD SCRAM Accumulator lights are illuminated on the Full Core Display

What sequence of actions is required in accordance with 2-AOI-85-3, CRD System Failure?

A. Immediately place 1B CRD Pump in service; manual SCRAM is **NOT** required

B. Immediately attempt one restart of 2A CRD Pump; manual SCRAM is **NOT** required

C. Manually SCRAM; **THEN** place the 1B CRD Pump in service

D. Manually SCRAM; **THEN** attempt one restart of 2A CRD Pump

Q 28

Unit 2 is operating at 100% power.

The following alarms are received:

- RX BLDG VENTILATION ABNORMAL (2-9-3D Window 3)
- REACTOR ZONE DIFFERENTIAL PRESSURE LOW (2-9-3D Window 32)

The Reactor Building AUO reports:

- Reactor Building ΔP on PDIC 64-2, El 639' is +0.55 inches of water and lowering

Which one of the following completes the statements below?

An automatic Reactor Zone Static Pressure Isolation __ (1) __ occurred.

EOI-3, Secondary Containment Control, entry__ (2) __ required.

A. (1) has
   (2) is

B. (1) has
   (2) is **NOT**

C. (1) has **NOT**
   (2) is

D. (1) has **NOT**
   (2) is **NOT**

Q 29

Unit 3 is in MODE 4, Cold Shutdown.

- RHR Loop I is tagged
- RHR Loop II is in Shutdown Cooling with both pumps in operation

Subsequently, reactor water level lowered to 0 inches due to a leak, and continues to slowly lower.

The Unit Supervisor directs restoration of Reactor Water Level using Loop II LPCI.

Which one of the following completes the statements below?

RHR Loop II pumps will automatically trip due to a __ (1) __ signal.

In accordance with 3-AOI-74-1, Loss of Shutdown Cooling, prior to injecting with RHR Loop II LPCI the Unit Operator is required to depress the isolation reset pushbuttons on Panel __ (2) __.

A. (1) low suction pressure
   (2) 3-9-4

B. (1) low suction pressure
   (2) 3-9-3

C. (1) suction path interlock
   (2) 3-9-4

D. (1) suction path interlock
   (2) 3-9-3

Q 30

HPCI has an automatic initiation signal.

Which one of the following completes the statement below?

The HPCI PUMP MIN FLOW VALVE, 2-FCV-73-30, will automatically start to close when flow indicated on 2-FIC-73-33, HPCI System Flow/Control, first exceeds _____ gpm.

A. 620

B. 900

C. 1255

D. 1350

Q 31

Unit 1 is operating at 100% power.

The Instrument Mechanics discovered that 1-LIS-3-208B, Reactor Water Level Narrow Range Level Indicating Switch, will not cause its associated automatic function(s).

The Unit Supervisor declared 1-LIS-3-208B inoperable.

Which one of the following completes both statements?

This condition __ (1) __ prevent an automatic trip of RCIC if actual Reactor Water Level rises to the high level trip setpoint.

This condition __ (1) __ prevent an automatic trip of HPCI if actual Reactor Water Level rises to the high level trip setpoint.

A. (1) will
(2) will

B. (1) will
(2) will **NOT**

C. (1) will **NOT**
(2) will

D. (1) will **NOT**
(2) will **NOT**

Q 32

Which one of the following completes both statements below?

When manually aligning Unit 3 Core Spray to inject, the CORE SPRAY SYS I __ (1) __ INJECTION VALVE must be opened first.

When **ONLY** one pump in a loop is running, 3-OI-75, Core Spray System, requires the pump flow be throttled to no more than__ (2) __ gpm to avoid pump run-out.

A. (1) INBOARD
(2) 2600

B. (1) INBOARD
(2) 3125

C. (1) OUTBOARD
(2) 2600

D. (1) OUTBOARD
(2) 3125

Q 33

The 2A SLC pump is injecting to the Reactor in accordance with 2-EOI-1A, ATWS RPV Control. The Unit Operator reports SLC Tank Level lowering.

Which one of the following describes the effect of the 2A SLC Pump Discharge Relief Valve failing open?

Reactor Core Pressure Drop indicated on 2-XR-68-50 will __ (1) __.
Indicated Individual Jet Pump Differential Pressures will __ (2) __.

A. (1) raise
   (2) lower

B. (1) raise
   (2) not change

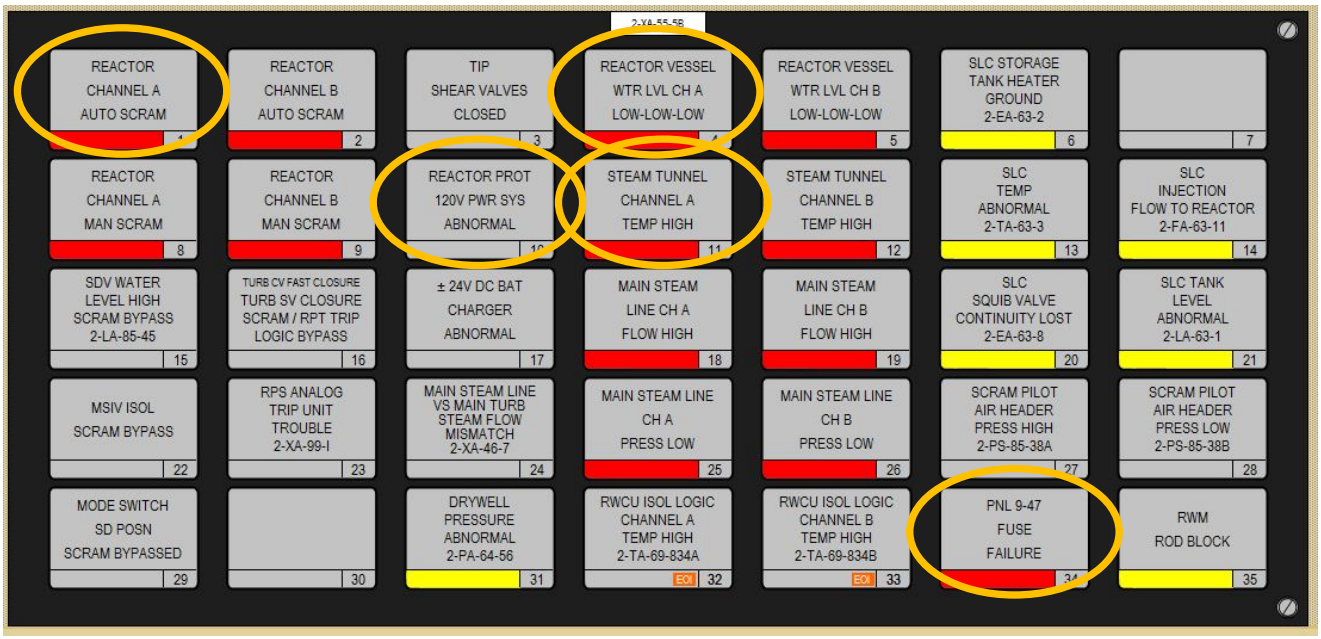
C. (1) lower
   (2) lower

D. (1) lower
   (2) not change

Q 34

Unit 2 is operating at 100% when the 2A RPS MG Set trips.

Given the alarm panel below:



Which set of annunciators include **ALL** the alarms that will illuminate on Panel 2-9-5B for this event?

Windows 1, 4, 10, 11, 34, along with…

A. 18 and 25.

B. 18, 25 and 32.

C. 8, 18, 23 and 25.

D. 8, 18, 23, 25 and 32.

Q 35

Unit 3 is operating at 100% power.

Subsequently;

- The Reactor scrams and RPV Water Level lowers to (-) 60 inches
- All 4 SCRAM Solenoid Group ‘A’ Reset lights are **illuminated**
- All 4 SCRAM Solenoid Group ‘B’ Reset lights are **extinguished**
- All Control Rods inserted to 00

(Assume no Operator actions have been taken)

Which one of the following completes the statement below?

The Control Rods inserted due to operation of the __ (1) __ which __ (2) __ to vent the air header.

A. (1) ARI valves
   (2) energize

B. (1) ARI valves
   (2) de-energize

C. (1) Scram pilot solenoid valves
   (2) energize

D. (1) Scram pilot solenoid valves
   (2) de-energize

Q 36

Unit 2 is in MODE 2.

IRM ‘B’ is on Range 1; ALL other IRMs are on Range 2.

Using the IRMs ICS Screen provided, which one of the following completes the statement below?

_____ IRM(s) is/are causing a Rod Block.

[REFERENCE PROVIDED]

A. No

B. **ONLY** ‘B’

C. **ONLY** ‘G’

D. ‘B’ **AND** ‘G’

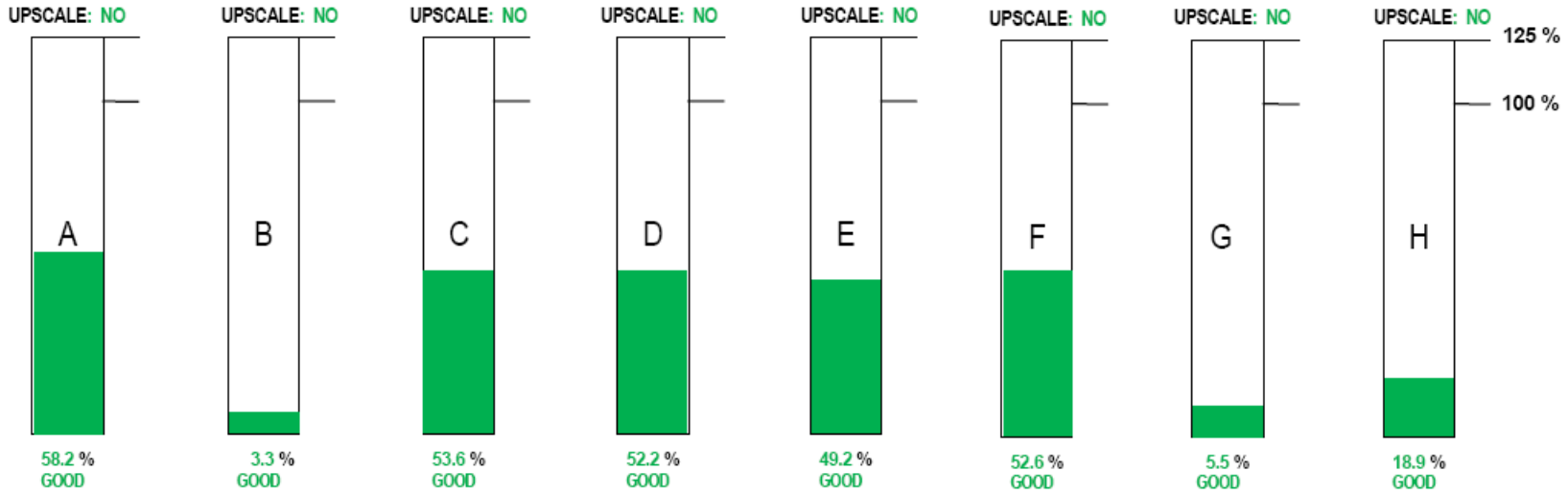
TVA **IRMS**

Main Alarms Graphics Trends Points Zoom/Layers Print Help

2 SELECT FUNC. KEY OR TURN ON CODE IRM >

09-NOV-2016 11:59:34

SPDS



AT LEAST ONE IRM IN BYPASS*:	NO
AT LEAST ONE IRM POSITION ABNORMAL*:	NO
AT LEAST ONE IRM DNSCLE*:	YES
AT LEAST ONE IRM HIGH FLUX*:	NO
AT LEAST ONE IRM INOP*:	NO
RX MODE SWITCH:	STARTUP

STANDBY LIQUID CONTROL TANK LEVEL:	88.0 %
REACTOR POWER:	0.2 %
REACTOR POWER:	7.2 MWT

APRMS SRM NSSS OVERVIEW

* INDICATION NOT VALID IN RUN MODE

PREVIOUS (F7) CANCEL (ESC) F1=CLEAR F2= F3= F4= F5= F6=

PG UP PG DN

TT046 WK= 002/win=1 SEC LVL = 3 PRIM/BACK CPU S STARTUP

BFN U2

Q 37

Unit 2 is in MODE 2.

- All IRMs are on range 4
- During Control Rod withdrawal the following IRM indications are noted:

  IRM ‘E’ – 108/125
  IRM ‘F’ – 118/125
  IRM ‘H’ – 117/125

What is the response of the Reactor Protection System (RPS) and/or Reactor Manual Control System (RMCS) to these plant conditions?

A. Rod Block **ONLY**

B. Rod Block and Half Scram RPS A

C. Rod Block and Half Scram RPS B

D. Full Scram

Q 38

What are the power supplies to the SRM Channels / detectors?

A. ‘A’ & ‘B’ are powered from the ‘A’ channel ± 24VDC System and ‘C’ & ‘D’ are powered from the ‘B’ channel ± 24VDC System.

B. ‘A’ & ‘C’ are powered from the ‘A’ channel ± 24VDC System and ‘B’ & ‘D’ are powered from the ‘B’ channel ± 24VDC System.

C. ‘A’ & ‘B’ are powered from Division I, 250 VDC System and ‘C’ & ‘D’ are powered from Division II, 250 VDC System.

D. ‘A’ & ‘C’ are powered from Division I, 250 VDC System and ‘B’ & ‘D’ are powered from Division II, 250 VDC System.

Q 39

A Local Power Range Monitor (LPRM) has been bypassed using BYPASS / HIGH VOLTS (BYP/HV) ON.

Which one of the following completes the statement below concerning the LPRM?

LPRM detector power output indication __ (1) __ be available at the APRM/LPRM drawer on Panel 9-14.

The Panel 9-5 Full Core Display __ (2) __ indicate which LPRM is bypassed.

A. (1) will
(2) will

B. (1) will
(2) will **NOT**

C. (1) will **NOT**
(2) will

D. (1) will **NOT**
(2) will **NOT**

Q 40

Which one of the following completes the statements below?

Opening __ (1) __ protects the RCIC pump from overheating.

The normal suction source for RCIC is from the __ (2) __.

A. (1) FCV-71-34, RCIC Pump Minimum Flow Valve
(2) CST

B. (1) FCV-71-34, RCIC Pump Minimum Flow Valve
(2) Suppression Pool

C. (1) FCV-71-25, Lube Oil Cooling Water Supply Valve
(2) CST

D. (1) FCV-71-25, Lube Oil Cooling Water Supply Valve
(2) Suppression Pool

Q 41

An ATWS has occurred on Unit 2.

- ADS LOGIC A INHIBIT switch 2-XS-1-159A is in INHIBIT.
- ADS LOGIC B INHIBIT switch 2-XS-1-161A is in INHIBIT.

ADS LOGIC BUS A INHIBITED (2-9-3C Window 18) is in alarm.
ADS LOGIC BUS B INHIBITED (2-9-3C Window 31) did **NOT** alarm.

Which one of the following completes the statement below?

To ensure that ADS is inhibited, the Unit Operator will dispatch an Auxiliary Unit Operator to _____ in accordance with 2-ARP-9-3C.

A. open the Auto Blowdown Logic Div II-2 breaker on the 2A 250V RMOV board

B. pull all ADS Solenoid power fuses at 2-25-32, Backup Control Panel

C. pull ADS logic fuses in the Aux Instrument Room on Panel 2-9-30 and 2-9-33

D. place all ADS transfer switches in emergency at 2-25-32, Backup Control Panel

Q 42

MSIV Closure-RPS Trip Channel Functional Test, 2-SR-3.3.1.1.8(5), is scheduled to be performed.

No fuses have been removed due to limit switch failures.

Which one of the following completes the statements below?

To measure MSIV stroke time 2-SR-3.3.1.1.8(5) directs the UO to **DEPRESS** and **HOLD** push-button 2-HS-1-14B, MSIV LINE A INBOARD TEST until __ (1) __.

If the MSIV remains partially closed when the test push button is released, 2-AOI-1-3, MSIV Closure at Power, requires __ (2) __.

A. (1) the MSIV red and green indicating lights are illuminated
   (2) lowering reactor power to ≤ 66%

B. (1) the MSIV red and green indicating lights are illuminated
   (2) inserting a manual Reactor SCRAM

C. (1) RPS Half-Scram is received
   (2) lowering reactor power to ≤ 66%

D. (1) RPS Half-Scram is received
   (2) inserting a manual Reactor SCRAM

Q 43

Which one of the following completes the statements below in the event of a Reactor Pressure transient?

The first four MSRVs will lift in the Safety Mode at a Reactor Pressure of __ (1) __ psig.

When MSRVs first open, indicated Reactor Water Level will __ (2) __.

A. (1) 1125
   (2) rise

B. (1) 1125
   (2) lower

C. (1) 1135
   (2) rise

D. (1) 1135
   (2) lower

Q 44

Which one of the following completes both statements below?

Unit 2 SRV Tailpipe Temperature monitoring is available __ (1) __.

In accordance with 2-C-4, RPV Flooding, open SRV tailpipe temperatures __ (2) __ be used as an indication that the RPV has been flooded to the Main Steam Lines.

A. (1) only on MSRV Discharge Tailpipe Temperature Recorder, 2-TR-1-1
(2) can

B. (1) only on MSRV Discharge Tailpipe Temperature Recorder, 2-TR-1-1
(2) can **NOT**

C. (1) on MSRV Discharge Tailpipe Temperature Recorder, 2-TR-1-1 and ICS
(2) can

D. (1) on MSRV Discharge Tailpipe Temperature Recorder, 2-TR-1-1 and ICS
(2) can **NOT**

Q 45

The 3A RFPT is the **ONLY** RFPT in service and the following conditions currently exist:

- Speed Control RAISE/LOWER switch is pulled up to the FEEDWATER CONTROL position
- RFPT 3A Individual Speed Control 3-SIC-46-8 Auto / Manual indicator displays 'L'
- Reactor Water Level Master Controller 3-LIC-46-5 Auto / Manual indicator displays 'R'

Which one of the following completes both statements?

The output of the __ (1) __ is currently controlling Reactor Water Level.

IF column one is selected on the controller that is controlling Reactor Water Level and the Ramp Up pushbutton is depressed the controller output __ (2) __ increase.

A. (1) RFPT 3A Individual Speed Controller
(2) will

B. (1) RFPT 3A Individual Speed Controller
(2) will **NOT**

C. (1) Reactor Water Level Master Controller
(2) will

D. (1) Reactor Water Level Master Controller
(2) will **NOT**

Q 46

Unit 2 is at 100% power.

The Drywell D/P Air Compressor is tagged electrically.

2-OI-64, Primary Containment System, Section 8.6, Maintaining Drywell/Suppression Chamber D/P Without the Drywell D/P Compressor, is in progress.

- Drywell Pressure 1.48 psig
- Suppression Chamber Pressure 0.33 psig
- Drywell / Suppression Chamber D/P 1.15 psid

Based on these conditions, the Unit Operator is required to vent the _____ in order to maintain Drywell Pressure and Drywell / Suppression Chamber D/P within their normal control bands.

A. Drywell to SGT

B. Drywell to the Primary Containment Purge Filter

C. Suppression Chamber to SGT

D. Suppression Chamber to the Primary Containment Purge Filter

Q 47

'D' D/G has been loaded in accordance with 0-SR-3.8.1.1(D) Diesel Generator 'D' Monthly Operability Test.

Subsequently, 2B Unit Station Service Transformer (USST) Tap Changer fails, causing DIESEL GEN D OVERLOAD (0-9-23D window 11) to alarm.

Which one of the following predicts the plant response?

A. 'D' D/G load rises and no automatic actions occur

B. 'D' D/G output breaker trips open and the D/G remains operating

C. 'D' D/G output breaker trips open and the D/G automatically shuts down

D. 'D' D/G remains operating and the normal feeder breaker to the 'D' 4KV Shutdown board trips open

Q 48

While transferring Unit 2 Unit Preferred to the Regulating Transformer, the Unit Preferred voltage begins to oscillate with the Motor-Motor-Generator (MMG) set in parallel with the Transformer, causing the following annunciator:

- UNIT PFD SUPPLY ABNORMAL (2-9-8B Window 35) alarms due to an overvoltage condition

NOTE: 0-BKR-280-002/1001, UNIT PFD MMG SET 2 TIE TO BAT BD 2 NORM FEEDER
0-BKR-280-002/1002, UNIT PFD XFMR 2 TIE TO BATTERY BD 2 ALT FDR

Which one of the following completes the statement below?

Battery board 2 breaker(s) __ (1) __ will trip and the MMG set will __ (2) __.

A. (1) 1001 **ONLY**
(2) coast to a stop

B. (1) 1001 **ONLY**
(2) continue to run without excitation

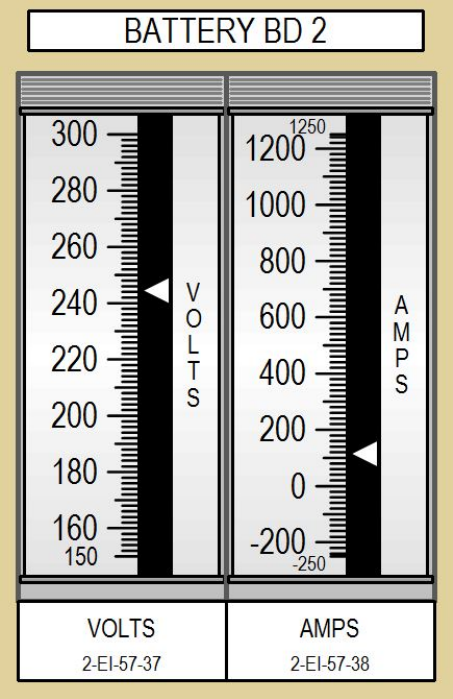
C. (1) 1001 **AND** 1002
(2) coast to a stop

D. (1) 1001 **AND** 1002
(2) continue to run without excitation

Q 49

The following are indicated on Panel 2-9-8 for Battery Board 2:

BATTERY BD 2 Volts (2-EI-57-37) indicates 245VDC as shown below.
BATTERY BD 2 Amps (2-EI-57-38) indicates (+) 120 amps as shown below.



Which one of the following completes the statements below?

Main Bank Battery #2 is currently __ (1) __.

In accordance with 0-OI-57D, DC Electrical, Battery Board 2 voltage __ (2) __ within 0-OI-57D limits.

A. (1) discharging
   (2) is **NOT**

B. (1) discharging
   (2) is

C. (1) being charged
   (2) is **NOT**

D. (1) being charged
   (2) is

Q 50

Which one of the following completes both statements concerning the 2B 250V Battery Charger?

The 2B 250V Battery charger __ (1) __ be aligned to supply Battery Board 5.

There is a/an __ (2) __ interlock that prevents the 2B 250V Battery Charger from supplying more than one Battery Board at a time.

A. (1) can
   (2) mechanical

B. (1) can
   (2) electrical

C. (1) can **NOT**
   (2) mechanical

D. (1) can **NOT**
   (2) electrical

Q 51

All three units are at 100% power.

EECW is in a normal system lineup.

An Emergency Diesel Generator on Unit 3 auto starts.

Which one of the following completes the statements below?

The __ (1) __ EECW Pumps received an auto start signal.

The EECW Pumps that received an auto start signal provide __ (2) __.

A. (1) A3 and C3
   (2) one pump on each EECW header

B. (1) A3 and C3
   (2) two pumps on one EECW header

C. (1) B3 and D3
   (2) one pump on each EECW header

D. (1) B3 and D3
   (2) two pumps on one EECW header

Q 52

Which of the following Control Air Compressors are available for service during a Loss of Off-Site Power?

A. ‘A’ and ‘B’ **ONLY**

B. ‘A’ and ‘D’ **ONLY**

C. ‘B’ and ‘C’ **ONLY**

D. ‘C’ and ‘D’ **ONLY**

Q 53

Unit 1 is operating at 100% Reactor Power.

RBCCW Pump 1A trips, resulting in the following:

- RBCCW PUMP DISCH HDR PRESS LOW (1-9-4C Window 12) in alarm

Which one of the following system loads is being cooled by RBCCW?

A. Drywell Coolers

B. Fuel Pool Cooling Heat Exchangers

C. Reactor Water Cleanup Non-Regenerative Heat Exchangers

D. Reactor Recirculation pump discharge sample cooler

Q 54

A Startup is in progress on Unit 2.

- The Rod Worth Minimizer (RWM) is latched into Rod Group 4.
- There are no error messages displayed on the RWM.
- Sequence Control is on.

Operators are withdrawing Control Rods from position 08 to position 12.

Which one of the following will result in a RWM Control Rod Withdraw Block?

A. One Control Rod in Group 4 is inserted to position 06.

B. One Control Rod in Group 5 is selected.

C. The second Control Rod in Group 4 is withdrawn to position 14.

D. The second Control Rod in Group 4 is skipped and the third Rod in Group 4 is selected.

Q 55

Which one of the following is the ATWS/RPT trip setpoint on high Reactor Pressure?

A. 1058 psig

B. 1073 psig

C. 1145 psig

D. 1148 psig

Q 56

Which one of the following completes the statement below?

1B Recirc VFD is normally powered by _____.

A. USST 1A

B. USST 1B

C. Start Bus 2A

D. Start Bus 2B

Q 57

3-OI-94, Traversing Incore Probe System, section 6.1, Automatic TIP Operation/RPHP is in progress.

The Auto Start Pushbutton has been depressed and one of the TIP probes is currently in the core and moving towards the top of the core.

The Reactor scrams on Low Reactor Water Level.

Which one of the following describes the response of the TIP System?

The TIP probe _____.

A. reverses, travels to the indexer, and then the Ball Valve closes

B. continues to the top of the core, reverses, travels to the Indexer, and then the Ball Valve closes

C. reverses, travels to the in-shield position, and then the Ball Valve closes

D. continues to the top of the core, reverses, travels to the in-shield position, and then the Ball Valve closes

Q 58

Unit 3 is operating at 100% power when the unit scrams due to a steam leak in the Drywell.

Current conditions are as follows:

- RPV Level is (-) 100 inches
- Reactor Pressure is 550 psig
- Drywell Pressure is 13 psig and rising
- Suppression Chamber Pressure is 12 psig and rising
- Drywell Temperature is 200°F and rising

The crew is implementing 3-EOI Appendix-17B, RHR System Operation Drywell Sprays.

When the Unit Operator placed keylock switch 3-XS-74-130, RHR SYS II LPCI 2/3 CORE HEIGHT OVRD, in 'Manual Override', its amber light did **NOT** illuminate.

The Unit Operator continued in the procedure and manually started 3B RHR pump.

Which ONE of the following completes the statements below?

When 3-HS-74-74A, RHR SYS II DW SPRAY OUTBD VALVE, and 3-HS-74-75A, RHR SYS II DW SPRAY INBD VALVE, are placed in the OPEN position, Drywell Temperature will __(1)__.

In accordance with 3-EOI-2, Primary Containment Control, **IF** Drywell Pressure drops to __ (2) __ psig Operators are required to STOP Drywell Sprays.

A. (1) Lower
(2) 2.45

B. (1) Lower
(2) 0

C. (1) Continue on the current trend
(2) 2.45

D. (1) Continue on the current trend
(2) 0

Q 59

RHR Loop II has been placed in service on Unit 1 in accordance with 1-EOI-Appendix 17C, RHR System Operation Suppression Chamber Sprays.

Which one of the following completes the statements below?

While operating solely in the Suppression Chamber Spray Mode, 1-FCV-74-30, RHR SYS II MIN FLOW Valve, will __ (1) __.

Suppression Pool Cooling __ (2) __ allowed to be placed in service on the same RHR loop operating in the Suppression Pool Spray Mode.

A. (1) remain open
   (2) is

B. (1) remain open
   (2) is **NOT**

C. (1) be closed
   (2) is

D. (1) be closed
   (2) is **NOT**

Q 60

A LOCA on Unit 2 has resulted in a Reactor SCRAM.

Reactor Water Level has lowered to (-) 140 inches.

The following indications currently exist on Panel 2-9-4:

- MSIV Group A1, 2-IL-64-A1, light extinguished
- MSIV Group A2, 2-IL-64-A2, light illuminated
- MSIV Group B1, 2-IL-64-B1, light extinguished
- MSIV Group B2, 2-IL-64-B2, light illuminated

Which one of the following is the Main Steam System response?

(Assume no Operator actions have been taken)

A. **NO** MSIVs isolate

B. **ONLY** Inboard MSIVs isolate

C. **ONLY** Outboard MSIVs isolate

D. **BOTH** Inboard and Outboard MSIVs isolate

Q 61

Unit 2 is operating at 100% power.

The Unit Operator observes that Generator Hydrogen pressure, 2-PI-35-17A, is lowering.

Which one of the following completes both statements below?

As Generator Hydrogen pressure lowers, Seal oil pressure Turbine End, 2-PI-35-38A will __ (1) __.

In accordance with 2-OI-35 section 6.1, Adding Hydrogen During Normal Operation, the Unit Operator __ (2) __ add Hydrogen to the Generator remotely from the Control Room.

A. (1) lower
   (2) can

B. (1) lower
   (2) can **NOT**

C. (1) remain the same
   (2) can

D. (1) remain the same
   (2) can **NOT**

Q 62

All three Units are in Cold Shutdown and CCW is operating in the OPEN Mode.

A Waste Sample Tank is being aligned for release to the river using 2-FCV-77-61, Radwaste Discharge Valve Unit 2 Discharge Conduit, in accordance with 0-OI-77A section 8.8, Waste Sample Tank Disposal.

Which one of the following satisfies the **MINIMUM** requirements for operating a/the CCW pump(s) to complete this river release?

A. One Unit 2 CCW Pump

B. Two Unit 2 CCW Pumps

C. One Unit 1 and one Unit 2 CCW pump

D. One CCW Pump from each unit

Q 63

Unit 2 is at 15% power preparing to synchronize the Main Generator to the Grid when the following occurs:

- CONDENSER A, B, OR C VACUUM LOW (2-9-7B, window 17) alarms
- The A SJAE is experiencing reduced First stage performance (stalling).

Which one of the following completes the statements below?

With no operator action, Off-Gas Flow to the Six Hour Hold Up Volume, 2-XR-66-20, will be __ (1) __.

2-AOI-47-3, Loss of Condenser Vacuum directs the UO to __ (2) __.

A. (1) lowering
   (2) Swap to the standby SJAE

B. (1) lowering
   (2) Start a Mechanical Vacuum Pump

C. (1) rising
   (2) Swap to the standby SJAE

D. (1) rising
   (2) Start a Mechanical Vacuum Pump

Q 64

Which one of the following completes the statements below?

2-TIS-1-60A, Main Steam Tunnel Temperature, is located on panel __ (1) __.

2-FI-64-38, Reactor Zone Exhaust Flow, is located on panel __ (2) __.

A. (1) 2-9-3
   (2) 2-9-25

B. (1) 2-9-3
   (2) 2-9-21

C. (1) 2-9-21
   (2) 2-9-25

D. (1) 2-9-21
   (2) 2-9-21

Q 65

In accordance with 0-OI-65, Standby Gas Treatment (SGT) System, upon a Secondary Containment Isolation, the SGT System is designed to maintain a negative_____ in Secondary Containment with an in-leakage flow of 12,000 cfm.

A. 0.25 inches of mercury

B. 0.50 inches of mercury

C. 0.25 inches of water

D. 0.50 inches of water

Q 66

Which one of the following completes both statements in accordance with OPDP-1, Conduct of Operations?

When a temporary relief is necessary, the Operator being relieved briefs his/her relief on abnormal or unusual conditions existing, any evolutions in progress and actions anticipated during the relief period, and __ (1) __.

Unit Operator temporary reliefs of short duration __ (2) __ required to be logged in NOMS.

A. (1) also provides a Shift Turnover Checklist to his/her relief
   (2) are

B. (1) also provides a Shift Turnover Checklist to his/her relief
   (2) are **NOT**

C. (1) where he/she may be reached in the plant during their absence
   (2) are

D. (1) where he/she may be reached in the plant during their absence
   (2) are **NOT**

Q 67

Unit 3 has experienced a LOCA AND the following conditions exist:

- 3A RHR pump is injecting
- Core Spray Loop II is injecting
- Suppression Pool Level is (-) 5.5 inches
- RPV pressure is 10psig
- Drywell pressure is 6psig
- Suppression Chamber Pressure is 5 psig
- Suppression Pool Temperature is 200º F
- 3-FI-74-50, RHR SYS I Flow, indicates 10,000 gpm
- 3-FI-75-49 CS SYS II Flow indicates 6250 gpm

Which one of the following completes both statements?

RHR __ (1) __ operating within the Net Positive Suction Head (NPSH) limits.

Core Spray __ (2) __ operating within the NPSH limits.

[REFERENCE PROVIDED]

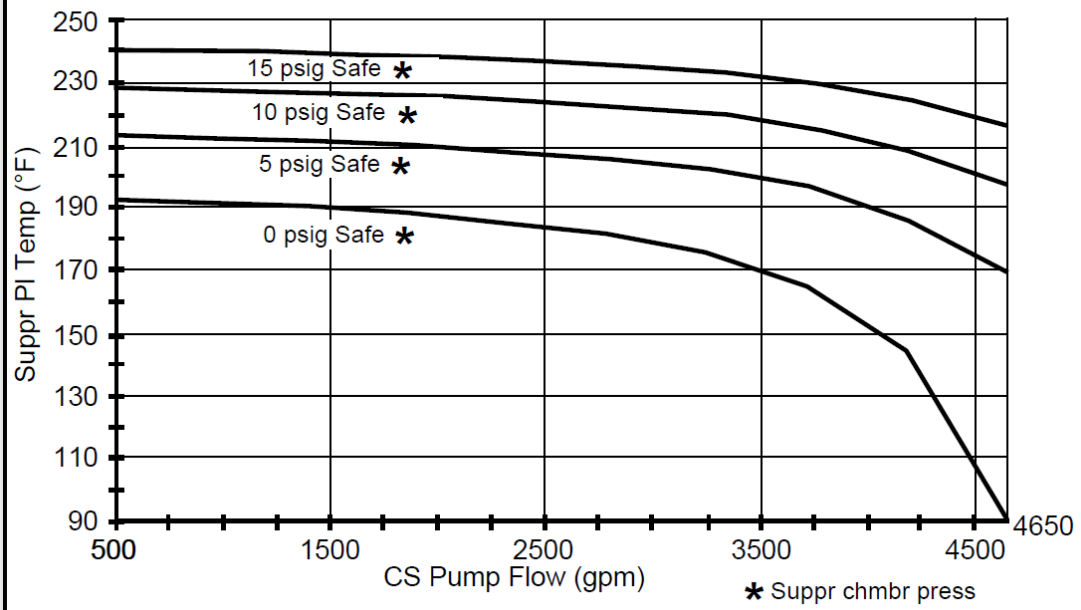
A. (1) is
   (2) is

B. (1) is
   (2) is **NOT**

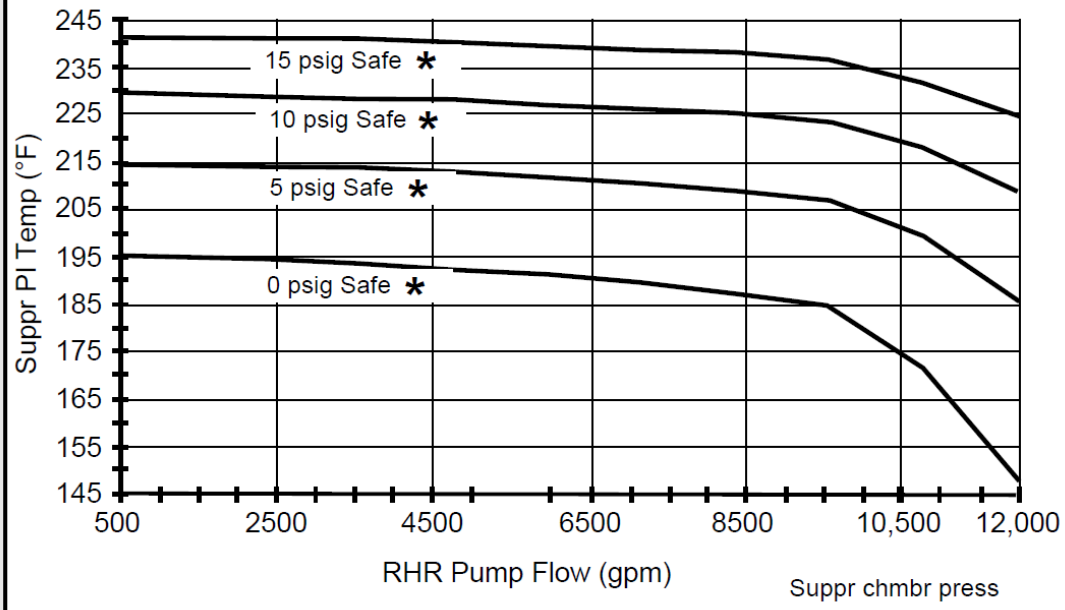
C. (1) is **NOT**
   (2) is

D. (1) is **NOT**
   (2) is **NOT**

Curve 1
CS NPSH Limits



Curve 2
RHR NPSH Limits



Q 68

What are the differences between the three Units' Standby Gas Treatment (SGT) controls?

A. Units 1 and 2 each have control switches to operate ALL three SGT trains. Unit 3 has SGT indications **ONLY**

B. Unit 1 has control switches to operate two SGT trains **ONLY**, Unit 2 has control switches to operate one SGT train **ONLY**, and Unit 3 has push buttons to start **ALL** three SGT trains **ONLY**

C. Unit 2 has control switches to operate **ALL** three SGT trains and Units 1 and 3 have indications **ONLY**

D. Unit 1 has control switches to operate one SGT train **ONLY**, Unit 2 has control switches to operate one SGT train **ONLY**, and Unit 3 has control switches to operate one SGT train **ONLY**

Q 69

Which one of the following completes the statement below, in accordance with OPDP-4, Annunciator Disablement?

Disabled annunciators are identified by a __ (1) __ placed on the disabled annunciator window.

Each unit __ (2) __ required to carry over the list of disabled annunciators each shift in the eSOMS Narrative Log.

A. (1) White border
(2) is

B. (1) White border
(2) is **NOT**

C. (1) Blue border
(2) is

D. (1) Blue border
(2) is **NOT**

Q 70

Which one of the following completes the statements below in accordance with 0-OI-48, Integrated Computer System?

The Safety Parameter Display System (SPDS) component of the Integrated Computer System (ICS) displays parameters in __ (1) __ to indicate that the data is bad data.

The SPDS target in the upper right corner of the display will be __ (2) __ if an EOI entry condition value is reached.

A. (1) cyan
   (2) yellow

B. (1) cyan
   (2) red

C. (1) blue
   (2) yellow

D. (1) blue
   (2) red

Q 71

Which one of the following completes the statement below in accordance with 2-SR-2, Instrument Checks and Observations?

The Spent Fuel Storage Pool Water Level shall be _____ over the top of irradiated fuel assemblies seated in the Spent Fuel Storage Pool Racks during movement of irradiated fuel assemblies in the Spent Fuel Storage Pool.

A. ≥ 21.5 feet

B. ≥ 22.0 feet

C. ≥ 23.5 feet

D. ≥ 25.0 feet

Q 72

Control Room Ventilation Radiation Monitor 0-RM-90-259A fails upscale and 0-RM-90-259B reads 120 counts per minute.

Which one of the following predicts how the Control Room Ventilation System will respond?

A. **NO** ventilation isolation; **NEITHER** CREV fan auto starts.

B. **ONLY** Unit 1 and 2 Control Room Ventilation Systems isolate and **ONLY** the selected CREV fan auto starts.

C. **ALL** 3 Units' Control Room Ventilation Systems isolate and **ONLY** the selected CREV fan auto starts.

D. **ALL** 3 Units' Control Room Ventilation Systems isolate and **BOTH** CREV fans auto start.

Q 73

Which one of the following completes the statement below?

In accordance with 0-AOI-26-1, Fire Response, in the event of a severe fire,
Operators are required to limit Containment venting to maintain _____ Pump NPSH.

A. RHR

B. CS

C. HPCI

D. RCIC

Q 74

Which one of the following completes the statement below in accordance with EPIP-6, Activation and Operation of the Technical Support Center?

The _____ has command and control in the Technical Support Center (TSC).

A. Outside Unit Supervisor on the unaffected Unit

B. Site Emergency Director

C. Operations Manager

D. Site Emergency Preparedness Manager

Q 75

An ALERT has been declared and the **TSC has been activated**.

Subsequently, RX BLDG AREA RADIATION HIGH, 9-3A, Window 22 alarms due to a VALID radiological condition.

Which one of the following completes the statements below?

In accordance with the Annunciator Response Procedure (ARP) ___ (1) ___ will use the Public Address System (PA) to evacuate the area.

The Unit Operator ___ (2) ___ dispatch a Control Bay AUO into the Aux Instrument Room without TSC concurrence.

A. (1) Control Room personnel
   (2) may

B. (1) Control Room personnel
   (2) may **NOT**

C. (1) Technical Support Center personnel
   (2) may

D. (1) Technical Support Center personnel
   (2) may **NOT**

Q 76

All three units are operating at 100% power.

Operations is scheduled to transfer the ‘A’ Diesel Auxiliary Board to the alternate supply breaker in accordance with 0-OI-57B section 8.12, Transfer of 480V Reactor MOV Boards A, B, and C and Diesel Aux BDs A&B, 3EA, & 3EB.

Which one of the following completes the statements below?

The ‘A’ Diesel Auxiliary Board is __ (1) __ when being supplied by its alternate power supply.

If the ‘A’ Diesel Auxiliary Board subsequently fails to transfer and remains de-energized, the most limiting Tech Spec required action to restore affected equipment to operable status requires restoring __ (2) __.

[REFERENCE PROVIDED]

A. (1) operable
   (2) the Diesel Auxiliary Board to OPERABLE status within 5 days

B. (1) operable
   (2) **ALL** but one Unit 1 and 2 D/G to OPERABLE status within 2 hours

C. (1) inoperable
   (2) the Diesel Auxiliary Board to OPERABLE status within 5 days

D. (1) inoperable
   (2) **ALL** but one Unit 1 and 2 D/G to OPERABLE status within 2 hours

Q 77

A Control Air leak develops on Unit 2.

Subsequently;

At 1500 the UO reports that the PSC PUMP SUCTION INBD and OUTBD VALVES are closed and that RHR SYS I DISCH PRESS, 2-PI-74-51, indicates 45 psig.

At 1520 RHR SYS I DISCH PRESS, 2-PI-74-51 is restored to 55 psig.

NOTE: 2-OI-74, Residual Heat Removal System
2-OI-75, Core Spray System

Which one of the following completes the statements below?

2-AOI-32-2, Loss of Control Air directs aligning condensate storage and supply to restore discharge piping pressure in accordance with __ (1) __.

At 1520, 2-SR- 3.5.1.1(RHR I), RHR System Venting Loop I, __ (2) __ required.

[REFERENCE PROVIDED]

A. (1) 2-OI-74
(2) is

B. (1) 2-OI-74
(2) is **NOT**

C. (1) 2-OI-75
(2) is

D. (1) 2-OI-75
(2) is **NOT**

Q 78

An event occurred on Unit 2 which resulted in the following conditions:

- All Rods are inserted
- Reactor Water Level (-)75 inches
- Reactor Pressure 800 psig
- Drywell Pressure 15 psig
- Drywell Temperature 225°F
- Suppression Chamber Pressure 14 psig
- Suppression Pool Level 18 feet

Subsequently;

Reactor pressure rose to 900 psig, which is in the action required area of Curve 4, SRV Tail Pipe Level Limit.

Which one of the following completes both statements in accordance with 2-EOI-2, Primary Containment Control?

Implementation of RHR SYSTEM OPERATION DRYWELL SPRAYS, 2-EOI Appendix 17B __ (1) __ allowed.

Lowering the Reactor Pressure band to exit the required action area of Curve 4, and to avoid Emergency Depressurization, __ (2) __ allowed.

[REFERENCE PROVIDED]

A. (1) is
   (2) is

B. (1) is
   (2) is **NOT**

C. (1) is **NOT**
   (2) is

D. (1) is **NOT**
   (2) is **NOT**

Q 79

Unit 2 is operating at 100% power.

The Unit 2 Unit Operator records the following in 2-SR-2, Instrument Checks and Observation:

- 0-TI-27-144 Forebay Temperature 93° F
- MIG has verified that 0-TI-27-144 is reading accurately

NOTE: Ultimate Heat Sink (UHS)

In accordance with Unit 2 Tech Specs, what is/are the minimum required action(s)?

[REFERENCE PROVIDED]

A. De-rate Unit 2 to less than 99% Rated Thermal Power **ONLY**.

B. Declare the UHS INOPERABLE for RHRSW **ONLY**; de-rate Unit 2 to less than 99% Power.

C. Declare the UHS INOPERABLE for RHRSW **AND** EECW; de-rate Unit 2 to less than 99% Power.

D. Declare the UHS INOPERABLE for RHRSW **AND** EECW, and if temperature **CANNOT** be reduced, be in MODE 3 in 12 hours and MODE 4 in 36 hours.

Q 80

A Reactor SCRAM occurred on Unit 2.

HPCI is in service in accordance with EOI Appendix 11C, Alternate RPV Pressure Control Systems HPCI Test Mode.

Subsequently:

- The Reactor Building AUO reports that there are several inches of water on the 519' elevation floor.

- The BOP Operator reports that 2-LI-64-54A and 2-LI-64-66, SUPPR POOL WATER LEVEL, indicate (-) 20 inches.

NOTE: 2-EOI Appendix-9 Primary Containment Water Level Monitoring and Equipment Control
2-EOI APPENDIX-18 Suppression Pool Water Inventory Removal and Makeup

Which one of the following completes the statements below in accordance with EOI-2, Primary Containment Control?

HPCI __ (1) __ required to be locked out.

__ (2) __ is required to be performed.

A. (1) is
(2) 2-EOI Appendix 9

B. (1) is
(2) 2-EOI Appendix 18

C. (1) is **NOT**
(2) 2-EOI Appendix 9

D. (1) is **NOT**
(2) 2-EOI Appendix 18

Q 81

A LOCA has occurred on Unit 1 with the following conditions:

- Reactor Water level is (-) 125 inches
- Reactor Pressure is 200 psig
- Drywell Pressure is 20 psig
- Only the 1B CRD pump is injecting to the RPV

The US has determined that Reactor Water level **CANNOT** be restored and maintained above (-) 162 inches.

In accordance with EOI-1, RPV Control, which one of the following is required?

A. SAMGs

B. Steam Cooling

C. Alternate Level Control

D. Emergency RPV Depressurization

Q 82

All three units are operating at 100% power.

At 1445 – 500 KV system voltage is slowly cycling between 515 and 525 KV; the crew entered 0-AOI-57-1E, Grid Instability.

At 1500 – Off-Site power is lost. All Diesel Generators are supplying their 4KV Shutdown Boards.

At 1520 – TVA's Transmission Operator (TOp) notifies BFN that Off-Site power will not be restored for at least 2 hours.

Which one of the following completes the statements below?

At 1445 the offsite power source __ (1) __ operable.

The **earliest** time that the NRC must be notified is __ (2) __.

[REFERENCE PROVIDED]

A. (1) was
(2) 1615

B. (1) was
(2) 1900

C. (1) was **NOT**
(2) 1615

D. (1) was **NOT**
(2) 1900

Q 83

Unit 2 was operating at 100% power when a Reactor SCRAM occurred.

The Unit Operator reports:

- Drywell Pressure 2.20 psig
- Drywell Temperature 162 °F
- Drywell Pressure is slowly rising

NOTE: 2-AOI-64-1, Drywell Pressure and/or Temperature High or Excessive Leakage into Drywell
2-EOI Appendix-13, Emergency Venting Primary Containment

Which one of the following completes the statement below?

Vent the…

A. Drywell in accordance with 2-AOI-64-1.

B. Suppression Chamber in accordance with 2-AOI-64-1.

C. Drywell in accordance with 2-EOI Appendix-13.

D. Suppression Chamber in accordance with 2-EOI Appendix-13.

Q 84

Unit 1 is operating at 100% Power when the following alarms are received:

- RX BLDG AREA RADIATION HIGH (1-9-3A, Window 22)
- RX BLDG Elevation 565 East ARM is indicating off-scale high
- RX BLDG Elevation 565 Northeast ARM is indicating 600 mr/hr and stable

The crew entered EOI-3, Secondary Containment Control, and the Shift Manager has declared an Alert.

Subsequently;

Reports from the field indicate that a primary system is discharging into secondary containment.

NOTE: 1-EOI-1; RPV Control
0-EOI-4; Radioactivity Release Control

Which one of the following completes both statements?

0-EOI-4, Radioactivity Release Control __ (1) __ required to be entered.

In accordance with Table SC-2, Secondary Containment Area Radiation, the potential isolation source is the __ (2) __.

A. (1) is
(2) RWCU Isolation valves

B. (1) is **NOT**
(2) Scram Discharge Volume vents and drains

C. (1) is
(2) Scram Discharge Volume vents and drains

D. (1) is **NOT**
(2) RWCU Isolation valves

Q 85

Unit 2 is operating at 100% power.

REACTOR ZONE EXHAUST RADIATION HIGH (2-9-3A window 21) is in alarm.
The crew entered 2-EOI-3, Secondary Containment Control.

Subsequently the Unit Operator reports:

2-RE-90-142A, Reactor Zone channel A detector A upscale
2-RE-90-142B, Reactor Zone channel A detector B upscale

NOTE; 2-OI-90, Radiation Monitoring System
2-EOI Appendix-8F, Restoring Refuel Zone and Reactor Zone Ventilation Fans Following Group 6 Isolation

Which one of the follow completes both statements?

An automatic Refuel Zone Ventilation Isolation __ (1) __ occur.

IF the isolation is determined to be invalid and 2-RM-90-142 remains upscale, the procedure that contains steps to immediately inhibit the 2-RM-90-142 trip signal and clear the isolation is __ (2) __.

A. (1) will
(2) 2-EOI Appendix-8F

B. (1) will
(2) 2-OI-90

C. (1) will **NOT**
(2) 2-EOI Appendix-8F

D. (1) will **NOT**
(2) 2-OI-90

Q 86

An ATWS has occurred on Unit 2.

- Reactor Water Level has been intentionally lowered
- HPCI is in service maintaining Reactor Water Level
- Suppression Pool Level is (+) 5 inches and rising

Which one of the following completes the statements below concerning continued HPCI operation?

2-EOI-5, Curves and Cautions, warns Operators that operating HPCI with a suction temperature above __ (1) __°F may result in equipment damage.

The procedure that directs performing 2-EOI Appendix-16E, Bypassing HPCI High Suppression Pool Water Level Suction Transfer Interlock, is __ (2) __.

A. (1) 140
   (2) 2-EOI-2, Primary Containment Control, flow chart

B. (1) 140
   (2) 2-EOI Appendix 5D, Injection System Lineup HPCI

C. (1) 240
   (2) 2-EOI-2, Primary Containment Control, flow chart

D. (1) 240
   (2) 2-EOI Appendix 5D, Injection System Lineup HPCI

Q 87

At 0300, a LOCA occurred on Unit 2.

At 0345, Venting in accordance with EOI Appendix 13, Emergency Venting Primary Containment was initiated.

At 0400, DRYWELL/SUPPR CHAMBER RADIATION HIGH (2-9-7 Window 15) alarmed.

At 0600, the following conditions are reported:

- Reactor water level is stable at (-) 145 inches
- Drywell pressure is 30 psig and rising
- 2-RE-90-272A Drywell Radiation indicates 2500 R/Hr
- Venting is in progress in accordance with 2-EOI-Appendix 13

Assume no further Operator actions.

Which one of the following completes the statements below?

The **highest** emergency classification required based on the 0600 report is a __ (1) __.

Based on these conditions, injecting SLC __ (2) __ required.

[REFERENCE PROVIDED]

A. (1) Site Area Emergency
   (2) is **NOT**

B. (1) Site Area Emergency
   (2) is

C. (1) General Emergency
   (2) is **NOT**

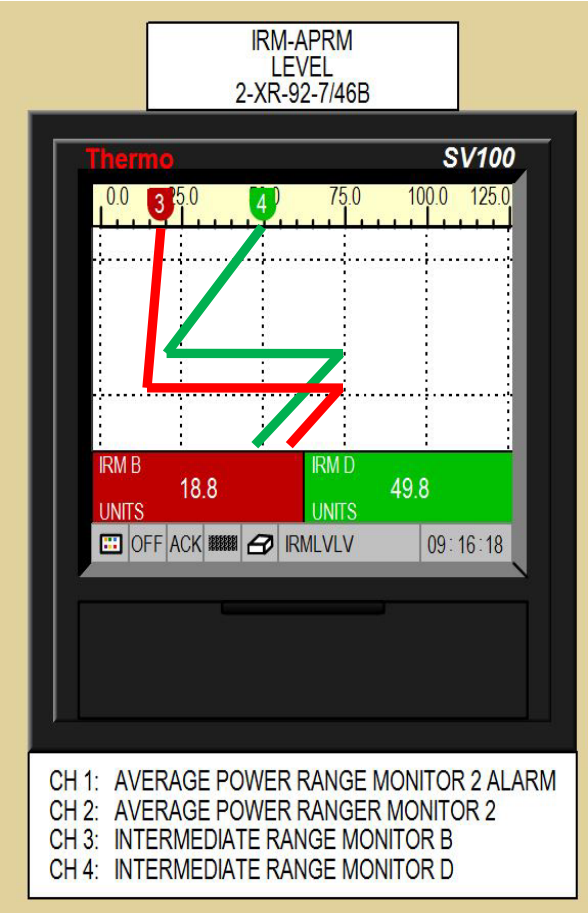
D. (1) General Emergency
   (2) is

Q 88

Unit 2 startup in accordance with 2-GOI-100-1A, UNIT STARTUP, is in progress.

The following conditions exist:

- IRMs 'A' and 'F' are INOPERABLE and bypassed
- The Reactor is critical
- The desired period has been established
- No additional reactivity changes are made



Subsequently;

When the Unit Operator ranged all IRMs from range 4 to range 5 the attached IRM recorder response was noted.

If the IRM with the abnormal trend was declared inoperable, which one of the following identifies the minimum required action, if any, required by Tech Spec 3.3.1.1, RPS Instrumentation?

[REFERENCE PROVIDED]

A. No action is required.

B. Condition B

C. Condition A

D. Condition G

Q 89

A Reactor SCRAM occurred on U2 and RCIC automatically initiated.

The following conditions currently exist:

- RCIC STEAM LINE FLOW EXCESSIVE (2-9-3B Window 21) is alarming.
- One area temperature and one area radiation level in the CS sys I pumps RCIC room have exceeded the Max Safe value.

Which one of the following completes the statements below?

RCIC __ (1) __ received an auto isolation signal.

2-C-2, Emergency RPV Depressurization, __ (2) __ required.

A. (1) has
   (2) is

B. (1) has
   (2) is **NOT**

C. (1) has **NOT**
   (2) is

D. (1) has **NOT**
   (2) is **NOT**

Q 90

Unit 3 is operating at 100% power with no equipment out of service.

3-SR-3.8.1.1(3D), Diesel Generator 3D Monthly Operability Test, is in progress with the D/G loaded.

Subsequently,

- All Off-Site power is lost.
- Diesel Generators A and C fail to start.
- Diesel Generators 3B and 3C fail to start.

Which one of the following completes the statements below?

When Off-Site Power is lost, the 3D Diesel Generator output breaker will __ (1) __.

The Unit 3 Unit Supervisor __ (2) __ required to perform 0-AOI-57-1A Attachment 12, Station Blackout Flowchart

A. (1) remain closed
(2) is **NOT**

B. (1) remain closed
(2) is

C. (1) trip open and then reclose
(2) is **NOT**

D. (1) trip open and then reclose
(2) is

Q 91

Unit 3 is operating at 100% power.
The Unit Operator was inserting Control Rod 34-57 from position 48 to position 00, using continuous insert when the Unit 3 Unit Preferred MMG set tripped.

The following conditions currently exist:

- Panel 9-9, Cabinet 6 failed to transfer
- The final position of Control Rod 34-57 cannot be determined directly or indirectly
- No rod positions are indicated on the full core display

Which one of the following completes both statements below?

Placing CRD System Flow Controller, 3-FIC-85-11 in manual __ (1) __ enable the Unit Operator to adjust CRD system flow.

In accordance with 3-AOI-85-4, Loss of RPIS, CRD 34-57 __ (2) __ required to be declared inoperable.

A. (1) will
   (2) is **NOT**

B. (1) will
   (2) is

C. (1) will **NOT**
   (2) is **NOT**

D. (1) will **NOT**
   (2) is

Q 92

Unit 3 is operating at 100% power with Traversing Incore Probe (TIP) operations in progress to support LPRM calibrations.

The BOP Operator reports that the 'A' TIP detector is stuck in the core.
Maintenance cannot retract the detector within 4 hours.

Which one of the following completes the statements below?

The US is required to enter Tech Spec 3.6.1.3 __ (1) __.

Firing the TIP shear valve __ (2) __ satisfy this Tech Specs' Required Action.

[REFERENCE PROVIDED]

A. (1) Condition C
   (2) will

B. (1) Condition C
   (2) will **NOT**

C. (1) Condition A
   (2) will

D. (1) Condition A
   (2) will **NOT**

Q 93

Unit 1 is operating at 100% power.

An electrical fault resulted in de-energizing the Unit 1 ± 24V Neutron Monitoring Battery and Battery Charger Channel ‘A’.

Which one of the following identifies the minimum required actions, if any?

[REFERENCE PROVIDED]

A. Tech Spec 3.3.1.1, Required Action A.1 **OR** A.2

B. Tech Spec 3.3.1.1, Required Action A.1 **OR** A.2 **AND** C.1.

C. ODCM Table 1.1-2 Actions A, B, C, **AND** D

D. No Tech Spec **OR** ODCM Actions are required

Q 94

An ALERT has been declared.

Which one of the following items is required on EPIP-3 Appendix A, ALERT Initial Notification Form.

A. Radiological Conditions

B. Wind speed and direction

C. Lower Emergency Action Levels which also apply

D. Brief description of the Emergency Action Level

Q 95

Which choice completes the following statement in accordance with NPG-SPP-10.2, Clearance Procedure to Safely Control Energy?

For any task where hazardous energy cannot be safely controlled by implementing NPG-SPP-10.2 requirements, the work is considered “working on energized equipment” and must be approved by the _____.

A. Responsible Employee

B. Primary Authorized Employee

C. Plant Manager

D. Work Control Center SRO

Q 96

Which one of the following completes the statement in accordance with NPG-SPP-09.4 Attachment 7, 50.59 Evaluation Form?

A proposed plant modification must **always** have prior NRC approval via a license amendment if it involves a change to _____.

A. a design basis limit for Primary Containment

B. a Tech Spec system

C. the Technical Requirements Manual (TRM) Bases

D. IST (In-Service Testing) program acceptance criteria

Q 97

In accordance with Tech Spec Bases 3.0, LCO Applicability, which one of the following completes the statement below?

Upon entry into LCO _____, an evaluation shall be made to determine if a Loss of Safety Function exists.

A. 3.0.4

B. 3.0.5

C. 3.0.6

D. 3.0.7

Q 98

All three Units are operating at 100% power.

The 1A & 1B Control Bay Supply Fans tripped and neither can be restarted.

Which one of the following identifies the minimum required Tech Spec actions, if any?

[REFERENCE PROVIDED]

A. No Tech Spec action is required.

B. Tech Spec 3.3.7.1, CREV Instrumentation, Required Action A.1 and D.1.

C. Tech Spec 3.3.7.1, Required Action A.1, D.1, and D.2.

D. Tech Spec 3.7.3, CREV System, Required Action A.1.

Q 99

An ATWS has occurred on Unit 2.
2-EOI-1A, ATWS RPV Control, was entered.

The OATC reports that the Reactor is subcritical, but will not remain subcritical under all conditions without Boron and SLC has failed to inject.

Which one of the following completes both the statements?

NOTE: 2-EOI-1 RPV Control
2-AOI-100-1 Reactor Scram

2-AOI-100-1 __ (1) __ required to be entered at this time.

2-EOI-1 __ (2) __ required to be implemented concurrently with 2-EOI-1A.

A. (1) is
(2) is

B. (1) is
(2) is **NOT**

C. (1) is **NOT**
(2) is

D. (1) is **NOT**
(2) is **NOT**

Q 100

At 1630 the Unit Operator observes valid indications in the Main Control Room which require an emergency declaration in accordance with EPIP-1, Emergency Classification Procedure.

At 1637 the Unit Operator reports these indications to the Shift Manager.

Which one of the following indicates the earliest time that the emergency declaration is required to be made; and the earliest time that the offsite notifications to the state and local agencies are required to be made?

A. 1645; 1700

B. 1645; 1745

C. 1652; 1707

D. 1652; 1752